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ASSESSING THE ROLE OF ISLAMIC BANKING IN DRIVING INDONESIA'S ECONOMIC GROWTH DURING COVID-19

Vera Novia Anisa,[a] Indri Supriani,[a] Yunice Karina Tumewang[b]
[a]Universitas Brawijaya, Indonesia
[b]Universitas Islam Indonesia, Yogyakarta, Indonesia
e-mail: veranoviaa@gmail.com; indri.supriani@ub.ac.id (corresponding author); yunice.karina@uii.ac.id

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Abstract

This study examines the role of Islamic banking in supporting Indonesia's economic growth during the unprecedented disruption caused by the COVID-19 pandemic from March 2020 to May 2023. The study employs the Autoregressive Distributed Lag (ARDL) model to investigate the relationship between key Islamic banking indicators and economic performance, as proxied by the Industrial Production Index (IPI), in both the short and long term. The empirical findings suggest that Islamic bank financing, as measured by the financing-to-deposit ratio (FDR), gross fixed capital formation (GFCF), and total assets, has a significantly positive impact on long-term economic growth. However, its short-term effects were relatively limited. These results underscore the importance of strengthening regulatory frameworks and promoting profit-and-loss-sharing mechanisms to enhance the resilience and developmental impact of Islamic banking, particularly in supporting economic recovery following financial shocks. By focusing on a crisis, this study offers novel empirical insights into the stabilising role of Islamic banking during periods of economic turbulence and contributes to promoting economic resilience.

Keywords: *islamic banking, COVID-19, ardl model, economic growth, indonesia*

I. INTRODUCTION

Boediono defined economic growth[1] as a sustained increase in output or per capita income over an extended period. Economic growth can be measured through Gross Domestic Product (GDP), with a higher GDP level reflecting better economic conditions in a country. A key driver of economic growth is the financial sector, which functions as a bridge between surplus and deficit economic agents through financial intermediation. Conventional financial institutions, especially banks, mobilise public savings and redistribute capital to productive sectors. This intermediation accelerates production, investment,

[1] Boediono, *Pengantar Ilmu Ekonomi*, 4th ed. (Yogyakarta: BPFE, 2018).

and consumption. Similar to traditional banks, Islamic banks also serve as financial intermediaries, but with distinct principles rooted in the principles of Sharia law. Rather than charging interest, for example, Islamic banks adopt profit-and-loss sharing mechanisms, as well as promoting ethical financing and avoiding speculative activities. In addition to ensuring adherence to religious values, these features offer economic resilience, particularly in times of financial instability.

During the COVID-19 pandemic, Islamic banking in Indonesia played a crucial role in stimulating the economy. The pandemic, which began in Wuhan, China, and was officially confirmed to have entered Indonesia on March 2, 2020,[2] brought severe disruptions. By July 2020, the country had recorded 91,715 cases, the highest number in Southeast Asia.[3] The Indonesian government implemented various mitigation strategies, such as the Large-Scale Social Restrictions (LSSR) policy, which restricted public gatherings and closed educational institutions and workplaces.[4] While this policy reduced virus transmission, it also led to a sharp economic slowdown, characterised by rising unemployment, inflation, reduced imports, and a significant decline in tourism.[5]

Despite these challenges, Islamic banking demonstrated notable resilience. According to the "Komite Nasional Ekonomi dan Keuangan Syariah" (KNEKS),[6] Islamic banking in Indonesia achieved growth in total assets (13.11%), financing (8.08%), and third-party funds (11.88%). In contrast, conventional banks experienced negative growth in several sectors, with national economic activity contracting by up to 5%. The performance of Islamic banking during the pandemic suggests a potential model for economic stability and recovery during crises.

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[2] Pusat Krisis Kesehatan, "Perkembangan Pandemi Covid-19 Di Indonesia," *Kementerian Kesehatan Republik Indonesia*, July 16, 2021, https://pusatkrisis.kemkes.go.id/perkembangan-pandemi-covid-19-di-indonesia.

[3] Sekretariat Nasional ASEAN Indonesia, "15,3 Juta Orang Positif COVID-19, Indonesia Tertinggi Di Asia Tenggara," Sekretariat Nasional ASEAN Indonesia, 2020, https://setnasasean.id/news/read/15-3-juta-orang-positif-covid-19-indonesia-tertinggi-di-asia-tenggara.

[4] Rindam Nasruddin and Islamul Haq, "Pembatasan Sosial Berskala Besar (PSBB) Dan Masyarakat Berpenghasilan Rendah," *SALAM: Jurnal Sosial Dan Budaya Syar-I* 7, no. 7 (2020): 4, https://doi.org/10.15408/sjsbs.v7i7.15569.

[5] Rasminto Rasminto et al., "Analisis Dampak Sosial-Ekonomi Akibat Pembatasan Sosial Berskala Besar (Psbb) Dalam Menghadapi Pandemi Covid-19 Di Provinsi Dki Jakarta," *Jurnal Green Growth Dan Manajemen Lingkungan* 11, no. 1 (2022): 27–34, https://doi.org/10.21009/jgg.v11i1.25672.

[6] KNEKS, "Insight Buletin Ekonomi Syariah 'Trend Konversi Ke Bank Syariah Tingkatkan Efisiensi Dan Produktivitas Bisnis,'" *KNEKS* (Jakarta, 2020), https://kneks.go.id/storage/upload/1580002526-KNKS Insight Edisi 8 (Januari)-1.pdf.

This resilience is not unprecedented. During the 1997–1998 Asian Financial Crisis, Indonesia experienced a surge in interest rates, which reached 60%,[7] devastating the country's conventional banking system. However, Islamic banks, which operate on a profit-sharing basis and prohibit interest, showed greater stability and fewer loan defaults. Islamic banks also offered unsecured microloans and promoted inclusive financing, thereby further supporting entrepreneurial growth and the development of the halal industry ecosystem.[8] According to Abasimel,[9] the growth in the Islamic banking sector during the pandemic is expected to continue, thereby enhancing the significant economic impact that Sharia banks can generate. Their performance during COVID-19 demonstrated that Islamic banks are more resilient in crises due to their profit-sharing framework.[10]

Islamic banks have the potential to boost the Indonesian economy due to the large Muslim population, which had reached 229.62 million people or 87.2% of the country's total population by 2020[11]. With projections of the world's Muslim population increasing to 2.2 billion by 2030 (covering 23% of the world's population), the Indonesian Muslim population would make up 13,1% of total Muslims in the world[12] However, realisation of the potential of Islamic banking institutions remains incomplete, as evidenced by their modest market share. According to the Indonesian Financial Services Authority's 2020 report, cited in Ramadhan et al.,[13] Islamic banks occupy a meagre 5.99% market in Indonesia, suggesting a limited understanding of the financial products offered by these institutions.

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[7] Ascarya Diana Yumanita, *Bank Syariah: Gambaran Umum*, *Pusat Pendidikan Dan Studi Kebanksentralan (PPSK) BI*, 14th ed. (Jakarta: Pusat Pendidikan dan Studi Kebanksentralan Bank Indonesia, 2005), https://ipief.umy.ac.id/wp-content/uploads/2020/02/14.-Bank-Syariah-Gambaran-Umum.pdf.

[8] Khairana Izzati, "Peran Keuangan Syariah Untuk Menjadikan Indonesia Pemimpin Industri Halal Dunia," *Komite Nasional Ekonomi Dan Keuangan Syariah*, July 2, 2021, https://kneks.go.id/berita/363/peran-keuangan-syariah-untuk-menjadikan-indonesia-pemimpin-industri-halal-dunia?category=1.

[9] Nasir Ababulgu Abasimel, "Islamic Banking and Economics: Concepts and Instruments, Features, Advantages, Differences from Conventional Banks, and Contributions to Economic Growth," *Journal of the Knowledge Economy* 14, no. 2 (June 22, 2023): 1923–50, https://doi.org/10.1007/s13132-022-00940-z.

[10] Hasna Maliha and Lina Marlina, "Mengapa Bank Syariah Relatif Lebih Tahan Krisis?: Aplikasi Logistic Regression Untuk Sistem Deteksi Dini Krisis Finansial Di Indonesia," *Ekonomi Islam Indonesia* 1, no. 1 (2019): 34–55.

[11] HS Mastuki, "Menjadi Muslim, Menjadi Indonesia (Kilas Balik Indonesia Menjadi Bangsa Muslim Terbesar)," *Kementerian Agama Republik Indonesia* (Kementerian Agama Republik Indonesia, 2020), https://kemenag.go.id/opini/menjadi-muslim-menjadi-indonesia-kilas-balik-indonesia-menjadi-bangsa-muslim-terbesar-03w0yt.

[12] Mastuki.

[13] Zulfikar Ramadhan at al., "Market Share Bank Syariah Di Indonesia Dan Faktor Yang Mempengaruhinya," in *Prosiding Semnaslit LPPM UMJ 2022* (Jakarta: Universitas Muhammadiyah Jakarta, 2022), 1–7, https://jurnal.umj.ac.id/index.php/semnaslit/article/view/14254.

Several scholars have affirmed the role of Islamic banking in fostering sustainable development. El Ayyubi et al.[14] argue that Islamic banking supports economic activities, including raw material procurement, working capital financing, and enhancing purchasing power. Similarly, Cahyaningrum[15] emphasises the importance of Islamic bank assets in improving access to financing for SMEs. Wasiaturrahma[16] also highlights Islamic banking's ability to endure and recover from economic crises, citing the crisis that struck Indonesia between 1997 and 1998. At the same time, El-Ayyubi et al.[17] establish a causal relationship between financing and GDP levels in their investigation of Islamic banks' contribution to stimulating economic growth. Despite an insignificant response to financing and TPF concerns, the results indicate that Islamic banks have a substantial effect on GDP. In contrast to the broader national economy, Islamic banks demonstrate a positive correlation with economic growth, notwithstanding their comparatively modest scale within Indonesia's financial system.[18] This correlation persists even after controlling for other variables, such as the depth of the financial system.

Research Gaps and Hypothesis

Previous studies have consistently focused on and shown Islamic banking's contribution in stable economic environments. This study aims to fill the gap in the existing literature by analysing Islamic banking's impact during times of crisis, specifically during COVID-19, using the Medium and Large Industrial Production Index (IPI) as a proxy for economic growth to determine the extent to which Islamic banking has contributed to Indonesia's economic development. This study adopted five independent variables: Capital Adequacy Ratio (CAR), Financing-to-Deposit Ratio (FDR), Total Islamic Bank Assets, Inflation and Gross Fixed Capital Formation (GFCF). These hypotheses were tested using quantitative analysis to assess the contribution of Islamic banking to Indonesia's economic growth, particularly during the COVID-19 pandemic. Based on theoretical foundations and previous empirical studies, the following hypotheses were formulated:

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[14] Salahuddin El Ayyubi et al., "Pengaruh Bank Syariah Terhadap Pertumbuhan Ekonomi Di Indonesia," *Al-Muzara'ah* 5, no. 2 (April 20, 2018): 88–106, https://doi.org/10.29244/jam.5.2.88-106.

[15] Ina Sholati Cahyaningrum, "Pengaruh Sektor Riil Dan Keuangan Syariah Terhadap Pertumbuhan Ekonomi Di Indonesia Tahun 2007-2014," *An-Nisbah: Jurnal Ekonomi Syariah* 4, no. 1 (October 10, 2017): 106–27, https://doi.org/10.21274/an.2017.4.1.106-128.

[16] Wasiaturrahma, *Perkembangan Perbankan Syariah Di Indonesia Dari Masa Ke Masa*, 1st ed. (Malang: Selaras Media Kreasindo, 2022), https://repository.unair.ac.id/119340/1/Wasiaturrahma_ArtikelT501_Perkembangan-Perbankan.pdf.

[17] El Ayyubi et al., "Pengaruh Bank Syariah."

[18] Patrick Imam and Kangni Kpodar, "Islamic Banking: Good for Growth?," *Economic Modelling* 59 (December 2016): 387–401, https://doi.org/10.1016/j.econmod.2016.08.004.

H1: CAR has a significant positive effect on the IPI.
H2: FDR has a significant positive effect on the IPI.
H3: Total Islamic Bank Assets has a significant positive effect on the IPI.
H4: Inflation has a significant adverse effect on the IPI.
H5: Gross Fixed Capital Formation (GFCF) positively affects the Industrial Production Index.

These variables were selected due to their relevance in representing the financial soundness, intermediation performance, and macroeconomic environment of Islamic banking in Indonesia. This result offers significant perspectives for banking regulation and Islamic banks, aiding the assessment of financial and corporate policies and strategies to maximise Islamic banks' involvement in concrete economic endeavours in Indonesia during a crisis.

II. LITERATURE REVIEW

II. A. Indonesia Islamic Banking Development

Nasyulianti[19] claims Islamic banks are characterised by unique operational frameworks that set them apart from conventional banking establishments. Instead of incorporating or imposing interest charges, Islamic banks are distinguished by their adherence to contractual obligations and their implementation of profit-sharing mechanisms and other incentive structures. Islamic banking follows the fundamental principles delineated in the Qur'an and Hadith.

During the early phases of Islamic bank establishment in Indonesia, substantial modifications were made to banking regulations. According to the Financial Services Authority,[20] Bank Indonesia, as Indonesia's central bank, authorised banks to set their interest rates in 1983, to promote an efficient banking sector that could assist the Indonesian economy. The early days of Islamic banking in Indonesia can be traced back to November 1, 1991, when the Majelis Ulama Indonesia (MUI) established Bank Muamalat Indonesia (BMI). According to Sjahdeini,[21] BMI began operating on May 1, 1992, with an initial capital of IDR 106,126,382,000. The establishment of BMI marked a significant evolution in Indonesian Islamic finance. After the implementation of Law No. 7 of 1992 on Banking, which further fortified this significant achievement, Baitul Mal Wattamwil was established as an Islamic microfinance

[19] Nasyulianti, "Pengaruh Perbankan Syariah Terhadap Pertumbuhan Ekonomi Di Indonesia Tahun 2016-2019" (Institut Agama Islam Negeri ParePare, 2021), http://repository.iainpare.ac.id/3073/.

[20] "Prinsip Dan Konsep Dasar Perbankan Syariah," 2017, https://ojk.go.id/id/kanal/syariah/tentang-syariah/Pages/Prinsip-dan-Konsep-PB-Syariah.aspx.

[21] *Perbankan Syariah: Produk-Produk Dan Aspek-Aspek Hukumnya*, cet. 1 (Jakarta: Prenada Media Grup Kencana, 2014).

institution. The establishment of Law No. 7 of 1992 on Banking was revised with the enactment of Law No. 10 of 1998, codifying Islamic banking in Indonesia as a distinct sector with strong Islamic principles and a profit-sharing model, rejecting interest rates for a more sustainable banking system [22]

Based on the aforementioned reasons, the annual growth of Islamic banks from 2015 to 2019 is evident from their expansion, as measured by total assets. Notwithstanding a persistent increase in the aggregate assets of Islamic banks, the expansion of the sector decelerated in 2017. Banking assets experienced a 20.33% growth rate in 2016, but declined by 1.35% in the following year, for a total growth rate of 18.98%.[23] The slower growth rates of total assets continued until 2019, in which the assets of Islamic banks grew by 9.8%. Significantly, this figure represents a reduction of 2.72% compared to asset growth recorded in 2018 of 12.52%.[24] The data provided highlights a noticeable deceleration in total asset expansion over between 2018 and 2019.[25]

The Islamic Financial Services Board (IFSB) 2019 report, showed that Indonesian Islamic banking has remained significant despite the country's economic downturn.[26] This report ranked Islamic banking in Indonesia, with the proportion of funds allocated to the manufacturing sector, among thirteen countries, including Saudi Arabia, Iran, Pakistan, Oman, Malaysia, Bangladesh, United Arab Emirates, Brunei, Jordan, Bahrain, Kuwait, and the United Kingdom. KNEKS [27] emphasises ongoing proliferation of Islamic institutions in its report. As of 2019, Indonesia had 189 Islamic banks, including 164 Islamic People's Financing Banks, 14 Islamic Commercial Banks, and 20 Islamic Business Units. An expansion of Islamic banking is expected to enhance Islamic banking's positive influence on economic development by securing financial resources, enhancing organisational efficiency as well as evaluating and influencing clients' perceptions of products and contracts that follow Islamic principles.[28]

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[22] Masyithah Aulia Permana, SH & Adhiem, "Strategi Pengembangan Baitul Mal Wattamwil Sebagai Sumber Pembiayaan Alternatif Bagi Usaha Mikro, Kecil, Dan Menengah," *Kajian* 24, no. 2 (2019): 103–12, https://doi.org/10.22212/kajian.v24i2.1862.

[23] Authority Financial Service Report, 2017a.

[24] Authority Financial Service Report, 2019.

[25] Ummu Ma'bad, "Pengaruh Kebijakan Office Channeling, Rasio Non-Performing Financing, Dan Dana Pihak Ketiga Terhadap Aset Perbankan Syariah Tahun 2015-2019" (IAIN Syekh Nurjati Cirebon, 2021), http://repository.syekhnurjati.ac.id/id/eprint/5016.

[26] (IFSB, 2019)

[27] KNEKS, "Insight Buletin Ekonomi Syariah 'Trend Konversi Ke Bank Syariah Tingkatkan Efisiensi Dan Produktivitas Bisnis.'"

[28] Duygu Zirek et al., "The Islamic Banking and Economic Growth Nexus: A Panel VAR Analysis for Organization of Islamic Cooperation (OIC) Countries," *Journal of Economic Cooperation and Development* 37, no. 1 (2016): 69–100. https://ssrn.com/abstract=3263939.

II.B. Economic Growth

Economic growth is defined as a concerted effort to enhance production capacity; a macroeconomic analysis of a nation's economic progress, gauged by real national income, inclusive of Gross National Product or Gross Domestic Product.[29] Economic growth in the real economy refers to a nation's fiscal advancement, characterised by increased industrial output, infrastructure development, educational development, and total production output. This aligns with Robert Solow's neoclassical theory, employing a production-centric approach, which emphasises production factors like human resources, capital accumulation, modern technology, and output as pivotal sources of propelling economic growth.[30]

The measure of economic growth utilised in this research is the Industrial Production Index (IPI). The concept behind applying IPI as a proxy for economic growth is the ability to capture real output in various industries, including manufacturing, mining, and companies' sectors such as oil and gas.[31] This variable effectively represents authentic economic activities conducted by businesses, as it is supplemented with detailed monthly data that includes both medium and large manufacturing as well as small and medium-sized industries.[32] IPI classifies as large producers those that have a minimum of 100 employees, while medium producers comprise a workforce of 20 to 99 employees.[33]

II.C. Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) is a measure of a financial institution's ability to maintain adequate capital levels and manage risks.[34] A higher CAR indicates

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[29] Rizal Muttaqin, "Pertumbuhan Ekonomi dalam Perspektif Islam," *Maro: Jurnal Ekonomi Syariah dan Bisnis* 1, no. 2 (2018): 23–34, https://scholar.google.com/scholar?oi=bibs&cluster=8179043723922694880&btnI=1&hl=en.

[30] OCBC NISP, "Teori Pertumbuhan Ekonomi Menurut Ahli, Klasik sampai Modern," Bank OCBC NISP, Indonesia, 2023, https://www.ocbcnisp.com/id/article/2023/02/08/teori-pertumbuhan-ekonomi.

[31] Hikmah Lailatul Mukarromah and Asyari Hasan, "Analisis Pengaruh Variabel Makroekonomi terhadap Penerimaan Zakat Pada Baznas Periode 2016-2021," *Jurnal Ilmiah Ekonomi Islam* 9, no. 2 (July 14, 2023): 2229, https://doi.org/10.29040/jiei.v9i2.8677.

[32] Wanvilai Chulaphan and Jorge Fidel Barahona, "Contribution of Disaggregated Tourism on Thailand's Economic Growth," *Kasetsart Journal of Social Sciences* 39, no. 3 (2018): 401–6. https://doi.org/10.1016/j.kjss.2017.07.012.

[33] Badan Pusat Statistik, "Monthly Production Index of Large and Medium Manufacturing by Subsector," 2019, https://www.bps.go.id/en/statistics-table/2/MjA3NyMy/monthly-production-index-of-large-and-medium-manufacturing-by-subsector--kbli-2020---2010-100-.html.

[34] Nasya Arsiyika, "Pengaruh CAR, FDR dan Inflasi terhadap Non-Performing Financing Pada Bank Umum Syariah di Indonesia Periode 2015-2020" (Universitas Islam Negeri Sumatera Utara Medan, 2021), http://repository.uinsu.ac.id/12485/.

that financial institutions can mitigate financing risk by maintaining a significant reserve fund proportional to the capital amount, contributing to market stability.[35] Research by Tsania et al.[36] uses CAR to evaluate banks' financial health, focusing on their ability to mitigate risks associated with productive assets, particularly in financing distribution. An increase CAR ratio correlates with Islamic banking's capacity to provide credit, enhance production capacity, national output, and contribute to economic growth through improved profitability.[37] The elevated CAR ratio indicates Islamic banks' mastery of risk management and financing allocation, promoting commercial sector development and a favourable influence on Indonesia's economic expansion.[38]

II.D. Financing to Deposit Ratio (FDR)

Sumadi and Romdhoni defined FDR as a measure that compares the funds collected from third parties with the financing extended through Islamic banking.[39] FDR also assesses banks' liquidity, encouraging customers to withdraw funds by utilising financing distribution as a source of liquidity.[40] A standard for Sharia banking FDR, ranging from 80% to 100%, has been

[35] Kenneth Baldwin et al., "A Structural Model of 'Alpha' for the Capital Adequacy Ratios of Islamic Banks," Journal of International Financial Markets, Institutions and Money 60 (2018): 267–83. https://doi.org/10.1016/j.intfin.2018.12.015; Mohammad Bitar et al.,, Kuntara Pukthuanthong, and Thomas Walker. "The Effect of Capital Ratios on the Risk, Efficiency and Profitability of Banks: Evidence from OECD Countries," Journal of International Financial Markets, Institutions and Money 53 (March 2018): 227–62. https://doi.org/10.1016/j.intfin.2017.12.002.

[36] Nurfadhila Tsania et al., "Pengaruh CAR, FDR, BOPO dan PDRB terhadap Non-Performing Financing pada Bank Umum Syariah BUMD di Indonesia," *Journal of Applied Islamic Economics and Finance* 2, no. 3 (2022): 524–35, https://doi.org/10.35313/jaief.v2i3.3065.

[37] Fadila Yaumil Hasanah and M. Lathief Ilhamy Nst, "Pengaruh Capital Adequacy Ratio (CAR) dan Non Performing Financing (NPF) terhadap Return on Asset (ROA) Pada Studi Kasus Bank Syariah Indonesia KC. Rantau Prapat," *Jurnal Ilmiah Ekonomi Islam* 9, no. 1 (2023): 1159–66. https://doi.org/10.29040/jiei.v9i1.8349.

[38] Ni Putu Mawar Adella Putri et al., "Effect of Capital, Liquidity, And Company Size on Profitability in Banking Companies Listed on the Indonesia Stock Exchange," *Politeknik Negeri Bali*. Politeknik Negeri Bali, 2022. https://repository.pnb.ac.id/1160/.

[39] Sumadi Sumadi and Abdul Haris Romdhoni, "Pengaruh Financing to Deposit Ratio (FDR), Dana Pihak Ketiga (DPK) dan Return on Asset (ROA) terhadap Pembiayaan Musyarakah (Studi Kasus Bank Syariah Mandiri Periode 2010-2018)," *Jurnal Ilmiah Ekonomi Islam* 6, no. 3 (2020): 598, https://doi.org/10.29040/jiei.v6i3.1430.

[40] Rika Kartika, et al., "The Influence of Financing to Deposit Ratio, Return on Assets and Non Performing Finance on Profit Sharing Finance of Sharia Banks in Indonesia," in *Proceedings of the 1st International Conference on Accounting, Management and Entrepreneurship (ICAMER 2019)*, vol. 123 (Paris, France: Atlantis Press, 2020), 136–40, https://doi.org/10.2991/aebmr.k.200305.034.

established by Bank Indonesia.[41] El Ayyubi et al.[42] and Roosmawarni[43] also demonstrate that higher FDR levels boost public expenditure, investment, and business expansion, positively impacting economic growth. This case study supports the hypothesis proposed in this study.

II.E. Total Assets

The total assets held by a bank are a crucial performance indicator for Islamic banks, as they assess their overall development and financial health.[44] Islamic banks hold various assets, such as cash, fund placements, financing distribution, asset inclusion, allowance, productive asset write-offs, inventory, and fixed assets.[45] The value of all assets held serves as a benchmark for evaluating the contribution of Islamic banks to the domestic banking sector.[46] Increasing assets held by Islamic banks is essential for promoting sustainable economic growth, as Islamic bank deposits and assets contributed positively to the region's long-term economic growth between 2000-2012.[47] Increased bank assets enhance operational efficiency, enabling more financing from reduced inputs and allocating fixed costs for scale returns.

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[41] Yeni Fitriani Somantri and Wawan Sukmana, "Analisis Faktor- Faktor Yang Mempengaruhi Financing to Deposit Ratio (FDR) pada Bank Umum Syariah di Indonesia," *Berkala Akuntansi dan Keuangan Indonesia* 4, no. 2 (2020): 61, https://doi.org/10.20473/baki.v4i2.18404.

[42] Ayyubi et al., "Pengaruh Bank Syariah."

[43] Anita Roosmawarni, "Pengaruh Non Performing Financing, Capital Adequacy Ratio dan Bopo Terhadap Profitabilitas Bank Syariah di Indonesia," *OECONOMICUS Journal of Economics* 6, no. 1 (December 28, 2021): 19–28, https://doi.org/10.15642/oje.2021.6.1.19-28.

[44] Renny Supriyatni and Nurjamil, "The Urgency of Handling Non-Performing Financing in Sharia Banks in the Development of Indonesian Sharia Economics," *Padjadjaran Jurnal Ilmu Hukum* 8, no. 1 (2021): 26–46, https://doi.org/10.22304/pjih.v8n1.a2; Diana Septa Nabella et al., "The Effect of Financing on Islamic Banking Assets With Non-Performing Finance As a Moderating Variable in Indonesia," *Jurnal Ekonomi* 12, no. 01 (2023): 2023, https://www.ejournal.seaninstitute.or.id/index.php/Ekonomi/article/view/1241.

[45] N. Haryono, "Pengaruh Inflasi Terhadap Pembiayaan Murabahah pada Bank Umum Syariah di Masa Pandemi COVID-19," *Jurnal Ilmiah Ekonomi Islam* 8, no. 02 (2022): 1737–43, https://doi.org/10.29040/jiei.v8i2.5774.

[46] Ma'bad, "Pengaruh Kebijakan Office Channeling;" Sandi Mulyadi and Asep Suryanto. "Sharia Banking Contribution to Indonesia's Economic Growth During Pandemic," *Iqtishaduna* 13, no. 2 (2022): 29–42. https://doi.org/10.20414/iqtishaduna.v13i2.5450.

[47] Hind Lebdaoui and Joerg Wild, "Islamic Banking Presence and Economic Growth in Southeast Asia," *International Journal of Islamic and Middle Eastern Finance and Management* 9, no. 4 (2016): 551–69, https://doi.org/10.1108/IMEFM-03-2015-0037.

II.F. Inflation

Inflation is a significant factor in assessing macroeconomic stability, as it leads to decreased purchasing power of the currency.[48] This devaluation of the rupiah results in increased expenses for households and reduced profits for corporations.[49] These negative impacts in turn lead to a decline in overall output.[50] Inflation also leads to operational deterioration in the financial sector due to increased interest rates.[51] Hyperinflation negatively impacted consumer spending, Islamic banking operations, and revenues, all of which affected Indonesia's economic growth from 2016 to 2020. Extended periods of inflation in Indonesia, which stem from crises, can harm the economy.[52] Khan and Naushad[53] as well as Özyılmaz[54] have highlighted the potential economic downturn and impact of hyperinflation on consumer expenditure, Islamic banking operations, and revenues. As a result, the empirical observations support the hypothesis that was advanced in this study.

II.G. Gross Fixed Capital Formation (GFCF)

GFCF refers to the measure of government expenditures allocated to capital product investments, including land expansion, construction of residential and commercial structures, and machinery and equipment acquisition, excluding consumption-related activities.[55] It is crucial for assessing a nation's infrastructure development, facilitating economic growth and overall

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[48] Imam and Kpodar, "Islamic Banking: Good for Growth?"; Velenkosini Matsebula and Johannes Sheefeni, "Financial Inclusion and Macroeconomic Stability in South Africa," *International Journal of Economics and Financial Issues* 12, no. 4 (2022): 56–64, https://doi.org/10.32479/ijefi.13053.

[49] Bank Indonesia, "Inflasi," Bank Indonesia, 2023, https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx.

[50] Saleh Sitompul et al., "The Influence of Exchange Rate, Inflation, for the Results of the Development Assets of Islamic Banks," *Journal of Economics, Finance and Management Studies* 04, no. 03 (2021): 138–48, https://doi.org/10.47191/jefms/v4-i3-05.

[51] Susan A. Yehosua et al., "Pengaruh Inflasi dan Suku Bunga terhadap Tingkat Pengangguran di Kota Manado," *Jurnal Berkala Ilmiah Efisiensi* 19, no. 01 (2019): 20–31, https://ejournal.unsrat.ac.id/index.php/jbie/article/view/22262.

[52] Mutiara Shifa et al., "Penggunaan Mata Uang Dinar dan Dirham Sebagai Solusi Prediksi Krisis Moneter di Indonesia," *Fair Value: Jurnal Ilmiah Akuntansi dan Keuangan* 4, no. 6 (2022): 2321–38, https://doi.org/10.32670/fairvalue.v4i6.992.

[53] Naushad Khan and Mahnoor Naushad, "Inflation Relationship with the Economic Growth of the World Economy," *SSRN Electronic Journal*, 2020, https://doi.org/10.2139/ssrn.3542729.

[54] Ayfer Özyılmaz, "Relationship Between Inflation and Economic Growth in EU Countries," *İktisat Politikası Araştırmaları Dergisi - Journal of Economic Policy Researches* 9, no. 2 (2022): 425-38, https://doi.org/10.26650/jepr1132170.

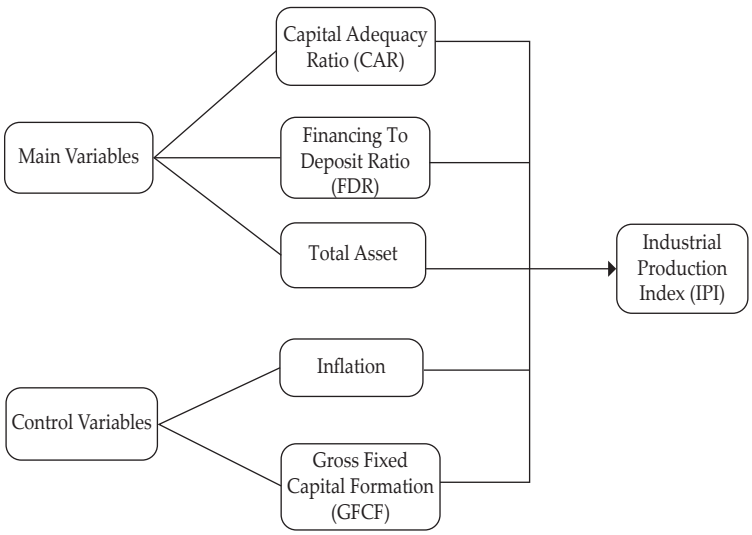
[55] The World Bank, "Investment (GFCF) (Indicator)," 2023, https://doi.org/10.1787/b6793677-en.

development.[56] GFCF enhances national income, employment, and economic growth, thereby improving the Indonesian standard of living.[57] An increase in GFCF promotes confidence among business sectors, enabling them to contribute to Indonesia's economic growth. The expansion of Islamic banks' lending can stimulate entrepreneurial activity, increasing investment interest and contributing to the country's national income.[58] The Harrod-Domar theory suggests that allocating a proportion of current consumption to capital accumulation can stimulate economic development.[59]

II.H. Research Framework

The objective of this research is to analyse the impact of Islamic banks on Indonesia's economic growth amidst COVID-19, the study formulated problem statements and established a research framework focusing on variables such as CAR, FDR, Total Assets, Inflation, and GFCF.

Figure 1. Research Conceptual Framework



Source: Authors (2023)

[56] Arifa Pratami et al., "Are Shariah Banking Financing Patterns Pro-Cyclical? An Evidence from ASEAN Countries," *Cuadernos de Economia* 45, no. 127 (2022): 82–91, https://doi.org/https://doi.org/10.32826/cude.v1i127.6070210-0266/.

[57] Yusuf Abdulkarim, "A Systematic Review of Investment Indicators and Economic Growth in Nigeria," *Humanities and Social Sciences Communications* 10, no. 1 (2023): 1–13, https://doi.org/10.1057/s41599-023-02009-x.

[58] A. Sankaran et al., "Effects of Dynamic Variables on Industrial Output in One of the World's Fastest-Growing Countries: Case Evidence from India," *Future Business Journal* 6, no. 1 (2020): 1–8, https://doi.org/10.1186/s43093-020-00023-y.

[59] Jopinus Saragih et al., "Trade Openness, Government Development Expenditures, Gross Capital Formation and Economic Growth: An ASEAN Case," *International Journal of Innovation, Creativity and Change* 12, no. 10 (2020): 366–83, www.ijicc.net.

III. DATA AND MODEL

This study analyses the influence of Islamic banking on economic growth in Indonesia during COVID-19. Monthly economic data was examined from March 2020 to May 2023. Data selection assumed, based on the Ministry of Health, Republic of Indonesia,[60] that COVID-19 arrived in Indonesia in March 2020. Moreover, following a Presidential Decree,[61] it was officially acknowledged that the pandemic in Indonesia came to an end in June 2023. However, the information required for this research was limited to statistics through May 2023, as data from the statistical reports of Sharia banking, as provided by the Financial Services Authority. The variables are explained in Table 1:

Table 1.
Variable's Measurement

Dependent Variable	Definition	Formula	Source
Industrial Production Index (IPI)	Indicators of the industrial output of a country over a specific period.	According to Supriani et al.,[62] the formula for calculating IPI is as follows: $IPI = \sum \frac{W_1 x \frac{P_1}{P_0}}{W_1}$ W_1 = *Base year weight* P_1 = *Production in current year* P_0 = *Production in base year*	Indonesian Central Bureau of Statistics.
Independent Variable	**Definition**	**Formula**	**Source**
Capital Adequacy Ratio (CAR)	The ratio ensuring the financial stability of risky assets.	According to Rasyidin[63], the formula for CAR is as follows: $CAR = \frac{Capital}{RWA} X100\%$ RWA=Risk Weighted Asset.	Financial Services Authority of Indonesia.

[60] "Penguatan Sistem Kesehatan dalam Pengendalian COVID-19," Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, 2021, https://p2p.kemkes.go.id/penguatan-sistem-kesehatan-dalam-pengendalian-covid-19/.

[61] "Penetapan Berakhirnya Status Pandemi Corona Virus Disease 2019 (COVID-19) di Indonesia," 2023, https://jdih.maritim.go.id/cfind/source/files/keputusan-presiden-republik-indonesia/2023/keppres-nomor-17-tahun-2023.pdf.

[62] Indri Supriani et al., "Revisiting the Contribution of Islamic Banks' Financing to Economic Growth: The Indonesian Experience," *Shirkah: Journal of Economics and Business* 6, no. 1 (March 27, 2021): 18–37, https://doi.org/10.22515/shirkah.v6i1.383.

[63] Didin Rasyidin Wahyu, "Financing To Deposit Ratio (FDR) Sebagai Salah Satu Penilaian Kesehatan Bank Umum Syariah (Study Kasus Pada Bank BJB Syariah Cabang Serang)," *Islamiconomic: Jurnal Ekonomi Keuangan Dan Bisnis Islam* 7, no. 1 (2016): 19–36, https://doi.org/10.32678/ijei.v7i1.34.

Table 1.
Variable's Measurement (Continued)

Independent Variable	Definition	Formula	Source
Financing to Deposit Ratio (FDR)	Ratio of the bank's total loans and total deposits	According to Rasyidin[64] the formula for calculating the FDR is as follows: $\frac{Total\ Finance}{Total\ Deposit} X100\%$	Financial Services Authority of Indonesia.
Sharia Banking Asset	An increase in value of assets managed by a financial institution over a given period.	According to Arrazy,[65] the formula for calculating Sharia banking assets is as follows: $\frac{(ga_t - ga_{t-1})}{(ga_{t-1})} X100\%$ g = growth *a* = assets t = time t-1= previous period	Financial Services Authority of Indonesia.
Control Variable	**Definition**	**Formula**	**Source**
Inflation	A consistent and durable propensity for price increases.	According to Supriani et al.,[66] the formula for calculating inflation is as follows: $\frac{CPI_t - (CPI - 1)}{(CPI_t)} X100\%$ CPI = Change in the consumer price index for the current year. CPI-1 = Change in the consumer price index for the immediate previous period (t-1).	Indonesian Central Bureau of Statistics.
Gross Fixed Capital Formation (GFCF)	Capital expenditures on durable goods (having more than a year's useful life); include commercial and residential properties, machinery, equipment, and infrastructure	Formula for the GFCF variable includes: GFCF = I + D – DP I= Gross Investment by the Private Sector. D= Net Depreciation of Physical Assets DP = Depreciation of assets.	Organisation for Economic Co-operation and Development (OECD)

[64] Wahyu.

[65] Zakaria Arrazy, "Pengaruh DPK, FDR dan NPT terhadap Pertumbuhan Aset Bank Umum Syariah (BUS) di Indonesia Tahun 2010-2014" (UIN Syarif Hidayatullah, 2015), https://repository.uinjkt.ac.id/dspace/bitstream/123456789/30666/1/ZAKARIA ARRAZY-FSH.pdf.

[66] Indri Supriani et al., "Revisiting the Contribution of Islamic Banks' Financing to Economic Growth: The Indonesian Experience."

III.A. Analytical Method

An Autoregressive Distributed Lag (ARDL) modelling approach has been selected to assess the impact of Islamic banking on Indonesian economic growth. ARDL is a dynamic econometric model that helps differentiate between transient and persistent reactions to the variables.[67] The ARDL method has several benefits, including the ability to handle data with different stationarity degrees even when cointegration is present[68] and the ability to yield more accurate results and address autocorrelation issues by selecting the optimal number of lags based on variable characteristics.[69] Nevertheless, if the unit root test results indicate a second difference I(2), this model becomes inappropriate.[70] Following the unit root test, it noted that there was a discrepancy in the stationarity level, specifically, the dependent variable and control variables were stationarity at level I(0), whereas remaining independent variables exhibited stationarity at the first difference I(1). Consequently, the appropriate econometric method to employ is the ARDL panel model.[71] This method was selected after considering previous studies conducted by Supriani et al.[72] to ascertain the Islamic banking sector's contribution to economic growth. Figure 2 illustrates the visual decision-making process entailed in the ARDL selection.

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[67] Jumhur, "Penerapan Autoregressive Distributed Lag dalam Memodelkan Pengaruh Inflasi, Pertumbuhan Ekonomi, Dan FDI terhadap Pengangguran di Indonesia," *Jurnal Ekonomi Bisnis dan Kewirausahaan* 9, no. 3 (2020): 250–65, https://doi.org/10.26418/jebik.v9i3.41332.

[68] Karunanithi Kriskkumar et al., "Investigating the Asymmetric Effect of Oil Price on the Economic Growth in Malaysia: Applying Augmented ARDL and Nonlinear ARDL Techniques," *SAGE Open* 12, no. 1 (2022): 1–17, https://doi.org/https://doi.org/10.1177/21582440221079936.

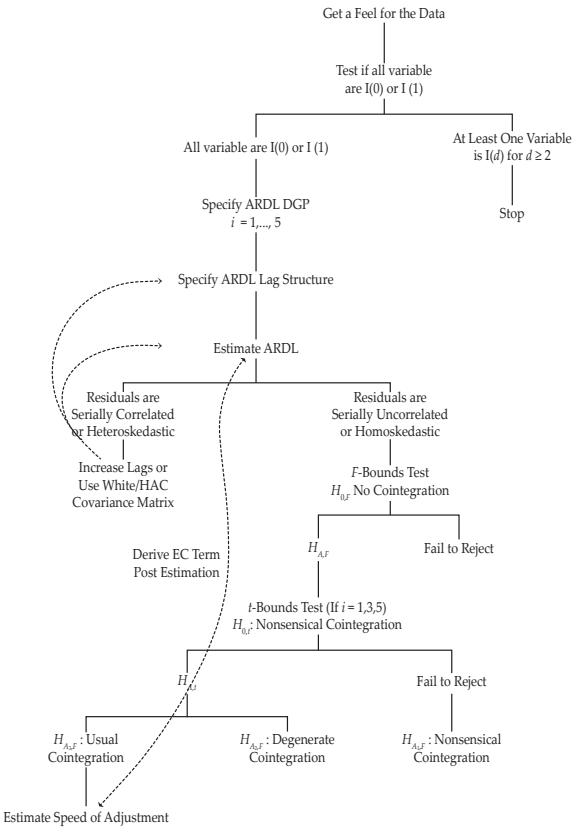
[69] Muhammad Zaky Nur Fajar et al., "The Impact of Financial Development on Carbon Emissions: An ASEAN Perspective," *Journal of Central Banking Law and Institutions* 3, no. 3 (September 30, 2024): 409–48, https://doi.org/10.21098/jcli.v3i3.249.

[70] Ahmad Ridha, Nurjannah, and Ratna Mutia, "Analisis Permintaan Uang di Indonesia: Pendekatan Autoegressive Distributed Lag (ARDL)," *Jurnal Samudra Ekonomika* 5, no. 2 (September 30, 2021): 152–60, https://doi.org/10.33059/jse.v5i2.4273.

[71] Agus Widarjono and Ari Rudatin, "Financing Diversification and Indonesian Islamic Bank's Non-Performing Financing," *Jurnal Ekonomi & Keuangan Islam* 7, no. 1 (2021): 45–58, https://doi.org/10.20885/jeki.vol7.iss1.art4.

[72] Indri Supriani et al., "Revisiting the Contribution of Islamic Banks' Financing to Economic Growth: The Indonesian Experience."

Figure 2. Process Regarding the Decision to Choose ARDL Method



Source: EViews[73]

III.B. Estimation Model

This research employs the ARDL equation as a regression method to analyse the relationships between the Industrial Production Index (IPI) as an economic growth proxy, Islamic banking variables, including CAR, FDR, Assets, and control variables, such as Inflation and GFCF, and "et" representing the error term. The basic linear regression form of the model is:

$$\boldsymbol{IPI_t} = \beta_0 + \beta_1 CAR_t + \beta_2 FDR_t + \beta_3 Asset_t + \beta_4 Inflation_t + \beta_5 GFCF_t + et \quad (1)$$

The following equation illustrates the formulation of the ARDL Model, that represents the variable used in this research, based on equation (1), the ARDL model can be expressed as:

[73] "AutoRegressive Distributed Lag (ARDL) Estimation. Part 3 - Practice," 2017, https://blog.eviews.com/2017/05/autoregressive-distributed-lag-ardl.html.

$$\Delta \boldsymbol{IPI_t} = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i}\, \Delta IPI_{t-1} + \sum_{i=0}^{n} \alpha_{2i}\, \Delta CAR_{t-1} + \sum_{i=0}^{n} \alpha_{3i}\, \Delta FDR_{t-1} + \sum_{i=0}^{n} \alpha_{4i}\ \Delta Asset_{t-1} + \sum_{i=0}^{n} \alpha_{5i} \Delta Inflation_{t-1} + \sum_{i=0}^{n} \alpha_{6i}\, \Delta GFCF_{t-1} + \beta_1 IPI_{t-1} + \beta_2 CAR_{t-1} + \beta_3 FDR_{t-1} + \beta_4 Asset_{t-1} + \beta_5 Inflation_{t-1} + \beta_6 GFCF_{t-1} + \gamma ECT_{t-1} + et \quad (2)$$

The symbol "Δ" denotes the stationarity of data at first difference. The coefficients of (α_{1i}–α_{6i}) represent the short-term dynamic model, while the coefficients of (β_1–β_6) symbolise the long-term relationship; the error correction term (ECT) represents the residual of the ARDL model.

III.C. RESULTS

The objective of this study is to analyse the impact of COVID-19 on the Indonesian economic development as it relates to Islamic institutions. The results of the study were based on data from the Medium and Large Industrial Production Index (IPI) as a dependent variable. The independent variables, which include CAR, FDR, and Total Assets of Sharia Banks, constitute a variety of Islamic bank performance indicators. Control variables, such as Inflation and GFCF, are applied to mitigate the influence of external factors and reduce the impact of potential mistakes by factors not accounted for in this methodology, through the specified variables.[74]

This study used the Autoregressive Distributed Lag (ARDL) method and EViews 9 statistical software. Pre-estimation was used to analyse independent variables in this study, ensuring ARDL estimation adheres to fundamental econometric assumptions in time-series data analysis, including assessing data stationarity, determining optimal latency, and performing a cointegration test by Johansen and Bound. Gujarati[75] emphasises the importance of unit roots in time series data to avoid error estimation results. The Augmented Dickey-Fuller (ADF) unit root method determines the stationarity of variables on the IPI model to ensures no variables exhibit stationarity at second difference I (2). The results of stationarity tests on the variables are displayed in Table 2:

[74] Mustapha Djennas, "Business Cycle Volatility, Growth and Financial Openness: Does Islamic Finance Make Any Difference?," *Borsa Istanbul Review* 16, no. 3 (2016): 121–45, https://doi.org/10.1016/j.bir.2016.06.003.

[75] *Basic Econometrics*, *The McGraw-Hill Companies*, 4th ed., vol. 82 (The McGraw-Hill Companies, 2004), https://doi.org/10.2307/2230043.

Table 2.
The Result of the Unit Root Test

Variable	I (0)		I (1)	
	ADF t-Statistic	Prob	ADF t-Statistic	Prob
IPI	-7.223715	0.0000	-5.815761	0.0000
CAR	-1.821457	0.3648	-6.278093	0.0000
FDR	-2.220866	0.2025	-6.818888	0.0000
ASSET	0.099955	0.9616	-7.239450	0.0000
INFLATION	-5.750775	0.0000	-9.441879	0.0000
GFCF	-15.39765	0.0000	-18.02641	0.0001

Source: Data processed (2023)

Based on the results in Table 2, this study confirms that all variables are stationary at first difference (I(1)). However, the dependent variable IPI, along with control variables such as GFCF, demonstrate level stationarity. Given these mixed orders of integration, the ARDL model is the most appropriate for this analysis. As highlighted by Gujarati,[76] the ARDL approach is particularly advantageous for datasets containing variables integrated at different levels, specifically I(0) and I(1). Furthermore, the Johansen cointegration test was employed to assess the existence of a long-run equilibrium relationship among the specified variables.[77] The results are presented in Table 3.

Table 3.
Johansen Cointegration Rank Test Unrestricted Cointegration Rank Test (Trace)

Hypothesised		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.827441	146.7100	95.75366	0.0000
At most 1 *	0.642589	81.70034	69.81889	0.0042
At most 2	0.490313	43.63220	47.85613	0.1179
At most 3	0.291619	18.69575	29.79707	0.5149
At most 4	0.148246	5.939117	15.49471	0.7027
At most 5	5.86E-05	0.002167	3.841466	0.9592

[76] Damodar N. Gujarati, *Dasar-Dasar Ekonometrika Buku 2 Edisi 5 (Basic Econometrics)*, 5th ed. (Salemba Empat, 2012).

[77] Fidelia Febriani Roman and Kartiko, "Penerapan Kausalitas Granger Dan Kointegrasi Johansen Trace Statistic Test Untuk Indeks Pembangunan Manusia terhadap Pertumbuhan Ekonomi, Inflasi dan Kemiskinan di Nusa Tenggara Timur," *Jurnal Statistika Industri dan Komputasi* 05, no. July (2020): 73–83, https://ejournal.akprind.ac.id/index.php/STATISTIKA/article/view/2887.

Table 3.
Johansen Cointegration Rank Test Unrestricted Cointegration Rank Test (Trace) (Continued)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesised		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.827441	65.00962	40.07757	0.0000
At most 1 *	0.642589	38.06814	33.87687	0.0149
At most 2	0.490313	24.93645	27.58434	0.1052
At most 3	0.291619	12.75663	21.13162	0.4749
At most 4	0.148246	5.936950	14.26460	0.6213
At most 5	5.86E-05	0.002167	3.841466	0.9592

Source: Data processed (2023)

After conducting the Johansen Cointegration test on the model, hypotheses of None and at most 1 indicate that the trace statistic value exceeds the critical value at the 5% alpha level (146.7100 > 95.7536 and 81.70034 > 69.81889). This finding affirms statistical evidence of the existence of a long run relationship. The Bound Test is utilised to calculate the percentage of significance, which functions to identify the existence of cointegration among variables.[78] A comparison is made between the F-statistic and critical values at selected alpha levels to interpret the Bound Test results.[79]

Table 4.
Bound F-test Result: The Long-Term Relationship between Islamic Banks' Contribution and Economic Growth on COVID-19

Model	Test Statistic	Value
IPI	**F-statistic**	**3.806169**
	Critical Value Bounds	
10 %		3.35
5 %		3.79
2.5 %		4.18
1 %		4.68

Source: Data processed (2023)

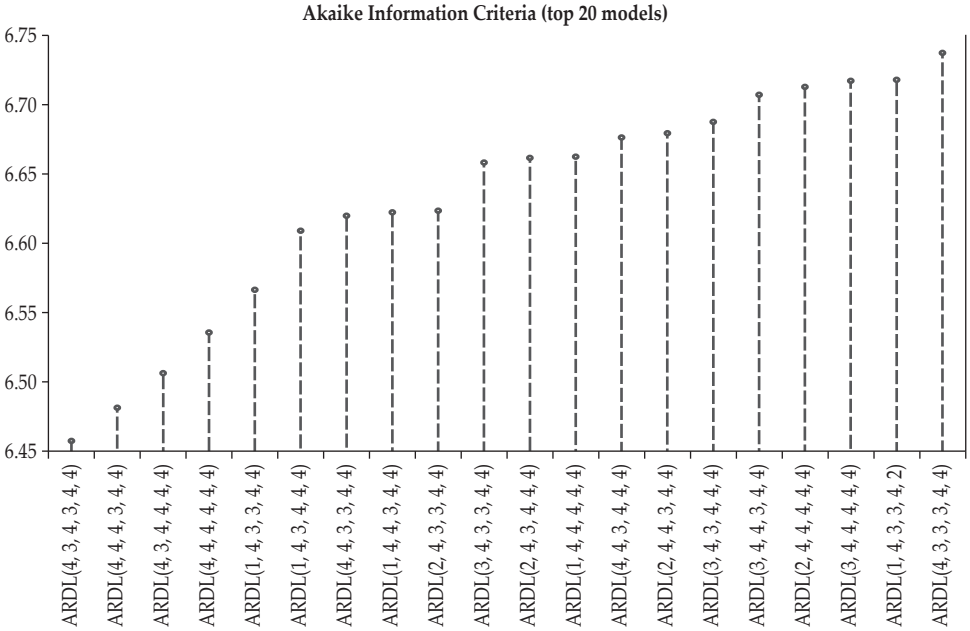
Table 4 shows that F-statistic value for Medium and Large IPI is higher than the upper critical bound at a 5% significance level (3.806169 > 3.79) as

[78] Diaztri Hazam and Maria Titah Jatipaningrum, "Penerapan Autoregressive Distributed Lag (ARDL) Dalam Memodelkan Pengaruh Indeks Harga Konsumen (IHK) Terhadap Inflasi Di Kota Yogyakarta," *Jurnal Statistika Industri Dan Komputasi* 7, no. 1 (2022): 24–33, https://doi.org/10.34151/statistika.v9i2.

[79] M. Hashem Pesaran et al., "Bounds Testing Approaches to the Analysis of Level Relationships," *Journal of Applied Econometrics* 16, no. 3 (2001): 289–326, https://doi.org/https://doi.org/10.1002/jae.616.

confirmed by Cointegration-Bound result. Hence, hypothesis 1 is supported, suggesting that the dependent variable is influenced by the independent variables in a long-run relationship, especially in the COVID-19 period.

Figure 3. Determination of Lag Length



Source: Data processed (2023)

The Akaike Information Criterion (AIC) method was used as the fourth stage of ARDL to determine optimal lag length, examine cointegration, and select a dynamic model.[80] The judicious selection of optimal lag lengths is critical to the effectiveness ARDL model, which involves choosing a model with the smallest AIC value.[81] The optimal ARDL model recommendation is ARDL (4,3,4,3,4,4), with a minimal AIC value (6.457), suggested by EViews9.

[80] Dewi Kusuma Ningrum and Sugiyarto Surono, "Comparison the Error Rate of Autoregressive Distributed Lag (ARDL) and Vector Autoregressive (VAR) (Case Study: Forecast of Export Quantities in DIY)," *EKSAKTA: Journal of Sciences and Data Analysis* 18, no. 2 (September 27, 2018): 167–77, https://doi.org/10.20885/eksakta.vol18.iss2.art8.

[81] Wawan Kurniawan and Kadir Kadir, "International Trade Price Index: A Leading Indicator for Indonesia's Inflation?," *Economics Development Analysis Journal* 12, no. 2 (2023): 182–93, https://doi.org/10.15294/edaj.v12i2.63088.

Following the determination ideal lag length, diagnostic testing is conducted to assess the accuracy model and minimise model deviations.[82] Fifth, the accuracy of ARDL model was assessed through implementation of two tests: heteroscedasticity and Serial Correlation Lagrange Multiplier test. The LM test is shown in Table 5.

Table 5.
The Result of Lagrange Multiplier (LM) Test: Breusch-Godfrey

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.006963	Prob. F (2,5)	0.9931
Obs*R-squared	0.097208	Prob. Chi-Square (2)	0.9526

Source: Data processed (2023)

Subsequently, the LM test was employed to examine the presence of autocorrelation among residual errors in the statistical model [83]. The findings from the LM test confirm that the Chi-square probability value is greater than α5% (0.9526 > 0.05), which indicates there is no autocorrelation problem in this model. As shown in Table 6, the Breusch Pagan Godfrey method assessed heteroscedasticity, potentially compromising statistical analysis outcomes and precision estimates.

Table 6.
Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.642292	Prob. F (33,4)	0.8090
Obs*R-squared	24.93505	Prob. Chi-Square (33)	0.5781
Scaled explained SS	2.360007	Prob. Chi-Square (33)	1.0000

Source: Data Processed (2023)

This result implies there is insufficient evidence to support the presence of heteroscedasticity in residual models (1.000000 > 0.05) this attribute bolsters the credibility of the statistical findings.[84] Lastly, the estimation of long- and short-run relationships, are reported in Tables 7 and 8.

[82] M. Hashem. Pesaran, "On the General Problem of Model Selection," *The Review of Economic Studies* 41, no. 2 (April 1974): 153, https://doi.org/10.2307/2296710.

[83] Hazam and Jatipaningrum, "Penerapan Autoregressive Distributed Lag (ARDL) Dalam Memodelkan Pengaruh Indeks Harga Konsumen (IHK) Terhadap Inflasi Di Kota Yogyakarta."

[84] Singgih Santoso, *Menguasai Statistik Parametrik Konsep Dan Aplikasi Dengan SPSS*, Cetakan 1 (Elex Media Komputindo, 2015).

Table 7.
ARDL Short-run Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Causality
D(CAR)	1.240337	2.329594	0.532426	0.6109	Insignificant
D(CAR (-1))	4.664872	2.414956	1.931659	0.0947	Insignificant
D(CAR (-2))	6.030690	2.805521	2.149579	0.0687	Insignificant
D(FDR)	-0.033215	0.625674	-0.053087	0.9591	Insignificant
D(FDR (-1))	0.555846	0.508127	1.093911	0.3102	Insignificant
D(FDR (-2))	1.685613	0.616426	2.734496	0.0291	Significant
D(FDR (-3))	1.021748	0.609527	1.676297	0.1376	Insignificant
D(ASSET)	-0.153617	0.241514	-0.636058	0.5450	Insignificant
D(ASSET (-1))	-0.135201	0.267274	-0.505853	0.6285	Insignificant
D(ASSET (-2))	0.253845	0.251106	1.010909	0.3457	Insignificant
D(ASSET (-3))	0.501651	0.247124	2.029954	0.0819	Insignificant
D(INFLATION)	-22.949362	7.457426	-3.077384	0.0179	Significant
D(INFLATION (-1))	3.175928	6.693587	0.474473	0.6496	Insignificant
D(INFLATION (-2))	-16.042759	7.525086	-2.131904	0.0705	Insignificant
D(GFCF (-1))	-0.255932	1.690215	-0.151420	0.8839	Insignificant
D(GFCF (-2))	-7.547952	4.094554	-1.843413	0.1078	Insignificant
D(GFCF (-3))	5.780283	2.459017	2.350648	0.0510	Insignificant
CointEq(-1)	-5.971409	1.290237	-4.628150	0.0024	Significant

Table 8.
ARDL Long-run Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Causality
CAR	-1.074067	0.507537	-2.116234	0.0721	Insignificant
FDR	-0.343755	0.091040	-3.775853	0.0069	Significant
ASSET	-0.034725	0.011995	-2.894963	0.0232	Significant
INFLATION	-4.418417	2.673929	-1.652407	0.1424	Insignificant
GFCF	2.590636	1.035656	2.501444	0.0409	Significant
C	64.912495	14.248832	4.555636	0.0026	Significant
R-squared		0.864793	F-statistic		1.658234
Adjusted R-squared		0.343279	Prob(F-statistic)		0.251993

Source: Data Processed (2023)

The ARDL estimation model utilises coefficient determination (R^2), which quantifies the extent of account variations in the dependent variable. The ARDL model estimation indicates that combined influence of independent variable accounts for 86.47% and the remaining 13.53% is attributed to other independent variables. The coefficient value of (CointEq (-1)), known as the Error Correction Term (ECT), provides insights into long- and short-effects and determining how to respond promptly to changes and return to

equilibrium,[85] and the coefficient must be negative and significant.[86] Estimation results in Table 7 indicate a negative coefficient of ECT value at -5.971409, with significant probability of 0.0024. This implies, within a one-month timeframe, 5.97% error values will be rectified, also indicating a significant relationship among variables affecting economic growth

Table 7 illustrates that, in the short run, the FDR variable at lag (-2) during COVID-19 has a positive, significant impact on economic growth. This suggests, an increase in loan values is associated with economic growth over the following two months. This implies that Islamic banks played a vital role in stimulating productivity amid the COVID-19 crisis. However, Table 8 shows that, in the long run, the FDR variable exhibits a significantly negative result on IPI, suggesting that a 1% increase in FDR level was associated with a decrease of 0.343755 in IPI during COVID-19.

The COVID-19 pandemic significantly impacted the banking industry, resulting in a greater risk to financing distribution, asset quality decline, and tightening net interest.[87] The Indonesian banking sector experienced 2.41 percent credit contraction in December 2020.[88] This contraction was due to reduced demand for credit and increased caution in extending credit due to heightened risk. Additionally, there was a 2.53 percent increase in the NPF ratio in December 2020 compared to 2019,[89] Total assets' short run effect has not significantly impacted Indonesia's economic growth, but in the long run, total assets negatively impact IPI. Inflation negatively impacts IPI in the short run, while GFCF positively influences long-run economic growth.

IV. DISCUSSION

IV.A. The Impact of the Capital Adequacy Ratio (CAR) during COVID-19

This study finds that the CAR in Islamic banks did not exert a statistically significant impact on economic growth, as measured by the IPI, over both the short and long runs during the COVID-19 pandemic, leading to the rejection of

[85] Hazam and Jatipaningrum, "Penerapan Autoregressive Distributed Lag (ARDL)."

[86] Iwanthika Rajakaruna and Nelson Perera, "Determining the Nominal Exchange Rate in Sri Lanka: An Application of The Lagrange Multiplier Structural Break Unit Root Test and The Ardl Co-Integration," *Journal of South Asian Studies* 8, no. 2 (2019): 57–70, https://doi.org/10.33687/jsas.008.02.3301.

[87] Hardiansyah Padli and Kumaidi -, "Peluang Dan Tantangan Bank Syariah di Masa Pandemi COVID 19," *ILTIZAM Journal of Shariah Economics Research* 5, no. 2 (December 16, 2021): 146–56, https://doi.org/https://doi.org/10.30631/iltizam.v5i2.810.

[88] Bank Indonesia, "Bangkit dan Optimis: Sinergi dan Inovasi Untuk Pemulihan Ekonomi" (Jakarta, 2021), https://www.bi.go.id/id/publikasi/laporan/Documents/LPI_2021.pdf.

[89] Iswahyuni Iswahyuni, "Analisis Dampak COVID-19 terhadap Perbankan Syariah," *Widya Balina: Ilmu Pendidikan dan Ekonomi* 6, no. 1 (June 30, 2021): 42–58, https://doi.org/10.53958/wb.v6i11.74.

the initial hypothesis. COVID-19's financial instability affected Islamic banks' CARs, affecting lenders' ability to repay extended financing, leading to capital sector challenges and domestic economic disruptions.[90] Implementation of LSSR inadvertently led to a reduction in output in the business sector.[91] The early stages of the pandemic and the imposition of these policies resulted in economic sluggishness, evident through an increased NPF ratio, which reached 4.32% in April 2020—the highest recorded during COVID-19,[92] as a result of diminishing corporate profits —thereby reducing bank capital, increasing risk-weighted assets (RWA),[93] and indicating poor credit quality.[94] This situation markedly contrasts with capital distribution in stable economic conditions, where the creditors' ability to repay financing is anticipated to be more robust and consistent.[95]

Different from conventional banks, CAR is a critical determinant of lending capacity and financial stability due to its role as a buffer against credit risk. Islamic banks operate under an Islamic-compliant model that emphasises asset-backed financing and profit-and-loss sharing based on financing the real sector, reduces funding for hazardous assets, reduces NPF, but increases financing without corresponding capital rather than interest-based lending.[96] This structural distinction reduces reliance on capital buffers. It positions Islamic banks to absorb shocks through real-sector intermediation and ethical risk-sharing principles.[97] While conventional banks may derive income through interest, Islamic banks' revenues are inherently tied to the performance

[90] Mister Candera and Karina Dwi Indah, "Financial Performance Islamic Banking: A Comparative Analysis Before and During the Covid-19 Pandemic in Indonesia," *International Journal of Business, Management and Economics* 1, no. 2 (2021): 44–52, https://doi.org/10.47747/ijbmer.v1i2.201.

[91] Nasruddin and Haq, "Pembatasan Sosial Berskala Besar."

[92] Candera and Indah, "Financial Performance Islamic Banking: A Comparative Analysis Before and During the Covid-19 Pandemic in Indonesia."

[93] Timothy Arsya Tifanny and RR Indah Mustikawati, "Pengaruh Capital Adequacy Ratio (CAR), Biaya Operasional Pada Pendapatan Operasional (BOPO), Financing to Deposit Ratio (FDR), Sertifikat Bank Indonesia Syariah (SBIS), Dan Inflasi Terhadap Risiko Pembiayaan Bermasalah Pada Bank Umum Syariah Di Indonesia ," *Profita: Kajian Ilmu Akuntansi* 7, no. 5 (2019): 1–20, https://journal.student.uny.ac.id/profita/article/view/16446.

[94] Taswan, *Manajemen Perbankan: Konsep, Teknik Dan Aplikasi*, 2nd ed. (Yogyakarta: UPP STIM YKPN, 2010).

[95] Faaza Fakhrunnas et al., "The Determinants of Non-Performing Loans in the Indonesian Banking Industry: An Asymmetric Approach Before and During the Pandemic Crisis," *SAGE Open* 12, no. 2 (2022): 1–13, https://doi.org/10.1177/21582440221102421.

[96] Agus Widarjono, M. B.Hendrie Anto, and Faaza Fakhrunnas, "Financing Risk in Indonesian Islamic Rural Banks: Do Financing Products Matter?," *Journal of Asian Finance, Economics and Business* 7, no. 9 (2020): 305–14, https://doi.org/https://doi.org/10.13106/jafeb.2020.vol7.no9.305.

[97] Hassan Daher, Mansur Masih, and Mansor Ibrahim, "The Unique Risk Exposures of Islamic Banks' Capital Buffers: A Dynamic Panel Data Analysis," *Journal of International Financial Markets, Institutions and Money* 36 (2015): 36–52, https://doi.org/10.1016/j.intfin.2015.02.012.

of financed projects, making capital levels more sensitive to economic fluctuations.[98] Therefore, this study highlights the need for Islamic banks to adopt alternative capital management approaches, such as strengthening equity-based contracts, diversifying lending portfolios, and implementing tailored regulatory frameworks to enhance resilience. The contrast with conventional banking practices underscores the unique features and adaptive potential of the Islamic financial system, especially in periods of economic disruption.[99]

IV.B. The Impact of Financing to Deposit Ratio (FDR) during COVID-19

This study confirms that FDR positively affected economic growth in the short run, aligning with findings by Hesniati and Sucipto.[100] Islamic Banks' intermediation role was further enhanced by the increase in financing distribution, stimulating industrial activity and capital flow.[101] Provided that FDR remains within Bank Indonesia's optimal range between 80%-100%, it provides a path to strengthen economic growth and expand into global markets.[102]

However, the long-run data show an unanticipated negative correlation between FDR and Indonesia's economic growth during the COVID-19 pandemic, with a decline in demand for products and services, leading to increased loan defaults.[103] This conflicts with conventional banking literature, which generally suggests that the FDR has a beneficial effect due to consistent interest-based revenue and risk management. In the case of Islamic banks, lending expansion despite economic instability resulted in an increase in Non-

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[98] Ahmad Alqatan and Wafaa Sbeiti, "Islamic Banking Performance Versus Conventional Banking," *Review of Economics and Finance* 19 (2021): 312–25, https://doi.org/https://doi.org/10.55365/1923.x2021.19.32.

[99] Naima Lassoued, Imen Khanchel, and Wiem Saidani, "Comparative Study on the Efficiency of Islamic Banks and Conventional Banks During the COVID-19 Outbreak," *SAGE Open* 15, no. 1 (2025): 1–16, https://doi.org/10.1177/21582440241309726.

[100] Hesniati & Soecipto, "The Influence of Risk Management and Macro Economy on The Performance Of Sharia Bank In Indonesia," *International Journal of Economics, Business and Accounting Research (IJEBAR)* 7, no. 1 (2023): 42–51, https://jurnal.stie-aas.ac.id/index.php/IJEBAR/article/view/7424/3364.

[101] Aris Munandar, "Faktor-Faktor Yang Mempengaruhi Financing To Deposit Ratio (FDR) Serta Implikasinya Terhadap Return On Assets (ROA) Dan Net Operating Margin (NOM) Pada Bank Umum Syariah Periode Januari 2014-September 2021," *Ekonomica Sharia: Jurnal Pemikiran Dan Pengembangan Ekonomi Syariah* 7, no. 2 (2022): 105–16, https://doi.org/10.36908/esha.v7i2.367.

[102] Somantri and Sukmana, "Analisis Faktor- Faktor Yang Mempengaruhi Financing to Deposit Ratio (FDR) Pada Bank Umum Syariah Di Indonesia."

[103] Badar Nadeem Ashraf, Mosab I. Tabash, and M. Kabir Hassan, "Are Islamic Banks More Resilient to the Crises Vis-à-Vis Conventional Banks? Evidence from the COVID-19 Shock Using Stock Market Data," *Pacific-Basin Finance Journal* 73, no. June (June 2022): 101774, https://doi.org/10.1016/j.pacfin.2022.101774.

Performing Financing (NPF) and considerable withdrawal of third-party funds,[104] reducing future lending capacity and increasing loan defaults.[105] In contrast to conventional banks, which derive revenue from interest, Islamic banks depend on real-sector activity and profit-and-loss sharing, exposing them to higher volatility.[106] During Indonesia's large-scale social restrictions (LSSR) and massive economic downturn, sectors commonly financed by Islamic banks, such as SMEs, trade, and agriculture, experienced decreased revenues and increased default. Consequently, investment declined, and banks were more cautious about loaning funds.[107] The FDR long-run negative impact may indicate overfinancing to vulnerable sectors without adequate capital buffers or risk mitigation strategies, and suggest inconsistencies between deposit maturity and financing schemes during COVID-19.

IV.C. The Impact of Islamic Banking Assets During COVID-19

The assets variable does not exhibit a statistically significant short-run correlation with the medium and large industrial production index; the hypothesis in this study is rejected, which aligns with Azhar Rifai et al.[108] who also reported an insignificant relationship between Islamic bank assets and short-term economic activity. This result contradicts conventional banking literature, which suggests that asset size is associated with increased lending capacity and economic growth.[109] Islamic bank assets in Indonesia have a limited impact due to their small market share (5.99%) and low public adoption, with only 10.5% of the population holding Sharia-compliant accounts.[110] Contributing factors include limited public awareness, lower profit margins, and the early stage of the Islamic banking sector's development.

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[104] Erna Hernawati et al., "Non-Performing Financing among Islamic Banks in Asia-Pacific Region," *Cuadernos de Economia* 44, no. 126 (2021): 1–9, https://doi.org/10.32826/cude.v1i126.501.

[105] Ashraf, Tabash, and Hassan, "Are Islamic Banks More Resilient to the Crises Vis-à-Vis Conventional Banks? Evidence from the COVID-19 Shock Using Stock Market Data."

[106] Asma Salman and Huma Nawaz, "Islamic Financial System and Conventional Banking: A Comparison," *Arab Economic and Business Journal* 13, no. 2 (December 2018): 155–67, https://doi.org/10.1016/j.aebj.2018.09.003.

[107] Dematria Pringgabayu, Kurnia Fajar Afgani, and Alda Ricederia, "Perbedaan NPF Dan FDR Bank Muamalat Antara Sebelum Dan Selama Pandemi Covid-19," *Jurnal Maps (Manajemen Perbankan Syariah)* 4, no. 2 (2021): 122–34, https://doi.org/10.32627/maps.v4i2.113.

[108] Azhar Rifai, Adi Wijaya, and Rachmad Budi Suharto, "Pengaruh Total Aset Dan Pembiayaan Serta Dana Pihak Ketiga Perbankan Syariah Terhadap Pertumbuhan Ekonomi Di Provinsi Kalimantan Timur," *Jurnal Ilmu Ekonomi Mulawarman (JIEM)* 6, no. 2 (2021): 11–20, https://doi.org/10.30872.

[109] Ying Zhang, Dongqi Yao, and Chunguang Zhang, "Bank Loan versus Financial Lease: How Do Traditional and Innovative Approaches within the Banking Sector Influence Economic Growth? A Comparative Analysis between the US and China," *Applied Economics* 52, no. 40 (2020): 4366–83, https://doi.org/10.1080/00036846.2020.1735617.

[110] Salman and Nawaz, "Islamic Financial System and Conventional Banking: A Comparison."

The long-run estimation reveals a significantly negative effect during COVID-19. The hypothesis in this study is rejected. This contrasts with conventional conditions, where asset expansion typically supports financial intermediation and investment. This unexpected result may reflect several structural challenges unique to Islamic banks in Indonesia. As noted by Ansari,[111] Islamic finance's early global development may negatively impact economic performance in countries like Indonesia, where Islamic banks have yet to match their conventional counterparts' asset value.[112] Additionally, findings by Fathurrahman and Sari[113] indicate that a decline in Islamic banks' assets limits their ability to achieve economies of scale, leading to liquidity issues, increased cost of funds, especially amid foreign investor withdrawals and a heightened risk of defaults during crises like COVID-19.[114] Mulyadi and Suryanto[115] also highlight that Islamic banks' resources were primarily used for internal purposes during the pandemic. These distinctions emphasise that Islamic banking cannot be assessed using the same parameters as conventional banking due to its different principles and market dynamics. These findings underline the importance of improving asset quality, developing targeted financing strategies, and enhancing resilience through a model tailored to the structural uniqueness of Islamic finance.

IV.D. The Impact of Inflation During COVID-19

The hypothesis suggests that inflation negatively impacted IPI during COVID-19. This study found that in the short run, this variable was negative and significantly influenced economic growth**,** due to the devalued rupiah, increasing production costs, and reducing profits for companies.[116] These results showed a decline in total output and profits, weakening consumer demand, and leading to a macroeconomic slowdown.[117] COVID-19 tightened

[111] Sanaullah Ansari, "The Role of Islamic Banking Industry in the Economic Growth of Pakistan," *SSRN Electronic Journal*, 2013, 1–14, https://doi.org/10.2139/ssrn.2312382.

[112] Sayyed Sadaqat Hussain Shah et al., "The Impact of COVID-19 Pandemic on Islamic and Conventional Banks' Profitability," *Economies* 11, no. 4 (2023): 1–17, https://doi.org/10.3390/economies11040104.

[113] Ayif Fathurrahman and Maya Kumala Sari, "Determinant of Total Assets of Sharia Banks in Indonesia (An Error Correlation Model Approach)," *Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah* 4, no. 2 (2020): 300–310, https://doi.org/https://doi.org/10.29313/amwaluna.v4i2.5567.

[114] Putri Cahya Rosyadah et al., "Factors That Affect Savings In Islamic Banking," *AL-ARBAH: Journal of Islamic Finance and Banking* 2, no. 1 (2020): 33–46, https://doi.org/10.21580/al-arbah.2020.2.1.5499.

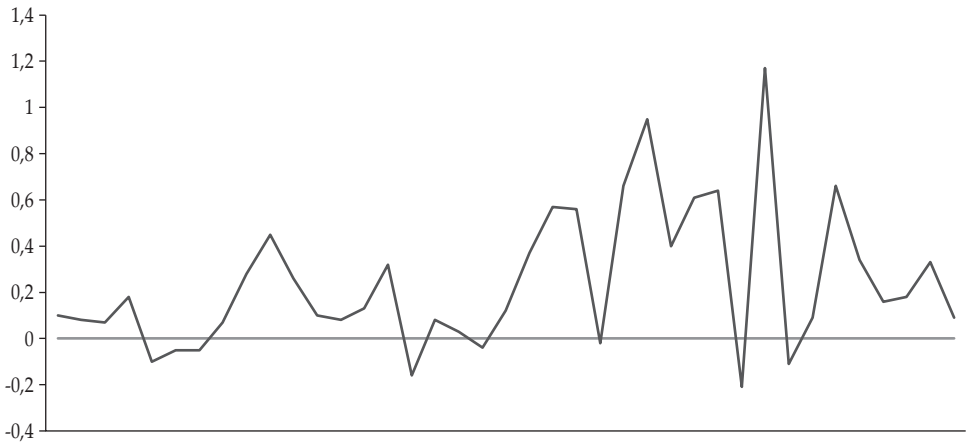
[115] Mulyadi and Suryanto, "Sharia Banking Contribution To Indonesia'S Economic Growth During Pandemic."

[116] Supriani et al., "Revisiting the Contribution of Islamic Banks' Financing to Economic Growth: The Indonesian Experience."

[117] Olivier Armantier et al., "How Economic Crises Affect Inflation Beliefs: Evidence from the Covid-19 Pandemic," *Journal of Economic Behavior and Organization* 189 (2021): 443–69, https://doi.org/10.1016/j.jebo.2021.04.036.

credit extension in banking.[118] This has reduced borrowers' incomes and affected their ability to repay principal Sharia obligations, which were based on PLS rather than interest. This contrasts with conventional bank lending, where inflation typically prompts monetary authorities to raise interest rates, leading to higher loan costs and tighter credit.[119] Consequently, while conventional banks adjust to inflation by manipulating interest-based instruments, Islamic banks face direct exposure to the real sector's performance, especially for PLS obligations. However, long-run estimates show that inflation's impact is inconsequential. Inflation's impact on economic growth is limited, especially when rates remain below 10%, indicating mild inflation[120] as seen in Indonesia, in Figure 4, during COVID-19.

Figure 4. Indonesian Inflation Conditions During COVID-19



Source: Indonesia Central Bureau of Statistics[121]

Figure 4 shows inflation trends during COVID-19, influenced by decreasing demand and reduced production output. A low and stable inflation rate catalysed economic growth by increasing profits.[122] This limited the adverse

[118] (Fakhrunnas et al., 2022)

[119] Narjess Boubakri, Ali Mirzaei, and Mohsen Saad, "Bank Lending during the COVID-19 Pandemic: A Comparison of Islamic and Conventional Banks," *Journal of International Financial Markets, Institutions and Money* 84, no. February (2023): 101743, https://doi.org/10.1016/j.intfin.2023.101743.

[120] Rizal Ronaldo, "Pengaruh Inflasi Dan Tingkat Pengangguran Terhadap Pertumbuhan Ekonomi Makro Di Indonesia," *Jurnal Ekonomi* 21, no. 2 (2019): 138–53, https://api.semanticscholar.org/CorpusID:201374470.

[121] "Inflasi 90 Kota (Umum)," 2023, https://www.bps.go.id/id/statistics-table/2/MTcwOCMy/inflasi--november-2023.html.

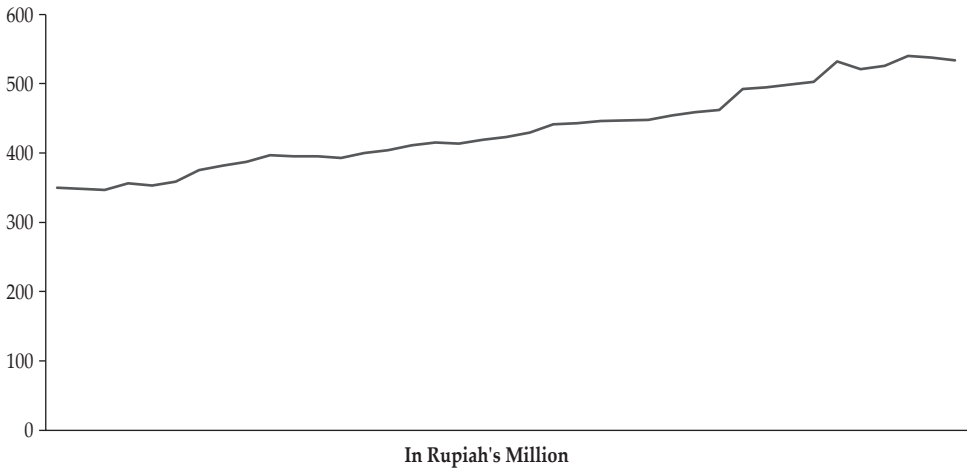
[122] Yurianto, "Analisis Kebijakan Pengendalian Inflasi DKI Jakarta," *BALANCE: Economic, Business, Management and Accounting Journal* 17, no. 1 (2020): 12–33, https://doi.org/10.30651/blc.v17i1.4179.

impact on economic growth and allowed Islamic banks to continue financing activities with fewer disruptions than their conventional counterparts. Stable inflation supports economic growth by sustaining consumer purchasing power and protecting the profitability of Sharia-compliant businesses, which do not rely on real economic productivity.

IV.E. The Impact of Gross Fixed Capital Formation (GFCF) During COVID-19

This study found that GFCF positively and significantly influences economic growth amid pandemic crises in the long run and validated the hypothesis proposed in this study. Arsyad[123] reveals that increased investment during COVID-19, as shown in Figure 5, significantly influences economic growth by utilising savings accumulation, stimulating demand and income, and increasing production capacity through capital stock has an positive effect on economic growth.[124]

Figure 5.
Indonesian GFCF Conditions During COVID-19



Source: Organisation for Economic Co-operation and Development (OECD)[125]

[123] *Ekonomi Pembangunan* (Yogyakarta: UPP STIM YKPN, 2010).

[124] Dwi Yunianto, "Analisis Pertumbuhan Dan Kepadatan Penduduk Terhadap Pertumbuhan Ekonomi," *Forum Ekonomi* 23, no. 4 (2021): 688–99.

[125] Organisation for Economic Co-operation and Development (OECD), "Investment (GFCF)" (Paris, France, 2023), https://www.oecd.org/en/data/indicators/investment-gfcf.html.

In contrast to conventional banking, which relies on interest, often constrained during crises, Islamic banking promotes real-sector investment through asset-backed lending and risk-sharing contracts. This unique approach enables Islamic banks to support productive capital formation even in uncertain times, strengthening their role in driving economic recovery.[126] Capital formation expansion positively impacts production levels and income, playing a crucial part in supporting IPI's capacity to withstand economic downturns, especially in the pandemic context.[127] Considering the complexities caused by COVID-19, the business sector must prioritise capital expansion to maintain its operations, caused by increased investment stimulates economic output and revenue.[128]

V. CONCLUSION

This research examines the impact of Islamic bank financing on Indonesia's economic growth during the COVID-19 crisis. The study utilises the IPI as a proxy for industrial sector performance and business cycle activity. The findings indicate that Islamic bank financing played a critical role in the short run, reflecting the banks' capacity to support liquidity and ensure business continuity during the COVID-19 crisis. However, these results highlighted that Islamic banking hurt IPI, indicating that a higher volume of financing exacerbated contraction in industrial activity, reduced productive investment, and inefficient capital allocation in Indonesia during financial turmoil due to COVID-19. This suggests that assumptions about the universally positive impact of financing may not fully apply to Islamic banking under crisis conditions, especially when PLS contracts are entered into without adequate risk management. These findings offer new insights into the dynamics of Islamic financial intermediation in emerging economies and invite further theoretical exploration on how Islamic financial principles operate under stress conditions.

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[126] Adil Saleem et al., "Financial Intermediation through Risk Sharing vs Non-Risk Sharing Contracts, Role of Credit Risk, and Sustainable Production: Evidence from Leading Countries in Islamic Finance," *Environment, Development and Sustainability* 26, no. 5 (2024): 11311–41, https://doi.org/10.1007/s10668-023-03298-7.

[127] Ubong E. Effiong, "Investment in Education and Health: Lessons for the Growth Potentials in the COVID-19 Era," *Saudi Journal of Economics and Finance* 4, no. 10 (2020): 492–97, https://doi.org/10.36348/sjef.2020.v04i10.002.

[128] Ibrahim Musa Gani and Zakaria Bahari, "Islamic Banking's Contribution to the Malaysian Real Economy," *ISRA International Journal of Islamic Finance* 13, no. 1 (July 6, 2021): 6–25, https://doi.org/10.1108/ijif-01-2019-0004.

During crisis periods, firms tend to decrease production, reduce demand for labour and capital, and suffer from unstable financial performance. Consequently, firms are not operating at their optimal levels, and a significant financing distribution from the Islamic Bank results in unproductive investment. This outcome indicates that Islamic banks should enhance the evaluation and screening processes for financing, particularly during periods of economic downturn. Furthermore, the study strongly recommends that Islamic banks exercise greater discretion in their investment decisions and offer non-financial support to firms, especially SMEs, to ensure their survival and sustainability during times of instability.

Based on these results, Bank Indonesia, as the central bank, plays a critical role in advancing Islamic financial policies and enhancing the contribution of Islamic banks to Indonesia's economic recovery. This can be achieved by strengthening the connection between Islamic banking and SMEs operating in the halal sector, including halal food, tourism, pharmaceuticals, cosmetics, and fashion. Consequently, Islamic banking is expected to become a primary source of financing for these sectors, thereby increasing the inclusivity of Islamic finance in Indonesia. Furthermore, it is highly recommended that comprehensive education for SMEs be prioritised to ensure that the concept of halal extends beyond the products and services offered and also includes the financial support SMEs adopt for their business funding. In summary, these efforts align with the 2017 Blueprint for Islamic Economic Development, which emphasises the strategic development of the Halal Value Chain across sectors, as well as the Master Plan for the Halal Industry of Indonesia 2023–2029, which aims to position Indonesia as a global leader in the halal sector. These initiatives also encourage Islamic banks to contribute to the sustainable economic development of Indonesia.

Aside from its theoretical and practical contributions, this study has several limitations, including the reliance on the IPI rather than GDP, the exclusion of conventional banks, and the constraints posed by the use of monthly data. Future research should consider a comparison between Islamic and conventional banks, as well as cross-country studies, to provide a broader perspective. Despite these limitations, the findings underscore the role of Islamic finance in enhancing Indonesia's economic resilience. Strengthening regulatory oversight and integrating Islamic banking into national economic strategies could further support economic recovery and foster long-term growth.

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