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STAGFLATION – PROOF BANKING: HOW FINTECH DEVELOPMENT AND FINANCIAL RESILIENCE DRIVE PROFITABILITY – ARDL MODELING EVIDENCE FROM INDONESIA'S COMMERCIAL BANKS

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Abstract

This study analyzes the impact of the triple-layer effect stagflation (inflation, GDP), fintech lending, and bank stability (CAR, LDR) on Indonesian banks' ROA, assessing short- and long-term effects. The object of this research is the audited financial report of Indonesian Commercial Bank KBMI IV which is listed on the Indonesia Stock Exchange. Data were collected using purposive sampling (time series of 2019-2024 period). The Autoregressive Distributed Lag (ARDL) model was applied to analyze both short-term dynamics and long-term equilibrium between the variables. The results show that: Inflation has a significant negative impact on ROA in both the short and long term. GDP does not significantly affect ROA. Fintech lending does not have a significant impact on ROA, though it may indirectly pressure banks to innovate. CAR has a significant positive influence on ROA, indicating financial resilience supports profitability. LDR does not significantly affect ROA, suggesting lending activities may not be optimal or are affected by external risks. A long-term cointegration exists between all variables and ROA, indicating the importance of strategic, forward-looking policies. The findings imply that stagflation poses a serious risk to banking profitability. Banks must strengthen risk management, improve capital efficiency, and embrace innovation to remain competitive. Policymakers should support financial stability through appropriate macroeconomic policies, especially in stagflationary conditions

Keywords: *Stagflation (Inflation, GDP), Fintech Lending, Financial Resilience, Return on Assets.*

INTRODUCTION

In the past two years, the global economy has faced multidimensional challenges, including the COVID-19 pandemic, geopolitical tensions, high inflation, and slowing economic growth[1]. According to the International Monetary Fund (IMF) report in 2023, global economic growth in 2022 will only reach 3.2%, down from 6.0% in 2021, with a moderate growth projection of 3.0% in 2025. According to projections, headline inflation in advanced economies will revert to baseline levels in 2025 and 2026, when it is predicted to drop to 4.2 % in 2025 and 3.5 % in 2026[2]. During the Covid-19 pandemic, the policy mix had a major impact on the stability of the financial system (as seen by exchange rates) and the economy (as shown by inflation). Countries like as India, Indonesia, Russia, Brazil, Turkey, and Egypt were particularly affected [3].

In 2022, Indonesia's economy grew 5.3%, driven by higher domestic spending and exports. Bank Indonesia (BI) expects growth to stay between 5.0-5.3% in 2025, but there is a risk of stagflation. Controlling inflation is important for long-term economic growth. In its broadest meaning, the nation's overall economic health is reflected in the economic aspect of sustainable development[4]. The risk of fragmentation arises in certain situations: a combination of high inflation rates and economic stagnation, called stagflation[5], is a serious threat to the global economy and Indonesia. Stagflation, a combination of high inflation and recession, has a negative impact on stock and bond investments[6]. Global inflation rose due to higher energy and food prices and supply chain problems. In 2022, Indonesia's inflation hit 5.5%, above the 3.0±1% target. If inflation continues to be high while economic growth slows down, the risk of stagflation will become more apparent[7].

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[1] Anggun Wida Prawira and Syamsul Arifin, 'Pengaruh Jerat Stagflasi Pada Capaian Laju Investasi Di Provinsi Jawa Timur Periode 2019-2022', *Journal of Business and Economics Research (JBE)*, 4.2 (2023), 164–73 <https://doi.org/10.47065/jbe.v4i2.3636>.

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[3] Ade Novalina and others, 'Economic Recession in 7Em Countries: Evidence of 3P Capability and Impact of Covid-19', *International Journal of Economic, Technology and Social Sciences (Injects)*, 2.1 (2021), 351–68 <https://doi.org/10.53695/injects.v2i1.501>.

[4] Stasys Girdzijauskas and others, 'New Approach to Inflation Phenomena to Ensure Sustainable Economic Growth', *Sustainability (Switzerland)*, 14.1 (2022), 1–21 <https://doi.org/10.3390/su14010518>.

[5] Pierpaolo Benigno and others, 'Stagflation and Fragmentation : The Euro Area at the Crossroads', *... Monetary Affairs, Policy ...*, 2022 <https://sep.luiss.it/wp-content/uploads/2022/06/WP4.22-Stagflation-and-fragmentation.-the-euro-area-at-the-crossroads-1.pdf>.

[6] Guido Baltussen and others, 'Investing in Deflation, Inflation, and Stagflation Regimes', *Financial Analysts Journal*, 79.3 (2023), 5–32 <https://doi.org/10.1080/0015198X.2023.2185066>.

[7] Dana Moneter Internasional.

In the US banking sector, inflation expectations and economic uncertainty hurt return on equity more than return on assets.

Stagflation reduces bank profits[8]. Stagflation can pose serious risks to the financial and banking industries, especially if inflation remains high and central banks such as the ECB must choose between raising interest rates or letting inflation run higher[9]. At the same time, the stagflation trap has a major impact on capital usage, as evidenced by the GDP, inflation, and unemployment rates[10]. In the context of UK banking, [11]asserts that inflation and the unemployment rate are important indicators of credit risk. Monitoring macroeconomic developments is crucial since changes in bank NPLs (non-performing loans) are more strongly influenced by economic factors (interest rates and inflation) than by bank-specific factors[12]. The ROA was not impacted by inflation, nor was it significant[13]. GDP significantly affects ROA, and this effect is positive, indicating that as GDP rises, so does the ROA for businesses[14]. As stand-ins for economic limitations, [15]research employs a variety of variables, including global supply chain pressure (GSCP), worldwide pandemic (WPU), economic policy intimidation (EPU), climate policy (CPU), geopolitical risk (GPR), and monetary policy (MPU). The findings demonstrate that macroeconomic factors typically threaten bank stability. Interest rates would rise, money printing would stop, and borrowing would decline if governments sought to stabilize

[8] OJK, 'Penguatan Sektor Jasa Keuangan Dalam Menjaga Pertumbuhan Ekonomi: Laporan Kinerja OJK Tahun 2023', *Financial Services Authority (FSA)*, 2024.

[9] European Parliament, 'Interaction between Price Stability and Financial Stability', *Economic Governance and EMU Scrutiny Unit (EGOV)*, June, 2023.

[10] Anggun Wida Prawira, Syamsul Arifin, and Nuryadi, 'The Impact of Spillover Stagflation on Capital Utilization in East Java (in Macroeconomic Perspectives) 2014-2022', *International Journal of Global Accounting, Management, Education, and Entrepreneurship*, 4.1 (2023), 49–59 <https://doi.org/10.48024/ijgame2.v4i1.109>.

[11] Hemlata Sharma and others, 'Analysing the Influence of Macroeconomic Factors on Credit Risk in the UK Banking Sector', *Analytics*, 3.1 (2024), 63–83 <https://doi.org/10.3390/analytics3010005>.

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prices and prevent inflation, but doing so could put the financial system at risk of collapsing[16].

A study by Claessens and Kose[17] shows that stagflation reduces credit demand as people's purchasing power decreases, while banks' funding costs increase due to rising interest rates. This can reduce the Net Interest Margin (NIM) and Return on Asset (ROA) of banks. Data from the Financial Services Authority (OJK) in 2024 the bank's ability to generate net profit experienced a significant weakening, as seen from the decline in the return on assets (ROA), there was a decrease in ROA at Bank KBMI from 3.72% to 3.34%, reflecting pressure on profitability[18]. Accordingly, the researcher suggests the following hypothesis: ***H1: Inflation has a negative effect on banking ROA in both the short and long term at Commercial Banks in KBMI IV. H2 = GDP growth has a positive effect on banking ROA in both the short and long term at Commercial Banks in KBMI IV.***

The term "fintech" refers to contemporary technology used in finance[19]. A financial institution that can impact a company's revenue and worth is fintech P2P lending. In Indonesia, P2P lending is gaining traction as a substitute for bank loans. It also contributes to economic progress because of technology[20]. This is because its operations are nearly identical to those of a bank, which include obtaining capital from investors and disbursing capital to the community in the form of loans[21]. Big Tech, Telco, and Fintech have been forced into the financial services industry by digitalization, which has made financial

[16] Jovica Pejčić, Marina Beljić, and Olgica Glavaški, 'Global Stagflationary Pressures: Macroeconomic Repercussions of Pandemic and Geopolitical Crises', *Ekonomija: Teorija i Praksa*, 26.2 (2023), 98–117 <https://doi.org/10.5937/etp2302098p>.

[17] Stijn Claessens and M. Ayhan Kose, *Frontiers of Macrofinancial Linkages*, *BIS Papers*, 2018, XCV <https://ssrn.com/abstract=3107418>.

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[21] Dwi Lesno Panglipursari, Tri Ratnawati, and Ulfi Pristiana, 'The Effect of Digitalization of Banks and Fintech Peer to Peer Lending on Earning with Variable Intervening Liquidity Risk', *Proceeding International Conference on Economic Business Management, and Accounting (ICOEMA)-2022*, 2022, 783–94.

service delivery mass-produced, remotely adjustable, and deliverable. Digital banking and fintech P2P lending have revolutionized Indonesia's financial sector[22]. In 2022, fintech P2P lending transactions reached IDR 100 trillion, growing 50% from the previous year (OJK, 2023). However, credit risk also increased, with the Non-Performing Loan (NPL) ratio of fintech P2P lending at 4.5%, higher than banks' 2.8% (OJK, 2023).

Fintech P2P lending had IDR 59.64 trillion in outstanding loans, up 16.67%, while bank lending grew 10.38%, and financing receivables rose 13.23%[23]. According to the study[24], financial stability was adversely impacted by FinTech development. There are two views on how fintech lending affects financial stability. Digital transformation has a detrimental effect on a bank's performance as measured by its return on equity and return on assets[25]. The financial performance of Indonesian banks was not enhanced by the deployment of digital technology, as these findings demonstrate[26]. The competition-fragility view sees fintech lending as a rival to banks because it provides loans and funding online. Banks take bigger risks, which could harm financial stability[27]. Contradiction on the study's[28] findings show that banks' utilisation of FinTech solutions significantly affects their position and profitability. Other findings provide more proof that FinTech firms impact banks' financial stability[29]. The results showed how banking digitization had a significant impact on the KBMI IV banking company's rise in return on

[22] Muyanja Jameaba, 'Digitalization, Emerging Technologies, and Financial Stability: Challenges and Opportunities for the Indonesian Banking Sector and Beyond', *SSRN Electronic Journal*, February, 2024, 1–39 <https://doi.org/10.2139/ssrn.4808469>.

[23] OJK.

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[25] Lan Nguyen-Thi-Huong and others, 'How Does Digital Transformation Impact Bank Performance?', *Cogent Economics and Finance*, 11.1 (2023) <https://doi.org/10.1080/23322039.2023.2217582>.

[26] Isma Coryanata and others, 'Digitalization of Banking and Financial Performance of Banking Companies', *International Journal of Social Service and Research*, 3.2 (2023), 366–71 <https://doi.org/10.46799/ijssr.v3i2.254>.

[27] Junarsin and others.

[28] Baker Akram Falah Jarah and others, 'The Influence of Financial Technology on Profitability in Jordanian Commercial Banks', *Humanities and Social Sciences Letters*, 12.2 (2024), 176–88 <https://doi.org/10.18488/73.v12i2.3661>.

[29] Aws Alhares, Abdulrahman Dahkan, and Tarek Abu-Asi, 'The Effect of Financial Technology on the Sustainability of Banks in the Gulf Cooperation Council Countries', *Corporate Governance and Organizational Behavior Review*, 6.4 Special Issue (2022), 359–73 <https://doi.org/10.22495/cgobrv6i4sip16>.

equity and return on assets[30]. Accordingly, the researcher suggests the following hypothesis: ***H3 = Fintech lending negatively impacts banking ROA due to competitive disruption at Commercial Banks in KBMI IV***.

FinTech and the Capital Adequacy Ratio (CAR) have a positive and significant association, indicating that FinTech raises CAR[31]. Financial Resilience is measured through the Capital Adequacy Ratio (CAR) and Loan-to-Deposit Ratio (LDR). CAR (Capital Adequacy Ratio) indicates the level of a bank's capital adequacy in absorbing risk, especially credit risk. A high CAR reflects the strength of capital that allows banks to expand credit, which can increase ROA. However, a low CAR indicates limited capital that can hinder credit distribution, thus having a negative impact on ROA. LDR (Loan to Deposit Ratio) reflects the proportion of third-party funds distributed by banks in the form of credit. A high LDR indicates the effectiveness of credit distribution which can increase interest income and have a positive impact on ROA. Conversely, a low LDR indicates that there are funds that are not optimally utilized, thus potentially reducing ROA. OJK data (2024) shows that KBMI IV banking CAR is stable at 22–24% (2021–2023), far above the minimum requirement of 8%. LDR tends to decrease from 92% (2021) to 88% (2023), indicating liquidity risk[32]. Different result found that FinTech has a higher positive effect on capital ratios and bank stability for non-listed banks, according to research findings[33]. Return on assets is significantly impacted by the capital adequacy ratio, but it is unaffected by the loan ratio [34]. ROA is significantly impacted by LDR, and banks that distribute loans more aggressively typically see higher profitability outcomes[35]. Thus, the hypothesis formulated by the researcher is: ***H4 = Capital Adequacy Ratio (CAR) has a positive effect on ROA at Commercial Banks in KBMI IV***. ***H5 = Loan to Deposit Ratio (LDR) has a positive effect on ROA at Commercial Banks in KBMI IV***.

[30] Lesdon Bakkara and Ronny B Sihotang, 'THE EFFECT OF BANKING DIGITALIZATION ON RETURN ON ASSETS AND RETURN ON EQUITY IN KBMI IV BANKING COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE Pengaruh Digitalisasi Perbankan Terhadap Return On Assets Dan Return On Equity Pada Perusahaan Perbankan Kbm', *COSTING:Journal of Economic, Business and Accounting*, 7.3 (2024), 6260–70.

[31] Surayya Jamal and others, 'Advancing in the Change Journey Towards FinTech : Does the Financial Performance of Commercial Banks in Pakistan Increase ?', *Journal for Social Science Archives*, 3.1 (2025), 43–55 <https://doi.org/DOI: 10.59075/jssa.v3i1.91>.

[32] OJK.

[33] Rizky Yudaruddin and others, 'Financial Technology and Bank Stability in an Emerging Market Economy', *Heliyon*, 9.5 (2023), e16183 <https://doi.org/10.1016/j.heliyon.2023.e16183>.

[34] Silva Nurbaiti Pertiwi and others, 'The Effect Of Digitization Transformation On Financial Performance: A Case Study Of Banking Companies In Indonesia', *Journal Research of Social Science, Economics, and Management*, 3.3 (2023), 620–35 <https://doi.org/10.59141/jrssem.v3i3.547>.

[35] Aryasari and Usman.

Research Gap & Novelty: Few studies have explored the interplay the short-term and long-term effects between financial resilience, macroeconomic shocks (particularly stagflation), and fintech adoption in shaping banking profitability—especially for KBMI IV banks in Indonesia. Consequently, the researcher has proposed the following hypothesis: ***H6 = There is a cointegration (long-term) relationship between macroeconomic variables* causing stagflation, *fintech, and internal bank factors on ROA, with significant short-term adjustments at Commercial Banks in KBMI IV***. This study breaks new ground by integrating three critical dimensions: stagflation, fintech development, and financial resilience (measured by CAR and LDR). While prior research has linked CAR and LDR to banking stability, their role in sustaining profitability during stagflation remains underexamined. **Core Objective:** this study examines the combined impact of the triple-layer effect—stagflationary pressures, fintech development, and financial resilience (CAR-LDR dynamics)—on banks' capacity to manage stagflation risks and improve profitability, employing the Autoregressive Distributed Lag (ARDL) model to assess both short-term and long-term relationships among variables. Specifically, it aims to: 1). Assess how stagflation (proxied by inflation and GDP growth) influence ROA. 2). Evaluate the effect of fintech lending on ROA. Investigate the role of financial resilience (CAR and LDR) in shaping ROA. 4). Analyse long-term and short-term relationships among these variables using the ARDL model.

RESEARCH METHODS

This study employs a quantitative approach with an explanatory research design[36] to investigate the relationship between stagflation, fintech development, financial resilience, and banking profitability. The research focuses on commercial banks classified under the KBMI IV category by Indonesia's Financial Services Authority (OJK). The study population comprises all KBMI IV general banks listed on the Indonesia Stock Exchange (IDX) during the 2019-2024 period. A purposive sampling method[37] was employed to select the sample based on the following criteria: (1) KBMI IV banks with complete financial reports available through IDX disclosures throughout the 2019-2024 period, and (2) banks actively regulated and monitored by the OJK. This sampling approach yielded a balanced panel dataset consisting of 72 observations.

The study incorporates one dependent variable and five independent variables:

Table 1. Variable Type, Measurement and Data Source

Variable Type	Variable Name	Proxy/Measurement	Source

[36] Sigit Hermawan and Wiwit Hariyanto, *Buku Ajar Metode Penelitian Bisnis (Kuantitatif Dan Kualitatif)*, *Buku Ajar Metode Penelitian Bisnis (Kuantitatif Dan Kualitatif)*, Cetakan Pe (Sidoarjo: UMSIDA Press Redaksi, 2022) <https://doi.org/10.21070/2022/978-623-464-047-2>.

[37] D Fatihudin, *METODE PENELITIAN UNTUK ILMU EKONOMI, MANAJEMEN DAN AKUNTANSI Dari Teori Ke Praktek*, *Zifatama Publisher*, 1st edn (Sidoarjo: Zifatama Publisher, 2020) <zifatama@gmail.com>.

Dependent	Profitability	Return on Assets (ROA) = Net Income / Total Assets (Y)	Bank Annual Reports (IDX)
Independent	Macroeconomic Stagflation	(X1) Inflation rate (y-o-y, %), (X2) GDP growth (%)	Bank Indonesia (BI), Central Bureau of Statistics (BPS)
Independent	Fintech Development	Volume of P2P lending transactions (IDR trillion) (X3)	Financial Services Authority (OJK)
Independent	Financial Resilience	(X4) Capital Adequacy Ratio (CAR), (X5) Loan-to-Deposit Ratio (LDR)	Bank Annual Reports (IDX), OJK

Source: Processed by Author

Data collection is conducted through documentation studies from official sources, and relevant research journals[38]. Data analysis methods: **The Autoregressive Distributed Lag (ARDL) model** is a regression method that includes both current and past (lagged) values of the dependent variable, along with lagged independent variables[39][40]. Unlike other models, ARDL allows different lag lengths for each variable, offering greater flexibility[41]. It simultaneously estimates **long-run and short-run relationships**, capturing both immediate and delayed effects between variables[42]. All statistical analyses were conducted using EViews 12 software to ensure robust and reliable results. The schematic in Figure 1 below can be used to present the research's framework:

[38] Haryo Suparmun and Wilhelmus Hary Susilo, *Metode Penelitian Bisnis (Aplikasi Pendekatan Manajemen Berbasis-Pasar)*, *In Media* (Bogor: Penerbit IN MEDIA, 2020).

[39] Rania Sukmana, 'Pemodelan Autoregressive Distributed Lag Untuk Memprediksi Nilai Impor Non-Migas Di Indonesia', *JURNAL STATISTIKA UNIVERSITAS DIPONEGORO*, 13 (2025), 499–508 <https://doi.org/10.14710/j.gauss.13.2.499-508>.

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[41] Eka Elencya Trisilia Laloan, Nelson Nainggolan, and Djoni Hatidja, 'Penerapan Autoregressive Distributed Lag (ARDL) Dalam Memodelkan Pengaruh Lama Sekolah Dan Tingkat Pengangguran Terbuka Terhadap Kemiskinan Di Kota Manado', *D'Cartesian*, 12.2 (2023), 35–40 <https://doi.org/10.35799/dc.12.2.2023.48784>.

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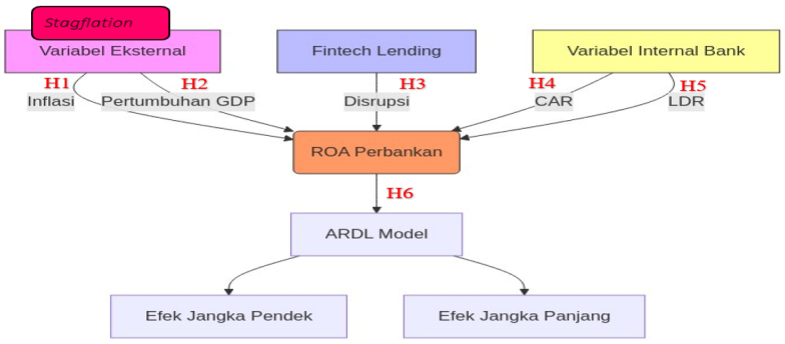
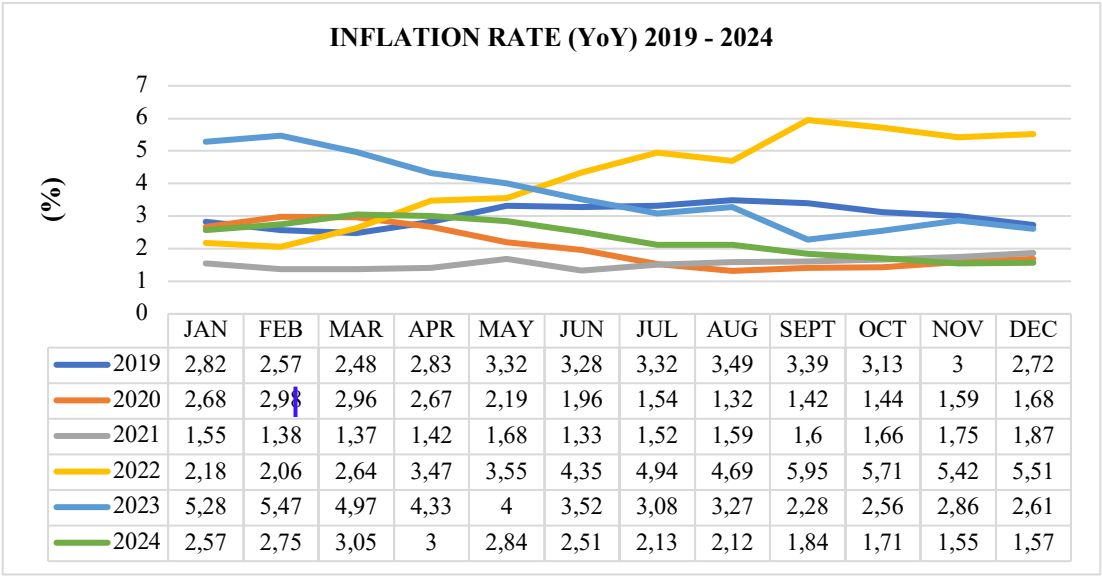


Figure 1. Conceptual Framework

RESULT

Figure 2. Inflation Rate 2019 – 2024 (%)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2019	2,82	2,57	2,48	2,83	3,32	3,28	3,32	3,49	3,39	3,13	3	2,72
2020	2,68	2,98	2,96	2,67	2,19	1,96	1,54	1,32	1,42	1,44	1,59	1,68
2021	1,55	1,38	1,37	1,42	1,68	1,33	1,52	1,59	1,6	1,66	1,75	1,87
2022	2,18	2,06	2,64	3,47	3,55	4,35	4,94	4,69	5,95	5,71	5,42	5,51
2023	5,28	5,47	4,97	4,33	4	3,52	3,08	3,27	2,28	2,56	2,86	2,61
2024	2,57	2,75	3,05	3	2,84	2,51	2,13	2,12	1,84	1,71	1,55	1,57

Source: Secondary data from Bank Indonesia processed by Researchers, 2025.

The dataset presents Indonesia's year-on-year (YoY) monthly inflation rates from 2019 to 2024. The data shows a period of relative price stability from 2019 to 2021, followed by a significant rise in inflation throughout 2022, peaking in September at 5.95%. This surge reflects post-pandemic economic adjustments and global inflationary pressures. Inflation began to ease in 2023 and continued to decline in 2024, indicating a return to more stable price levels and the possible effectiveness of monetary policy interventions.

Figure 3. Gross Domestic Product Rate in 2019 – 2024 (%)

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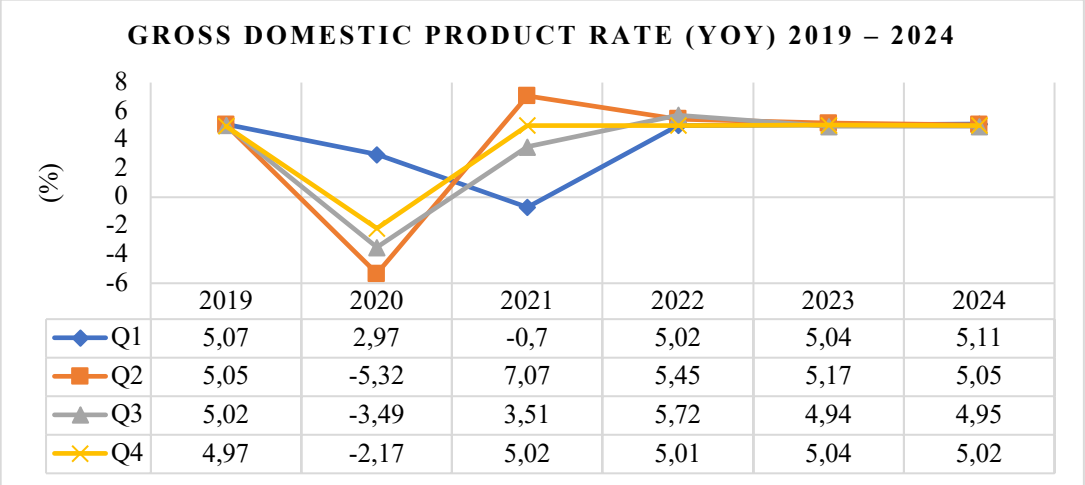
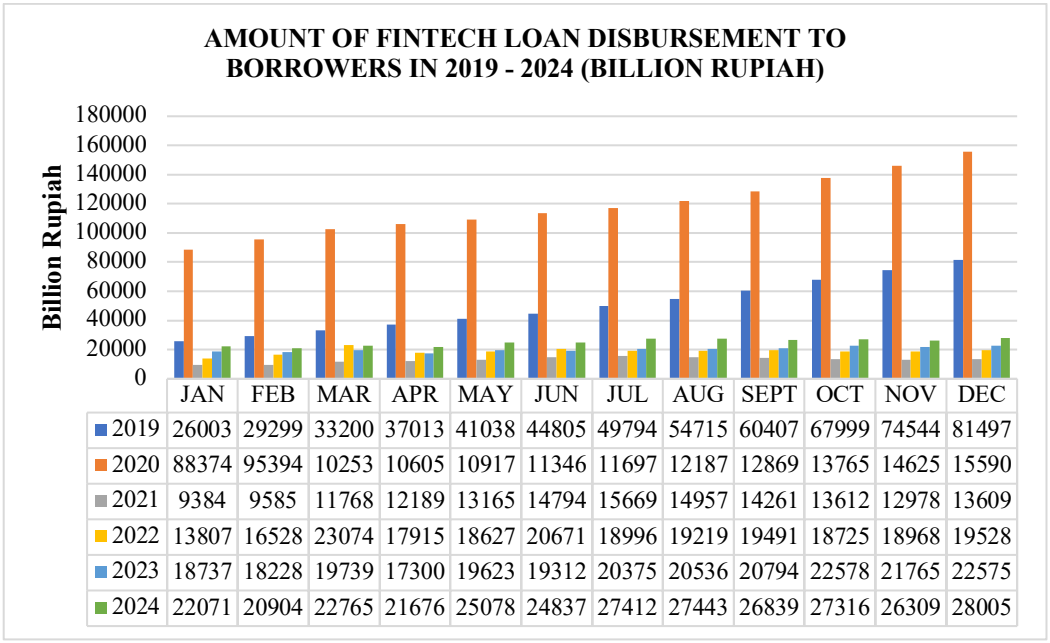


	2019	2020	2021	2022	2023	2024
Q1	5,07	2,97	-0,7	5,02	5,04	5,11
Q2	5,05	-5,32	7,07	5,45	5,17	5,05
Q3	5,02	-3,49	3,51	5,72	4,94	4,95
Q4	4,97	-2,17	5,02	5,01	5,04	5,02

Source: Secondary data from Central Bureau of Statistics processed by Researchers, 2025.

This dataset shows Indonesia's quarterly Gross Domestic Product (GDP) growth rates from 2019 to 2024. Economic growth was stable around 5% in 2019 but experienced a sharp contraction in 2020 due to the COVID-19 pandemic, with the deepest decline in Q2 2020 at -5.32%. A strong recovery followed in 2021, particularly in Q2 with a growth of 7.07%. From 2022 to 2024, GDP growth stabilized again around 5%, indicating a return to pre-pandemic economic performance and suggesting effective post-crisis recovery measures. In the data processing process, an interpolation process has been carried out from quarterly to monthly.

Figure 4. Number of Fintech Lending Transactions for Loan Disbursement 2019 – 2024



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2019	26003	29299	33200	37013	41038	44805	49794	54715	60407	67999	74544	81497
2020	88374	95394	10253	10605	10917	11346	11697	12187	12869	13765	14625	15590
2021	9384	9585	11768	12189	13165	14794	15669	14957	14261	13612	12978	13609
2022	13807	16528	23074	17915	18627	20671	18996	19219	19491	18725	18968	19528
2023	18737	18228	19739	17300	19623	19312	20375	20536	20794	22578	21765	22575
2024	22071	20904	22765	21676	25078	24837	27412	27443	26839	27316	26309	28005

Source: Secondary data from LPBBTI OJK processed by Researchers, 2025.

The data underscores the resilience and expansion of Indonesia's fintech lending sector, with 2020 as an outlier due to external shocks. The recovery and subsequent

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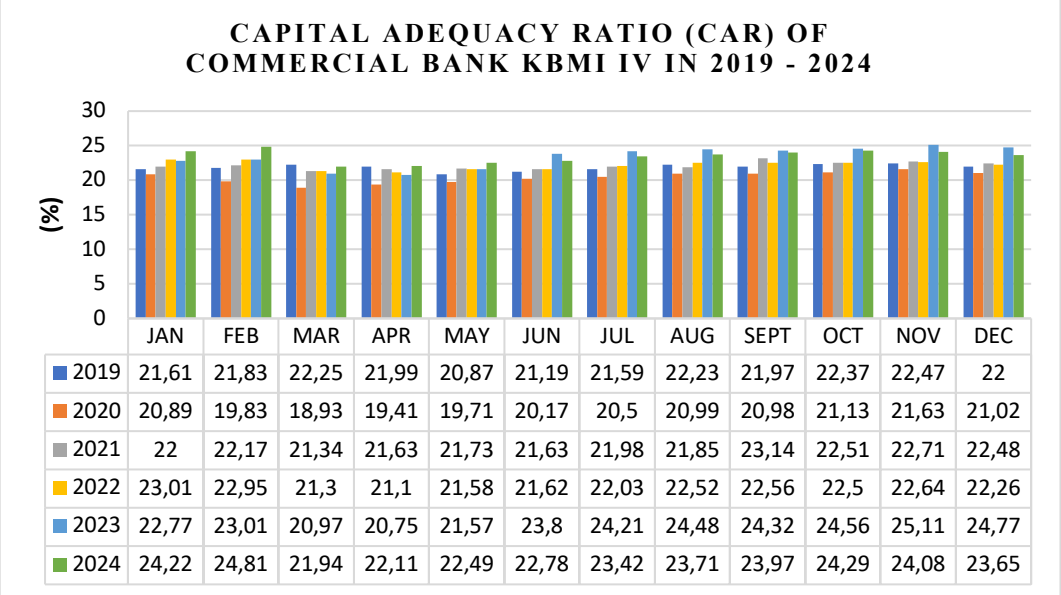
growth highlight the sector's adaptability and increasing integration into the financial ecosystem.

Figure 5. Capital Adequacy Ratio (CAR) 2019 – 2024 (%)

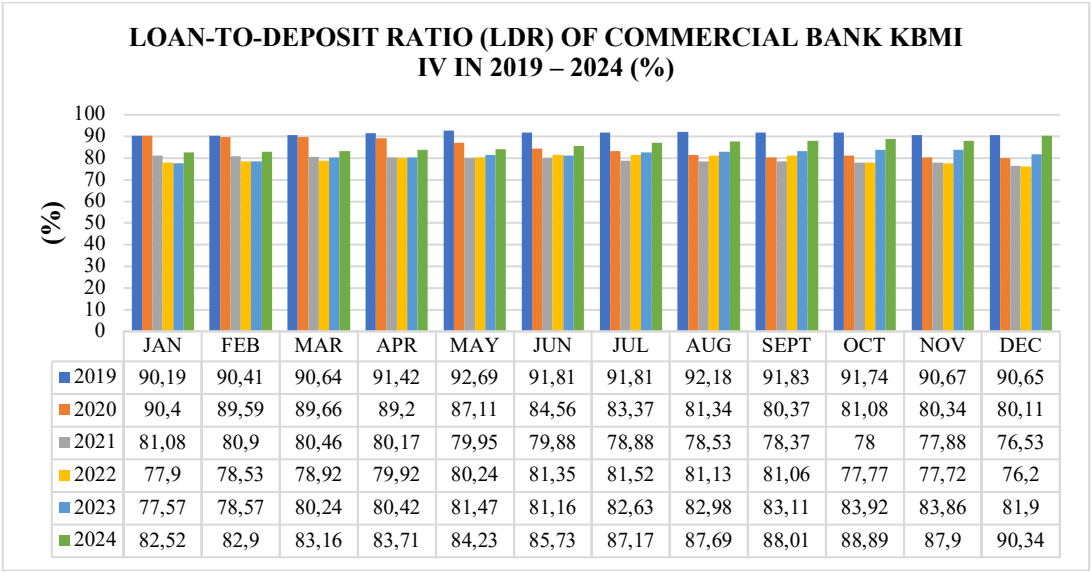


	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2019	21,61	21,83	22,25	21,99	20,87	21,19	21,59	22,23	21,97	22,37	22,47	22
2020	20,89	19,83	18,93	19,41	19,71	20,17	20,5	20,99	20,98	21,13	21,63	21,02
2021	22	22,17	21,34	21,63	21,73	21,63	21,98	21,85	23,14	22,51	22,71	22,48
2022	23,01	22,95	21,3	21,1	21,58	21,62	22,03	22,52	22,56	22,5	22,64	22,26
2023	22,77	23,01	20,97	20,75	21,57	23,8	24,21	24,48	24,32	24,56	25,11	24,77
2024	24,22	24,81	21,94	22,11	22,49	22,78	23,42	23,71	23,97	24,29	24,08	23,65

Source: Secondary data from LSPI OJK processed by Researchers, 2025.

The dataset presents the monthly Capital Adequacy Ratio (CAR) of KBMI IV commercial banks in Indonesia from 2019 to 2024. The data shows a generally increasing trend in CAR, especially from 2022 onwards, indicating stronger capital buffers and improved financial resilience. Despite slight fluctuations in earlier years, CAR remained above regulatory requirements, reflecting the banks' consistent ability to absorb potential losses and maintain stability during periods of economic stress, including the COVID-19 pandemic and post-crisis recovery.

Figure 6. Loan-to-Deposit Ratio (LDR) 2019 – 2024 (%)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2019	90,19	90,41	90,64	91,42	92,69	91,81	91,81	92,18	91,83	91,74	90,67	90,65
2020	90,4	89,59	89,66	89,2	87,11	84,56	83,37	81,34	80,37	81,08	80,34	80,11
2021	81,08	80,9	80,46	80,17	79,95	79,88	78,88	78,53	78,37	78	77,88	76,53
2022	77,9	78,53	78,92	79,92	80,24	81,35	81,52	81,13	81,06	77,77	77,72	76,2
2023	77,57	78,57	80,24	80,42	81,47	81,16	82,63	82,98	83,11	83,92	83,86	81,9
2024	82,52	82,9	83,16	83,71	84,23	85,73	87,17	87,69	88,01	88,89	87,9	90,34

Source: Secondary data from LSPI OJK processed by Researchers, 2025.

From the data above reflects a significant variation in the LDR of Commercial Bank

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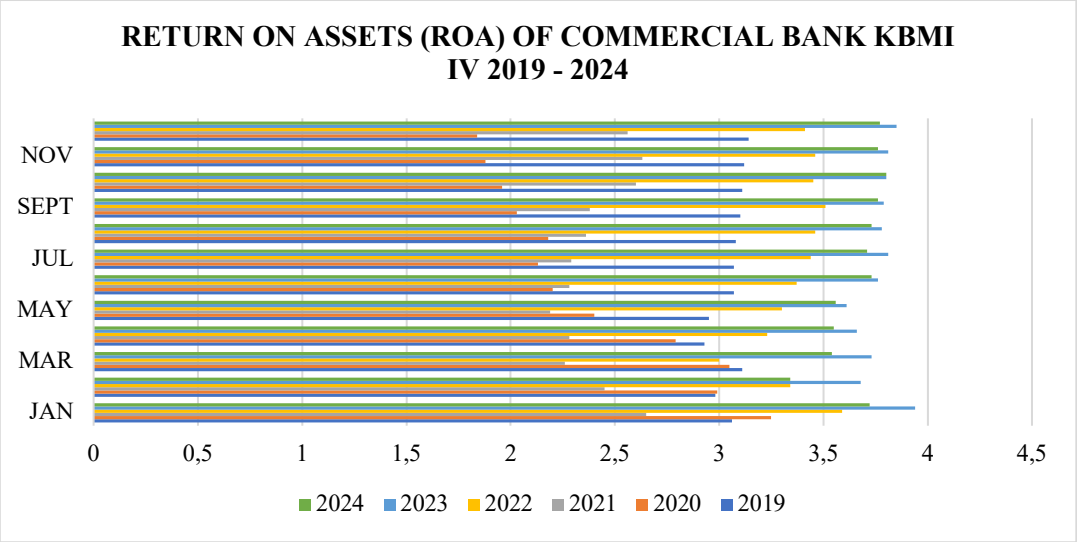
KBMI IV from 2019 to 2024, with an overall downward trend from 2019 to 2022, likely due to the bank's focus on reducing credit risk or adjusting its lending policies during uncertain economic times. However, from 2023 to 2024, there was a noticeable recovery in the LDR, indicating a return to more aggressive lending practices or higher demand for loans. These fluctuations are consistent with seasonal lending trends, showing that the bank's LDR is influenced by both strategic adjustments and market conditions.

Figure 7. Return On Assets (ROA) of Commercial Bank KBMI IV 2019 - 2024 (%)



Source: Secondary data from the Indonesia Stock Exchange processed by Researchers, 2025.

The ROA of Commercial Bank KBMI IV decreased significantly in 2020 and 2021, likely due to the economic impacts of the COVID-19 pandemic. However, from 2022 onward, the bank's performance improved, with ROA increasing and stabilizing, indicating a recovery in profitability and efficient asset management. The consistent improvement in 2023 and 2024 suggests a strong financial recovery and operational efficiency.

1. Descriptive Statistics

Figure 8. Descriptive Statistics

Date: 04/11/25 Time: 15:31
Sample: 2019M01 2024M12

	INFLATION	GDP	FINTECH	CAR	LDR	ROA
Mean	2.803333	3.688333	40922.14	22.23042	83.69639	3.112500
Median	2.655000	5.020000	22323.00	22.07000	82.21000	3.185000
Maximum	5.950000	7.070000	155902.0	25.11000	92.69000	3.940000
Minimum	1.320000	-5.320000	9384.000	18.93000	76.20000	1.840000
Std. Dev.	1.224709	3.134989	38481.34	1.334953	4.865221	0.598846
Skewness	0.920046	-1.792188	1.565300	0.090832	0.455079	-0.536713
Kurtosis	3.089924	4.878001	4.138427	2.824155	1.829457	2.051976
Jarque-Bera	10.18208	49.12390	33.29004	0.191771	6.595680	6.152973
Probability	0.006152	0.000000	0.000000	0.908568	0.036963	0.046121
Sum	201.8400	265.5600	2946394.	1600.590	6026.140	224.1000
Sum Sq. Dev.	106.4938	697.7992	1.05E+11	126.5291	1680.596	25.46175
Observations	72	72	72	72	72	72

Source: Processed by Author, 2025

2. Stationarity Test

Table 2. Descriptive Statistics result

Stationarity Test Result

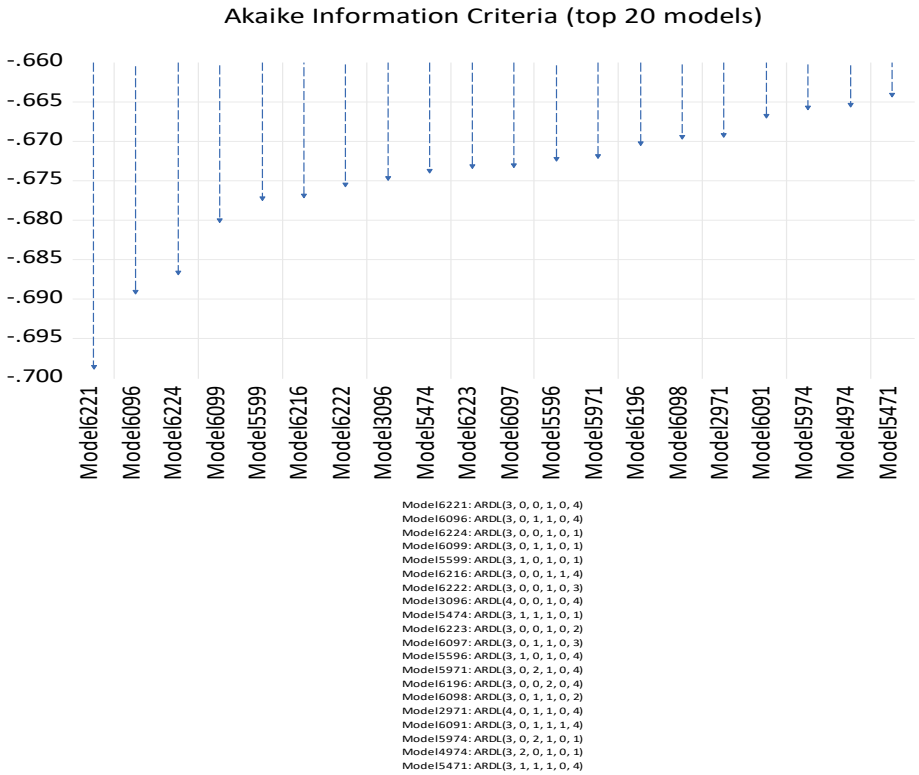
Variables	Level			First			Second		
	t-stat	Prob	Decision	t-stat	Prob	Decision	t-stat	Prob	Decision
INFLATION	-2,521	0,1150	Not Stationary	-2,535	0,1118	Not Stationary	-1,244	0,0001	Stationary
GDP	-2,027	0,2749	Not Stationary	-8,246	0,0000	Stationary	-8,035	0,0000	Stationary
FINTECH LENDING	-1,979	0,2954	Not Stationary	-8,522	0,0000	Stationary	-9,908	0,0001	Stationary
CAR	-2,212	0,2041	Not Stationary	-7,843	0,0000	Stationary	-6,931	0,0000	Stationary
LDR	-1,489	0,5330	Not Stationary	-3,511	0,0105	Stationary	-14,802	0,0001	Stationary
ROA	-1,297	0,6260	Not Stationary	-9,873	0,0000	Stationary	-5,569	0,0000	Stationary

Source: Processed by Author, 2025

The stationarity test is conducted to determine whether the time series data is stationary, which is a crucial prerequisite for ARDL (Autoregressive Distributed Lag) modeling. Based on the ADF test results: **All variables (INFLATION, GDP, FINTECH LENDING, CAR, LDR, and ROA) are non-stationary at level**, as shown by probability values greater than 0.05. After first differencing, almost all variables become stationary **except INFLATION**, which remains non-stationary (Prob = 0.1118). At second differencing, all variables, including INFLATION, become stationary (Prob < 0.05). **Implication:** Since the variables are integrated at different orders (I(1) and I(2)), the ARDL model **can still be applied as long as none of the variables is integrated at**

order higher than I(2). In this case, since all variables are at most I(2), the use of ARDL is still acceptable but must be done **with caution**.

3. Determination of Optimum Lag



Graph 1. Determining Optimum Lag Graph

The way to determine Optimum Lag is to first perform ARDL analysis by automatically setting the lag length. It appears based on the graph above, that the Optimum Lag used with the lowest AIC criteria is the Selected Model: ARDL (3, 0, 0, 1, 0, 4). This model means: In the dependent variable ROA, the maximum Lag length is 3. While in INFLATION the maximum lag length is 0, GDP the maximum Lag length is 0, FINTECH LENDING the maximum Lag length is 1, CAR the maximum Lag length is 0. And in LDR the maximum length is 4.

4. Cointegration Test (Bound test)

Figure 9. Cointegration Test (Bound Test) result

ARDL Bounds Test
Date: 04/11/25 Time: 23:52
Sample: 2019M01 2024M12
Included observations: 68

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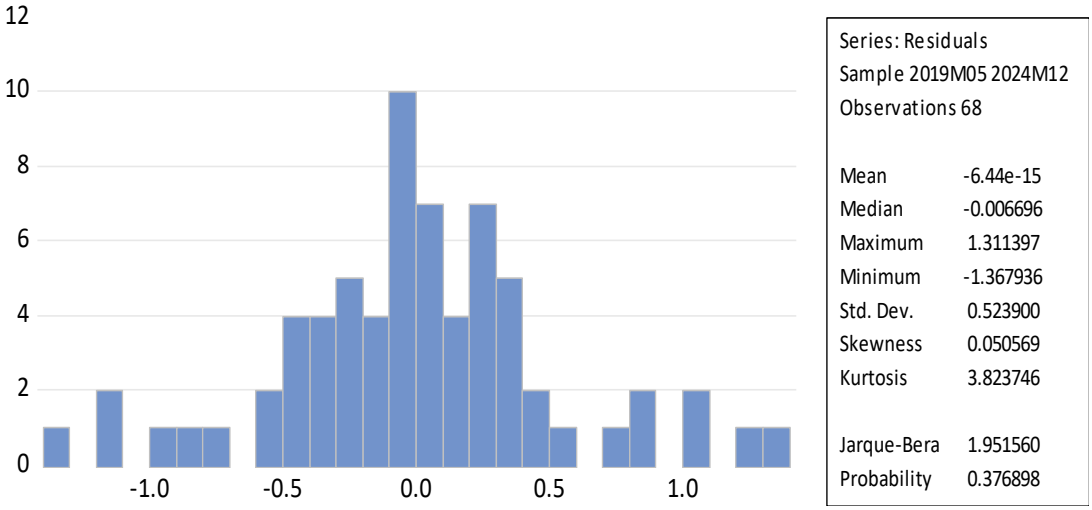
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	5.282098	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Processed by Author, 2025

The F statistic value of 5.8220298 is greater than the critical limit of 3.38, so it can be concluded that there is cointegration in this ARDL Eviews model. So far, all analyses conducted have met the requirements so that the ARDL model is suitable for use as a forecasting method.

5. Classical Assumption Test

a. Normality Test



Graph 2. Normality Test Result
Source: Processed by Author, 2025

Based on the output above, the results of the Jarque-Bera test ($p = 0.3768 > 0.05$) suggest that **the residuals are normally distributed**.

b. Heteroscedasticity Test

Figure 10. Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.741592	Prob. F(13,54)	0.7148
Obs*R-squared	10.30108	Prob. Chi-Square(13)	0.6691
Scaled explained SS	45.10222	Prob. Chi-Square(13)	0.0000

Source: Processed by Author, 2025

Based on the output of heteroscedasticity analysis using Breusch Pagan Godfrey as above, the p value of 0.6691 is greater than 0.05, so **there is no heteroscedasticity** problem.

c. Autocorrelation Test

Figure 11. Heteroscedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.741592	Prob. F(13,54)	0.7148
Obs*R-squared	10.30108	Prob. Chi-Square(13)	0.6691
Scaled explained SS	45.10222	Prob. Chi-Square(13)	0.0000

Source: Processed by Author, 2025

Based on the output of the autocorrelation analysis using the Breusch Godfrey LM Test as above, the p value of 0.0678 is greater than 0.05, so **there is no autocorrelation** problem.

6. ARDL Analysis

Figure 12. ARDL Modelling Test Result

Dependent Variable: ROA
Method: ARDL
Date: 04/11/25 Time: 22:20
Sample (adjusted): 2019M05 2024M12
Included observations: 68 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): INFLATION GDP FINTECH CAR LDR
Fixed regressors: C
Number of models evaluated: 12500
Selected Model: ARDL(3, 0, 0, 1, 0, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA(-1)	0.593778	0.121181	4.899934	0.0000
ROA(-2)	-0.078347	0.126908	-0.617351	0.5396
ROA(-3)	0.276432	0.102067	2.708355	0.0090
INFLATION	0.050643	0.024647	2.054729	0.0448
GDP	0.015915	0.012215	1.302923	0.1981
FINTECH	-4.99E-06	1.29E-06	-3.855487	0.0003
FINTECH(-1)	4.36E-06	1.35E-06	3.236336	0.0021
CAR	0.051089	0.023301	2.192586	0.0327
LDR	0.063410	0.022714	2.791630	0.0072
LDR(-1)	-0.077778	0.031461	-2.472248	0.0166
LDR(-2)	0.057305	0.035262	1.625092	0.1100
LDR(-3)	-0.081153	0.037305	-2.175371	0.0340
LDR(-4)	0.043732	0.025621	1.706885	0.0936
C	-1.106765	0.707524	-1.564279	0.1236

R-squared	0.948376	Mean dependent var	3.117941
Adjusted R-squared	0.935948	S.D. dependent var	0.615789
S.E. of regression	0.155847	Akaike info criterion	-0.698637
Sum squared resid	1.311575	Schwarz criterion	-0.241680
Log likelihood	37.75367	Hannan-Quinn criter.	-0.517577
F-statistic	76.30904	Durbin-Watson stat	1.938120
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Source: Processed by Author, 2025

a. Short-Term Analysis or Error Correction Model (ECM)

In this section, focus on the coefficients in the ARDL equation that represent the short-run effects of each variable (direct and through lags).

Figure 12. Error Correction Model (ECM) Test Result

ARDL Cointegrating Form
Dependent Variable: D(ROA)
Selected Model: ARDL(3, 0, 0, 1, 0, 4)
Case 2: Restricted Constant and No Trend
Date: 04/11/25 Time: 01:20
Sample: 2019M01 2024M12
Included observations: 68

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ROA(-1))	-0.198086	0.092933	-2.131480	0.0376
D(ROA(-2))	-0.276432	0.093084	-2.969720	0.0044
D(FINTECH)	-4.99E-06	1.02E-06	-4.869650	0.0000
D(LDR)	0.063410	0.019220	3.299191	0.0017
D(LDR(-1))	-0.019883	0.021228	-0.936671	0.3531
D(LDR(-2))	0.037421	0.022149	1.689495	0.0969
D(LDR(-3))	-0.043732	0.021252	-2.057801	0.0445
CointEq(-1)*	-0.208136	0.041195	-5.052468	0.0000

R-squared	0.581905	Mean dependent var	0.012353
Adjusted R-squared	0.533127	S.D. dependent var	0.216382
S.E. of regression	0.147850	Akaike info criterion	-0.875108
Sum squared resid	1.311575	Schwarz criterion	-0.613990
Log likelihood	37.75367	Hannan-Quinn criter.	-0.771645
Durbin-Watson stat	1.938120		

* p-value incompatible with t-Bounds distribution.

Source: Processed by Author, 2025

a. Summary Table – Short-Term Interpretation (ECM)

Variable	Coefficient	Probability	Significance	Interpretation
D(ROA(-1))	-0.1981	0.0376	**Significant**	Previous ROA negatively affects current ROA
D(ROA(-2))	-0.2764	0.0044	**Significant**	ROA from two periods ago has a negative impact
D(FINTECH)	-4.99E-06	0.0000	**Significant**	Fintech lending reduces ROA in the short term
D(LDR)	0.0634	0.0011	**Significant**	LDR increases current ROA
D(LDR(-1))	-0.0199	0.3517	**Not Significant**	No significant effect
D(LDR(-2))	0.0374	0.0969	**Not Significant**	No significant effect
D(LDR(-3))	-0.0437	0.0445	**Significant**	LDR from three periods ago reduces ROA
CoinEq(-1)	-0.2081	0.0000	**Significant**	20.81% of long-term disequilibrium corrected per period

b. Model Statistical Test Results

Test	Value	Interpretation
R-squared	0.5819	58.19% of ROA variation explained by the model
Adjusted R-squared	0.5331	Adjusted for number of variables; fairly good model

The key findings can be summarized as follows:

1) **Short-Term Effects On ROA**: Fintech lending negatively affects ROA in the short term. LDR (Loan to Deposit Ratio) has a mixed effect. The current LDR

positively influences ROA, LDR from three periods prior has a negative impact. Lagged ROA (t-1 and t-2) both have significant negative effects, implying that past profitability levels can suppress current ROA.

2) **Adjustment to Long-Term Equilibrium**: The coefficient of the error correction term (ECT) is -0.2081 and statistically significant. This indicates that approximately 20.81% of any deviation from the long-run equilibrium is corrected each period. The negative and significant ECT supports the validity of a long-run cointegrating relationship between the variables.
3) **Model Fit:** The model demonstrates a moderate explanatory power with an R-squared of 58.19% and Adjusted R-squared of 53.31%, suggesting that the independent variables collectively explain a substantial proportion of the variation in ROA.
4) **The short-term regression equation** based on the available coefficients is:

$$\begin{aligned} D(ROA)_t = & -0.1981 \cdot D(ROA_{t-1}) - 0.2764 \cdot D(ROA_{t-2}) \\ & - 4.99 \times 10^{-6} \cdot D(FINTECH_t) + 0.0634 \cdot D(LDR_t) \\ & - 0.0199 \cdot D(LDR_{t-1}) + 0.0374 \cdot D(LDR_{t-2}) \\ & - 0.0437 \cdot D(LDR_{t-3}) - 0.2081 \cdot ECT_{t-1} + \varepsilon_t \end{aligned}$$

b. Long-Term Analysis or Long Run Equation.

Figure 13. Long Run Equation Test Result

ARDL Long Run Coefficients
Dependent Variable: D(ROA)
Selected Model: ARDL(3, 0, 0, 1, 0, 4)
Case 2: Restricted Constant and No Trend
Date: 04/11/25 Time: 01:12
Sample: 2019M01 2024M12
Included observations: 68

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INFLATION	0.243316	0.082747	2.940478	0.0048
GDP	0.076462	0.069622	1.098251	0.2770
FINTECH	-3.02E-06	5.29E-06	-0.570164	0.5709
CAR	0.245461	0.086584	2.834948	0.0064
LDR	0.026497	0.026716	0.991805	0.3257
C	-5.317501	2.886052	-1.842483	0.0709

EC = ROA - (0.2433*INFLATION + 0.0765*GDP -0.0000*FINTECH + 0.2455*CAR + 0.0265*LDR - 5.3175)

Source: Processed by Author, 2025

The long-run relationship extracted from the ARDL model is as follows:

ROAt = −5.3175+0.2433·INFLATIONt+0.0765·GDPt−0.00000302·FINTECHt +0.2455·CARt+0.0265·LDRt.

Coefficient Interpretation:

Variable	Coefficient	Interpretation
Inflation	0.2433	A 1-unit increase in inflation increases ROA by 0.2433. This relationship is **positive and statistically significant**.
GDP	0.0765	An increase in GDP raises ROA by 0.0765. However, this effect is **not statistically significant**.
Fintech	-0.0000	Fintech lending has an almost zero and **insignificant** negative long-run effect on ROA.

CAR	0.2455	A 1-unit increase in CAR improves ROA by 0.2455. This is **positive and significant**.
LDR	0.0265	LDR shows a small positive impact on ROA, but it is **not statistically significant**.
Constant (C)	-5.3175	This is the intercept of the long-run relationship, mainly for equation construction.

t-Statistic and Probability Results:

Variable	t-Statistic	t-table	Probability	Significance Conclusion
Inflation	2.9405	1,996	0.0048	**Statistically significant** at 5% level → affects ROA.
GDP	1.0983	1,996	0.2770	**Not significant** → GDP does not affect ROA.
Fintech	-0.5702	1,996	0.5709	**Not significant** → Fintech lending has no long-run effect.
CAR	2.8350	1,996	0.0064	**Statistically significant** → positively affects ROA.
LDR	0.9918	1,996	0.3257	**Not significant** → LDR has no long-run effect.
Constant	-1.8428		0.0709	Marginally significant at 10%, but not strongly conclusive.

1) This equation reflects the long-run equilibrium relationship between the dependent variable ROA (Return on Assets) and the explanatory variables: Inflation, GDP, Fintech Lending, CAR, and LDR.
2) Based on the long-run estimation results using the ARDL model, it is evident that Inflation and Capital Adequacy Ratio (CAR) have a positive and statistically significant impact on bank profitability (ROA) in the long term. Meanwhile, GDP, Fintech Lending, and LDR do not demonstrate a statistically significant effect in the long term**.**

F-Statistic and Probability Results:

Aspect	Result	Interpretation
F-Test (F-Bounds Test)	F-statistic = 5.282 k = 5. F-table = 2,508	Exceeds all upper bounds (I1) at every significance level including 1% → **Long-run relationship exists between variables**
F-Test Hypothesis	H0: No long-run relationship H1: There is a long-run relationship	**Reject H0** → Strong evidence of a long-run relationship between ROA and inflation, GDP, fintech lending, CAR, and LDR

To determine whether there is a long-term relationship between variables (ROA with inflation, GDP, fintech lending, CAR, and LDR), we refer to the **F-Bounds Test** result. **There is a significant long-term relationship** between ROA and its independent variables (Inflation, GDP, Fintech Lending, CAR, and LDR).

7. Stability Test

The CUSUM Test output is as follows:

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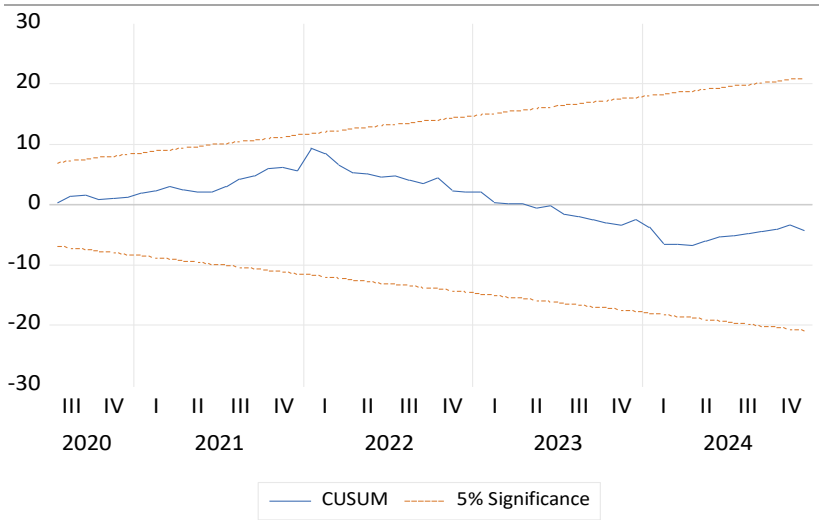
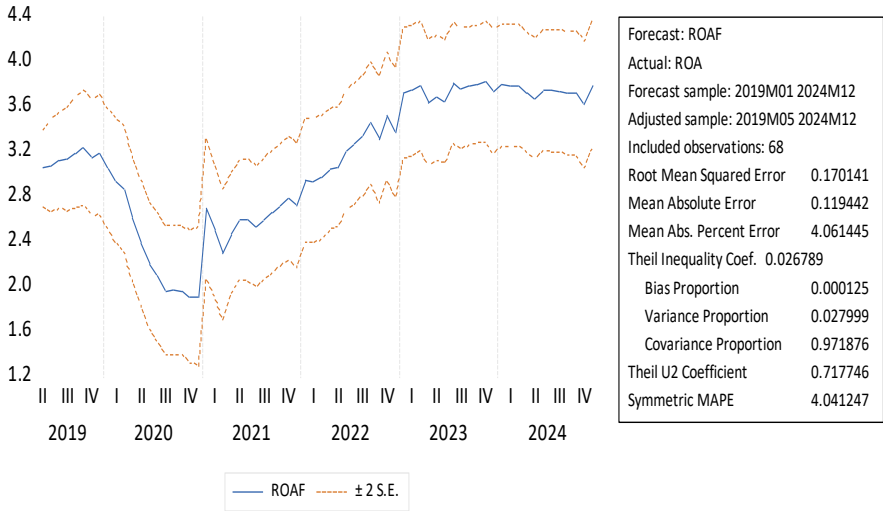


Graph 3. CUSUM Test Result
Source: Processed by Author, 2025

Based on the diagram above, the blue line is still within the range of the red line, namely the upper and lower limits of the predicted LN_ROA value at a 95% confidence interval. So, it can be concluded that the prediction model or forecasting model with ARDL EViews is stable, so it is **valid to be used as a short-term or long-term forecasting model for LN_ROA**.

8. Forecasting



Graph 4. Long Run Equation Test Result
Source: Processed by Author, 2025

As seen in the output diagram above, the blue line is between the red lines, namely the upper and lower limits of the 5% error degree, so the prediction or **forecasting model ROA is stable**.

DISCUSSION

1. The Influence of Stagflation (Inflation & GDP) on Bank ROA

Stagflation, characterized by the simultaneous occurrence of stagnant economic growth and high inflation, presents a paradoxical challenge for the banking sector. In such an environment, banks may face reduced credit demand, increased non-performing loans, and compressed interest margins, all of which can adversely affect profitability. This study examines how the two primary components of stagflation—**inflation** and **GDP growth**—influence the profitability (ROA) of KBMI IV banks in Indonesia. The calculated t value is obtained > t table = 2.9405 > 1,996 and Sig 0.0048<0.05. So, it can be concluded that individually and **significantly Inflation has a negative effect** on Return on Assets in both the short and long term at Commercial Banks in KBMI IV. Numerous previous studies affirm that inflation negatively impacts banking profitability as funding [43] Persistent inflation increases credit risk and reduces ROA. Reported [44] High inflation in Iraq erodes the real value of bank assets and returns, reducing overall profitability. As noted in the research by [45] the relationship between macroeconomic indicators (GDP and Inflation) bank performance in Thailand is statistically insignificant. This result aligns with the findings of [46] external explanatory variables such as province GDP and inflation have a significant impact on the profitability of city commercial banks in China. In the context of KBMI IV banks, which have significant exposure to real-sector lending, inflationary pressure worsens asset quality and raises operational costs, ultimately lowering profitability. Some studies, however, argue that **inflation can have a positive impact** on ROA, particularly when banks can pass inflation-related costs to borrowers. As study observed by[47] the inflation has insignificant positive effect on

[43] Myra V. de Leon, 'The Impact of Credit Risk and Macroeconomic Factors on Profitability: The Case of the ASEAN Banks', *Banks and Bank Systems*, 15.1 (2020), 21–29 <https://doi.org/10.21511/bbs.15(1).2020.03>.

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profitability measured by ROA. Similar with funding of [48] the increase in inflation rate and GDP growth rate positively affects profitability of Turkish banking sector. These contrasting findings suggest that the inflation–ROA relationship is heavily influenced by **bank cost structures**, **pricing power**, and prevailing **monetary policy environments.**

The calculated t value <t table = 1.098 <1.996 and the Sig value 0.277> 0.05 were obtained. So, it can be concluded that individually and **significantly GDP does not have a positive effect** on Return on Assets *in both the short and long term at Commercial Banks in KBMI IV.* In general, literature suggests that economic growth should enhance bank performance. This result aligns with the findings of the profitability of the sample banks of Bangladesh is not significantly influenced by GDP growth[49]. Supported by[50] GDP growth at constant prices in Iraq positively affects the profitability of Iraqi banks. However, these expectations did not materialize for KBMI IV banks during the observed period. Several studies suggest that GDP growth does **not always positively** affect ROA, especially during stagflationary conditions: In terms of GDP with ROA, the GDP growth rate has a significant negative effect on ROA, which revealed the inverse contribution to the profitability of UK banks as measured by ROA[51]. Result from [52] In terms of economic growth, there is a significant relationship between economic growth with ROA. The results of[53] show that there is a positive and significant impact of the economic growth rate, and the inflation rate on the profitability of the banking sector. Supported by [54] As macroeconomic variables, the Inflation Rate (IR) and GDP Growth Rate (GDPGR) have a positive and significant effect on ROA. These findings can help regulators make informed decisions to improve bank profitability. The threat of stagflation poses a serious

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challenge to the banking sector, especially for large banks like those in KBMI IV, which have significant exposure to the real economy. This study confirms that **inflation has a clear negative impact** on bank profitability, while **GDP growth fails to provide a positive contribution** under stagflationary conditions. To maintain stability and profitability, banks must adopt a more resilient and adaptive strategy—balancing risk management, operational efficiency, and capital adequacy—while policymakers must foster a macroeconomic environment that minimizes the dual threat of inflation and economic stagnation.

2. The Influence of Fintech Lending on ROA

The calculated t value <t table = -0.570<1.996 and the Sig value 0.570> 0.05 were obtained. So, it can be concluded that individually and **significantly Fintech Lending does not have a negative effect** on Return on Assets in both the short and long term at Commercial Banks in KBMI IV. A considerable amount of research highlights that digital lending reduces bank profitability[55]. In contrast, when P2P lending interacts with Islamic banks, it has a negative and significant effect on their performance, meaning Islamic banks are more negatively affected than conventional ones[56]. The study[57] finds that, Italian banks were more efficient than FinTech lending firms. The traditional banks perform better in terms of efficiency. The growth of fintech lending helps banks reduce risk by encouraging them to improve credit quality[58]. The outcomes of this study are inconsistent with those reported[59] that Fintech lending has a positive and significant impact on banking financial performance. The data analysis shows that fintech lending can affect bank profitability[60]. The study shows fintech lowers bank profitability. So,

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banks need to innovate and react quickly to these changes[61]. Although fintech lending does not currently show a significant negative impact on ROA in KBMI IV banks, its long-term influence should not be underestimated, especially in a challenging stagflation environment. Banks must adapt to fintech-driven changes by innovating and strengthening risk management. A proactive response will allow them to maintain stability and profitability, even amid economic uncertainty and rising inflation. The findings highlight the importance of synergy between traditional banks and fintechs to face future risks more effectively.

3. The Influence of Financial Resilience (CAR, LDR) on ROA

The calculated t value is obtained > t table = 2.835 > 1.996) and Sig 0.006 <0.05. So, it can be concluded that individually and **significantly Capital Adequacy Ratio (CAR) has a positive effect** on ROA in both the short and long term at Commercial Banks in KBMI IV. Previous academic findings consistently show that CAR initially has a positive impact on bank profitability, but the impact becomes negative when CAR^2 is too high[62]. A higher CAR reflects the bank's ability to manage risk in its operations, but it does not necessarily have a significant impact on increasing ROA[63]. The results confirm that CAR plays a key role in improving profitability (ROA)[64]. The findings here diverge from previous research conducted by[65] have a negative and significant relationship with ROE. Supported by[66] CAR also shows a negative effect on ROA, indicating that the focus on regulatory compliance and maintaining capital adequacy after the pandemic may limit

[61] Wang Haoliang1 Mohamed Hisham Dato Haji Yahya2* Norhuda Abdul Rahim3 Zariyawati Mohd Ashhari, 'The Impact of Fintech on the Profitability of State-Owned Commercial Banks in China', *Journal of Physics: Conference Series*, 1955.1 (2021), 128–38 <https://doi.org/10.1088/1742-6596/1955/1/012007>.

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credit growth and reduce productive investments. The results show that CAR has no effect on profitability[67], while LDR has a significant effect[68]. The Capital Adequacy Ratio (CAR) shows a bank's ability to handle financial risks and continue operating during difficult times. Based on banking theory and Basel guidelines, a higher CAR means the bank is more financially stable, which can increase trust from investors and customers. This trust can help improve profits by supporting better risk management and stable operations. However, some studies have found that very high CAR levels might lower profits because of less efficient use of capital or reduced lending. In this study, CAR is at a level that supports ROA, suggesting that KBMI IV banks are managing their capital and risks effectively.

The calculated t value <t table = 1.098 <1.996 and the Sig value 0.277> 0.05 were obtained. So, it can be concluded that individually and **significantly Loan to Deposit Ratio (LDR) does not have a positive effect** on Return on Assets in both the short and long term at Commercial Banks in KBMI IV. Extensive empirical research has confirmed that the Loan to Deposit Ratio (LDR) are found to be negative and significant on Return on Assets[69]. Supported by [70] LDR has no effect on bank profitability (ROA). The Loan to Deposit Ratio (LDR) reflects a bank's liquidity risk, which helps evaluate its ability to meet short-term obligations and can influence profitability and firm value[71]. Additionally, LDR does not have a significant impact on ROA[72]. The outcomes of this study are

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inconsistent with those reported by [737475] Loan to Deposit Ratio (LDR) positive and not significant effect on Return to Asset Ratio (ROA). LDR was found to improve ROA in a significant way[76]. LDR measures a bank's ability to convert deposits into loans, which directly impacts income generation. In theory, a higher LDR implies aggressive lending and could enhance profitability, but also increases liquidity risk. However, the insignificant effect found in this study indicates that either lending efficiency is low or that credit risks are high, thereby limiting the positive impact of LDR on ROA. Additionally, external macroeconomic factors (such as stagflation or post-pandemic credit caution) may cause banks to be more conservative in their lending practices, thereby reducing the influence of LDR on profitability

4. The Influence of Short-Term vs. Long-Term Dynamics all variable independent on ROA

The calculated F value is obtained > F table = 5.282 > 2.508. It can be concluded **There is a significant long-term relationship** between ROA and its independent variables (Inflation, GDP, Fintech Lending, CAR, and LDR). The findings confirm that macroeconomic conditions, fintech lending, and internal bank factors have a significant long-term impact on ROA in KBMI IV banks. Although short-term changes may be unpredictable, these variables are interconnected in the long run. This highlights the need for banks to adopt forward-looking strategies that integrate macroeconomic awareness, digital transformation, and strong financial governance. By doing so, banks will be better positioned to navigate stagflation risks while maintaining sustainable profitability.

CONCLUSION

Findings: This study investigates the effect of stagflation (Inflation and GDP), fintech lending, and internal bank factors (CAR and LDR) on bank profitability (ROA) in KBMI

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IV banks in Indonesia using the ARDL model. The results show that: Inflation has a significant negative impact on ROA in both the short and long term. GDP does not significantly affect ROA. Fintech lending does not have a significant impact on ROA, though it may indirectly pressure banks to innovate. CAR has a significant positive influence on ROA, indicating financial resilience supports profitability. LDR does not significantly affect ROA, suggesting lending activities may not be optimal or are affected by external risks. A long-term cointegration exists between all variables and ROA, indicating the importance of strategic, forward-looking policies. **Implications:** The findings imply that stagflation poses a serious risk to banking profitability. Banks must strengthen risk management, improve capital efficiency, and embrace innovation to remain competitive. Policymakers should support financial stability through appropriate macroeconomic policies, especially in stagflationary conditions. **Limitations:** This study focuses only on KBMI IV banks in Indonesia, which may limit the generalizability of the results. It also uses a limited time frame and does not explore the quality or structure of fintech partnerships in depth. **Suggestions for Future Research:** Further studies can extend the analysis to banks in other KBMI categories or other countries for comparison. Include more detailed fintech indicators (e.g., collaboration models, digital maturity). Analyze the impact of other macroeconomic shocks (e.g., interest rates, exchange rate volatility) on bank profitability.

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