# Market Structure, Strategic Conduct, And Bank Performance: A Descriptive SCP Approach to Indonesia's Banking Industry

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## ABSTRACT

This study examines the applicability of the Structure–Conduct–Performance (SCP) paradigm in Indonesia's commercial banking sector over the period 2011–2024, focusing on the interrelationship among market structure, strategic conduct, and financial performance. The research employs a descriptive approach using secondary data published by the Financial Services Authority (OJK) and Bank Indonesia, covering all 105 commercial banks classified under the KBMI (Kelompok Bank Modal Inti) framework. Market structure is measured using the CR4 concentration ratio, conduct is proxied by credit growth across KBMI groups, and performance is assessed through Return on Assets (ROA). The findings reveal a persistently high level of concentration (average CR4 > 50%), indicating an oligopolistic structure dominated by four major banks. This structural dominance translates into strategic advantages for large banks, enabling them to maintain credit growth and profitability even during systemic shocks, such as the COVID-19 pandemic. Conversely, smaller banks exhibit heightened volatility in both credit distribution and ROA, reflecting limited capitalization, constrained funding access, and operational inefficiencies. The results affirm the core proposition of the SCP model: market structure significantly influences bank conduct and performance, reinforcing competitive asymmetries within the industry. Policy implications emphasize the need for regulatory interventions, including capital strengthening programs, liquidity support, and digital transformation incentives, to enhance the resilience and competitiveness of smaller banks.

*Keywords:* Structure–Conduct–Performance, CR4, credit growth, ROA, Indonesian banking sector.

## INTRODUCTION

The banking sector plays a vital role in sustaining economic development by channeling financial resources from surplus units to deficit units, thereby supporting productive investment and economic growth. In Indonesia, the banking industry dominates the financial system, holding more than 75 percent of total national financial assets (1). This dominance highlights the critical role of banks in maintaining financial stability and promoting inclusive growth. However, the industry continues to face persistent challenges such as structural concentration, unequal credit distribution, and profitability fluctuations—issues that are particularly

relevant amid global economic uncertainty and rapid technological change.

Bank size, commonly measured by total assets, represents a fundamental structural characteristic that influences a bank's strategic decisions and performance outcomes. Larger banks generally enjoy advantages in terms of economies of scale, operational efficiency, and access to low-cost funding, which enable them to allocate credit more extensively and diversify their loan portfolios. This strategic conduct—credit distribution—is crucial in determining how banks channel resources into various economic sectors. Ultimately, such strategic choices affect profitability, which is often measured by Return on Assets (ROA), an indicator of how efficiently a bank converts its assets into net income. Understanding the interplay among size, credit distribution, and profitability is essential for assessing the competitive dynamics and resilience of the banking sector.

Previous empirical studies have provided important insights into these relationships, though findings remain mixed. The larger banks tend to exhibit higher profitability due to operational efficiency and cost advantages (2,3). Similarly, empirical evidence confirmed that bank size positively influences profitability in emerging markets, suggesting that scale economies and diversification enhance performance (4). In contrast, argued that beyond a certain threshold, large size can lead to diseconomies of scale and management inefficiencies, thereby reducing profitability (5).

With regard to strategic conduct, credit distribution plays a central role in determining profitability and risk exposure. The emphasized that lending behavior significantly affects bank income and portfolio risk (6). In the Indonesian context, larger banks tend to allocate a greater share of their lending to large corporate clients rather than MSMEs, which has implications for financial inclusion and overall economic development (7). Supporting this view, several studies have demonstrated that credit growth and bank-specific factors—particularly size—exert a significant influence on Return on Assets (ROA) among banks in ASEAN countries (8).

Despite these findings, research gaps remain. Most existing studies examine the relationship between bank size and profitability or focus solely on lending patterns without integrating these variables under the Structure–Conduct–Performance (SCP) framework. Furthermore, many prior studies employ cross-sectional data or short observation periods, limiting their ability to capture structural and behavioral changes over time, especially during periods of financial innovation and economic shocks.

Recent developments such as digital transformation, the rise of fintech competitors, and the economic disruptions caused by the COVID-19 pandemic have further reshaped the competitive landscape, influencing asset growth, credit allocation strategies, and profitability trends. These dynamics underscore the need for a comprehensive reassessment of the SCP paradigm in the Indonesian banking sector, focusing on the interaction among bank size, credit distribution, and ROA over an extended timeframe.

In light of the foregoing, this study undertakes a comprehensive descriptive analysis of Indonesia's banking sector using the Structure–Conduct–Performance (SCP) framework over the period 2010–2024. The analysis is organized around three principal objectives: (1) to examine the evolution of market structure, with particular emphasis on bank size and asset concentration; (2) to investigate shifts in strategic conduct, as evidenced by patterns of credit distribution across bank groups classified by core capital (KBMI); and (3) to assess the implications of these structural and behavioral dynamics for bank performance, using Return on Assets (ROA) as the primary measure of profitability.

By pursuing this multidimensional inquiry, the study contributes to both the theoretical development and practical utility of the SCP framework. Theoretically, it extends the

model's applicability to the context of an emerging economy, where structural concentration and strategic responses frequently co-evolve amid macroeconomic shocks and ongoing regulatory reforms. Practically, the findings are expected to inform policymakers, regulators, and financial institutions in designing interventions that promote competitive neutrality, operational efficiency, and broader financial inclusion within Indonesia's banking system.

## LITERATURE REVIEW

The Structure–Conduct–Performance (SCP) paradigm is a foundational theoretical framework in industrial organization economics, originally developed by Mason (9) and further formalized by Bain (10). The core premise of the SCP framework posits that the structure of a market influences the strategic behavior (conduct) of firms, which in turn determines the performance outcomes of those firms or industries. While the SCP model was initially applied to manufacturing industries in developed economies, it has since been widely adopted and adapted for analysis in the banking and financial sectors, especially in developing countries.

### 1. Market Structure in the Banking Industry

Market structure refers to the competitive landscape within a particular industry, typically characterized by the number of firms, market concentration, product differentiation, and entry barriers. In banking, market concentration is often measured using indicators such as the Herfindahl-Hirschman Index (HHI) and Concentration Ratios (CRn). Claessens and Laeven (11) demonstrated that high market concentration may reduce competition and innovation, potentially leading to inefficiencies in credit allocation and banking services. In the Indonesian context, studies have observed that the country's banking sector displays characteristics of a highly concentrated oligopoly, wherein a small number of large banks dominate both the lending and deposit markets (12,13). This structural concentration is particularly evident in the persistently high CR4 index, which underscores the dominance of top-tier institutions—primarily state-owned and foreign-controlled banks. Such a market configuration raises critical concerns regarding diminished market discipline, reduced competitive pressures, and the potential for tacit collusion among dominant players. These dynamics may not only hinder price competition and innovation but also exacerbate barriers to entry for smaller and regional banks, ultimately affecting the overall efficiency and inclusiveness of the financial system.

### 2. Strategic Conduct of Banks

Strategic conduct refers to how banks behave within a given market structure. This includes decisions regarding interest rate setting, product innovation, operational efficiency, digital transformation, and competitive strategy. According to Berger and Udell (14), banks' strategic choices—particularly in credit risk management, loan pricing, and branching strategies—significantly influence their profitability and risk exposure. In Indonesia, Sutrisno (15) noted that larger banks are typically more proactive in adopting digital services, penetrating new market segments, and shaping industry pricing behavior. Conversely, smaller banks often follow the strategic lead of larger institutions due to resource constraints and limited market power.

### 3. Bank Performance Indicators

Bank performance is typically evaluated using financial indicators such as Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), Non-Performing Loans (NPL), and Capital Adequacy Ratio (CAR). From a theoretical standpoint, the performance outcomes of banks may be influenced by either market power—where high concentration enables excess profits—or efficiency-based explanations, which suggest that well-managed and technologically advanced banks outperform their competitors regardless of market

structure. Demirgüç-Kunt and Huizinga (16) provided empirical evidence that higher profitability is not solely a function of concentration but also of operational efficiency and institutional quality. In Indonesia, In Indonesia, empirical evidence has revealed significant variation in bank performance across different classifications—such as state-owned, foreign, and regional development banks—highlighting the critical influence of ownership structure and strategic orientation (17). Further, the literature has highlighted the importance of both structural and behavioral factors in shaping the efficiency of credit intermediation within the banking sector (18).

## 4. Descriptive SCP Approach

The descriptive SCP approach is a non-econometric method that maps and analyzes the interlinkages between market structure, conduct, and performance using secondary data, trend analysis, and comparative statistics. This method is particularly useful when the goal is to provide a broad overview of industry dynamics rather than to test causal relationships. For instance, Al-Muharrami et al. (19) used a descriptive SCP framework to analyze banking in the Gulf Cooperation Council (GCC) countries, concluding that even in concentrated markets, performance outcomes vary significantly depending on conduct. Similarly, Bank Indonesia periodically adopts the SCP lens in its Financial Stability Review to monitor concentration risks, competition trends, and profitability metrics across various banking groups.

## MATERIALS & METHODS

This study employs a descriptive quantitative research design anchored in the Structure–Conduct–Performance (SCP) framework to explore the interrelationships between market structure, bank behavior, and financial performance within Indonesia's commercial banking sector. The SCP model offers a robust conceptual structure for analyzing how structural conditions—such as market concentration—influence strategic conduct, such as credit allocation, and ultimately affect institutional performance. By focusing on industry-wide patterns rather than individual causality, this approach is particularly relevant for policy-oriented financial research.

## Data Scope and Sources

The analysis spans a 15-year period from 2010 to 2024, encompassing pre-pandemic, pandemic, and post-pandemic phases, which allows for temporal comparisons across distinct economic contexts. Data used in this study are exclusively secondary in nature, collected from credible and official sources, namely: Financial Services Authority (OJK), Bank Indonesia (BI), and Annual reports of individual commercial banks.

## Population and Sampling Method

The research population includes all 105 commercial banks officially listed by OJK, representing various ownership structures including state-owned banks, private national banks, foreign banks, and joint-venture banks. Because the full population is examined, the study applies a census method, ensuring comprehensive industry coverage and eliminating sampling error.

## Variable Operationalization in SCP Framework

The operationalization of each SCP component is as follows:

1. **Market Structure**

Market structure is proxied using the CR4 index—the concentration ratio of the four largest banks—based on total assets. The CR4 index captures the extent of market dominance by top-tier banks and reflects the degree of oligopolistic concentration within the sector (20). The CR4 ratio is computed as:

$$CR4 = \left( \frac{Total\ Assets\ of\ the\ Four\ Largest\ Banks}{Total\ Banking\ Industry\ Assets} \right) x100\%$$

This measure allows the study to observe structural shifts and their implications on competition.

2. **Strategic Conduct**

Strategic conduct is measured by the distribution of credit across banks, classified by their core capital groups (Kelompok Bank Berdasarkan Modal Inti/KBMI 1–4). Credit distribution is evaluated using annual credit growth rates, which indicate the aggressiveness or conservativeness of lending strategies under various macroeconomic conditions (16). The formula used is:

$$credit\ growth\ rate = \left(\frac{Total\ Loans_t - Total\ Loans_{t-1}}{Total\ Loans_{t-1}}\right) x100\%$$

This variable reflects how banks adjust their lending behavior in response to market power and systemic risk.

### 3. Performance
Bank performance is evaluated using the Return on Assets (ROA) indicator, which assesses managerial efficiency in generating profits from total assets. ROA is a widely accepted proxy for profitability and sustainability in the banking industry (6). The formula is:

$$ROA = \left(\frac{Net\ Income}{Total\ Assets}\right) x100\%$$

ROA is disaggregated by KBMI group to examine performance disparities between large and small banks over time.

### Analytical Technique
The analytical approach in this study employs descriptive statistics, time-series visualizations, and trend evaluations to uncover structural patterns and strategic behaviors within Indonesia's banking industry over the period 2010–2024. Specifically, three key indicators are examined: the CR4 index (as a proxy for market structure), credit growth (as a measure of strategic conduct), and Return on Assets (ROA) (as a performance metric). Each of these variables is analyzed across the Kelompok Bank Berdasarkan Modal Inti (KBMI) classification to capture heterogeneity among banks of differing sizes and capital strength.

## RESULT
### Market Structure: CR4 Dynamics (2010–2024)
The CR4 index, which reflects the total asset share of the four largest banks in Indonesia, consistently ranged between 46.61% and 58.30% over the period 2010 to 2024, indicating a persistently oligopolistic market structure in the Indonesian banking sector. This structural pattern can be categorized into three distinct phases.

During the first phase (2010–2015), CR4 values fluctuated between 46% and 49%, suggesting a moderately concentrated market following the recovery from the global financial crisis. In this phase, competitive forces were relatively balanced, supported by regulatory reforms and macroeconomic stability.
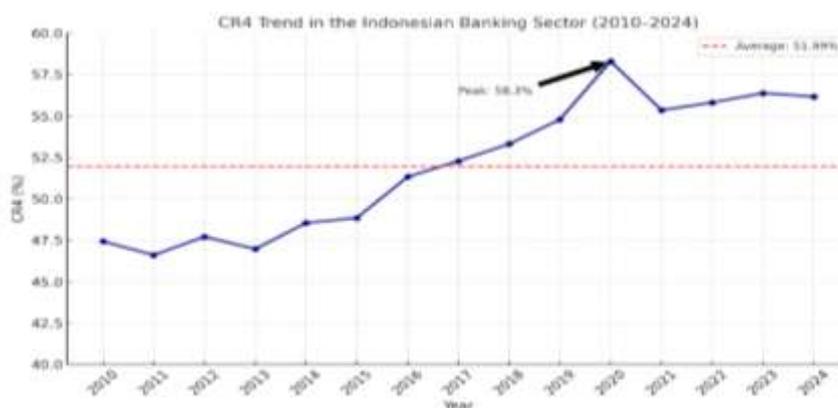


**Figure 1. CR4 Trend in the Indonesia Banking Sector 2010-2024**

The second phase (2016–2020) was marked by a period of accelerated consolidation, with CR4 values consistently exceeding 50% and peaking at 58.30% in 2020. This surge in concentration coincided with a wave of digital transformation, strategic mergers, and heightened risk aversion amid global economic uncertainty, particularly during the COVID-19 pandemic.

In the third phase (2021–2024), CR4 experienced a slight decline, stabilizing around 55% to 56%, which still reflects a high degree of concentration. This marginal reduction is attributed to the gradual expansion of Tier-2 banks and increased market participation from technologically adaptive mid-sized institutions in the post-pandemic recovery period.

This three-phase trend is consistent with findings from Structure–Conduct–Performance (SCP) literature, particularly in emerging economies, where banking sectors tend to exhibit higher concentration during episodes of systemic crisis or periods of technological disruption (Bikker & Haaf, 2002; Claessens & Laeven, 2004). The Indonesian case thus reinforces the notion that structural consolidation often intensifies in response to shocks, ultimately shaping market dynamics and competitive behavior in ways that favor larger, more resilient institutions.

## Strategic Conduct: Bank Credit Distribution by KBMI

The analysis based on the classification of banks by Kelompok Bank berdasarkan Modal Inti (KBMI) reveals heterogeneous patterns of strategic conduct, particularly in terms of credit distribution behavior. Banks within KBMI 1—those with the smallest core capital—exhibited extreme volatility in credit growth throughout the observation period. This was most evident in 2020, when KBMI 1 banks experienced a dramatic contraction in lending, reaching −67.3%. Such a sharp decline reflects heightened credit risk aversion and acute liquidity constraints in response to the economic uncertainty induced by the COVID-19 pandemic.

In contrast, banks in the higher capital tiers (KBMI 2 to KBMI 4) demonstrated a more stable pattern of credit expansion. Although all KBMI groups recorded a deceleration in lending during 2020, the contraction among larger banks was significantly less severe. Moreover, from 2021 to 2024, these banks exhibited a strong rebound in credit distribution, supported by their more robust capital buffers, diversified portfolios, and technological adaptability.
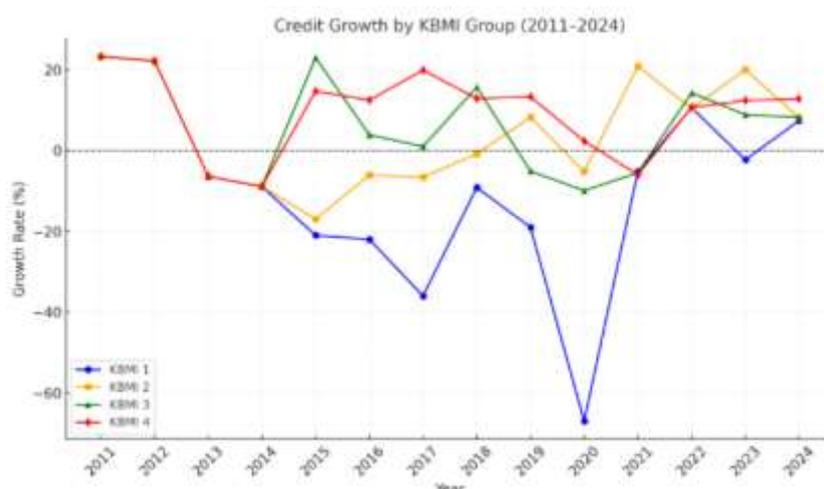


**Figure 2. Credit Growth by KBMI Group 2011-2024**

This divergence in credit behavior supports the core proposition of the Structure– Conduct–Performance (SCP) framework, which posits that market power—often

associated with size and capitalization—enables dominant firms to sustain strategic conduct even during economic downturns. Empirical studies such as Demirgüç-Kunt and Huizinga (2000) similarly affirm that larger banks tend to have superior shock absorption capacity, allowing them to maintain lending operations and even expand market share when smaller competitors retreat. Consequently, the Indonesian banking sector exemplifies how structural positioning within the market shapes strategic responses, particularly under stress conditions.

**Performance: ROA Trends across KBMI (2010–2024)**

Return on Assets (ROA), serving as a proxy for bank financial performance, exhibits significant structural disparities across the KBMI classifications. Banks within KBMI 1, representing institutions with the smallest core capital, displayed high volatility in ROA throughout the 2010–2024 period. The most pronounced downturn occurred in 2020, coinciding with the peak of the COVID-19 crisis, during which these smaller banks experienced a sharp decline in profitability. Although a modest recovery in ROA was observed after 2022, the performance remained erratic, indicating persistent vulnerability to external shocks and operational inefficiencies.
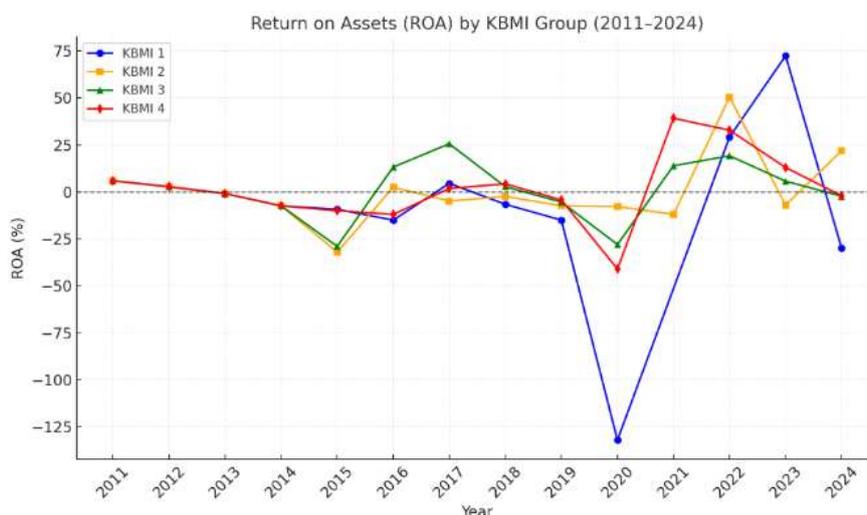


**Figure 3. ROA by KBMI Group 2011-2024**

In contrast, banks categorized under KBMI 2 to KBMI 4—those with larger capital bases—maintained relatively stable ROA levels, generally ranging between 1.5% and 2.5%, even during periods of macroeconomic instability. Their consistent profitability across cycles suggests that these banks benefitted from stronger asset bases, more diversified income streams, and superior risk management capabilities.

These observed trends are in line with existing literature that underscores the advantages of scale and diversification in enhancing financial performance. Berger and Mester (1997) argue that cost efficiency and

asset concentration are key drivers of profitability in the banking industry. Similarly, Athanasoglou et al. (2008) highlight that larger banks, due to economies of scale and broader market coverage, are better positioned to sustain earnings under adverse conditions. Thus, the Indonesian banking context reinforces the premise that structural advantages contribute to performance resilience, further validating the SCP framework's emphasis on the interplay between market structure and firm-level outcomes.

## DISCUSSION

The results strongly support the Structure–Conduct–Performance (SCP) hypothesis in the context of Indonesia's banking industry. The persistently high CR4 index confirms that the market is structurally concentrated, reflecting features of an imperfectly competitive market as proposed by Bain (1956) and Gilbert (1984).

### Market Structure and Competition

A CR4 index exceeding 50% is widely recognized in industrial organization literature as indicative of oligopolistic dominance, wherein a small number of large firms exert substantial control over market dynamics (11,21). In the context of Indonesia's banking industry, this threshold has consistently been surpassed, primarily due to the asset concentration held by state-owned and foreign-majority banks. These dominant institutions continue to control a significant portion of the market's total assets, reinforcing structural imbalances and limiting room for equitable competition.

Such dominance raises important concerns related to competitive neutrality, particularly regarding the ability of smaller, domestically owned banks—often classified under KBMI 1 and 2—to compete on equal footing. Entry barriers, including regulatory compliance costs, capital requirements, and technological disadvantages, further exacerbate the competitive asymmetry. These conditions may hinder innovation, reduce market dynamism, and ultimately affect financial inclusion and efficiency. Therefore, while high CR4 values reflect structural stability from a macroprudential standpoint, they also pose challenges for fostering a more competitive and inclusive banking landscape in Indonesia.

### Strategic Conduct and Risk Appetite

The observed variation in credit distribution across KBMI classifications reflects differentiated strategic conduct among banks in Indonesia, aligning closely with theoretical expectations under the Structure–Conduct–Performance (SCP) framework. Larger banks—particularly those in KBMI 3 and 4—demonstrated a capacity to maintain lending activity even during economic downturns, attributable to their stronger capital buffers, robust liquidity positions, and superior digital infrastructure. In contrast, smaller banks in KBMI 1 significantly curtailed credit disbursement, particularly during the height of the COVID-19 crisis, indicating heightened risk aversion and limited operational flexibility.

This behavioral divergence supports the argument made by Cetorelli and Gambera (22), who found that banks with greater market power are more capable of selectively allocating credit, often favoring lower-risk, high-return borrowers during times of uncertainty. Such strategic selectivity allows dominant banks to preserve asset quality and mitigate default risk, reinforcing their market positions.

Furthermore, the notable post-pandemic resurgence in credit growth among KBMI 2–4 banks suggest a deliberate strategy of market re-engagement. This trend aligns with the principles of relationship lending theory as articulated by Boot (23), which posits that larger banks utilize accumulated borrower information and long-term client relationships to support credit quality and customer retention. These institutions' ability to swiftly reallocate capital toward productive lending as conditions stabilized underscores the strategic advantage conferred by scale, information asymmetry management, and technological readiness. Collectively, these dynamics illustrate how structural advantages shape conduct in Indonesia's banking sector, particularly under the stress of exogenous shocks such as the COVID-19 pandemic

### Performance and Profitability Dynamics

Larger banks in Indonesia consistently demonstrated more stable Return on Assets (ROA) throughout the 2010–2024 period, reaffirming the central proposition of the Structure–Conduct–Performance (SCP) paradigm—that increased market concentration tends to be associated with

higher profitability. This finding aligns with Berger's (6) articulation of two complementary hypotheses: the Structure–Conduct–Performance (SCP) hypothesis, which suggests that market power leads to superior performance through pricing and strategic control, and the Efficient-Structure Hypothesis, which attributes higher profitability to greater efficiency and cost advantages. In the Indonesian context, both mechanisms appear to be at play. KBMI 3 and 4 banks not only benefit from their dominant market positions but also from superior economies of scale, digital transformation, and risk management capabilities.

Nevertheless, the upside of market concentration must be weighed against its potential macroeconomic and developmental drawbacks. Excessive concentration may reduce allocative efficiency and hinder broad-based financial inclusion. Empirical studies by Beck, Demirgüç-Kunt, and Levine (24)underscore the risks of high market concentration, particularly in emerging economies, where dominant banks may neglect small and micro enterprises due to perceived risk or lack of profitability. In Indonesia, this phenomenon is partially evidenced by the persistent credit contraction and profit instability observed in KBMI 1 banks—institutions that often serve underserved segments of the market. Such trends highlight the trade-off between systemic stability and inclusive financial development, suggesting the need for regulatory vigilance and policies that promote competitive neutrality and innovation across all tiers of the banking system

## CONCLUSION

This study revisits the Structure–Conduct–Performance (SCP) paradigm within the context of Indonesia's commercial banking sector over the period 2011–2024, incorporating structural concentration (CR4), credit distribution behavior, and profitability (ROA) as key dimensions. The

empirical findings provide several important insights.

First, the Indonesian banking industry remains highly concentrated, with the CR4 ratio consistently exceeding 50% throughout the observation period, signifying an oligopolistic structure dominated by four major banks. This structural configuration confers significant market power and competitive advantage to large institutions while constraining smaller banks' ability to compete effectively.

Second, the analysis of credit distribution across KBMI groups reveals that strategic conduct varies substantially by bank size. Large banks maintained relatively stable lending growth, even during periods of macroeconomic stress, whereas smaller banks exhibited pronounced volatility, contracting credit sharply during crises such as the COVID-19 pandemic. This divergence reflects disparities in capital adequacy, funding stability, and technological capability across bank groups.

Third, the performance dimension, measured by Return on Assets (ROA), demonstrates a similar pattern: large banks consistently achieved more resilient profitability outcomes, while smaller banks faced severe earnings shocks, particularly during the pandemic, followed by erratic rebounds. These dynamics reinforce the central tenet of the SCP framework: market structure fundamentally shapes conduct and, consequently, performance.

From a policy perspective, these findings underscore the need for regulatory interventions aimed at mitigating structural imbalances, such as capital strengthening initiatives for smaller banks, targeted liquidity support, and incentives for digital transformation. Such measures are essential to foster a more competitive and inclusive banking system capable of sustaining financial intermediation in support of economic growth.

Future research should extend this analysis by incorporating macroeconomic variables, risk management indicators, and efficiency measures to capture the multidimensional

determinants of banking performance in an evolving financial landscape.

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