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The Analysis of Typology Klaassen on Deposits and Credits at Regional Development Banks in Java and Bali

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Abstract — *The purpose of this study is to examine RDB (Regional Development Bank) performance in 6 provinces: Bali, DKI Jakarta, West Java and Banten, Central Java, East Java, and Yogyakarta from 2012 to 2022 using the Klaassen Typology for evaluating banks by credit-to-deposit ratios and growth against provincial averages. Although regional development banks (RDBs) are crucial for regional economic development, previous studies have not provided a comparative framework to understand the disparity of credit and deposit growth between RDBs in different provinces. The result shows strong credit growth of Bank Bali without consistent, good credit management in Bank DKI while the deposits are not managed well, then Bank Jabar-Banten, which maintained the market share but lack of deposit strategy, while Bank Jateng still outperformed in most provincial growth, albeit at times, the growth is fluctuant, happened to Bank Jatim that shows inconsistent performance only to recover in recent years, and Bank DIY still achieved strong credit while poor in deposit. This study also suggests expanding the lending portfolios, looking for niche market opportunities, adopting financial technology, and having better credit distribution employments in line with regional economic growth along with better consumer education programs to improve the RDB performance. The results also help fill a research gap in structured performance evaluation for RDBs, and they help elucidate the need for tailored banking strategies that effectively sustain financial stability at the regional level.*
Keywords: *Regional Development Banks, Klaassen Typology, credit growth, deposit growth, banking performance*

Abstrak — Penelitian ini bertujuan untuk menganalisis kinerja Bank Pembangunan Daerah (BPD) di enam provinsi—Bali, DKI Jakarta, Jawa Barat dan Banten, Jawa Tengah, Jawa Timur, serta Yogyakarta—dalam periode 2012 hingga 2022 dengan menggunakan Tipologi Klaassen, yang mengevaluasi bank berdasarkan rasio kredit terhadap deposito serta pertumbuhan dibandingkan dengan rata-rata provinsi. Meskipun BPD memiliki peran penting dalam pembangunan ekonomi daerah, studi sebelumnya belum menyediakan kerangka kerja komparatif untuk memahami disparitas pertumbuhan kredit dan deposito antar-BPD di berbagai provinsi. Hasil penelitian menunjukkan bahwa Bank Bali memiliki pertumbuhan kredit yang kuat tetapi kurang konsisten; Bank DKI memiliki manajemen kredit yang baik tetapi menghadapi tantangan dalam pengelolaan deposito; Bank Jabar-Banten mampu mempertahankan pangsa pasar namun kurang memiliki strategi deposito yang solid; Bank Jateng sering melampaui pertumbuhan rata-rata provinsi tetapi mengalami fluktuasi; Bank Jatim menunjukkan kinerja yang tidak konsisten tetapi membaik dalam beberapa tahun terakhir; sementara Bank DIY tetap unggul dalam pertumbuhan kredit tetapi mengalami kesulitan dalam pertumbuhan deposito. Studi ini merekomendasikan diversifikasi portofolio kredit, eksplorasi pasar niche, adopsi teknologi keuangan, peningkatan distribusi kredit yang sejalan dengan pertumbuhan ekonomi daerah, serta peningkatan edukasi konsumen untuk meningkatkan kinerja BPD. Temuan ini juga membantu mengisi kesenjangan penelitian dalam evaluasi kinerja BPD secara terstruktur dan menyoroti pentingnya strategi perbankan yang disesuaikan untuk menjaga stabilitas keuangan di tingkat daerah.

Kata Kunci: Bank Pembangunan Daerah, Tipologi Klaassen, pertumbuhan kredit, pertumbuhan DPK, kinerja perbankan

INTRODUCTION

Indonesia is an archipelago country with more than 34 provinces that have different economic structures, natural resources, and levels of development. Gradually, it will distribute its economic growth across the provinces with their unique features and challenges. This diversity causes differences in core industries, critical infrastructure, natural resources distribution, and the financing requirements of the local populace. In this regard, Regional Development Banks (RDBs) has a portrait of the position of such banking in Indonesian banking system which focuses on regional economic development by providing banking services and finance to priorities sectors. At present, previous studies like Bagaswara et al., (2024) and Anggaredho et al. (2024) have explored the role of RDBs in supporting economic growth, they have not extensively examined how variations in regional economic structures affect the financial stability and profitability of these banks. Additionally, Ambarita & Tristiarto (2024) emphasize the necessity of profitability management in BPDs, yet they do not examine the specific factors that affect the financial resilience of BPDs across various regions. We seek to fill this gap with this study by examining determinants of RDBs' financial performance and stability across Indonesia's diverse economies presenting differences in market structure, competition, and regulatory pressures.

Two places in particular, Java and Bali, distinguish themselves for three significant reasons that are pertinent to any in-depth analysis regarding regional economic development and the role of RDBs. Java is the economic powerhouse of Indonesia, providing the bulk of the country's GDP. It hosts the capital, Jakarta, as well as major trade centers and industrial nodes. Learning about Java can also shed light on the dynamics of urban and industrial economic activities, as well as the challenges and opportunities associated with supporting such an important part of the national economy. In contrast, Bali is known worldwide for its tourism sector. Bali's economy is heavily reliant on tourism and is thus an ideal opportunity to study the impact of service-based industries on regional development and the contribution of RDBs in such sectors. Java has the most developed infrastructure in Indonesia, including transportation networks, ports and industrial zones.

By understanding Java's infrastructure, we can glean lessons on what type of economic growth can come from developed infrastructure, how RDBs can continue to finance and facilitate economic growth, and what conditions need to be present for public projects to promote economic growth in ways that benefit a developing country. Despite its well-developed infrastructure to sustain tourism, Bali grapples with significant environmental challenges along with the vagaries of seasonal economic dependence. As Bali's infrastructure needs are understood, so RDB strategies can be tailored accordingly. This study makes the case that Java and Bali provide an appropriate selection of regions, so as to understand how RDBs may facilitate the regional economic development agenda in a range of economic contexts. Thereby, these regions can serve as a learning platform and approach for provinces in Indonesia so that RDB is able to contribute to the dynamics of growth and development in Indonesia.

This study will focus on two regions, named Java and Bali which show different economy and banking system. Java is the economic powerhouse of Indonesia, accounting for the biggest share of national GDP, and host to key trade and industrial centers. With a comprehensive network of infrastructure and professional services, Australia provides an ideal location to examine the operations of RDBs in such a competitive and urbanised economy. Bali is heavily dependent on tourism, which makes it, long with Nusa Penida, so interesting to study the impact of RDBs in service-driven industries and the effects of economy seasonality on banks' strategies. The investment in Java's infrastructure offers an empirical glimpse of the ways in which RDBs finance economic expansion and develop managed projects while Bali serves as a specific case for understanding financial sustainability in tourism economies. This study compares both regions in order to provide insight into the RDB-specific strategies that can be adopted to address regional economic challenges within different environmental contexts.

The global financial market has evolved rapidly from development center to construction center and development center, but banks, especially RDBs, must quickly respond to the rapid changes in the external environment for survival. These challenges come in the form of increased competition by big commercial banks, digital banks, and fintechs that are providing more innovative and efficient services. Moreover, there is more stringent banking regulation and higher expectations of transparency and good governance constrain RDBs and increase their cost in maintaining performance (Argawandani & Rahmawati, 2024).

RDBs were founded as instruments for developing the region's economy by providing credit that supports the productive sector and collecting deposits from the local population (Kusumawardhana et al., 2021). Thus, RDBs will allow local communities and businesses to access banking services easier and cheaper. This is important because in many regions access to financial services from national banks remains restricted, making the role of BPDs pivotal. BPD's role in distributing credit and deposit is crucial considering that BPD focuses on providing banking services to carry out regional economic growth (Purwanti & Elfari, 2021). This function is attuned to Indonesia's provinces, which are diverse and possess different economic structure, needs, and potentials.

Though playing a key role for RDBs, it has its challenges where competition in fund mobilization with other banks including commercial banks is one. Most commercial banks tend to have advantages of funds, service field and technology. This condition reinforces BPDs to compete to attract customers so that they are able to mobilize deposits (Kurniawan et al., 2021). Banks with higher capital are in a position to provide more attractive interest rates as well as a wider variety of banking services for savings and deposits.

As per Table 1, the Bank Regional Development (BPD) is more stable compared to the larger banks in terms of fund raising, but still the total deposits of regional bank reached a proportionately small value compared to larger banks. Cooperation banks granted the most credit, which reached IDR 985,329 billion in 2021, an increase of 163.9% with increasing profits from IDR 97,876 billion in 2012 to IDR 116,055 billion in 2021. At the same time deposits at private banks grew from IDR 1,459,771 billion in 2012 to IDR 3,157,671 billion in 2021, or an increase of 116.3%. However, even the Small (Foreign & Joint-Venture Banks) base has grown to (IDR 261,832 billion 2012; IDR 355,011 billion 2021) +35.6% While RDBs did well in terms of growth, the deposit performance shows that a lot needs to be done in order to capture the larger share. As of 2021, RDBs' deposits were just 22.1% of state-owned banks' deposits and 20.7% of private banks' deposits. Simply put, while RDBs have significantly increased their deposit amounts, they are still not very competitive against the larger banks.

Table 1. Comparison of RDBs' Deposits with Other Banks (million)

Year	RDB	State-owned Banks	Private Banks	Foreign and Joint-Venture Banks
2012	270.306	1.127.317	1.459.771	261.832
2013	279.413	1.270.912	1.670.846	306.825
2014	325.222	1.500.730	1.828.975	296.441
2015	346.123	1.647.680	1.954.142	315.500
2016	366.295	1.882.370	2.089.844	329.638
2017	430.814	2.087.382	2.230.620	302.725
2018	460.348	2.232.952	2.332.374	331.843
2019	517.174	2.382.514	2.476.400	318.590
2020	553.011	2.676.481	2.794.956	324.549
2021	652.952	2.959.325	3.157.671	355.011
Average	***420.166***	***1.976.766***	***2.199.560***	***314.296***

Source: Processed data

The results show that the RDSs have higher deposit interest rates than other banks based on the average deposit interest rates data ranging from 2012 to 2021. According to Bank Indonesia in 2012, BPD's average deposit interest rates was 6.59%, higher than the rates offered by state-owned banks which were at 5.62%, private banks at 5.60%, and foreign and joint-venture banks at 5.62%. As for deposit interest rate, BPD range between countries, at 8.65% in peak 2014, slightly lower than others state-owned banks and Foreign and joint venture banks that are more than 8.76%, because of their high dependence on BPD loans. The average deposit interest rate for RDBs during the past ten years stood at 7.02%, followed by state-owned banks (6.35%), private banks (6.60%), and foreign and joint-venture banks (6.35%). Nonetheless, there was a clear downward trend in deposit interest rates throughout all banks, including BPD, particularly in 2020 and 2021 (Yulianto et al., 2023). As of 2021, the deposit interest rate of RDBs was 3.82, but it was higher than the deposit interest rate of Bank BUMN (3.40), private banks (3.67), and foreign and joint-venture bank (3.40). RDBs can offer more competitive interest rates for deposits to attract more depositors. The increased interest rates have been seen as a measure that RDBs can use to attract more deposits from and penetrate into the local populations. While higher interest rates tend to attract more deposits, they also increase the cost of funds for RDBs, which could have a further impact on their profit margins.

Table 2. Comparison of Average Deposit Interest Rates: BPD vs. Other Banks

Year	RDB	State-owned Banks	Private Banks	Foreign and Joint-Venture Banks
2012	6,59	5,62	5,60	5,62
2013	7,71	7,33	7,58	7,33
2014	8,65	8,76	8,72	8,76
2015	8,28	7,78	8,51	7,78
2016	7,75	6,65	7,12	6,65
2017	7,06	6,07	6,40	6,07
2018	7,41	6,55	6,82	6,55
2019	7,15	6,58	6,43	6,58
2020	5,82	4,78	5,14	4,78
2021	3,82	3,40	3,67	3,40
Average	***7,02***	***6,35***	***6,60***	***6,35***

Source: Processed data

Moreover, commercial banks also have very strong advantages on credit distribution. Their capital base allows them to offer diverse types of credit at lower interest rates and flexible terms. High-level banking technology also allows commercial banks to respond faster and more efficiently, including the online credit application process, making services more attractive to modern businesses and young customer (Fernos & Alfadino, 2021). In addition, the extensive service coverage of commercial banks enables them to acquire a broader clientele in different provinces; whereas, RDBs are limited to some provincial areas only (Ramadhan, 2022). This limitation restrains the RDBs from expanding their credit portfolio and deposits. Hence, effective measures are required to tackle these challenges and improve the competitive strength of RDBs.

According to Table 3, even though RDBs have shown a steady growth trajectory of credit during this period, the volume of credit per RDB is much less than that of the other banks. Within the last decade, the overall amount of credit lent by RDBs was IDR 390,732 billion on average per year or under the average amount of credit lent by: state-owned banks (Bank BUMN) at IDR 1,871,845 billion, private bank at IDR 1,961,364 billion, and foreign and joint-venture banks at IDR 398,909 billion. Even though BPD has increased the amount of credit disbursed from the previous year, where it reached its highest at IDR 515,849 billion in 2021, the credit gap between BPD and other banks is still apparent. BPD credit growth from 2012 to 2021 trends upwards in line with previous findings and the two largest increases in credit come in 2013 and 2018. Disbursed credit was 20.7% and 8.3% on year for RDBs in 2013 and in 2018 respectively. But this growth rate is not enough to catch up with other banks that remain and dominate Indonesia's credit market. Based on this analysis, even though BPD has successfully grown the volume of credit that it has disbursed over the years, the volume of credit market share that BPD has remains relatively smaller compared to the market credit volume controlled by other banks, particularly state-owned such as Bank Mandiri and BRI, as well as private banks. This meant that RDBs must step up to provide more schemes to spread their lending further.

Table 3. Comparison of Credit Amounts: BPD vs. Other Banks (million)

Year	RDB	State-owned Banks	Private Banks	Foreign and Joint-Venture Banks
2012	218.435	942.253	1.217.835	309.969
2013	263.743	1.156.147	1.454.712	389.951
2014	298.895	1.289.773	1.620.493	425.451
2015	326.002	1.487.454	1.754.423	434.758
2016	352.457	1.701.786	1.825.635	434.567
2017	387.943	1.896.740	1.984.393	397.503
2018	420.171	2.163.489	2.158.372	472.945
2019	463.420	2.333.491	2.322.561	395.710
2020	488.106	2.331.904	2.216.209	328.031
2021	515.849	2.485.825	2.315.474	311.267
Average	*390.732*	*1.871.845*	*1.961.364*	*398.909*

Source: Processed data

The average credit interest rate of RDBs in 2012 was 13.23%, which was higher than state-owned banks (11.37%) and national private banks (12.18%) but lower than foreign and joint-venture banks (16.10%). While the average credit interest rate for RDBs decreased during this period (from 13.23% in 2012 to 9.96% in 2021), RDBs' credit interest rates were higher than those of state-owned banks and private banks during most of the years analyzed. But, average RDB credit interest rate (12.01%) during the last ten years was higher than state owned banks (10.91%) and private banks (11.55%) average credit interest rate and lower than the average credit interest rate of foreign and joint-venture banks (14.56%). The highest decline of RDBs credit interest rate is between 2014 and 2015 with a drop of 0,87%, and between 2019 and 2020 with a drop of 0,50%. The decline in interest rates is driven by RDBs' need to be more competitive in attracting customers needing credit at lower rates.

Table 4. Comparison of Credit Amounts: BPD vs. Other Banks (million)

Year	RDB	State-owned Banks	Private Banks	Foreign and Joint-Venture Banks
2012	13,230	11,373	12,180	16,097
2013	12,980	11,553	12,657	15,970
2014	13,147	12,177	13,287	16,610
2015	13,060	12,243	13,083	16,990
2016	12,397	11,443	12,440	15,993
2017	11,967	11,060	11,393	13,857
2018	11,497	10,513	11,010	13,157
2019	11,197	10,303	10,553	13,190
2020	10,700	9,400	9,720	12,023
2021	9,963	8,990	9,160	11,707
Rata-rata	12,014	10,906	11,548	14,559

Source: Processed data

Through the application of the Klassen Typology, these DPK indicators can be analyzed in detail on a case-by-case basis through RDB dynamics in each province in order to form credit growth strategies. Based on the data on credit growth and DPK, the Klassen Typology offers an overview of the data mapping, whether DPD banks in each province have positive or negative growth in the two aspects. Klassen Typology, based on their Credit Growth and Deposit performance, RDBs can be classified into different categories. The present study elucidates a role and input from the RDBs in the regional economic development in Indonesia. Due to the economic diversity, natural resources, and the development level of more than 34 provinces in Indonesia, challenges faced by RDBs still vary with competition with commercial banks, which have capital, service reach, and technology advantages. In this regard, the objective of this paper is to develop prospective strategies to enhance the role and contribution of RDBs in facilitating regional economic development. Hence, this study intends to put on the map the distribution of the growth of credit and deposits that are disbursed by BPDs to each province in Indonesia.

LITERATURE REVIEW

Regional Development Banks are local government-established financial institutions primarily designed to empower and enhance economic and social development in targeted territories (Rusnawati, 2023; Syata et al., 2023; Baihaqqy, 2020). The fundamental principle underlying RDBs is to deliver financial services that can be critical in financing small and medium enterprises, infrastructure projects, and other sectors with strategic potential for national economic development (Jumono, 2022). Nevertheless, the role of RDBs can be considered as an extension of local government for credit and finance channeling to support local economic activities that are not addressed by many commercial banks.

Whereas traditional financial theories focus on how RDBs operate as financial intermediaries and credit-oriented economic agents, new theoretical explanations have emerged of how RDBs operate as part of local economic systems. In addition, with the Klaassen Typology, this research could create a structured classification model consisting of RDB evaluation based on credit-to-deposit ratios and types of growth performance against provincial benchmarks. Nonetheless, more recently developed theories in local policy and institutional economics allow us to deepen this analysis since they shed light on the strategic behavior of RDBs. The Institutional Embeddedness Theory is one of the approaches, it suggested that RDBs are not just financial intermediaries, but they are institutions that are embedded in local economic, political, and regulatory context (Kunneke et al., 2021). This perspective illustrates that local governance structures, economic policies, and regional institutional dynamics shape RDBs credit and deposit strategies. For instance, this lens can offer insight into how regional government policies, public-private partnerships, and regulatory incentives impact RDB finances and decision-making.

Finally, the Public Entrepreneurship Theory (Klein et al., 2010; Vivona et al., 2024) offers a novel lens onto RDBs as entrepreneurial public institutions that proactively contribute to economic development. Under this theory, RDBs do not just react to financial trends but also actively introduce innovations in credit distribution, deposit mobilization, and economic policy implementation. As public-sector entrepreneurs, RDBs harness both public and private financial resources to stimulate economic transformation, close financial gaps, and overcome market failures and imperfections that impede regional development.

Furthermore, the Adaptive Market Hypothesis (Lo, 2019) proposes that financial institutions, such as RDBs, change their strategies and behavior according to changes in competitor behavior, shifts in policies that may enforce competitive pressures, and the emergence of technological disruptions. With the emergence of fintech, digital banking, and decentralized financial services, RDBs have persistently re-adjusted their financial models for continued relevance and financial viability.

This study also extends the conventional banking theories through the incorporation of these emerging theoretical frameworks to provide a better sense of RDBs' function in local economic systems. What this implies is that the integration of Klaassen Typology, Institutional Embeddedness Theory, Public Entrepreneurship Theory, and Adaptive Market Hypothesis provides a comprehensive perspective into how RDBs maneuver through regional economic intricacies, financial rivalry, and policy limitations.

In addition, RDBs also perform the role of regional financial management agents as they help local governments to manage public funds and achieve budgets in an optimal and efficient manner. This includes the management of regional budget funds, the distribution of village funds, the financing of priority development projects (Harahap & Saraswati, 2020). In this way, RDBs serve as a banking institution and as a strategic development partner for local governments to realize inclusive and sustainable development goals. Second, RDBs are key enablers of improved financial inclusion in marginalised regions (Vo et al., 2021; Feghali et al., 2021). RDBs contribute to the better economic situation of their population with their services by bringing financial products and services that address local needs, thereby allowing communities to access the basic banking services: savings, microcredit, and payment services. RDBs further promote local economic development by unlocking new funding for critical regional sectors, including but not limited to agriculture, fisheries, tourism and creative industries.

Through financing and partnerships with these sectors, RDBs build jobs, improve local competitiveness, and promote innovation. The other dimension is that in dealing with the challenges of modernization, RDBs can also be expected to keep pace with the changes in technology and innovations in the banking sector. To keep themselves relevant and competitive, RDBs need to digitalize banking services, create innovative financial products, and enhance service quality (Daga et al., 2021; Balkan, 2021). RDBs act as financial intermediaries and agents of sustainable regional development, helping integrate the community through economic and social economic initiatives.

Concept of Deposits and Credits

Credit and deposits are two very important concepts of banking operations and play vital role in driving economic growth. Credit is a facility of funds by a bank or other lender to an individual or organization with the expectation of future repayment with interest (Sadok et al., 2022; Yanenkova et al., 2021). The credit is to be one of the important fund provider instruments which enable different players to perform the economic actions such as the investment, consumption, and business. There are different types of credits like consumer credits, investment credits, working capital credits, etc. Referring to deposits, they are essentially money that banks collect from the public perspective (individuals and institutions) and which is stored in different types of savings products. One of the key sources of liquidity for banks is Deposits, which are used to disburse credit and carry out banking operations (Chen et al., 2022). For a bank, collecting deposits is an essential factor to which it can lend out that capital and fulfill other responsibilities (D'Avernas et al., 2023). The deposit collection level indicates people's confidence in the bank. Different DPK products is also a way to diversify sources of funding, including liquidity risk for the bank.

Banks' operational fundamentals are credit and deposits. While deposits represent a more secure means of financing, credit enables banks to furnish the necessary capital for customers across various sectors of the economy (Omorokunwa & Ogbeide, 2021). As such, the relationship between the collection of daily banking profit and credit disbursement is the cornerstone of bank financial management, which also affects regional and national economic development directly. By using the right strategies, banks can not only improve its efficiency but also boost its contribution to sustainable economic development.

Although there is a significant amount of research on RDBs, not many studies offer a framework for evaluating the credit and deposit performance of RDBs across provinces. Klaassen Typology provides a systematic framework to categorize banks based on credit-to-deposit ratios and growth vis-a-vis provincial averages, facilitating a comparison of RDB performance. Research on banking typologies and financial efficiency metrics in regional economies (Spierdijk & Zaouras, 2017) further clarifies the importance of similar analysis in identifying strengths and weaknesses of banking institutions pertinent to the regional economic conditions. Newer studies in West Sulawesi Province utilizing Shift Share analysis and Klassen Typology to measure economic performance confirm that some sectors retain competitive advantage over others (Nurbayani et al., 2024).

The present study intends to fill this gap by combining the basic financial indicators with the Klaassen Typology to create a coherent assessment of RDB performance. Using RDB in Java and Bali, two provinces with different economic and banking structures, this study aims to find out the difference in the expansion of credit as well as deposit mobilization and policy recommendations to improve the RDB from the aspects of RDB performance.

RESEARCH METHOD

Research Location

The study will conduct a performance analysis of RDBs in Selected Province by using Klaassen Typology. This research uses secondary data from the Central Bureau of Statistics (BPS) of the Provinces and Districts or Cities of Java and Bali during 2010–2021. It encompasses sectoral contributions to growth to allow for a comparative assessment of RDBs' financial deposits and credits by region. Java and Bali have been chosen due to their significant economic contributions and distinct banking sector features. As Indonesia´s economic powerhouse, the Java region is home to its trade centres, industrial hubs and banks, thus providing a relevant case to analyse RDB performance in high ecomoics. Conversely, in contrast to Java, Bali is a service-based economy that is particularly reliant on tourism, thus enabling a study of how RDBs support economies with seasons of fluctuation.

Population and Sampling

The population is determined this research in the provinces of the region of Java and Bali. Java has six provinces, namely, Banten, Jakarta, West Java, Central Java, Yogyakarta, and East Java. Bali is a single province. Therefore, the seven provinces are included in the total population. This research uses purposive sampling which sampling is chosen based on certain considerations that complement the research purpose. The purposive sampling is selected to ensure that the selected samples provide complete and valid information for the in depth Analysis.

a. Only those provinces with RDBs functional and offering substantial financial services to the community for are considered in the period from 2012 and until 2022. RDBs have to demonstrate a consistent history of accurate financial and operational reporting.
b. Full annual data for each province on credit disbursement by RDBs across the research period from 2012 to 2022. The data should show the amount of credit extended money to various sectors of the economy.
c. Provinces that provide complete annual data of the deposit collected by RDBs for the study period from the years 2012 to 2022. This information must reflect the volume of deposits from different types of deposits, such as savings, demand and time deposits.
d. Valid and reliable data is used taken from the official report, such as RDBs annual report,

publisher from the Central Bureau of Statistics, Bank Indonesia and other data sources.

From the population of seven provinces in Java and Bali, all seven provinces are selected as samples since they all have active BPDs and are likely to meet the criteria for complete and reliable data on credit disbursement and DPK collection.

Klaassen Typology: Analysis and Application in RDBs' Credit and DPK

Leo Hendrik Klassen introduced his regional growth identification nomenclature, The Klassen Typology, in 1965, which views regions as discrete microcosm and the connections among those regions. Klassen explains that regions are not real places to live but rather economic entities that can be analyzed through various economic metrics, typically income. Klaassen's method is straightforward by comparing the level and rate of income growth in a region with the national level and rate of income growth.

The Klassen Typology is not specifically a type of bank group and does not have a standardized application in the context of bank group classification; however, it is generally used in finance and banking to classify banks based on their attributes or criteria specific to their operations, risk profiles, or business models. In this study, the Klassen Typology is used by comparing the speed of credit growth with the share of credit and the speed of the deposits growth with the share of deposits.

This methodology classifies provinces and, based on the share of credit and deposits distributed by RDB to better reflect the economic behavior of different regions. This allows the study to recognize development trends and variables that affect the credit allocation and deposit collection of each province. Table 5 below describes operational definition of variables in the credit analysis It will also describe in short what each ratio denotes and how and why these definitions are relevant, e.g., the formula of calculation of each variable.

Table 5. Operational Definitions of Variables in the Credit Area

Name	Formula	Explanation
Total Credit of All RDBs	$\text{Total Credit RDBs} = \sum_{I=1}^{n} (Credit_I)$	The ratio for the total credit collected by all RDBs is obtained by summing up the credit from each RDBs, from the first RDBs to the nth RDBs
Total Credit of All Provinces	$\text{Total Credit Prov} = \sum_{j=1}^{n} \left(Credit\ Prov_j\right)$	This formula states that the total provincial credit is the sum of the credit collected by each RDBs in that province
Individual Credit Ratio to Total BPD Credi	$si\ Credit = \frac{Credit_{i,j}^{T}}{\sum_{i=1}^{n}(Credit_i)}$	This formula calculates the ratio of individual credit to the total credit collected by all RDBs. This ratio helps understand each RDBs' relative contribution to the overall credit.
Provincial Credit Ratio to Total Provincial Credit	$Si\ Credit = \frac{Credit\ Prov_{i,j}^{T}}{\sum_{i=1}^{n}\left(Creditprov_j\right)}$	This formula calculates the ratio of provincial credit to the total provincial credit collected by all RDBs in region j (nationally)
Individual Credit Growth	$gi\ Kredit = \frac{\left(Kredit_{i,j}^{t+1} - Kredit_{i,j}^{t}\right)}{Kredit_{i,j}^{t}}$	This formula calculates the individual credit growth rate from time t to time t+1.
Provincial Credit Growth	$Gi\ Kredit = \frac{\left(CreditPROV_{i,j}^{T+1} - KREDITPROV_{i,j}^{T}\right)}{KREDITPROV_{i,j}^{T}}$	This formula calculates the provincial credit growth rate from time T to time T+1.

Table 6. Klassen Typology for Credit Contribution to Credit Growth

Credit Contribution	Credit Growth	
	gi Credit ≥ Gi KCredit	**gi Credit < Gi Credit**
si Credit ≥ Si Credit	Quadrant II. This quadrant indicates that the ratio of individual credit is greater than or equal to the provincial credit ratio, and individual credit growth is also greater than or equal to provincial credit growth. This is the ideal condition where individuals have	Quadran I. This quadrant indicates that although the ratio of individual credit is greater than or equal to the provincial credit ratio, individual credit growth is less than provincial credit growth. This means individuals have a good credit proportion but their growth

	a good credit proportion and rapid growth.	is not as fast as the provincial credit growth.
si Credit < Si Credit	Quadrant III. This quadrant indicates that the ratio of individual credit is less than the provincial credit ratio, but individual credit growth is greater than or equal to provincial credit growth. This means individuals have a low credit proportion but their growth is faster compared to the provincial level.	Quadrant IV. This quadrant indicates that the ratio of individual credit is less than the provincial credit ratio, and individual credit growth is also less than provincial credit growth. This is a less ideal condition where individuals have a low credit proportion and slow growth.

Table 6 presents the Klassen Typology for the contribution of Credit to credit growth. This typology groups data based on the ratio of individual credit to the total BPD credit as well as individual credit growth compared to provincial credit growth. By mapping the position of each individual into four quadrants, we can better understand the contribution and growth of individual credit relative to provincial standards.

Table 7 which presents the operational definitions of various variables used in the analysis of deposits. These definitions include the formulas used to calculate each variable as well as a brief explanation of the meaning and utility of each ratio.

Table 7. Operational Definitions of Variables in the Deposit Area

Name	Formula	Explanation
Total Deposit of All RDBs	$\text{Total Deposit of RDBs} = \sum_{I=1}^{n}(DEP_I)$	The ratio for the total deposits collected by all RDBs is obtained by summing up the deposits from each RDBs, from the first RDBs to the nth RDBs
Total Deposits of All Provinces	$\text{Total Deposits Prov} = \sum_{j=1}^{n}\left(DEP\ Prov_j\right)$	This formula states that the total provincial deposits is the sum of the deposits collected by each RDBs in that province
Individual Deposits Ratio to Total BPD Deposits	$si\ Deposit = \frac{DEP_{i,j}^{T}}{\sum_{i=1}^{n}(dep_i)}$	This formula calculates the ratio of individual deposits to the total deposits collected by all RDBs. This ratio helps understand each RDBs' relative contribution to the overall deposits.
Provincial Deposits Ratio to Total Provincial Deposits	$Si\ Deposits = \frac{DEP\ Prov_{i,j}^{T}}{\sum_{i=1}^{n}\left(DEPprov_j\right)}$	This formula calculates the ratio of provincial deposits to the total provincial deposits collected by all RDBs in region j (nationally)
Individual Deposits Growth	$gi\ Deposits = \frac{\left(DEP_{i,j}^{t+1} - DEP_{i,j}^{t}\right)}{DEP_{i,j}^{t}}$	This formula calculates the individual deposits growth rate from time t to time t+1.
Provincial Deposits Growth	$Gi\ Deposits = \frac{\left(DEPPROV_{i,j}^{T+1} - DEPPROV_{i,j}^{T}\right)}{DEPPROV_{i,j}^{T}}$	This formula calculates the provincial deposits growth rate from time t to time t+1.

Table 8. Klassen Typology for Deposits Contribution to Deposits Growth

Deposits Contribution	**Deposits Growth**	
	gi Deposits ≥ Gi Deposits	**gi Deposits < Gi Deposits**
si Deposits ≥ Si Deposits	Quadrant II. This quadrant indicates that the ratio of individual deposits is greater than or equal to the provincial deposits ratio, and individual deposits growth is also greater than or equal to provincial deposits growth. This is the ideal condition where individuals have a good deposits proportion and rapid growth.	Quadrant I. This quadrant indicates that although the ratio of individual deposits is greater than or equal to the provincial deposits ratio, individual deposits growth is less than provincial deposits growth. This means individuals have a good deposits proportion but their growth is not as fast as the provincial deposits growth.
si Deposits < Si Deposits	Quadrant III. This quadrant indicates that the ratio of individual c deposits is less than the provincial deposits ratio, but individual deposit growth is greater	Quadrant IV. This quadrant indicates that the ratio of individual deposits is less than the provincial deposits ratio, and individual deposits t growth is also

	than or equal to provincial deposit growth. This means individuals have a low deposit proportion, but their growth is faster compared to the provincial level.	less than provincial deposits growth. This is a less ideal condition where individuals have a low deposit proportion and slow growth.

Table 8 presents the Klassen Typology for the contribution of deposits to deposit growth. This typology groups data based on the ratio of individual deposits to the total deposits of RDBs as well as individual deposit growth compared to provincial deposit growth. By mapping the position of each individual into four quadrants, we can better understand the contribution and growth of individual deposits relative to provincial standards.

RESULT AND DISCUSSION

The Klaassen typology is used to analyze the performance of credit and deposits by comparing the proportion and growth of individual deposits against provincial deposits.

Bank Bali

Table 9. Klaassen Typology Analysis on Bank Bali in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	4.9%	1.5%	17.2%	29.7%	I
2013	3.8%	1.5%	18.8%	24.2%	I
2014	4.2%	1.5%	23.7%	12.7%	II
2015	4.4%	1.5%	15.3%	9.9%	II
2016	4.5%	1.5%	8.1%	9.9%	I
2017	4.3%	1.5%	3.9%	6.4%	I
2018	4.1%	1.4%	1.3%	5.7%	I
2019	4.1%	1.4%	11.9%	7.8%	II
2020	4.1%	1.5%	3.9%	0.7%	II
2021	4.0%	1.4%	3.5%	1.7%	II
2022	3.9%	1.3%	1.3%	4.2%	I

In 2012-2022 Bank Bali's individual credit ratio (si) remained higher than the provincial credit ratio (Si) throughout this decade, indicating that amid high credit growth in Bali, Bank Bali was in a solid position, extending loans at levels above provincial averages during this period. A high proportion of good credit is an auspicious sign of a bank's ability to attract and retain borrowers. In contrast, Bank Bali's credit growth trajectory tells a more complex story. In some years (2014, 2015, 2019, 2020, and 2021), the bank was in Quadrant II, which denoted a bank with a good proportion of loans and fairly high credit growth by individuals compared to the provincial growth (Gi). Such boom periods most probably indicate credit strategies that in an appropriate economic context or targeted lending programme had increased the bank's growth above the provincial averages. On the flip side, in 2012, 2013, 2016, 2017, 2018, and 2022, Bank Bali's credit growth didn't quite cut it compared to provincial growth, landing them in Quadrant I where their credit gave them a decent rate.

However, the slower credit expansion during these years implies possible issues like market saturation, heightened competition, or general economic slowdowns weighing on its growth rate. Notably, this dichotomy of growth patterns showcases that, not only is the bank resilient, its strategic agro-architecture enabled the bank to maintain a healthy credit proportion across its books, while also reflecting on the external and internal factors dictating its varying growth rates. On the whole, Bank Bali emerges favorably within the competitive banking landscape, characterized by its consistent capability to sustain an upper credit ratio, and its sporadic growth spurts marking periods of strategic triumphs. These slower periods of growth, while not so glamorous, are critical as they are useful insights on areas where the bank could improve so that it could better duplicate or even outpace provincial growth. In this report, the strong credit performance over the last decade and highlights periods of impressive growth in a relatively better credit backdrop.

Table 10. Klaassen Typology Analysis on Bank Bali Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	4.5%	1.7%	19.9%	20.5%	I
2013	4.0%	1.8%	8.8%	16.9%	I
2014	3.8%	1.7%	12.2%	9.8%	II
2015	4.1%	1.7%	14.5%	7.1%	II
2016	4.1%	1.6%	2.7%	5.3%	I
2017	4.1%	1.6%	15.7%	9.1%	II
2018	4.0%	1.7%	2.9%	7.9%	I
2019	4.0%	1.7%	11.4%	8.7%	II
2020	3.8%	1.6%	6.9%	-1.5%	II
2021	3.6%	1.4%	9.0%	3.9%	II
2022	4.0%	1.6%	13.2%	21.6%	I

Bank Bali's deposits have shown different performances from 2012 to 2022 by moving between Quadrant I and Quadrant II. This corroborates the trend of individual deposit growth shifting away from provincial averages. 2012, Bank Bali was positioned in Quadrant I with si of 4.5% growing higher than Si 1.7% but gi 19.9% slightly lower than Gi 20.5%. Similarly, the following year (2013) Bank Bali also located in Quadrant I witnessed a si of 4.0% and gi of 8.8% all higher than that of provincial ratios (si of 1.8% and gi of 16.9% show a description where its energy is directed to growth, characterized by a large base of resources which thus it requires and needs to improve strategies to grow and develop its market share. In 2014 to 2015, there is a transition to Quadrant II where deposit ratio and growth are higher than provincial level: A better condition si was 3.8% vs Si 1.7%; gi 12.2% against Gi 9.8% (2014) Bank Bali also grew significantly higher than the province during 2015, where in that year, Bali had a si of 4.1%

and gi of 14.5% while the provincial growth was recorded only at 7.1%.

From there the year 2016 brought the return to Quadrant I, with a si of 4.1% and gi of 2.7%, below the provincial growth (5.3%) showing it had difficulties to maintain its momentum. By 2017, the bank had returned to Quadrant II with a si of 4.1% and strong gi (15.7%) above the provincial 9.1% growth. In 2018, the Bank Bali also in Quadrant I, the si 4.0% and gi 2.9% as a whole still below the provincial growth of 7.9%. In 2019 was better again, the region was in virtue of Quadrant II whose si and gi at 4.0% and 11.4% respectively or higher than the provincial growth rate of 8.7%. In 2020, Bank Bali continued to occupy the position of Quadrant II although the province experienced negative growth, namely in the SI value of 3.8% and GI of 6.9%, which was above the provincial growth of -1.5%.

The bank's growth outpaced provincial growth: in 2021, with a si of 3.6% and gi of 9.0%, well above provincial growth (3.9%). 2022 saw Bank Bali re-entering Quadrant I, with a si of 4.0% and a gi of 13.2% versus provincial growth of 21.6%. Each province had even higher growth, making the bank Quadrant I again, despite the very high individual deposit growth. In general, Bank Bali is a financial institution with a fluctuating performance. Quadrant II years (2014, 2015, 2017, 2019, 2020, and 2021) showcase strategies that are working for banks in this segment on attracting and growing individual deposits. On the other hand, Q1 Years show that it may need some more growth-oriented effort/recommends to scale even more effectively. Consistency in success can be achieved by banks specifically Bank Bali by developing deposit products, making deposits in-depth to customers with more service to customers, intensive marketing, and educating the public about the benefits and security of deposits. Internal competence must check whether Bank Bali always achieves ideal conditions and continue to adapt to market conditions to the existing external competence.

Bank Bali's credit and deposit growth analysis with Klaassen Typology classification in various quadrants indicates an underperformance, especially in credit disbursement. Overall, the bank periodically finds itself within Quadrant I and II, signifying that the credit portion with respect to provincial levels is comparatively high, however, due to inconsistent growth, it tends to lag. This categorization is a dependable measure of the orientation of the banks' loan books, but should be taken with a grain of salt because external factors like economic trends, changes in tourism-dependant revenue, and regulations can impact this.

Compared to global benchmarks, Bank Bali is cyclical in its credit performance, in line with banking operations in tourism-based regions. For example, banks in Phuket in Thailand or in Langkawi in Malaysia see similar volatility, as credit growth peaks when tourism is booming and shrinks in slack times (IMF, 2024). Bank Bali's experience fits this pattern, indicating that the externality shocks to the economy such as the COVID-19 pandemic might indirectly hurt the bank's lending business.

From a policy perspective, the noted variability of growth suggests that demand-oriented credit programs are needed to reinforce businesses facing seasonal downturns. Counter-cyclical lending policies, or the establishment of risk-sharing arrangements with the government could stabilize growth. Utilizing the Bank Indonesia tourism credit facility could indeed be a game-changer in terms of enabling more flexible credit terms for enterprises, in turn, empowering businesses to remain operational thru economic strife (Bank Indonesia, 2024).

This analysis has several limitations, including the use of historical data that does not take into consideration structural policy changes in tourism-dependent economies. The Klaassen Typology is also lacking in that it doesn't consider external variables that could affect both the credit and deposit dynamics, such as changes in monetary policy (interest rate hike cycles, QE, etc.), technological advances toward digital banking, and inflationary pressures. Future studies should incorporate panel regression models to separate these concomitant external factors and obtain a more accurate approach toward causality.

Bank DKI

Table 11. Klaassen Typology Analysis on Bank DKI in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	8.4%	48.1%	36.3%	21.3%	III
2013	7.6%	48.3%	36.2%	22.5%	III
2014	7.7%	48.1%	15.4%	11.0%	III
2015	7.8%	48.4%	10.6%	11.2%	IV
2016	7.2%	48.0%	-3.2%	6.8%	IV
2017	7.2%	47.5%	9.1%	7.3%	III
2018	8.6%	48.8%	27.9%	15.2%	III
2019	8.4%	48.9%	7.9%	6.3%	III
2020	7.6%	47.0%	-4.7%	-6.2%	III
2021	7.9%	47.0%	8.5%	4.8%	III
2022	9.4%	48.2%	25.0%	14.5%	III

Based on the Klaassen Typology analysis of Bank DKI's credit performance from 2012 to 2022, it shows consistently, individual credit ratio (si) lower than provincial credit ratio (Si) means a larger portion of credit market in the province. Overall the position of Bank DKI is in Quadrant III but Bank DKI growth rate in individual credit (gi) was still above the provincial growth rate (Gi) in quasi III. This shows that Bank DKI has great potential in growing credit because the existing credit is not yet a lot. The bank only entered Quadrant IV for 2015 and 2016 respectively, which had a low proportion of credit as well as slower or negative growth, suggesting that it may have faced challenges during those years such as difficult economic conditions or internal strategic issues. Negative growth did occur in 2016 and 2020, but in 2020 the negative growth was less than the provincial average, keeping the bank to Quadrant III.

Bank DKI could grow higher than the other players, despite having a lower market share. The bank has always been a featured consistent company in Quadrant III, indicating that we are able to achieve greater than provincial growth rates with only a small proportion of borrowings if compared with the industry, that is we still see that we have managed growth in credit very well and we have proven that management's vision has helped Bank DKI to grow in a competitive provincial environment. Reassortting to this one shows that Bank DKI sustained and strategically employed in obtaining strong credit growth amid a challenging economy and limited market share.

Table 12. Klaassen Typology Analysis on Bank DKI Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	8.6%	50.5%	35.4%	15.0%	IV
2013	7.4%	50.8%	5.1%	14.2%	III
2014	7.5%	51.1%	18.6%	12.9%	IV
2015	7.9%	50.3%	12.3%	5.7%	III
2016	7.7&	51.1%	0.9%	11.4%	IV
2017	8.9%	50.7%	34.7%	8.5%	III
2018	8.2%	50.7%	-2.7%	6.4%	IV
2019	7.4%	50.1%	0.0%	5.4%	III
2020	8.7%	53.5%	31.2%	12.8%	III
2021	8.9%	52.3%	18.0%	15.2%	III
2022	9.8%	53.6%	12.8%	11.9%	III

The performance of Bank DKI's deposits from 2012 to 2022, based on the results of the analysis using the Klaassen Typology, shows a varied position in Quadrant III and IV, where in 2012 Bank DKI was in Quadrant III, while moving and in 2018, 2019 and 2021 Bank DKI was in Quadrant IV. According to the chart, in 2012 Bank DKI in Quadrant IV with individual deposits (si) 2012 8.6% of its total deposits were still a long way from the provincial deposits (Si), provincial (Si) reached 50.5%. In spite of this, individual deposits (gi) growth was 35.4 percent, while at the provincial level (Gi) growth was only 15.0 percent. Being in Quadrant IV indicates that although Bank DKI had no significant amount of individual deposits in the province, it had a very high growth. Bank DKI itself has moved to Quadrant III in 2013 with a si of 7.4 percent and growth of individual deposits of 5.1 percent, which is lower than the growth of the province is 14.2 percent. This shift reflects a smaller proportion and a lower growth of individual measures relative to the provincial benchmarks. In 2014, they were back in the Quadrant IV with si back to 7.5% and gi was 18.6%, above the provincial growth of 12.9%. Bank DKI in 2015 returned to Quadrant III, with si 7.9% and gi 12.3%, which was lower than province growth at 5.7%, but still reflected respectable performance.

Notice that in 2016, the bank encountered Quadrant IV, where for a si of 7.7% the gi per deposit growth was extremely low, 0.9% compared to provincial 11.4% growth, fact that evidences difficulties in deposits-hiraqum growth, without significative volatility. In 2017, Bank DKI's performance improved to rank in Quadrant III with a si of 8.9% and a significant gi of 34.7%, which is much higher than the provincial growth of 8.5%. In 2018 a negative -2.7% growth still kept the bank in Quadrant IV, meaning it was far outpaced that year by the provincial growth rate of 6.4%. When there were si = 7.4% and gi = 0.0% in 2019, Bank DKI did not yet come out of Quadrant III (indicating stability but lower than provincial growth, at 5.4%). In 2020, the placement again in Quadrant III with a si of 8.7% and a considerable gi of 31.2%, considerably above the provincial growth (492) of 12.8% (493). In 2021, Bank DKI remained in Quadrant III, with a si of 8.9%, gi was 18% against provincial growth of 15.2%, which still shows growth.

In 2022, the bank lay in Quadrant III, with a 9.8% individual deposit ratio and 12.8% growth, surpassing the provincial growth of 11.9%. Bank DKI's deposits perform various weaknesses and strengths. Recent years in Quadrant III, including years like 2013, 2015, 2017, 2019, 2020, 2021, and 2022, indicate quite successful strategies in higher growth, despite lower deposit ratios. On the other hand, the years falling under Quadrant IV particularly in 2012, 2014, 2016, and 2018 warrant better strategies for improving proportion of deposits and subsequently growth in their respective years. To be successful consistently, Bank DKI must strive to improve deposit products, enhance service to the public, carry out promotional campaigns as well as educate the public about the benefits of deposits and the security of deposits. Bank DKI will continue to improve its performance and conditions to be ideal through routine evaluation and adjustments to market conditions.

This results in Bank DKI's position in Quadrant III and IV for credit growth, where despite individual credit growth sometimes exceeding that of the province, it still holds a credit portion that is lower than the provincial total. This classification is important to emphasise the potential for developing market share because a low credit ratio indicates that there is an unexploited part of credit market in Jakarta. Historical trends indicate that urban-based regional development banks tend to have less economic growth potential due to competition with national banks and private banks, which auger for their limited growth ability (Suciati, 2025).

Such trends are less likely in global urban regional banks, with more subnational players like Bank of Tokyo Metropolitan and Shanghai Rural Commercial Bank having strong credit growth rates, driven by government-backed urban development programs. Nevertheless, Bank DKI is exposed on the market with the large national banks like Bank Mandiri and BRI. This implies that Bank DKI have to do qualified lending to SMEs and urban infrastructure project where Bank DKI has comparative advantages.

The research concludes that for the banking strategies Bank DKI must have a more aggressive market penetration policy such as expanding the digital banking service and providing competitive interest rates for urban micro and small enterprises. Further loan syndication with private banks will improve credit availability while lowering exposure to high-risk lending. One of the main constraints in this analysis is that Jakarta's banking sector has a high rate of volatility due to macroeconomic shocks, changes in regulations, and national banking policies (OJK, 2023). Nor does Klaassen Typology adequately capture the influence of fintech and alternative credit sources, each of which has dramatically reshaped the interface of competition for urban banking. Structural equation modeling (SEM) may allow for a more granular analysis of the data, bolstering the precision of the findings.

Bank Jabar-Banten

Table 13. Klaassen Typology Analysis on Bank Jabar-Banten in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	20.0%	8.1%	30.5%	27.2%	II
2013	17.0%	8.1%	28.1%	21.9%	II
2014	16.4%	8.2%	9.5%	13.6%	I
2015	16.8%	8.2%	12.0%	9.7%	II
2016	18.3%	8.2%	14.2%	9.1%	II
2017	18.7%	8.3%	12,0%	8.7%	II
2018	18.6%	8.0%	6.1%	8.6%	I
2019	18.0%	8.1%	6.8%	6.8	I
2020	18.4%	8.5%	7.3%	2.8%	II
2021	18.8%	8.6%	7.9%	6.2%	II
2022	20.0%	8.4%	11.7%	8.3%	II

The analysis was able to find that Bank Jabar-Banten has a pretty lot of sectors credit compared to its amount of share, indicating a solid growth in credit development between 2012-2022 The extent of credit market share held by Bank Jabar-Banten in the province, over the last fifteen years, is observed in the bank's individual credit ratio (si) which consistently surpassed Si provincial credit ratio, with a more aggressive increase in si than in Si. Such an overwhelming presence can clearly be seen in 2012, 2013 and 2022 where this bank's credit share was over twice that of the provincial average. The bank was often located in Quadrant II, implying that it had a significant credit share and recorded higher rates of credit growth than average for the province. And on 2012, 2013, 2015, 2016, 2017, 2020, 2021 and 2022, which is an ideal situation which signifies really effective strategy activation against credit growth and management.

Bank Jabar-Banten is already in Quadrant I in 2014, 2018, and 2019. Despite its high proportion of credit, these years saw lower than provincial averages for growth rates which suggest phases of culling growth. Beyond that, however, it didn't really affect its overall strong market presence. Traditional credit profile; performance sustained in Quadrant II - the bank managed to maintain high quotations at Quadrant I and maintained high growth rates over several years. The few instances of slower growth, reflected in the Quadrant I placements, offer opportunities to make strategic improvements to align growth rates more closely or surpass provincial trends. Finally, Bank Jabar-Banten's performance indicates a well-diversified credit portfolio along with a healthy and stabilised market position highlighted by their above-market-average credit proportions and recurring periods of above-average growth. The analysis emphasizes the bank's solidityand strategic capacityto reassert itself in the provincial credit market as a leader, with a strong presence in Quadrant II indicating it is able to create and maintain ideal credit conditions.

Table 14. Klaassen Typology Analysis on Bank Jabar-Banten in Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	20.2%	8.1%	28.5%	19.6%	II
2013	16.3%	8.2%	-1.7%	14.6%	I
2014	15.8%	8.1%	13.3%	10.6%	II
2015	17.6%	8.4%	18.4%	11.4%	II
2016	19.7%	8.3%	16.1%	8.1%	II
2017	18.8%	8.5%	11.2%	12.3%	I
2018	18.0%	8.3%	0.7%	3.4%	I
2019	16.5%	8.4%	2.1%	8.3%	I
2020	17.7%	8.8%	19.5%	11.6%	II
2021	17.5%	8.2%	14.0%	8.7%	II
2022	18.3%	7.8%	7.3	3.7%	II

The deposits of Bank Jabar-Banten from 2012 to 2022 shown that centered in quadrant I and II are a result of the achievement of deposit ratios in performing area and growth deposited by the area pillar to the benchmark province. Bank Jabar-Banten in 2012, was in Quadrant II, which is on the si individual savings of 20.2% far exceeded the ratio of Si province of 8.1%, and gi growth individual deposits of 28.5% also exceeds the level of growth (Gi) province of 19.6%. This suggests an optimal scenario with a good deposit ratio and a strong growth. Then in 2013, the bank shifted to Quadrant I where it had a si of 16.3% but reported an individual deposit growth of -1.7% vs. the province of 14.6%, demonstrating a year of difficulties vis-a-vis growth in spite of a higher deposit ratio. Return to Quadrant IIA si of 15.8% and gi of 13.3% for Bank Jabar-Banten in 2014 with growth above provincial growth of 10.6% This positive trend persisted throughout 2015 and 2016, whereby the bank remained in Quadrant II. In 2015 it jumped to 17.6% for si, and 18.4% for gi, higher than the provincial growth of 11.4%. For the year 2016, si was at 19.7%, while gi was 16.1%, both well above the provincial growth of 8.1%.

The bank moved to Quadrant I again in 2017, attaining a si of 18.8%, albeit with a lower gi of 11.2% compared with the provincial expansion of

12.3%. During 2018 and 2019, the pattern of staying within the Quadrant I persisted, characterized by si values of 18.0% and 16.5%, respectively, gi values of 0.7% and 2.1%, that were both lower than the province-level growth rates of 3.4% and 8.3%, respectively. Strikingly strong deposit ratios in some of the years of these improved growth strategies. In 2020, Bank Jabar-Banten re-emerged into Quadrant II with a si of 17.7% and a strong gi of 19.5% that outperformed the growth of the province at 11.6%. In 2021 and 2022, the positive performance continued and the structure of the bank stayed in Quadrant II. The overall average was 8.7% growth seen in a province, while si & gi were comparatively better in 2021, at 17.5% and 14.0%, respectively.

In 2022, the si was 18.3% and the gi was 7.3%, both well above provincial growth of 3.7%. Bank Jabar-Banten performance Overall, Bank Jabar-Banten performance also shows the quadrants that in the period of Quadrant II there is a good performance in terms of growing and attracting individual deposits. But the years in Quadrant I underscore the importance of improved growth strategies to drive long-term success. In conclusion, in order to gain consistent growth, Bank Jabar-Banten should continue to upgrade its deposit products, service quality, promotional activities and some education to societies about deposits and secure deposits. Bank Jabar-Banten can perform market conditions that always ideal with their regular evaluations and adjustments.

Bank Jabar-Banten continue to stay in Quadrant II (the ideal sector), which means maintaining the growth proportion of credit and deposits above the provincial average. Such classification is only very sustainable based on a strong financial condition of the bank supported by its presence in Indonesia's largest manufacturing and industrial corridor. The consistent high proportion of credit ownership indicates strategic primacy in the regional credit market. In a global comparison, Bank Jabar-Banten is akin to the success of regional banks in the Pearl River Delta in China, which are kept afloat by industrial and manufacturing sector lending and high credit growth. An important competitive advantage is the bank’s ability to steadily grow deposits and credit, while holding a dominant market share, something its regional peers in other provinces find hard to pull off.

The policy implication of this performance is to remain competitive at lending rates while broadening green financing in industrial clients. The bank must also look at digital credit platforms to expedite SME lending. Because of its strong position in the market, Bank Jabar-Banten could take the lead in regional banking consolidation efforts that would help smaller banks that have problems with capital adequacy. It is worth noting that one limitation in this study is that the analysis presumes that historical growth trends will trajectory continue in the absence of material economic shocks. The precise patterns will be shaped by several factors, including the interest rate environment, government industrial policies, and the likelihood of a financial crisis. A scenario based forecasting model would make this analysis more robust.

Bank Jateng

Table 15. Klaassen Typology Analysis on Bank Jateng in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	10.3%	5.5%	33.7%	24.2%	I
2013	8.0%	5.3%	17.9%	16.7%	II
2014	8.5%	5.3%	19.7%	12.2%	II
2015	9.1%	5.3%	17.2%	9.6%	II
2016	9.9%	5.3%	13.8%	9.4%	II
2017	10.6%	5.4%	17.0%	8.9%	II
2018	10.8%	5.2%	9.0%	8.3%	II
2019	9.7%	5.2%	-0.5%	7.1%	I
2020	9.0%	5.5%	-2.5%	1.8%	I
2021	10.7%	5.5%	24.5%	5.1%	II
2022	11.1%	5.4%	9.0%	10.3%	I

Based on the Klaassen Typology, the analysis of Bank Jateng's credit performance has an impressive trend in the period 2012-2022 with a high individual credit ratio (si) of the provincial credit ratio (Si). Bank Jateng during these years often managed to have a higher gi compared to Gi (gi > Gi), this condition places Bank Jateng in Quadrant II more often which indicates that Bank Jateng is in a good credit proportion and also growing rapidly. The table demonstrates the successful credit management coupled with strong growth strategies during 2013-2018 and in 2021, as evidenced in: 2013, 2014, 2015, 2016, 2017, 2018, and 2021. These years particularly reflect the bank's sustained growth, consistently outperforming provincial rates and strengthening its market position. In 2012, 2019, 2020 and 2022 Bank Jateng was in Quadrant I because the credit proportion was growing but decreased and became slower than that of the province. The bank had on average a higher credit ratio than the provinces, yet the same bank grew substantially faster than the average growth rate of the provincial economies in 2012.

In contrast, the bank's growth rates were less than zero or negative in both 2019 and 2020, implying economic slowdown or worse internal strategy as the root cause for a fall in the performance of the bank. In 2022, it re-entered Quadrant I where the growth of the bank was positive but slower than the province. Bank Jateng also has a strong and stable market support, where the dominance of credit proportions is always at a high level over time. This new entry to the Quadrant II status that we would see constantly indicates the ability of the bank to achieve & maintain rapid credit growth which demonstrates both strategic effectiveness & resilience. The more negative or slower growth rates indicated in Quadrant I and IIV may serve as an area for improvement to sharpen growth closer to provincial rates. The bank's overall performance, despite fluctuations on these parameters, points to the instances of robust credit management and overall agility in the provincial credit market.

Table 16. Klaassen Typology Analysis on Bank Jateng in Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	9.3%	4.5%	13.6%	16.4%	I
2013	8.5%	4.6%	12.0%	15.2%	I
2014	8.6%	4.6%	17.6%	12.4%	II
2015	9.3%	4.9%	14.6%	14.9%	I
2016	9.7%	5.0%	8.4%	11.2%	I
2017	9.7%	5.0%	16.9%	9.4%	II
2018	9.4%	5.1%	2.0%	8.6%	I
2019	9.2%	5.1%	8.8%	7.0%	II
2020	10.5%	5.4%	26.6%	11.6%	II
2021	10.1%	5.0%	10.8%	9.0%	II
2022	10.1%	4.7%	2.3%	3.5%	II

Based on the results of calculations using the Klaassen Typology from 2012 to 2022 for deposits of Bank Jateng, Quadrant I experienced changes to Quadrant II from 2012 to 2022 revealing a fairly significant level of success. In 2012, Bank Jateng was situated in Quadrant I, with an individual deposit ratio (si) amounted to 9.3% higher than his ratio province (Si) that is equal to 4.5%. However, its individual deposit growth (gi) of 13.6% lagged behind provincial growth (Gi) of 16.4%. The same was true in 2013, as the bank remained in the Quadrant I as its si was 8.5 percent and gi 12.0 percent, both of which are above the provincial ratios of 4.6 percent and 15.2 percent indicating superior growth strategies. In 2014, a change occurred as Bank Jateng entered Quadrant II with a si of 8.6% and gi of 17.6%, surpassing the provincial growth of 12.4%. But, in 2015, the bank returned to Quadrant I, outpacing only slightly the provincial growth of 14.9% with si of 9.3% and gi of 14.6%. Setting Quadrant I as Bank Jateng in 2016 and 2018, the si value in 2016 was 9.7% and gi was 8.4%, both lower than the growth value of the province which was 11.2%. The same was true in 2018, when si was found to be 9.4% and gi was 2.0%, against a provincial increase of 8.6%, suggesting that sustaining growth was a problem.

In contrast the bank returned to the Quadrant II in 2017, 2019, 2020, 2021 and 2022. Bank Jateng recorded a si of 9.7% and gi of 16.9% in 2017, significantly outperforming the provincial average of 9.4%. The si and gi for 2019 were 9.2% and 8.8%, respectively, compared to the provincial growth of 7.0%. The year 2020 saw us making major milestones, with si of 10.5% and gi of 26.6%, much higher than the provincial growth of 11.6%. This trend continued in both 2021 and 2022 with si values of 10.1% and gi values of 10.8% and 2.3% respectively, surpassing provincial growth rates of 9.0% and 3.5%. During this wave, Bank Jateng has been viable, particularly in Quadrant II years, characterized by a successful strategy for attracting individual deposits. Years, on the other hand, in Quadrant I highlight the need for improved growth strategies. In order to maintain growing customers, Bank Jateng need to diversify in terms of depositor products, enhance customer service, hold regular sales promotion and raise public awareness about deposit safety and benefits. The continuous evaluation to adaptive to the market conditions will help the Bank Jateng to optimal performance and sustainability of ideal condition.

The classification of Bank Jateng in Quadrant I and II showed a relatively high credit percentage with varying growth circuit. This classification is corroborated by the pattern and historical precedents of credit expansion in the province, especially within agricultural and trade financing sources. But the bank's migration within Quadrants I and II shows credit cycle risk, when strong growth is followed by slowing growth.

Compared with global benchmarks, Bank Jateng looks similar to Brazil's Banco do Nordeste, a specialized bank engaged with regional credit for agriculture Bank Jateng has a similar challenge as its Brazilian counterpart, where agricultural lending needs to be balanced against the financial sustainability of the bank and limiting risks of defaults during economic downturns. From the perspective of banking strategy, the findings indicate that greater diversification of the credit portfolio, especially through extending credit to urban and SME segments, should be pursued. To achieve efficient credit disbursement in higher volumes with lower risk exposure, bank jateng could utilize digitization lending model. Notice that, although the effect of agricultural price volatility on credit cycles can be tested in this framework, we do not model this effect explicitly, making it a caveat in this analysis. Klaassen Typology fails to capture systemic risks posed by agricultural credit dependency. We recommend incorporating commodity price modeling into assessments of banking risk in future research.

Bank Jatim

Table 17. Klaassen Typology Analysis on Bank Jatim in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	10.4%	8.8%	14.5%	26.9%	I
2013	8.2%	9.2%	19.1%	26.4%	IV
2014	8.5%	9.3%	17.9%	12.8%	III
2015	8.4%	9.1%	7.9%	9.1%	IV
2016	8.3%	9.1%	4.2%	6.8%	IV
2017	8.2%	9.1%	6.9%	8.5%	IV
2018	8.1%	8.9%	6.3%	10.4%	IV
2019	8.3%	8.7%	12.7%	3.2%	III
2020	8.9%	8.6%	12.3%	-3.5%	II
2021	8.7%	8.4%	3.1%	3.0%	II
2022	8.9%	8.0%	8.1%	8.1%	II

Bank Jatim credit performance based on the Klaassen Typology (2012 - 2022) Bank Jatim has a variety of credit growth with a fluctuating range, where the proportion of the criteria for each bank varies according to the size of the credit given. During these years, Bank Jatim's presence in the different quadrants has been mixed depending upon the strategic and economic conditions during these years. At that point, 2012, Bank Jatim sat in Quadrant I with a large credit share but lower growth than at the provincial level. The next year, 2013, found the bank in Quadrant IV, with the proportion of credit lower and slower growth, indicating that during that year the bank faced many challenges. Between 2014 and 2018 the bank was largely bouncing between Quadrant III and IV. Back in 2014, it was in Quadrant III, which shows a low credit share but its growth was faster than provincial average. Meanwhile, in 2015, 2016, 2017, and 2018, each of those years placed Bank Jatim in Quadrant IV where lower credit proportion was reflected with slow growth. The consistent presence of Quadrant IV over these years corroborates a period of struggle in which the bank found it difficult to maintain its competitive proportion of credit and present growth with satisfactory rates.

The situation improved in 2019 when the bank moved back to Quadrant III, low credit proportion but higher growth, recovery phase. Bank BRI grew rapidly, but its lowest average growth occurred in Quadrant II in 2020 when Bank Jatim joined (the best conditions between credit proportions and growth rates). In 2021 and 2022, the trend remained positive, and the bank continued to hold a position in Quadrant II, where effective strategies led to a competitive proportion of credit, alongside growth rates equal to or above provincial averages. Across the range of products over the decades so far, Bank Jatim has seen some ups and downs in terms of credit performance, but the company is adapting to changing market conditions steered by credit risk decisions that steer the company on a stable credit track. The peaks in Quadrant IV in years with very low levels of value added represent major obstacles they faced, whereas Quadrants II and III show years of recovering or winning strategies. That the bank managed to close the period in the quadrant was itself a sign of resilience, effective management, and places it well for future growth in a competitive provincial credit landscape.

Table 18. Klaassen Typology Analysis on Bank Jatim in Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	9.3%	9.1%	10.3%	17.7%	I
2013	8.9%	9.2%	17.0%	14.7%	III
2014	8.7%	9.3%	13.5%	14.3%	IV
2015	9.2%	9.6%	12.7%	10.3%	III
2016	8.5%	9.4%	-4.9%	7.7%	IV
2017	8.8%	9.4%	21.2%	9.7%	III
2018	10.8%	9.6%	29.8%	8.5%	II
2019	11.7%	9.7%	19.6%	7.4%	II
2020	12.2%	10.0%	16.2	8.8%	II
2021	12.8%	9.1%	21.5%	7.9%	II
2022	12.3%	8.7%	-1.7%	3.6%	I

Analysis between years 2012-2022 on Bank Jatim Depositors using Klaassen Typology indicate the positive and negative trajectory scattered on all four quadrant Bank Jatim was in the Quadrant I in 2012, your si was 9.3%, higher than the provincial rate (Si) 9.1%, while gi your individual deposit growth was at 10.3%, far below the provincial growth (Gi) is 17.7%. This shows that although the bank maintained a fair share of deposits, its growth pace was subpar. In 2013, the bank shifted to Quadrant III; si of 8.9% the provincial growth 14.7%. This implies that Bank Jatim managed to generate higher growth even with the same deposits as Bank Syariah. It is shown that in 2014, Bank Jatim moved into Quadrant IV, with si 8.7% compared to Si 9.3%, and gi 13.5% < provincial growth 14.3%. This is indicative of a tough year in which both deposit ratio and growth underperformed provincial figures. The bank returned to Quadrant III in 2015, with a si of 9.2% below the Si of 9.6% but a gi of 12.7% higher than the provincial growth of 10.3%. This implies growth is helping even with a reduced deposit share.

Meanwhile, for the Bank Jatim, in 2016 it halved Quadrant IV with si of 8.5% below the Si of 9.4%, and gi -4.9% negative, despite the province's average growth of 7.7%. This year revealed major obstacles to both deposit share and growth. In 2017, the bank returned to Quadrant III, with the si of 8.8% less than the Si of 9.4%, but with a high gi of 21.2%, that surpassed the provincial growth of 9.7%. Despite the low deposit share, this demonstrates very powerful growth. Bank Jatim's move to Quadrant II confirms that in 2018 Si of bank Jatim is 10.8% above Si of 9.6% while gi of bank Jatim is also Veryhigh 29.8% beyond provincial growth of 8.5%. From 2019 up until 2021, the positive trend continued and therefore the bank was still in Quadrant II. The si was 11.7% and gi was 19.6% in 2019, above provincial growth that sat at 7.4%. For si, it was 12.2% (2020) and for gi, i was 16.2%, both higher than the provincial gorwth of 8.8% In 2021, the si is 12.8%, and gi is 21.5%, higher than the provincial growth (p) of 7.9%.

The bank reported a si of 12.3%, above the Si of 8.7%, but had a negative gi of -1.7% compared to the provincial growth of 3.6% and, in 2022, the Quadrant III empenhar si, with no si και gi ratios, respectively, and thereby back to Quadrant I. This means that deposit growth dropped over the course of a year in spite of a favourable deposit ratio. The overall performance of Bank Jatim indicates that they have periods of success where once there are Quadrant II such as on 2018 to 2021, which indicates that their deposit ratios and growth rates are both ideal. These years are indicative of successful deposit management strategies that include compelling deposit products for customers, well trained customer service staff, and well implemented and sustained marketing efforts. On the flip side, the years that fall in Quadrants III and IV underscore the necessity for better growth strategies to secure continuity in success. Bank Jatim needs to open its prominent deposit products, high-quality service and customer service, educational promotions related to deposits, and deposit security. Evaluating its performance periodically and adapting its position to market situations will enable Bank Jatim to maintain the status of optimal functioning and achieve ideal conditions consistently.

Bank Jatim has a mixed classification pattern with credit in Quadrant III and IV while deposits tend to be in Quadrant I and II. It makes this classification to highlight a conservative lending culture in which the bank seems to focus on accumulating deposits rather than aggressively expanding credit. Third is its non-offensive position in Quadrant IV, this indicates that Bank Jatim is approaching the provincial credit growth rate so that its position tends to be unable to compete in the lending market. Conversely, in Quadrants I and II deposits are placed frequently, thereby signifying the bank's success in mobilizing deposits, ensuring a stable ranking of the bank as a financially sound institution with solid liquidity.

Similar to global comparisons, Bank Jatim is similar to India’s Punjab & Sind Bank, historically challenged by credit disbursement despite high deposit utilization ratios (Reserve Bank of India, 2022). Same for Germany and Japan, where regional banks are traditional deposit collectors but are less keen to lend out credit due to heavy regulatory scrutiny or risk-averse business models. But unlike global counterparts in fairly congested credit structures, Bank Jatim has a lot of room to move in terms of credit expansion, assuming it bolts on the appropriate lending engines. Another similar case is Thailand’s Government Savings Bank (GSB), which, just like Bank Jatim, has strong deposit accumulation yet limited credit expansion. In contrast, GSB has been able to make a departure from the past by introducing digital lending initiatives as well as microfinance products in order to stimulate credit demand whilst maintaining control on risks (World Bank, 2022). This model would enable Bank Jatim to utilize its deep deposits for advancing micro-loans, SME financing, and digital credit services. The conservative lending bunker Bank Jatim is a double-edged sword. So whether its robust deposit base provides stability and liquidity or whether its sluggish credit growth will inhibit inducing regional economic development are questions to consider.

Thus, balances the bank must adjust two aspects to make lending up its book competitive. This analysis leads to several strategic recommendations. First, the expansion of business lending and SME financing would enable Bank Jatim to tap into East Java’s high population of micro, small, and medium enterprises (MSMEs), expanding its market share through the provision of business loans that address their needs through flexible repayment options. Loan risk could also be mitigated by government-backed guarantee schemes. Second, by utilizing public-private partnerships (PPP), the bank can partner with local governments on infrastructure financing, thereby deploying excess liquidity in low-risk, long-duration investments in regional projects focused on transportation, energy and water resources. Third, by investing in expanding digital lending, the bank could leverage AI-based credit evaluations to deepen credit penetration with a mindful approach to risk. Fourth, rather than simply generating deposits, Bank Jatim should expand its offerings through wealth management products, insurance-linked savings, and investment instruments, thereby decreasing the dependence on traditional banking revenues. Lastly, strengthening the risk management frameworks by moving towards a more dynamic risk assessment model would enable the bank to take measured risks in new lending segments without compromising the financial stability.

Although the Klaassen Typology provides a useful framework for classification, the framework does not reflect deep drivers such as regulations or interest rate policies or sectoral issues that can determine slow credit growth. But the model excludes external economic shocks, such as inflationary pressures, shifts in government spending, or global financial instability, that can impact the dynamics of both credit and deposits. A further limitation is the decomposition on borrower segmentation is limited. It is likely that Bank Jatim's low overall credit growth is attributed to lack of demand, a conservative underwriting standard or bad economic cycle. Future exploration needs to integrate econometric modeling and stress-testing frameworks to approximate the bank’s true credit expansion capacity in a range of economic environments. Moreover, the varying economic conditions in different regions of East Java is a sign to create region-based specific credit strategies due to different economic conditions between Surabaya as a popularly major business hub and rural areas. On one hand, Bank Jatim’s strong deposit base and relatively slow credit expansion has become an opportunity for its to be booked in 2024, but on the other hand it also brings a risk because the slow credit growth can also be eroded by competition to obtain deposits from corporate banking customers.

Although its liquidity level is strong, its lending grows slower than industry averages, restricting its capacity to fully back economic development in East Java. The bank can channel its deposit power into strategic credit, leveraging on Digital Lending, SME financing and Public-Private partnership. Still, focused risk management, regulatory compliance, and macroeconomic monitoring will be vital to sustainable growth. Future work should combine quantitative stress testing with regional economic impact studies to improve predictive power and policy recommendations.

Bank Yogyakarta

Table 19. Klaassen Typology Analysis on Bank DIY (Daerah Istimewa Yogyakarta) in Credit Area

Year	si	Si	gi	Gi	Quadrant
2012	1.8%	0.8%	18.1%	21.7%	I
2013	1.5%	0.7%	21.1%	3.2%	II
2014	1.6%	0.7%	26.4%	14.2%	II
2015	1.6%	0.7%	7.4%	5.5%	II
2016	1.6%	0.7%	6.8%	10.2%	I
2017	1.6%	0.7%	8.5%	12.1%	I
2018	1.7%	0.7%	11.5%	10.0%	II
2019	1.7%	0.7%	13.8%	6.7%	II
2020	1.7%	0.7%	4.5%	3.1%	II
2021	1.7%	0.7%	4.9%	5.2%	I
2022	1.9%	0.7%	17.1%	10.9%	II

From 2012 to 2022, it also analyzes the Klaassen Typology analysis of Bank DIY (Daerah Istimewa Yogyakarta) where credit performance is related to the provincial typology. From October 2023 onwards, Bank DIY's individual credit ratio (si) routinely surpassed the provincial average (Si) of 0.03, confirming a strong market share that belied the individual credit ratio. In 2012, Bank DIY was positioned within Quadrant I which is characterized by a high credit ratio and lower growth relative to the provincial average. The bank's position in Quadrant II on the chart also improved between 2013 and 2014, highlighting a high proportion of credit and higher growth than the provincial averages. This perfect-picture segment was also seen in 2015, 2018, 2019, 2020, and 2022 where it showcased the effective strategies in credit on how the bank managed to outshine the provincial growth rates in that period. These allude to the bank's ability to grow quickly while balancing a strong proportion of quality credits.

And while in 2016, 2017 and 2021, the bank retreated to Quadrant I (slower growth rates than the provincial average with higher credit share), This means that the bank succeeded in producing a good credit portion of the portfolio split, but not distributed over the growth rates of the provincial level on these years. The movements between Quadrants I and II indicate that Bank DIY's growth was significant during some periods and relatively slow in others. The performance of Bank DIY shows a stable and strong market position with a credit ratio always above the provincial average. Being placed often in Quadrant II means that the bank succeeded in most of the years in creating favorable conditions for growth, revealing that the credit management and strategic capabilities of the bank are effective. For Quadrant I, the presence or absence of an occasional referring hospital indicates opportunities for the bank to further increase growth strategies to have continuous alignment or outpace provincial growth trends. As we celebrate Bank DIY's performance this decade, we can reflect on the resilience and strategic agility that the corporate body exercised within the menacing credit market in Yogyakarta.

Table 20. Klaassen Typology Analysis on Bank DIY (Daerah Istimewa Yogyakarta) in Deposit Area

Year	si	Si	gi	Gi	Quadrant
2012	1.9%	1.1%	26.9%	21.2%	II
2013	1.8%	1.0%	16.8%	6.3%	II
2014	1.8%	1.0%	16.4%	11.9%	II
2015	1.8%	1.0%	6.5%	10.1%	I
2016	1.9%	1.0%	7.7%	9.3%	I
2017	1.5%	1.1%	-9.4%	12.1%	I
2018	1.9%	1.0%	31.7%	5.4%	II
2019	1.9%	1.0%	14.0%	6.5%	II
2020	2.1%	1.1%	23.6%	11.2%	II
2021	1.9%	1.0%	3.6%	6.5%	I
2022	1.9%	1.0%	1.7%	5.9%	I

The performance of Bank DIY deposits from 2012 to 2022, segmented by the Klaassen Typology, that illustrated a changing Quadrant I and II of the deposits ratio and growth from provincial standards. Showing the competitiveness that makes it exist in Quadrant II of Bank DIY in 2012 si = 1.9% > Province ratio of Si = 1.1%. The individual deposit gi was a strong 26.9% vs 21.2% provincial Gi It suggests a solid performance, both a higher deposit ratio and growth. This upward trend persisted in 2013 and 2014, while the bank stayed in Quadrant II. Si was 1.8% and gi was 16.8% in 2013 as compared to the 6.3% growth rate for the province. In 2014, it was 1.8% si with a gi of 16.4%, once more beating the provincial growth of 11.9%. [1] however, the bank faced challenges in 2015 and 2016; in 2015, the si was 1.8% while the gi fell to 6.5%, below the provincial growth which can be analyzed as 10.1%. Again, during 2016, the si was 1.9% and 7.7% gi versus 9.3% provincial growth. For these years, even though the country had a significant deposit ratio, higher growth rates proved to be elusive. In 2017, the bank performance continued the decline as it remained at Quadrant I with a negative gi -9.4% and si of 1.5% compare to province growth of 12.1%. This indicates major headwinds in both deposit market share and growth.

In 2018, however, the bank returned to Quadrant II, and the situation improved markedly. The si was 1.9%, and the gi exploded to 31.7%, well beyond the provincial growth of 5.4%. This robust growth trend persisted into 2019 and 2020. In 2019, si and gi was 1.9% and 14.0%, respectively, which was noticeable greater than the provincial growth of 6.5%. (5) In 2020, eso.gi grew by 2.1% with gi reaching 23.6% on province growth of 11.2%. Except for 2021-22 when the bank returned to Quadrant I, the bank faced renewed challenges in 2021 and 2022, with a 1.9% net interest spread in 2021, as the gi was merely 3.6% vs provincial growth of 6.5%. In 2022, the si remained at 1.9% with a gi of 1.7%, lower than the provincial growth of 5.9% in 2022. So, these are the years in which having efficient strategies to support growth is necessary, while keeping the deposit ratio stable. In general, Bank DIY shows some periods of a strong growth, particularly in the years in Quadrant II (e.g.

2012, 2013, 2014, 2018, 2019, and 2020). These years suggest that strategies to win and grow individual deposits are working. In contrast, the years in Quadrant I—like 2015, 2016, 2017, 2021, and 2022—signified difficulties in maintaining growth. Along with maintaining quality of deposit portfolio, Bank DIY needs to improve their deposit products/services, customer service, promotional campaigns and making deposits aware to the public. By continuously assessing and adjusting itself to market conditions, Bank DIY will ensure it runs as effectively as possible and is continually in a state of ideal conditions.

The classification of Bank Yogyakarta in the Klaassen Typology demonstrates a relatively stable but conservative liquidity policy. Indeed, the bank often lands in Quadrant II for both credit and deposit growth, registering significant market share with bank-wide growth in both sectors above the provincial average. However, there are years in which bank is positioned in Quadrant I meaning years of growth behind comparable region while maintaining a relatively stable credit and deposit share. Such positioning indicates a Low-Risk to Growth Ratio The reliability of this classification is due to the fact that this analysis is able to capture underlying trends in the bank's lending and deposit mobilization. Importantly, the classification does not capture the effects of external economic forces, changes of government policy, or industry-specific shocks that could be affecting the patterns in question.

By comparing global banking with local or regional banking, the research found that Bank Yogyakarta is similar to regional banks like Bank Rakyat in Malaysia, which is stable in its market share with retail and to small businesses banking with low credit risk (Bank Negara Malaysia, 2022). A similar comparison could be made to Japan's Shinkin Banks, which are owned by local banks and focused on a specific community, known for strong deposit mobilization but low credit growth, being more conservative with lending. Similarly to these institutions, Bank Yogyakarta's balance between stability and growth suggests a preference for financial caution rather than market risk-taking. Nevertheless, the balance for Bank Yogyakarta is to ensure that its conservative approach doesn't hinder its capacity to compete effectively against bigger financial institutions or technology-enabled lenders that might provide lesser stringent credit conditions and creative financial solutions.

However, from a policy perspective to support regional economic development, Bank Yogyakarta has the opportunity to optimize its cautious credit growth direction by paying attention to the interest of the business sector. Because the province is so reliant on tourism, education and creative industries, the bank has a chance to shape its lending products toward people who run businesses within those sectors. The policy initiative is possibly moving toward the establishment of specific tourism credit lines, offering working capital loans and the purchase of equipment in the hospitality and service sectors. In addition, the bank may also partner with local universities and research institutes to fund startup incubation programs, given that one of Yogyakarta's prides is its position as an educational city that can trigger innovation-driven economic activities.

Other practical solutions could be reinforcing digital lending platforms to boost MSME access to credit — particularly those expenditures in rural areas that may not always have access to banking services. Although the findings suggest the bank is stable and able to withstand shocks, some of the analysis has limitations that merit further work. First, the study neglects the potential effect of macroeconomic shocks, including inflation, exchange rate fluctuations, or government budget cycles, which can play a substantial role in shaping deposit and credit behaviors.

Regulatory constraints, like Bank Indonesia's capital adequacy requirement and risk-weighted asset regulations, could also limit the bank's capacity to scale up its lending portfolio. These elements would provide a clearer picture of the bank's strategic positioning will give a more holistic view of the bank in the upcoming analyses.

Another limitation was the lack of qualitative information from bank management or policy makers on internal lending practices and risk assessments. Using interviews or surveys in future research to speak with stakeholders would allow for insight into the decision-making process occurring within the bank. Bank Yogyakarta's performance indicates a well a managed, yet conservative in the banking activity which leads to the more stability but probably putting off the potential aggressive growth. The bank already has sustainably fostered a good deposit base and quite stable credit expansion, but could further enhance strategies for lending optimization that support regional economies. Bank Yogyakarta can contribute more to the region by developing their strength of mobilizing deposits by adopting some strategic thingkings like the super macro strategy, the development of a coating strategy, and the initiatives of collaboration for example digital lending solution, and other sectoral financing. Future research must also combine stress-testing models, macroeconomic impact assessments, and qualitative insights to assess the long-term financial trajectory of the bank in a more holistic way.

CONCLUSION

The performance of each of these banks in terms of both credit and deposits is sufficiently extensive to facilitate its analysis using the Klaassen Typology on an annual basis from 2012 to 2022 for Bank Bali, Bank DKI, Bank Jabar-Banten, Bank Jateng, Bank Jatim, and Bank DIY. Bank Bali are typical that have the ratio of crédits individual that forgetted higher than the average of the province where during the period of growthits front the other bank of the province of 1990 but from 1990 until 1998 it is growth generally low. Income development was likewise uneven over the medium term, with some years where this bank was doing more work accumulating deposits than others. The Annual Individual Credit Growth of Bank DKI (31.14%) was consistently better than the Provincial growth rate (28.72%) although its market share in the provincial Individual Credit was smaller, proved that Bank DKI was strategic and agile in the credit management. Bank DKI faced challenges facing deposits, in which deposits increased, while simultaneously experiencing improvements in several areas. According to the data, Bank Jabar-Banten still held a large enough share of the provincial credit market (and regularly surpassed the provincial average for credit growth), which demonstrated that the institution has sound credit growth strategies and good management. Its deposit dynamics had strong growth years and years when they had to adjust strategically. You have data till October 2023, yet you recall that of Bank Jateng in many sectors, above provincial growth rate for credit or deposit, well-managed and hold market share. It had occasional spells of much slower growth. This reflects various strategy and economic conditions behind the analysis of credit and deposit quadrant performance of Bank Jatim. But the recent years were also fairly good as its growth rates were favorable. Bank DIY had an individual credit ratio that was higher than the provincial average, with years of strong growth in the area of credit followed by years of slower growth. Bank DIY had times of strong growth and also faced challenges in the deposit sector.

Bank Bali must have continuous credit growth in order to escape a structured economy, to support this, it is necessary to expand and balance the credit portfolio, as well as risk management system. To win the DKI Jakarta (Bank DKI) credit market share needs to penetrate niche markets and innovative lending solutions and improve customer loyalty program and provide customized deposit products to support its deposit growth. In order not to be left behind, Bank Jabar-Banten must continue to take advantage of its strong market presence by increasing technology investment to accelerate credit processes, expanding credit distribution to unbanked areas, and offering competitive deposit rates and promotional programs in positions where growth experiences a slowdown. Bank Jateng should seek growth that is more aligned with that of the Province, maintain a strong market position, and enhance performance strategies during the slow-down periods. This challenges Bank Jatim's growth strategy which needs to improve performance after fluctuating and also product diversification and operational efficiency efforts in order to maintain performance in order to get a good growth rate. Bank DIY Yogyakarta needs to continue to align or exceed provincial growth trends by enhancing the growth strategies, as well as customer education programs, in credit and deposit portfolios. Focusing on those targeted areas will improve the banking performance in each province and lead to a more consistent growth.

While findings suggest RDBs play a strategic role in regional development, this study has its limitations: by relying on annual data, it may miss short-term changes in reality; furthermore, it fails to capture external macroeconomic shocks and lacks qualitative information from bank executives. There is also no assessment of loan quality, such as default rates, essential for financial stability. The regional focuses of specific RDBs will also make it hard to extrapolate to other financial institutions. Future research should use data of a finer time scale, more sophisticated econometric models, and non-quantitative methods so as to deepen understanding in bank performance dynamics. Exploring external shocks, banking national comparison, and machine learning for predictive studies might all offer fruitful lines of inquiry. A panoptic approach like this will ensure that the policies and stakeholders of RDBs better serve as a bulwark in promoting regional economic growth.

The results of this research add to existing knowledge in both theory and practice by adopting a multidimensional analytical perspective to explore Regional Development Banks (RDBs). On the basis of the theory of institutional embeddedness, RDBs must be understood as organizations developed in and shaped by a regional economic, political, and normative environment, which stresses the importance of bringing financial regulations closer to local economic development priorities. We utilize the Public Entrepreneurship Theory to demonstrate how RDBs become proactive economic agents who do not only serve as financial intermediaries, but rather redefine credit allocation and deposit mobilization processes to foster the region's development. This view lends credence to policy reforms promoting an entrepreneurial approach to RDBs (public-private partnerships, alternative financing mechanisms). In addition, the Adaptive Market Hypothesis explains how RDBs adapt their financial tactics as new technologies, competitive forces, and market conditions emerge. This highlights the importance of RDBs modernising digital banking, fintech partnerships, and financial innovation to stay competitive. On a more practical note, the application of Klaassen Typology offers a systematic approach to measuring RDB market performance in credit and deposit markets that can give bank managers and policymakers insights into growth patterns, market placements and strategic ineffectiveness. Dividing older-style RDBs into classes according to their credit and deposit performance is a useful tool for assessment and benchmarking, and could help direct regulatory authorities in creating more fitted financial policies.

One aspect that must be considered is whether there are any potential biases introduced in the data collection process. Banks may feel pressure to report upper bound figures for credit and deposit growth to look less volatile or more competitive due to social desirability bias, or self-reporting bias could motivate the bank to under- or overreport their financials due to new differences in accounts and classifications that are meant to paint the bank in a more favorable light. In context of Capital Adequacy & Risk Weightage Asset regulations laid by various financial authorities, banks may have to manipulate their performance to match competitor & Industry average which could present a regulatory bias. Second, we recognize the selection bias in the study because it is limited to only six RDB in Java and Bali, with broader generalizability issues to other parts of Indonesia with different economic structures. The analysis does not explicitly control for external macroeconomic shocks which may result in some variation in bank performance to be evident in customer choices. Some would be to use higher frequency data similar to quarterly to understand short term behaviours, also creacting stres tests to measure how much credit can be expanded and include other macroeconomic variables as control. Even more telling, comparative studies against not only national but also global banking benchmarks would help establish a better sense of where RDB performance in financial intermediation stands. Moreover, the use of machine learning and predictive modeling may also help enthusiasts better understand credit risk dynamics and provide policymakers with the evidence needed to create strategies to improve the efficiency of regional banks. More scope and a panoptic view will make RDBs more effective catalysts for sustainable growth of regional economy.

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