

**UNVEILING THE MICRO-LEVEL AND MACRO-LEVEL
IMPLICATIONS OF COMPETITION IN THE COMMERCIAL
BANKING SECTOR: EMPIRICAL INSIGHTS FROM THE BRICS
REGION**

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BY

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CERTIFICATE

The thesis entitled, “**Unveiling the micro-level and macro-level implications of competition in the commercial banking sector: empirical insights from the BRICS region**”, being submitted by **Ms. Bhavya Srivastava** to the Indian **Institute of Technology Delhi** for the award of the degree of Doctor of Philosophy is a record of bonafide research work carried out by her. She has worked under our guidance and supervision and has fulfilled all the requirements for the submission of this thesis, which has attained the standard required for a Ph.D. degree at this institute. The results presented in this thesis have not been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

The banking sector is the most significant constituent of a financial system and the foundation of a nation's economy. Bank failures may destabilise various crucial macroeconomic indicators. By disrupting the payment system and interbank lending market, the effects of a shock to one bank can spread to other banks through contagion. Policymakers, therefore, strive to foster a banking system that effectively integrates stability and economic efficiency. Well-functioning financial intermediaries positively influence economic growth. Researchers, policymakers, and regulators have concentrated their efforts on identifying factors contributing to bank soundness. The level of competition in the banking sector is often cited as an important factor driving the efficiency and development of the banking sector. The commonly perceived view that greater competition (lower market power) improves consumer welfare through lower prices and higher quantities drives policymakers' decision to foster banking sector competition. As a crucial external monitoring mechanism, competition is believed to play a pivotal role in fostering bank stability, bank efficiency, economic growth, and the realization of broader financial inclusion goals.

Nevertheless, the commonly held belief that competition is inevitably beneficial is not entirely true, owing to the prevalence of market failures that distort the nature and consequences of competition. The 1997 Asian Financial Crisis and the 2008 Global Financial Crisis (GFC) have shed doubts on the positive economic consequences of competition, thus questioning the dark side of competition (Soedarmono et al., 2011; Li, 2019). It is argued that the 2008 GFC resulted from excessive competition and regulatory inadequacies that induced the U.S. banks to make imprudent decisions in the face of the erosion of market power and reduced margins (Danisman and Demirel, 2019). Further, bank regulations seek to reduce moral hazards and limit excessive risk-taking.

Although regulatory changes are intended to manipulate the behaviour of banks, inconclusive results remain regarding the impact of regulations on the incentives for risk-taking and the efficiency of banks in a competitive environment.

Against this background, the current research seeks to investigate the level of competition as well as the economic consequences of banking sector competition. The existing scholarly literature on the competition-bank stability relationship focuses on developed nations. This dearth of research creates a knowledge vacuum regarding the micro and macro consequences of banking sector competition in emerging economies. Consequently, the generalizability of findings to developing countries with distinct institutional environments may be challenging. The present study, thus, focuses on the banking sectors of the BRICS nations, which are an important group of prominent emerging nations, including Brazil, Russia, India, China, and South Africa, where a notable dearth of comprehensive empirical studies persists, notwithstanding their increasing significance and prominence in the international financial sphere. This thesis is, thus, a pioneering attempt to investigate, at the micro-level, the influence of competition on bank stability, risk-taking, and economic (both cost and profit) efficiency across the BRICS nations. Further, it is perhaps the first attempt to integrate competition, regulatory framework, and bank performance into a single framework for the BRICS nations. The study attempts to identify the banking regulations that promote bank stability and efficiency in a competitive market environment. To this end, several estimation techniques are employed, including the two-step system generalized method of moments (GMM), a traditional two-step time-decay technique proposed by Battese and Coelli (1992), and the single-step pairwise difference estimator (PDE) proposed by Belotti and Ilardi (2018). Further, employing a pooled mean group autoregressive distributed lag approach, the study provides novel findings on the role of banking sector competition in influencing two important

macroeconomic goals for the BRICS region: economic growth and financial inclusion, both in the short and long term. With the understanding that competition, a measure of a bank's conduct, and concentration, a measure of bank-market structure are distinct concepts, the present research inspired by the new empirical industrial organization literature assesses the degree of banking sector competition using a non-structural metric, the Lerner index. The Lerner index does not assume that concentrated banking systems lack competition inherently and is a preferred proxy due to its stability with respect to changes over time, solid theoretical foundation, and suitability for disaggregated research (Lerner, 1934; Beck et al., 2013; Danisman and Demirel, 2019). The current study evaluates two variants of the Lerner index.

Several significant findings are highlighted. There is a moderate level of competition and a low level of concentration in the BRICS banking industry. Although the banking sector in South Africa has a relatively high degree of market concentration, there is still a healthy level of competition, indicating a monopolistic competition environment. The findings, therefore, recommend against using competition and concentration measures interchangeably. Regarding the relationship between competition and bank stability or risk-taking, it is observed that as competition increases (or market power decreases), banks in BRICS countries are more likely to experience a higher risk of bankruptcy. Large banks encounter more severe fluctuations in their non-interest income growth in environments characterized by intense competition, as opposed to smaller banks. Further, higher capitalisation levels function as a crucial disciplinary mechanism, aiding in the alleviation of the detrimental consequences of heightened competition on the stability and risk-taking of banks operating in the BRICS banking sector. In relation to the competition-efficiency nexus, findings highlight that increasing competition in the BRICS banking market may be detrimental to the bank's efforts to minimize expenses and maximise profits. Further, the influence of government

safety nets on large banks encourages them to engage in excessively risky activities in response to greater competition, which substantially reduces their profit efficiency, in contrast to small banks. Higher capitalisation mitigates the adverse consequences of heightened competition on bank efficiency. Exploring the interconnections between competition, regulations, and bank performance, it is observed that stringency in capital requirements and the presence of deposit insurance are useful regulatory tools in mitigating the detrimental influence of increasing competition on bank stability and risk-taking in the BRICS nations. Further, higher restrictions on bank activities and greater market discipline requirements serve as an effective regulatory tool in mitigating the detrimental influence of competition on bank stability, risk-taking, and efficiency. In contrast, higher official supervisory power tends to magnify the negative influence of competition on bank stability, risk-taking, and efficiency, perhaps pointing to challenges such as limited expertise and resource constraints among supervisors in emerging nations. From a macro-level perspective, the findings highlight that increasing competition leads to a decline in economic growth and financial inclusion in the BRICS countries in the long run.

The study has important implications for bank managers and policymakers. From the managerial perspective, it is recommended that bank managers enhance their risk management practices, contemplate strengthening capital buffers, and engage in strategic collaborations or partnerships with alternative financial institutions or fintech entities to take advantage of technology improvements and improve operational efficiency. Further, the findings serve as a warning to banking regulators who presume that increasing competition is an indisputable path to bank stability and bank efficiency at the micro-level, and economic growth and financial inclusion at the macro-level. Regulators should strive for a well-balanced approach that fosters competition while addressing its potential downsides. As banks face increasing competition, policy reforms

emphasizing the promotion of a healthy credit culture and enhancing prudential oversight are required. Regulators must promote the implementation of strong corporate governance practices within the banking sector of BRICS nations and prioritise the improvement of supervisory mechanisms and stress testing frameworks to appropriately evaluate banks' ability to withstand increasing competition. Regulators may contemplate adopting different regulatory strategies depending on the size and capitalisation levels of banks. Finally, regulators should acknowledge that competition policies can destabilise the banking industry if not adequately matched with the appropriate regulatory framework. The research emphasizes that competition may not eliminate discretionary behavior and management laxity in a situation with asymmetric information and weak institutions. The results, therefore, highlight the need for a robust institutional framework, better risk management culture, and a robust supervision mechanism in realizing potential advantages from banking sector competition. As banks face increasing competition, regulators may enhance the performance of the BRICS banks through the implementation of stringent capital requirements, imposing more significant restrictions on bank activities, strengthening market discipline requirements, and introducing deposit insurance schemes. Nevertheless, they must consider implementing a more equitable approach to oversight. To foster financial inclusion, it is recommended that regulators provide incentives and support to small and medium-sized banks, enabling them to compete in the market.

सार

बैंकिंग क्षेत्र वित्तीय प्रणाली का सबसे महत्वपूर्ण घटक और देश की अर्थव्यवस्था की नींव है। बैंक की विफलताएँ विभिन्न महत्वपूर्ण व्यापक आर्थिक संकेतकों को अस्थिर कर सकती हैं। भुगतान प्रणाली और अंतरबैंक ऋण बाजार को बाधित करने से, एक बैंक को लगे झटके का प्रभाव संक्रमण के माध्यम से दूसरे बैंकों में फैल सकता है। इसलिए, नीति निर्माता एक ऐसी बैंकिंग प्रणाली को बढ़ावा देने का प्रयास करते हैं जो स्थिरता और आर्थिक दक्षता को प्रभावी ढंग से एकीकृत करती है। अच्छी तरह से काम करने वाले वित्तीय मध्यस्थ आर्थिक विकास को सकारात्मक रूप से प्रभावित करते हैं। शोधकर्ताओं, नीति निर्माताओं और नियामकों ने अपने प्रयासों को बैंक की सुदृढ़ता में योगदान देने वाले कारकों की पहचान करने पर केंद्रित किया है। बैंकिंग क्षेत्र में प्रतिस्पर्धा के स्तर को अक्सर बैंकिंग क्षेत्र की दक्षता और विकास को चलाने वाले एक महत्वपूर्ण कारक के रूप में उद्धृत किया जाता है। आम तौर पर माना जाने वाला विचार है कि अधिक प्रतिस्पर्धा (कम बाजार शक्ति) कम कीमतों और उच्च मात्रा के माध्यम से उपभोक्ता कल्याण में सुधार करती है, जो बैंकिंग क्षेत्र की प्रतिस्पर्धा को बढ़ावा देने के लिए नीति निर्माताओं के निर्णय को प्रेरित करती है। माना जाता है कि एक महत्वपूर्ण बाहरी निगरानी तंत्र के रूप में, प्रतिस्पर्धा बैंक स्थिरता, बैंक दक्षता, आर्थिक विकास और व्यापक वित्तीय समावेशन लक्ष्यों की प्राप्ति को बढ़ावा देने में महत्वपूर्ण भूमिका निभाती है।

पिछले दो दशकों में, संरचनात्मक विकास ने वाणिज्यिक बैंकिंग के प्रतिस्पर्धी परिदृश्य में क्रांति ला दी है। फिर भी, आमतौर पर मानी जाने वाली धारणा कि प्रतिस्पर्धा अनिवार्य रूप से फायदेमंद है, पूरी तरह से सच नहीं है, क्योंकि बाजार की विफलताओं की व्यापकता के कारण प्रतिस्पर्धा की प्रकृति और परिणाम विकृत हो जाते हैं। 1997 के एशियाई वित्तीय संकट और 2008 के वैश्विक वित्तीय संकट (जीएफसी) ने प्रतिस्पर्धा के सकारात्मक आर्थिक परिणामों पर संदेह को दूर कर दिया है, इस प्रकार प्रतिस्पर्धा के अंधेरे पक्ष पर सवाल

उठाया है (सोएडमोनो एट अल।, 2011; ली, 2019)। यह तर्क दिया जाता है कि 2008 जीएफसी अत्यधिक प्रतिस्पर्धा और नियामक अपर्याप्तताओं के परिणामस्वरूप हुआ, जिसने अमेरिकी बैंकों को बाजार की शक्ति के क्षरण और कम मार्जिन (डेनिसमैन और डेमिरल, 2019) के सामने अविवेकपूर्ण निर्णय लेने के लिए प्रेरित किया। इसके अलावा, बैंक नियमन नैतिक खतरों को कम करने और अत्यधिक जोखिम लेने को सीमित करने का प्रयास करते हैं। हालाँकि विनियामक परिवर्तनों का उद्देश्य बैंकों के व्यवहार में हेरफेर करना है, जोखिम लेने के प्रोत्साहन और प्रतिस्पर्धी माहौल में बैंकों की दक्षता पर विनियमों के प्रभाव के संबंध में अनिर्णायक परिणाम बने हुए हैं।

इस पृष्ठभूमि के खिलाफ, वर्तमान शोध प्रतिस्पर्धा के स्तर के साथ-साथ बैंकिंग क्षेत्र की प्रतिस्पर्धा के आर्थिक परिणामों की जांच करना चाहता है। प्रतिस्पर्धा-बैंक स्थिरता संबंध पर मौजूदा विद्वान साहित्य विकसित देशों पर केंद्रित है। अनुसंधान की यह कमी उभरती अर्थव्यवस्थाओं के लिए बैंकिंग क्षेत्र की प्रतिस्पर्धा के सूक्ष्म और वृहद परिणामों के बारे में ज्ञान का शून्य पैदा करती है। नतीजतन, अलग-अलग संस्थागत वातावरण वाले विकासशील देशों के लिए निष्कर्षों की सामान्यीकरण चुनौतीपूर्ण हो सकता है। इस प्रकार, वर्तमान अध्ययन ब्रिक्स देशों के बैंकिंग क्षेत्रों पर केंद्रित है, जो ब्राजील, रूस, भारत, चीन और दक्षिण अफ्रीका सहित प्रमुख उभरते देशों का एक महत्वपूर्ण समूह है, जहां व्यापक अनुभवजन्य अध्ययनों की उल्लेखनीय कमी बनी हुई है। अंतर्राष्ट्रीय वित्तीय क्षेत्र में उनका बढ़ता महत्व और प्रमुखता। इस प्रकार, वर्तमान शोध ब्रिक्स देशों में बैंक स्थिरता और आर्थिक (लागत और लाभ दोनों) दक्षता पर प्रतिस्पर्धा के प्रभाव की सूक्ष्म स्तर पर जांच करने का एक अग्रणी प्रयास है। इसके अलावा, यह ब्रिक्स देशों के लिए प्रतिस्पर्धा, नियामक ढांचे और बैंक प्रदर्शन को एक ही ढांचे में एकीकृत करने का पहला प्रयास है। अध्ययन उन बैंकिंग नियमों की पहचान करने का प्रयास करता है जो प्रतिस्पर्धी बाजार माहौल में बैंक स्थिरता और दक्षता को बढ़ावा देते हैं। इस उद्देश्य के लिए, कई अनुमान तकनीकों को नियोजित किया जाता है, जिसमें क्षणों की दो-चरण प्रणाली सामान्यीकृत

विधि, बैटेस और कोएली (1992) द्वारा प्रस्तावित एक पारंपरिक दो-चरण समय-क्षय तकनीक और एकल-चरण जोड़ीदार अंतर अनुमानक (पीडीई) शामिल हैं। बेलोटी और इलार्डी (2018) द्वारा प्रस्तावित। अंत में, पूल्ड मीन ग्रुप ऑटोरेग्रेसिव डिस्ट्रीब्यूटेड लैग दृष्टिकोण को नियोजित करते हुए, अध्ययन ब्रिक्स क्षेत्र के लिए दो महत्वपूर्ण व्यापक आर्थिक लक्ष्यों को प्रभावित करने में बैंकिंग क्षेत्र की प्रतिस्पर्धा की भूमिका पर उपन्यास निष्कर्ष प्रदान करता है: आर्थिक विकास और वित्तीय समावेशन, लघु और दीर्घकालिक दोनों में। इस समझ के साथ कि प्रतिस्पर्धा, बैंक के आचरण का एक माप, और एकाग्रता, बैंक-बाजार संरचना का एक माप अलग अवधारणाएं हैं, नए अनुभवजन्य औद्योगिक संगठन साहित्य से प्रेरित वर्तमान शोध एक गैर-संरचनात्मक का उपयोग करके बैंकिंग क्षेत्र की प्रतिस्पर्धा की डिग्री का आकलन करता है। मीट्रिक, लर्नर सूचकांक। लर्नर इंडेक्स यह नहीं मानता है कि संकेंद्रित बैंकिंग प्रणालियों में स्वाभाविक रूप से प्रतिस्पर्धा का अभाव है और समय के साथ परिवर्तनों के संबंध में इसकी स्थिरता, ठोस सैद्धांतिक आधार और अलग-अलग शोध के लिए उपयुक्तता के कारण यह एक पसंदीदा प्रॉक्सी है (लर्नर, 1934)। वर्तमान अध्ययन लर्नर इंडेक्स के दो प्रकारों का मूल्यांकन करता है।

कई महत्वपूर्ण निष्कर्षों पर प्रकाश डाला गया है। ब्रिक्स देशों के बैंकिंग उद्योग में मध्यम स्तर की प्रतिस्पर्धा और कम केंद्रित संरचना है। हालाँकि दक्षिण अफ्रीका में बैंकिंग क्षेत्र में अपेक्षाकृत उच्च स्तर का बाज़ार संकेंद्रण है, फिर भी वहाँ प्रतिस्पर्धा का एक स्वस्थ स्तर है, जो एकाधिकारवादी प्रतिस्पर्धा के माहौल का संकेत देता है। इसलिए, निष्कर्ष प्रतिस्पर्धा और एकाग्रता उपायों को एक दूसरे के स्थान पर उपयोग करने के खिलाफ सलाह देते हैं। प्रतिस्पर्धा और बैंक स्थिरता या जोखिम लेने के बीच संबंधों के संबंध में, यह देखा गया है कि जैसे-जैसे प्रतिस्पर्धा बढ़ती है (या बाजार की शक्ति घटती है), ब्रिक्स देशों में बैंकों को दिवालियापन का अधिक जोखिम का अनुभव होने की अधिक संभावना है। छोटे बैंकों के विपरीत, तीव्र प्रतिस्पर्धा वाले वातावरण में बड़े बैंकों को अपनी गैर-ब्याज आय वृद्धि में अधिक गंभीर उतार-चढ़ाव का सामना करना पड़ता है। इसके

अलावा, उच्च पूंजीकरण स्तर एक महत्वपूर्ण अनुशासनात्मक तंत्र के रूप में कार्य करता है, जो ब्रिक्स बैंकिंग क्षेत्र में कार्यरत बैंकों की स्थिरता पर बढ़ती प्रतिस्पर्धा के हानिकारक परिणामों को कम करने में सहायता करता है। प्रतिस्पर्धा-दक्षता संबंध के संबंध में, निष्कर्ष इस बात पर प्रकाश डालते हैं कि ब्रिक्स बैंकिंग बाजार में बढ़ती प्रतिस्पर्धा बैंक के खर्चों को कम करने और मुनाफे को अधिकतम करने के प्रयासों के लिए हानिकारक हो सकती है। इसके अलावा, बड़े बैंकों पर सरकारी सुरक्षा जाल का प्रभाव उन्हें अधिक प्रतिस्पर्धा के जवाब में अत्यधिक जोखिम भरी गतिविधियों में शामिल होने के लिए प्रोत्साहित करता है, जो छोटे बैंकों के विपरीत, उनकी लाभ दक्षता को काफी कम कर देता है। उच्च पूंजीकरण एक महत्वपूर्ण अनुशासनात्मक तंत्र के रूप में भी कार्य करता है जो बैंक दक्षता पर बढ़ती प्रतिस्पर्धा के प्रतिकूल परिणामों को कम करता है। प्रतिस्पर्धा, विनियमों और बैंक प्रदर्शन के बीच अंतर्संबंधों की खोज करते हुए, यह देखा गया है कि पूंजी आवश्यकताओं में कठोरता और जमा बीमा की उपस्थिति ब्रिक्स देशों में बैंक स्थिरता और जोखिम लेने पर बढ़ती प्रतिस्पर्धा के हानिकारक प्रभाव को कम करने में उपयोगी नियामक उपकरण हैं। इसके अलावा, बैंक गतिविधियों पर उच्च प्रतिबंध और अधिक बाजार अनुशासन आवश्यकताएं बैंक स्थिरता और दक्षता दोनों पर प्रतिस्पर्धा के हानिकारक प्रभाव को कम करने में एक प्रभावी नियामक उपकरण के रूप में काम करती हैं। इसके विपरीत, उच्च आधिकारिक पर्यवेक्षी शक्ति बैंक स्थिरता और दक्षता पर प्रतिस्पर्धा के नकारात्मक प्रभाव को बढ़ाती है, जो शायद उभरते देशों में पर्यवेक्षकों के बीच सीमित विशेषज्ञता और संसाधन की कमी जैसी चुनौतियों की ओर इशारा करती है। व्यापक स्तर के परिप्रेक्ष्य से, निष्कर्ष इस बात पर प्रकाश डालते हैं कि बढ़ती प्रतिस्पर्धा के कारण लंबे समय में ब्रिक्स देशों में आर्थिक विकास और वित्तीय समावेशन में गिरावट आती है।

अध्ययन का बैंक प्रबंधकों और नीति निर्माताओं के लिए महत्वपूर्ण प्रभाव है। प्रबंधकीय दृष्टिकोण से, यह अनुशांसा की जाती है कि बैंक प्रबंधक अपने जोखिम प्रबंधन प्रथाओं को बढ़ाएं, पूंजी बफ़र्स को मजबूत करने

पर विचार करें, और प्रौद्योगिकी सुधारों का लाभ उठाने और परिचालन दक्षता में सुधार करने के लिए वैकल्पिक वित्तीय संस्थानों या फिनटेक संस्थाओं के साथ रणनीतिक सहयोग या साझेदारी में संलग्न हों। इसके अलावा, निष्कर्ष बैंकिंग नियामकों के लिए एक चेतावनी के रूप में काम करते हैं जो मानते हैं कि बढ़ती प्रतिस्पर्धा सूक्ष्म स्तर पर बैंक स्थिरता और बैंक दक्षता और वृहद स्तर पर आर्थिक विकास और वित्तीय समावेशन के लिए एक निर्विवाद मार्ग है। नियामकों को एक संतुलित दृष्टिकोण के लिए प्रयास करना चाहिए जो प्रतिस्पर्धा को बढ़ावा देने के साथ-साथ इसकी संभावित कमियों को भी दूर करे। जैसे-जैसे बैंकों को बढ़ती प्रतिस्पर्धा का सामना करना पड़ रहा है, स्वस्थ ऋण संस्कृति को बढ़ावा देने और विवेकपूर्ण निगरानी बढ़ाने पर जोर देने वाले नीतिगत सुधारों की आवश्यकता है। नियामकों को ब्रिक्स देशों के बैंकिंग क्षेत्र के भीतर मजबूत कॉर्पोरेट प्रशासन प्रथाओं के कार्यान्वयन को बढ़ावा देना चाहिए और बढ़ती प्रतिस्पर्धा का सामना करने के लिए बैंकों की क्षमता का उचित मूल्यांकन करने के लिए पर्यवेक्षी तंत्र और तनाव परीक्षण ढांचे में सुधार को प्राथमिकता देनी चाहिए। नियामक बैंकों के आकार और पूंजीकरण स्तर के आधार पर विभिन्न नियामक रणनीतियों को अपनाने पर विचार कर सकते हैं। अंत में, नियामकों को यह स्वीकार करना चाहिए कि यदि उचित नियामक ढांचे के साथ प्रतिस्पर्धा नीतियां पर्याप्त रूप से मेल नहीं खाती हैं तो वे बैंकिंग उद्योग को अस्थिर कर सकती हैं। शोध इस बात पर जोर देता है कि असममित जानकारी और कमजोर संस्थानों की स्थिति में प्रतिस्पर्धा विवेकाधीन व्यवहार और प्रबंधन की शिथिलता को खत्म नहीं कर सकती है। इसलिए, परिणाम बैंकिंग क्षेत्र की प्रतिस्पर्धा से संभावित लाभों को साकार करने के लिए एक मजबूत संस्थागत ढांचे, बेहतर जोखिम प्रबंधन संस्कृति और एक मजबूत पर्यवेक्षण तंत्र की आवश्यकता पर प्रकाश डालते हैं। जैसे-जैसे बैंकों को बढ़ती प्रतिस्पर्धा का सामना करना पड़ता है, नियामक कठोर पूंजी आवश्यकताओं के कार्यान्वयन, बैंक गतिविधियों पर अधिक महत्वपूर्ण प्रतिबंध लगाने, बाजार अनुशासन आवश्यकताओं को मजबूत करने और जमा बीमा योजनाओं को शुरू करने के माध्यम से ब्रिक्स बैंकों के प्रदर्शन को बढ़ा सकते

हैं। फिर भी, उन्हें निगरानी के लिए अधिक न्यायसंगत दृष्टिकोण लागू करने पर विचार करना चाहिए। वित्तीय समावेशन को बढ़ावा देने के लिए, यह अनुशंसा की जाती है कि नियामक छोटे और मध्यम आकार के बैंकों को प्रोत्साहन और सहायता प्रदान करें, जिससे वे बाजार में प्रतिस्पर्धा करने में सक्षम हो सकें।

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LIST OF ABBREVIATIONS

2SLS	Two-stage least squares
ABC	Agricultural Bank of China
AFC	Asian financial crisis
AIC	Akaike information criterion
AMC	Asset management company
AQR	Asset quality review
ARDL	Auto regressive distributed lag
ASEAN-5	Association of Southeast Asian Nations
AUM	Assets under management
BBB	Banks Board Bureau
BC92	Battese and Coelli (1992)
BCB	Banco Central do Brasil
BCBS	Basel Committee on Banking Supervision
BOC	Bank of China
BOCOM	Bank of Communications
BRICS	Brazil, Russia, India, China, and South Africa
CAMELS	Capital adequacy, asset quality, management efficiency, earnings ability, liquidity, sensitivity to market risk
CBR	Central Bank of Russia
CBRC	China Banking Regulatory Commission
CCB	China Construction Bank
CCB	City commercial bank
CCB	Capital conservation buffer
CEE	Central and Eastern European
CRR	Cash reserve ratio
DEA	Data envelopment analysis
EU	European Union
FAPM	Central Bank of the Russian Federation
FMI	Financial market infrastructure
FRM	Fractional regression model
FSAP	Financial Sector Assessment Program
FSCA	Financial Sector Conduct Authority
GCC	Gulf Cooperation Council
GDI	Global Development Index
GDP	Gross domestic product
GEPF	Government Employees Pension Fund
GFC	Global financial crisis
GFDD	Global Financial Development Database
GMM	Generalized method of moments
GNPL	Gross non-performing loan
HDI	Human Development Index
HHI	Herfindahl-Hirschman index

HPI	Human Product Index
ICBC	Industrial and Commercial Bank of China
IFS	Indian financial system
IO	Industrial organization
IPOs	Initial public offers
IRDAI	Insurance Regulatory and Development Authority of India
IV	Instrumental variable
JSCB	Joint-stock commercial bank
MC	Marginal cost
MENA	Middle Eastern and North African
ML	Maximum likelihood
NBFC	Non-bank finance company
NEIO	New empirical industrial organization
NII	Net interest income
NIM	Net interest margin
NPI	Negative performance indicator
NPL	Non-performing loan
NSCA	Non-standard credit assets
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary least squares
PBC	People's Bank of China
PBT	Profits before tax
PDE	Pairwise difference estimator
RBI	Reserve Bank of India
ROA	Return on assets
SARB	South African Reserve Bank
SCP	Structure-conduct-performance
SEBI	Securities and Exchange Board of India
SFA	Stochastic frontier analysis
SLR	Statutory liquidity ratio
SME	Small and medium-sized enterprise
SOCB	State-owned commercial bank
SOE	State-owned enterprise
SSA	Sub-Saharan African
TBTF	Too big to fail
TC	Total cost
TFE	True fixed effects
UK	United Kingdom
UNDP	United Nations Development Programme
UPI	Unified Payments Interface

US	United States
VECM	Vector error correction model
WDI	World Development Indicators
WMP	Wealth management product
WTO	World Trade Organization