

International Journal of **Finance**

(IJF)

**INVESTIGATING BANK MARKET CONCENTRATION IN THE
SOUTHERN REGION OF THE UNITED STATES:
IMPLICATIONS FOR BANKING STRUCTURE**



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INVESTIGATING BANK MARKET CONCENTRATION IN THE SOUTHERN REGION OF THE UNITED STATES: IMPLICATIONS FOR BANKING STRUCTURE

Musa Essayyad

McNeese State University, Lake Charles, LA 70609, USA

Email: messayyad@mcneese.edu

Banamber Mishra

McNeese State University, Lake Charles, LA 70609, USA

Email: bmishra@mcneese.edu

Omar Al-Titi

King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia

titi@kfupm.edu.sa

Prakriti Karki

McNeese State University, Lake Charles, LA 70609, USA

Email: msu-pkarki5@mcneese.edu

Abstract

The objective of this paper is to determine whether commercial banks in the Southern Region of the United States are highly concentrated and hence less competitive in offering favorable lending terms to borrowers and subsequently hindering economic development in their region. The paper employs concentration measures to estimate the concentration degrees of commercial banks in the Southern Region of the United States in 2019. Data for deposits and loans plus leases of banks in 12 states in the South were collected for the year 2019 from the following sources: <http://www.ofi.state.la.us/> and <http://www.ibanknet.com/>. Empirical results show that only commercial bank markets in Kentucky and Florida have perfect competition. The commercial banks in other ten states are either uncompetitive or less competitive, thereby creating adverse economic development environments for prospective corporate and individual borrowers in those states, and consequently impairing the profitability, stability and risk structure of the banking industry in most states covered in the Southern Region. The paper provides a value-added literature contribution to US banking market structure. The next step would be up to state and federal bank regulatory bodies to address the issue in those less competitive states and their potential on economic development in that region.

Keywords: Bank structure, bank competitiveness, concentration ratios.

JEL: G2, L1, L2, L4.

1. Introduction

US banking sector is regulated and governed by the Federal Reserve System. It was founded by Congress to oversee the monetary policy of the nation using traditional and innovative tools necessary to insure stable economy, provide price stability, moderate long-term interest rates. The commercial banking sector is expected to play an important role in innovative financing to corporate and individual borrowers to help stabilize the economy. The banking system facilitates funds transfer from surplus unit to deficit units in an efficient manner, according to the Federal Reserve Bank of San Francisco. An efficient banking system ensures the product and services being provided by banks would be available to its borrowers at a very competitive rate. In the absence of competition, the banks may overcharge borrowers increasing the cost of capital, and dampening economic expansion and GDP growth (Naym., 2018).

Bank concentration is important to the financial industry competition within the context of industrial organizations issue. Beck, Dimirguc-Kunt, and Levine (2006) argues that public policy debates are always ongoing about the relationship between bank concentration, bank competition and banking system fragility. Public forums are initiated to gauge the impact of concentration as much as is related to prevailing banking crises and the need to dig deep into its roots.

Gajure and Pradhan (2012) point out that banking industry has changed significantly over the past few decades as a result of liberalization, deregulation, advancement in information technology and globalization, which subsequently impacted banking concentration and hence lending terms to borrowers. They argue further that "The financial sector liberalization resulted into entry of new banks in the market; deregulation widened the scope of activities and delimited the banking activities; advancement in technology resulted into new ways and tools to perform banking activities; and globalization added more pressure on competitiveness of individual banks. Moreover, the banks, nowadays, are entering into non-banking markets and other financial institutions are entering into the banking markets that have traditionally been served by the banks. These factors have changed the structure and market behavior of the banking industry".

There are two different views on the impact of commercial bank concentration on economic development, GDP growth and capital appreciation. The first view is represented by Pagano (1993), Shaffer (1998) and Cotorelli and Gambera (2001) who argue that "conventional wisdom suggests that any departure from perfect competition in the credit market introduces inefficiencies that would harm firms' access to credit thus hindering growth."

Cotorelli and Gambera (2001) have shown that higher concentration in the commercial banking industry determines a general potential loss that may dampen economic growth. However, they provide evidence that "bank concentration promotes the growth of those industrial sectors that are more in need of external finance by facilitating credit access, not necessarily at better terms, to younger firms". The second view on concentration is articulated by Cohen (1967), Sylla (1969), Mayer (1990), and Petersen and Rajan (1995) who support a positive role of concentrated bank markets for economic development growth.

The concentration debate touches always on bank mergers and efficiency. Meyer (1998) argues that the historical increased number of commercial bank mergers during the last four decades has greatly reduced the number of US commercial banks, pushing for higher concentration ratios. Hanweck and Shull (1999) have similar findings that bank mergers transactions has

generated less competition. Within the context of corporate consolidations, mergers have neutral effect on the benefits of diversification.

This paper utilizes the concentration measures CR3, CR4, CR5, CR8, and Thiel's concentration ratio based on entropy measure (CRE) as well as Hirshman-Herfindahl Index (HHI or H^2) to estimate the concentration degrees of US banks in the South in 2019 to determine whether those banks are highly concentrated and hence less competitive in offering better lending terms to borrowers and subsequently hindering economic development in the region.

The rest of this paper is made up of the following sections: Section 2 reviews the literature, section 3 discusses the methodology and data with emphasis on different concentration measures and list 12 southern states which will be covered in this research. Section 4 presents and discusses the empirical results and highlights the implications for prospective borrowers, and section 5 concludes the paper.

2. Review of Literature

Beck, Dimirguc-Kunt, and Levine (2006) use data on 69 countries from 1980 to 1997. They find that countries with high concentrated banking markets are protected to certain extent against banking and financial crises. Their findings were robust despite difference in bank regulatory policies, macroeconomic conditions, and other monetary factors among so many countries. Moreover, the 69 countries data covering the study indicates that regulatory policies and institutions that dampen banks competition are associated with greater banking system fragility.

Using Hirschman-Herfindahl Index, Gajure and Pradhan (2014) investigate bank concentration in Nepal. They use a panel of 15-25 banks for the period 2001- 2009. In addition, they use Panzar-Rosse approach to test Nepal's market competition. The results show low concentration in the Nepalese banking industry. Furthermore, results based on Panzar-Rosse approach do not substantiate the hypotheses for monopoly and perfect competition indicating monopolistic market behaviors among the Nepalese banks. Considering the banking market in Nepal, the results show that the market for interest-based income is reported to be more competitive than that of the market for fee-based income. As far as the size effect, the results show that bank has positive size effect, and equity capitalization has negative impact on revenue generation.

Using one-step Generalized Method of Moments (GMM), Young (2015) tests the impacts of risk and competition on profitability in the Chinese banking industry over the period 2003–2011. The results do not show any relationship between competition and risk on bank profitability “while it is found that Chinese bank profitability is affected by taxation, overhead cost, labor productivity and inflation”.

Pasiouras and Kosmidou (2006) examine the concentration case of 15 European Union countries. The findings show that profitability of banks is affected by both bank's characteristics and financial market structure. “All the variables, with the exception of concentration in the case of domestic banks profits, are significant although their impact and relation with profits is not always the same for domestic and foreign banks”.

Mohammed, Ismail, and Muhammad (2015), analyze the relationship between concentration and competition in Islamic and non-Islamic banking markets in Malaysia. In addition, they analyze the relationships between bank concentrations and specific factors and other control variables. Structural approach is used to analyze the evolution in banking market concentration in both banking streams. “The findings support the structure-conduct-performance (SCP) paradigm, where different concentration ratios show a decreasing trend over the study period, which reflect greater degree of competition in the Malaysian dual banking system”.

Owen and Pereira (2018) find that the higher the deposit and loan accounts the higher the banking industry concentration but provided that the market power of banks is limited.

Berger, Klapper, and Turk-Arsis (2017) suggest that banks with a higher degree of market power have less overall risk exposure but they are prone to higher loan portfolio risk. However, such risk may be offset in part by higher equity capital ratios.

Grippa and Gornicka (2016) find that commercial bank concentration risk has an impact on the degree of stability of individual banks and the whole banking structure. Lending to large U.S. corporations contributed to financial problems of several U.S. banks in the early 2000s. A collapse in the housing market in Scandinavian countries in the 1990s that was linked to highly concentrated mortgage portfolios led to failure of commercial banks and later pushed toward worldwide financial crisis of 2007/08.

3. Methodology and Data

To discern the appropriate methodology employed in this research paper, this section reviews the academic methodology employed to address the determinants of bank concentration ratios and the mathematical calculations of those ratios. The scope of the paper, however, will place emphasis on using the actual bank concentration ratios to determine their competitiveness and their impact on the lending market in the Southern region of the United States. This section sheds light also on HHI and the Role of US Department of Justice and Federal Trade Commission.

Table 1 summarizes different methodologies used in measuring concentration and competition in some notable empirical studies.

Table 1. Past methodologies used in measuring concentration and competition of banks

First part	Using profitability as dependent variable, and concentration as independent variable			
Paper	Model	Dependent Variable	Independent Variables	Method
Dinesh Prasad Gajure and Radhe Shyam Pradhan2012." - "Concentration and competition	$\ln \text{REVN}_{it} = a + b_1 \ln \text{INTC}_{it} + b_2 \ln \text{LC}_{it} + b_3 \ln \text{OTHC}_{it} + b_4 \ln \text{LOAN}_{it} + b_5 \ln \text{TA}_{it} +$	REVN it is Interest revenue divided by assets for bank i at time t,	INTC _{it} is the total interest expenses/ total deposit, LC _{it} is staff expenses to assets ratio, OTHC _{it} is the total other	The Panzar-Rosse method on bank competition in banking markets.

<p>in Nepalese banking”</p>	$b6lnEQUY_{it} + e$		<p>operating expenses to total assets ratio, $LOAN_{it}$ is loans to assets ratio, TA_{it} is assets, $EQUY_{it}$ is equity/asset ratio.</p>	
<p>- Yong Tan, 2015 - “The impacts of risk and competition on bank profitability in China”.</p>	$l_{it} = C + \alpha_1 l_{it-1} + \alpha_2 \sum_{j=1}^k X_{jit} + \alpha_3 \sum_{l=1}^L X_{lit} + \alpha_4 \sum_{m=1}^m X_{mt} + \alpha_5 JSCB_{sit} + \alpha_6 CCBS_{it} + \alpha_7 vit + \epsilon_{it}$	<p>There are four profitability indicators considered in the study</p> <p>Return on Assets (ROA),</p> <p>Return on Equity (ROE),</p> <p>Net Interest Margin (NIM)</p> <p>and Profit Margin (PBT)</p>	<p>Bank-specific variables,</p> <p>Stability</p> <p>inefficiency</p> <p>Bank size</p> <p>Liquidity</p> <p>Taxation</p> <p>Capitalization</p> <p>Overhead cost</p> <p>Diversification</p> <p>Labor productivity</p> <p>Industry characteristics</p> <p>Herfindahl index</p> <p>Banking sector development</p> <p>Stock market development</p> <p>Macroeconomics</p> <p>Inflation</p> <p>GDP growth rate</p> <p>Joint-stock commercial banks</p> <p>City commercial banks</p>	<p>By Athanasoglou et al. (2008)</p>

<p>“Fotios Pasiouras and Kyriaki Kosmidou, 2006” - “Factors influencing the profitability of domestic and foreign commercial banks in the European Union”.</p>	<p>$zit = bot + bit(EQASit + COSTit + LOFUNDit + SIZEit) + bjt(INFjt + GDPGRjt + CONCjt + ASSGDPjt + MACPASSjt + MACGDPjt)$</p>	<p>The return on average total assets of the bank</p>	<p>Measure of capital adequacy Cost to income ratio loans to customers and Short term funding Size Inflation GDP Concentration measure And some other ratios</p>	
<p>Second part</p>		<p>Using concentration as dependent variable</p>		
<p>Paper</p>	<p>Model</p>	<p>Dependent Variable</p>	<p>Independent Variables</p>	<p>Method</p>
<p>Nafisah Mohammed *Abdul Ghafar Ismail, and Junaina Muhammad, 2014 “Evidence On Market Concentration In Malaysian Dual Banking System”.</p>	<p>$HHI_{it} = \beta_0 + \beta_1 ROE + \beta_2 ASSETS + \beta_3 NUM + \beta_4 ZSCORE + \beta_5 DUM + \varepsilon_{it}$</p>	<p>The Herfindahl - Hirschman Index (HHI)</p>	<p>Profitability is measured using logarithm of return on equity (ROE) Bank size is measured by logarithm of total assets (ASSET) Logarithm of number of banks (NUM) is used as a proxy for competition Z-score for Stability</p>	<p>Model proposed by Tushaj (2010), Casu and Giradone (2006) and Bikker and Haaf (2002b) as shown below.</p>

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Unlike concentration ratios including HHI, interest spreads at commercial banks could be utilized as reasonable measure of the concentration structure and efficiency of the banking industry in a region of a country. Levine (1997) use commercial bank interest spread between the net return to savings and the gross return to investment as a proxy for the interest margins.

In their econometric analysis, Demirguc-Kunt and Huizinga (1999) employ regression tools to find the national relationship between the determinants of interest spreads and bank profitability. Bank leverage, size, ownership, type of business, taxation, macroeconomic indicators, and financial structure, and legal indexes are the independent determinants incorporated in the regression model.

Demirguc-Kunt and Huizinga (1999) utilize the *ex post* difference between bank actual interest revenues and their actual interest expenses to measure bank efficiency. They justified the utilization of this approach by arguing that “the *ex post* spread is a more useful measure because it controls for the fact that banks with high-yield, risky credits are likely to face more defaults.”

Mathematical Definition of Concentration Measures

Rather than using econometrics, we will use generally accepted concentration ratios to measure the structure of commercial banks in the Southern Region of the United States. Concentration ratio refers to the percentage of market share taken up by the largest firms. It could be a 3 firm concentration ratio (market share of 3 biggest) or a 4 firm concentration ratio or 5 firm concentration ratio. Concentration ratios are used to determine the market structure and competitiveness of the market.

The following concentration ratios were used (Essayad, 1990):

CR₃ Measure: This concentration ratio represents the percentage of the total amount of the deposits or loans of the three largest commercial banks in the market. This ratio is expressed as follows:

$$CR3 = \sum_{i=1}^3 P_i \sum_{i=1}^n P_i \quad (1)$$

Where P_i is the total amount of deposits or loans of the i th single large commercial bank, and ‘ n ’ is the total number of commercial banks in a certain banking market or banking industry.

CR₄ Measure: This concentration ratio represents the percentage of the total amount of the deposits or loans of the four largest commercial banks in the market. This ratio is expressed as follows:

$$CR4 = \sum_{i=1}^4 P_i \sum_{i=1}^n P_i \quad (2)$$

CR5 Measure: This concentration ratio represents the percentage of the total amount of the deposits or loans of the five largest commercial banks in the market. This ratio is expressed as follows:

$$CR5 = \frac{\sum_{i=1}^5 P_i}{\sum_{i=1}^n P_i} \quad (3)$$

CR8 Measure: This concentration ratio represents the percentage of the total amount of the deposits or loans of the eight largest commercial banks in the market. This ratio is expressed as follows:

$$CR8 = \frac{\sum_{i=1}^8 P_i}{\sum_{i=1}^n P_i} \quad (4)$$

CRE Measure: This is a modification of Thiel's entropy measure, i.e.

$$CRE = 1 - \left[\frac{\sum_{i=1}^n \psi_i \ln(1/\psi_i)}{n} \right] \quad (5)$$

where $\psi_i = P_i / \sum_{i=1}^n P_i$ and \ln is the natural log.

Hirshman-Herfindahl Index (HHI or H²): This index is calculated by summing up the squares of individual bank's market share in deposits or loans of commercial banks. It is expressed as follows:

$$HHI = \sum_{i=1}^n \left[\left(P_i / \sum_{i=1}^n P_i \right)^2 \right] \quad (6)$$

HHI and the Role of US Department of Justice and Federal Trade Commission

Prior to 2020, the US Department of Justice and Federal Trade Commission provided guidelines for horizontal merger and considered having an HHI increase of above 1800 is not competitive and would set the stage for investigation and litigation to enforce its anti-trust laws.

According to the 2020 Horizontal Merger Guidelines, the US Agencies generally classify markets into three types:

- “Unconcentrated Markets: HHI below 1500”
- “Moderately Concentrated Markets: HHI between 1500 and 2500”

- “Highly Concentrated Markets: HHI above 2500”

“The Agencies employ the following general standards for the relevant markets they have defined:

- “Small Change in Concentration: Mergers involving an increase in the HHI of less than 100 points are unlikely to have adverse competitive effects and ordinarily require no further analysis”.
- “Unconcentrated Markets: Mergers resulting in unconcentrated markets are unlikely to have adverse competitive effects and ordinarily require no further analysis”.
- “Moderately Concentrated Markets: Mergers resulting in moderately concentrated markets that involve an increase in the HHI of more than 100 points potentially raise significant competitive concerns and often warrant scrutiny”.
- “Highly Concentrated Markets: Mergers resulting in highly concentrated markets that involve an increase in the HHI of between 100 points and 200 points potentially raise significant competitive concerns and often warrant scrutiny. Mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power.”

Criticism has been aired by economists. They claim although HHI is a good measure of competitiveness in certain market, but it is too simplistic as it fails to take into account the complexities of various markets.

Interpretation of Concentration Ratios

Commercial banks concentration ratio indicates whether a banking industry is made up of few powerful large banks dominating the landscape, affecting the lending and borrowing rates, and subsequently affecting growth of the economy. The three-bank, four-bank, five-bank, or eight-bank concentration ratio consists of the market share of the three, four, five, or eight largest banks in the banking industry, expressed as a percentage. Any concentration ratio takes on a value between zero and 100. The higher the ratio the lower is the competitiveness of the banking industry. A perfect competitive market has a concentration ratio that is less than 50%.

The general rule of thumb works as follows: “An oligopoly (the monopoly of the few) exists when the top five firms in the market account for more than 60% of total market sales. If the concentration ratio of one bank is equal to 100%, this indicates that the banking industry is monopolistic in structure”.

Research Data. Data for commercial banks in different states in the Southern Region of the U.S. has been collected, and concentration ratios and HHI index have been utilized to determine the bank structure and competitiveness. Table 2 lists the specific Southern states which are covered in this research paper.

Table 2. List of Southern States Covered

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1. Alabama (AL)
 2. Arkansas (AR)
 3. Florida (FL)
 4. Georgia (GA)
 5. Kentucky (KY)
 6. Louisiana (LA)
 7. Mississippi (MS)
 8. North Carolina (NC)
 9. South Carolina (SC)
 10. Tennessee (TN)
 11. Virginia (VA)
 12. West Virginia (WV)
-

4. Empirical Results and Implications

High concentration ratio implies that few banks within the industry has a greater control in the market. With the higher concentration ratio, there is greater scope for collusion and abuse of monopoly power. In this kind of situation, the government may need to use a regulator to check whether monopoly power isn't being abused and measure the adverse impact on the regional economy.

The results from the study are illustrated in the tables 3 and 4 below. Table 3 shows the bank concentration ratios in the Southern region of the United States based on deposits for the year 2019. The findings show that for the 3-bank (CR3) and 4-bank (CR4) ratios, the averages of Southern banks are 60% and 67%, respectively, which are somewhat high, meaning that banks in the South are generally less competitive. However, banking industry in Florida (FL) and Kentucky (KY) stands out as being perfectly competitive at 28% and 35% for CR3 and CR4 for Florida, and at 24% and 29% in Kentucky. The implications for such results would impact positively the borrowers in those two states, with an expected favorable lending rates charged by their banks. For other states, the results show that Alabama (AL), Arkansas (AR), Georgia (GA), Louisiana (LA), Mississippi (MS), North Carolina (NC), South Carolina (SC), Tennessee (TN), Virginia (VA), West Virginia (WV) are less competitive based on CR3, CR4, CR5, CR8, and CRE, but they are competitive based on HHI concentration measure.

Using 5-bank ratio (CR5) and 8-bank ratio (CR8), the results show that the banking industry in both Kentucky and Florida states is robust in terms of their low concentration ratios, indicating perfectly competitive banking industry. The positive economic implications will have far reaching consequences on employment in those two states. Again the banking industry in both

Alabama and North Carolina are not competitive, based on CR5 and CR8 ratios, which is not good news from prospective corporate or individual borrowers to fund startups or expansion. All the other states indicate that they are also not competitive.

When using the HHI ratio, which is powerful ratio, the results show that the average concentration ratio is 26%, indicating that the banking industry in all states are very perfectly competitive, which contradicts the findings by CR3, CR4, CR5, and CR8. The seemingly contradictory results are attributed to mathematical calculation of those ratios compared to HHI which counts all banks (not only the largest 3, 4, 5, or 8 banks) in the same industry.

When using CRE concentration ratio, the results show that the average concentration ratio is 94% for all 12 Southern states contained in the study. The results contradicts the other CR3, CR4, CR5, CR8 and HHI ratios.

Based on loans and leases, Table 4 shows that bank concentration ratios are not significantly different from the results shown in Table 3 which is based on deposits. The results here substantiate the results generated in Table 3.

Table 3. Bank Concentration Ratios in the Southern Region of the United States Based on Bank Deposits, 2019

State	AL	AR	FL	GA	KY	LA	MS	NC	SC	TN	VA	WV	AVG
CR3	0.85	0.65	0.28	0.69	0.24	0.58	0.59	0.95	0.62	0.57	0.56	0.62	0.60
CR4	0.86	0.81	0.35	0.70	0.29	0.61	0.71	0.96	0.66	0.59	0.61	0.66	0.65
CR5	0.87	0.82	0.40	0.73	0.31	0.65	0.74	0.97	0.69	0.62	0.65	0.71	0.68
CR8	0.89	0.87	0.53	0.75	0.43	0.73	0.82	0.98	0.77	0.66	0.72	0.74	0.74
HHI	0.60	0.17	0.05	0.21	0.03	0.23	0.15	1.00	0.21	0.16	0.12	0.24	0.26
CRE	0.97	0.96	0.91	0.94	0.91	0.92	0.94	0.99	0.93	0.92	0.92	0.93	0.94

Table 4. Bank Concentration Ratios in the Southern Region of the United States Based on Bank Loans and Leases, 2019

State	AL	AR	FL	GA	KY	LA	MS	NC	SC	TN	VA	WV	AVG
CR3	0.86	0.66	0.24	0.73	0.28	0.61	0.61	0.95	0.68	0.59	0.58	0.66	0.62

CR4	0.87	0.82	0.31	0.75	0.33	0.64	0.74	0.96	0.71	0.62	0.62	0.70	0.67
CR5	0.89	0.86	0.43	0.77	0.38	0.67	0.80	0.97	0.75	0.65	0.67	0.73	0.71
CR8	0.91	0.88	0.53	0.79	0.45	0.76	0.84	0.98	0.81	0.69	0.74	0.77	0.76
HHI	0.62	0.18	0.05	0.25	0.04	0.25	0.16	0.75	0.25	0.17	0.12	0.00	0.24
CRE	0.97	0.96	0.91	0.94	0.91	0.93	0.94	0.99	0.94	0.93	0.93	0.94	0.94

Implications: The results in general, with the exception of those related to Kentucky and Florida, support the findings that there are 10 southern states which lack competitiveness in the lending market. Those results have external and internal implications. Externally, we argued in favor of having lower than 50% to 60% ratios that would boost banking activities (lending and borrowing) that would subsequently boost state economies and regional development. For internal bank's financial stability, the concentration ratios can provide insight into the bank's financial stability and hence its risk management issues. Ben Ali, Intissar, and Zeitun (2018) analyzed the relationship between banking concentration and financial stability for many developed and developing countries. They find that concentration has a positive impact on financial stability *via* profitability channel and a negative impact through the interest rate effect. Furthermore they report that "when considering the level of development across countries, the results support the existence of a stabilizing effect of concentration on financial stability and the absence of a destabilizing interest channel for developing countries. Interestingly, our results also indicate that concentration has a direct and indirect effect on financial stability during crisis periods, but no direct effect on financial stability during normal periods."

Berger, Klapper and Turk-Ariss (2009) argue that under the "competition-fragility" view, more bank competition has negative impact on commercial banking market power. Consequently, profit margin declines and bank book values declines too.

5. Conclusions

This paper uses concentration ratios CR3, CR4, CR5, CR8, HHI, and CRE to determine the organization structure of commercial banks in 12 states of the Southern region of the United States. The data is based on deposits and loans and leases of 2019. The objective is to determine whether those banks are highly concentrated and hence less competitive in offering better lending terms to borrowers and subsequently hindering economic development in the region. Empirical results shows that only banks in Kentucky and Florida have perfect competition. The commercial banks in the other 10 states are either uncompetitive or less competitive, thereby creating adverse economic development environments for those states, and affects the profitability, stability and risk structure of the banking industry.

We argued in favor of having lower than 50% to 60% ratios that would boost banking activities

(lending and borrowing) that would subsequently boost state economies and regional development. For internal bank's financial stability, the concentration ratios can provide insight into the bank's financial stability and hence its risk management issues. Some researchers analyzed the relationship between banking concentration and financial stability for many developed and developing countries. They find that concentration has a positive impact on financial stability via profitability channel and a negative impact through the interest rate effect. In addition they find that "when considering the level of development across countries, the results support the existence of a stabilizing effect of concentration on financial stability and the absence of a destabilizing interest channel for developing countries. Interestingly, our results also indicate that concentration has a direct and indirect effect on financial stability during crisis periods, but no direct effect on financial stability during normal periods." Some other research argues that under the "competition-fragility" view, more bank competition has negative impact on commercial banking market power. Consequently, profit margin declines and bank book values decline too. State and Federal banking regulatory bodies should look into these issues and take a corrective action.

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