RESEARCH ARTICLE

Applied Econometrics and International Development

Volume 26, Issue 1 (2026)

Modelling Market Power in the SADC Banking Industry

Sanderson Abel[1,*], Syden Mishi[2] and Siyasanga Dingela[2]

[1]*Nelson Mandela University, South Africa &Botswana University of Agriculture and Natural resources, Botswana;* [2]*Nelson Mandela University, South Africa*

CORRESPONDING AUTHOR

*Address correspondence to this author at the Nelson Mandela University, South Africa &Botswana University of Agriculture and Natural resources, Botswana

Received: June 05, 2026 **Accepted: June 08, 2026** **Published: October 29, 2026**

ABSTRACT:

The study of market power in the banking industry is important because of the vital role banks play and the potential impact these dynamics may have on the health economies. In this endeavour the objective of the study is to understand the evolution of market power and its driver among banks in the Southern Africa Development Community (SADC) region. The study uses a two-step process based on the Lerner Index approach and Generalised methods of moments. The results reveal that the average Lerner index is 0.5602, suggesting that the market structure of the banking industry is monopolistic. This means that banks have some market power hence ability to influence market pricing decisions. The regression analysis established that profitability and capital asset ratio positively influence market power in the banking industry. On the other hand, credit risk and inflation have a negative effect on market power.

Keywords: Market Power, Lerner Index, GMM, Tobit, SADC.

1. INTRODUCTION

Market power, which has attracted attention from scholars (see for example Chaffai and Coccorese, 2023; Carletti, Leonello, & Marquez, 2024), is the ability of a business or group of businesses to significantly shape their policies—such as prices, product quality, and investments in innovation—without facing serious competition constraints from rivals, clients, or consumers. It can also mean the ability of firms to influence market outcomes by exerting control over prices, output, and other competitive factors – a central concept in understanding the dynamics of various industries (Carletti, Leonello, and Marquez, 2024). A firm with market power, whether as a buyer or a seller, can affect market outcomes like volume of output, quality, pricing, and contractual terms. Alternatively, it is the capacity of businesses to exert control over prices, output, and other competitive factors to affect market outcomes, thus ultimately economic performance (Idun, Aboagye & Bokpin, 2020).A business with significant market power can control its profit margin by manipulating the market price (Mi, Zhang, Han, & Shen, 2024.) . It may also be able to raise barriers for prospective new competitors. A company's brand reputation, exogenous regulation, economies of scale, network effects, intellectual property, and other factors that set it apart from competitors can all contribute to its market power (Ofori-Sasu, Agbloyor, Kumankoma & Abor, 2023). As can entry barriers resulting from prior investments. How market power is used in the market is atopic of competition law. For instance, a business might use its hegemonic status to unfairly displace rivals, which is problematic from the perspective of competition.

Understanding market power in banking industry is significant due to the vital role banks play as middlemen between depositors and businesses, as well as the potential impact these dynamics may have on the health of the economy (Igan *et al.*, 2021). Market power in the banking sector affects credit availability and stability significantly. In the financial

sector, market power is essential for determining the availability of credit, impacting financial stability, and influencing the implementation of monetary policy. while with the emergence of new rivals like FinTech and BigTech, it becomes a crucial topic in the digital economy (Berg *et al.*, 2022; Gambacorta *et al.*, 2022; Carlson *et al.*, 2022; Wang *et al.*, 2022; Drechsler *et al.*, 2023).

Several studies have reviewed market power in the banking sector (Berger and Hannan, 1998; Pagano 1993; Guzman 2000; Jimenez *et al.* 2010; Idun, *et al.* 2020; Minh, et. al., 2020; Chaffai, & Coccorese, 2023; Carletti, et al, 2024). It has been demonstrated that monopoly power encourages managers to pursue goals other than maximizing profits, such as allocating resources to the maintenance of market power, and helps businesses extract monopoly rents by allowing them to price their goods above competitors' prices or through unrestricted costs. Managers are less motivated to maximize operating efficiency when market power is exercised because the pressure from competitors is lessened. Additionally, market power weakens market discipline and eliminates the signals that typically compel management adjustments. As a result, managers are kept in roles where they have no competitive advantage. According to Pagano (1993), market power enables banks to charge higher interest rates on loans and compensate savers with lower rates on deposits. This lowers the equilibrium amounts of funds that are available for credit, which in turn lowers the potential for economies to grow. In a similar vein, Guzman (2000) contends that because market power necessitates extensive monitoring, it negatively impacts capital accumulation and produces inefficient results. Guzman (2000) goes on to say that moral hazard causes monopoly power to raise lending rates, which raises the risk of default. This then diverts resources that could be used for lending, forcing monopolistic banks to bear greater costs associated with monitoring entrepreneurs. According to Berger's (2009) theory, banks with more market power are less risky. Jimenez *et al.* (2010) provide support for the claim that a bank's credit risk decreases as its market power increases.

The current study seeks to evaluate the determinants of market power among banks in the SSA. A review has demonstrated the abundance of research on market power dynamics in banking markets, but it also highlights the dearth of research on the explanatory elements of market power. This question is particularly important because, from the regulator's perspective, it is not very useful to know just how competitive a market is. It will not be feasible to implement the reforms required to lessen the social inefficiencies connected to market power's existence until the sources of this power have been uncovered.

2. LITERATURE REVIEW

Market power for banking industry has received a lot of attention among scholars for some time (Minh, 2020; Fernandez de Guevara *et al.*, 2005; Church and Ware, 2000). Some of the studies have highlighted that the concept of market power is synonymous with monopoly power in the banking sector (OECD, 2002).Market power is the capacity of an institution to raise and sustain its market price above the point at which it outperforms its competitors (OECD, 2002). Fernandez de Guevara *et al.* (2005) argue that a bank's market power is a measure of its competitiveness and the degree to which it can set prices for goods and services that are higher than its marginal costs. Broadly, the term market power can be described as the ability of banks to control the market and set prices for goods and services that will benefit them. In competitive environments banks have no power to control the market and set prices for goods while they assume a higher degree of monopoly in a market with less competition. Silva and Lucinda, (2017) contends that market power is probably greater for incumbent banks as compared to new entrants.

The assessment of market power is a significant topic in the banking sector, primarily due to divergent views regarding the influence that bank competition has on the stability of the financial system (Coccorese, 2014). One side of the debate is the "competition-fragility" view, which contends that because competition lowers banks' profit margins and market power, it encourages banks to take on more risk, undermining the stability of the overall financial system (Mishi & Khumalo, 2019). Therefore, some market power held by banks would be advantageous. Conversely, the alternative "competition-stability" view maintains that increased market power forces banks to raise interest rates, which in turn makes it more difficult for borrowers to return loans, exacerbating moral hazard and adverse selection issues (Coccorese, 2014).

The factors that determine market power in the banking sector are also the subject of several empirical investigations. Issa *et al.* (2021) evaluated how bank competition changed and converged for MENA nations between 2005 and 2014. The annual value of the combined Lerner index, which spans the sample period and shows a declining trend for all macro-regions, is 0.410 to 0.633. The other estimated measures, which also support this, point to increased banking competition, which is linked to the region's 20 years of financial reforms and growing economic integration. Miah *et al.* (2020) investigate how switching costs affect the market power and stability of conventional and Islamic banks for the years 2000–2016. They discover that customers of Islamic banks have lower switching costs than those of conventional banks, and that higher switching costs are associated with greater market power but lower financial stability. Overall, the Lerner index is higher for Islamic banks and exhibits a declining trend, particularly in the second half of the sample period. Spierdijka and Zaourasa (2018) used a scale-corrected and uncorrected Lerner Index to analyse the market power of the US banking industry for the years 2000–2014. When comparing the scale-adjusted Lerner Index (for 60–85% of the bank years) to the uncorrected index, their results indicated that US banks had a sizable advantage in the market. Mirzaei (2019) used the Lerner Index to examine how the global financial crisis affected market power at different UAE banks. The findings indicated that the sample banks had lost market share during the global financial crisis. Further variations in the outcomes were observed based on attributes of the bank level, including capitalization and efficiency.

Rakshit and Bardam (2019) used a sample of 70 commercial banks from 1996 to 2016 to determine the level of bank market power in India. They use the Lerner index, the adjusted Lerner index, and the Boone indicator to estimate each bank's market power to determine the level of market power. Com-

paring public sector banks in India to private and foreign sector banks, empirical results show that public sector banks engage in a comparatively higher level of bank competition. Overall findings, however, continue to bolster the notion that the Indian banking sector is generally competitive. According to their findings, concentration measures have little to no impact on bank competition, in contrast to the structure-conduct-performance paradigm, which contends that a concentrated banking system reduces competition. Instead, contestability metrics are crucial to the determination of bank competition.Applyingthe Panzar-Rosse model, Divino (2017) evaluated the degree of market power in the Brazilian banking industry. The sample spans the months of July 1994 through February 2012 and includes 62 banks. In contrast to previous research, the seasonally adjusted model without scale variables shows that banks as a whole and certain subgroups are not competitive in the market, according to the H-statistics. Public banks have intermediary market power, which allows for various forms of political interference in their management decisions, while large banks have significant market power.

Das and Kumbhakar (2016) use a unified theoretical framework based on the primal approach to investigate market power and efficiency in Indian banking. Based on empirical findings, large banks have significant market power and can impose higher prices, especially on advances, because of their high level of concentration. Bank size has a major influence on the rising trend of market power. Due to their ability to impose higher prices or their cost advantages, large banks have more market power. The large banks have been able to sustain a higher level of efficiency thanks to lower marginal costs and higher returns from the so-called efficient structure. Lastly, increased profit was a direct result of increased market power. Fischer and Hempel (2015) examined the banking industry's competitive behaviour. The New Empirical Industrial Organization was applied to a large microdata set that included nearly all German banks between 1993 and 2001. We calculate Lerner indices using an empirical cost approach while accounting for the individual effects of each bank. Our analysis indicates that during the sample, alternative market power decreased, or competitive pressures increased. German banks currently hold a moderate but sizable amount of market power. Additionally, the study discovered that regional structural and economic factors were largely responsible for cross-regional variations in average Lerner indices. Even though local bank concentration has a big influence, local demand-side variables appear to have even more economic significance.

Polemis (2015) calculates the market power for the MENA region's banking industry from 1997 to 2012. The primary supporting data shows that monopolistic competition is the dominant regime in these industries, and the Lerner index has a mean value of 0.324 with a range of 0.021 to 0.634. Anzoategui *et al.* (2012) also look at the competition among Russian banks. According to their findings, state-owned and bigger banks have more market power than other banks. Furthermore, the findings show that bank concentration has a negative impact on Russian bank competition, while financial and economic development.Fungacova *et al.* (2010) assess the competitive environment in the Russian banking sector from 2001 to 2007 using the Lerner index. The findings indicate a slight improvement in bank competition in the Russian over the studied period. Additionally, the results imply that the market power of Russian banks is strongly correlated with bank size, risk, and market concentration. Using the Lerner index and the H-statistic, Anzoategui *et al.* (2010) investigate the level of bank competition in the MENA region from 1994 to 2008 and conclude that it remained stagnant during that time, making it less competitive than in other regions. The total Lerner index is equal to 0.320. Simpasa (2010) measures market power held by Zambian banks during the post-reform era by estimating a bank-specific and time-varying Lerner Index, which is used to assess the intensity of competition. By utilizing an oligopolistic behaviour model, he demonstrates how Zambian banks used their market power to determine prices. Furthermore, a large portion of the banks' use of their market power was explained by regulatory intensity, market concentration, efficiency performance, and diversity in revenue sources. Nonetheless, the findings suggest that unclear macroeconomic policies and credit risk moderated the banks' ability to use their market dominance. The analysis's policy lesson is that, in order to promote contestability in the banking sector, regulatory bodies should keep up their policy of allowing more players into the financial sector.

Fernandez de Guevara and Maudos (2005) examine the market power of the Spanish banking sector from 1986 to 2002 (2007). The findings indicate that since the mid-1990s, market power has increased. Furthermore, the results imply that bank market power in Spain is highly correlated with bank size, efficiency, and specification. Similarly, Fernandez de Guevara *et al.* (2005) analyse the evolution of market power in the primary banking sector of the European Union. Their findings indicate that while bank size, risk, efficiency, and economic cycle are strongly correlated with European banks' market power, there is no increase in the level of competition within the EU.

There have been several attempts in the past to compare and analyse the market power of Islamic and conventional banks, with differing degrees of success. Weill (2011), for instance, provided evidence that Islamic banks are not as strong in the market as traditional banks. However, Kabir and Worthington (2017) found that Islamic banks have greater market power. Similar findings were reported by Louhichi *et al.* (2020) in South Asian and Middle Eastern contexts. In the Indonesian context, Risfandy *et al.* (2020) also discovered a consistent outcome.

Moreover, Aboagye and Bokpin (2020) examine the effect of bank market power on economic growth in Africa. They employed a dynamic generalized method of moments (GMM) model to achieve the above objective. The results show that banks with market power in Africa induce economic growth. Also, institutional quality improvement causes positive economic growth and improves the degree with which banks with market power influence economic growth. In West Africa, banks with market power induce economic growth, but the less competitive nature in the banking environment of the other sub-regions discourages economic growth.

An analysis of data from the Global Financial Development Database (GFDD)(2017) depicts that the Lerner Index average around 30% over the past decade to 2013. For instance, for a sample of 44 African countries, the Lerner Index

was 30.5% in 2004. This figure increased marginally to 31.19 in 2013, showing a rising level of bargaining power of banks in Africa. Bempong and Sy (2015) estimated that in 2014, the Lerner Index for African was 30% of which North Africa, 35%; East Africa, 34%; West Africa 16% and Southern Africa 33%. Development in North Africa drive the apparent less-competitive nature of the banking system. Bempong and Su (2016) attributed this to higher foreign entry restriction in the Middle-East. The figures show that the banking system in West Africa is more competitive than the system in other sub-regions and appears to drive the competitiveness of the banking environment in Africa. The deregulation processes in the sub-region allow pan-African banks to penetrate the West African Sub-region. Other regions in the world appear more competitive than Africa. In their report, Bempong *et al.* (2016) also showed that the Lerner Index associated with the banking systems in Latin America and the Caribbean, High-Income Countries and Low-Income countries were 27%, 20% and 22% respectively.

3. METHODS AND MATERIALS

The New Empirical Industrial Organization (NEIO) methodology for determining market power is the foundation of the study. The goal of NEIO techniques is to evaluate a firm's competitive behaviour directly. The Boone indicator, the Panzar and Rosse model, and Lerner's Index are the most often used performance metrics.

The study uses a two-step process based on the Lerner Index approach. To determine the degree of market power in the banking sector, the study first computes the Lerner index. The Lerner Index can be used to determine how bank pricing practices have changed over time. Given that the goal of the study is to ascertain the banks' market power in the SSA region between 2010 and 2022, the Lerner index approach is appropriate.

Comparing the market power of banks during the study period is made feasible by the bank-specific and time-varying Lerner Index (Pruteanu-Podpiera and Weill and Shobert 2008). The model is relevant to this study because it enables market power to be measured independently for the various banking markets (local banks vs. foreign banks). The method's lack of strict data requirements makes it convenient, especially considering the study's short duration. The ability of the model to separate different market structures is another one of its strengths. In contrast to the Panzar-Rosse model of measuring competition, the Lerner Index is independent of the banking sector's equilibrium.

The following is the cost function, which was obtained following the works of Pruteanu-Podpiera, Weill, and Shobert (2008).

$$ln\left[\frac{TC}{B_p}\right] = \alpha_0 + \alpha_1 \ln Q + \frac{1}{2}\alpha_2(\ln Q)^2 + \alpha_3 ln\left(\frac{L_p}{B_p}\right) + \alpha_4 ln\left(\frac{C_p}{B_p}\right) + \alpha_5 ln\left(\frac{L_p}{B_p}\right) ln\left(\frac{C_p}{w_3}\right) + \frac{1}{2}\alpha_6\left[\ln\left(\frac{L_p}{B_p}\right)\right]^2 + \frac{1}{2}\alpha_7\left[\ln\left(\frac{C_p}{B_p}\right)\right]^2 + \alpha_8 \ln y\, ln\left(\frac{L_p}{B_p}\right) + \alpha_9 \ln Q\, ln\left(\frac{C_p}{B_p}\right) + \varepsilon \quad (1)$$

The model assumes the cost function has one output (Q) $representing\ loans$ and three input prices (L_p = cost of labour, C_p = cost of physical capital, B_p = cost of borrowed funds.). A translog cost function represents the cost function (TC). By normalizing total costs and input prices by one input price, the assumption of linear homogeneity in input prices is imposed.

Equation (2) computes the marginal cost by utilizing the estimated coefficients of the cost function in equation 1. The derivative of the logarithms of the total cost to output and the total cost over output multiply the marginal cost.

$$MC = \frac{TC}{Q}\left[\alpha_1 + \alpha_2 \ln Q + \alpha_8 \ln\left(\frac{L_p}{B_p}\right) + \alpha_9 ln\left(\frac{C_p}{B_p}\right)\right] \quad (2)$$

Bank level marginal cost (mc_{it}) and corresponding output price, measured as total interest income divided by total bank assets (P_{it}) are in turn used to calculate the bank specific time varying Lerner Index.

$$Lerner_{\ it} = \frac{[P_{it} - MC_{it}]}{P_{it}} \quad (3)$$

$$Lerner\ index_{it} = \frac{Price_{it} - Marginal\ Cost_{it}}{Price_{it}} \quad (4)$$

Equation (3 and 4) shows that the Lerner index is the ratio of the difference the between corresponding output price and its marginal costs divided by its price. The Lerner index typically ranges between 0 and 1. When there is perfect competition, it will be equal to zero and when there is a pure monopoly, it will equal one. When it is less than 0, banks behave in a non-optimizing manner. According to Coccorese (2014), Lerner's index may be negative because banks may decide to engage in predatory behaviour or because of outside causes like the economic crisis, which might cause prices to fall below marginal costs and result in negative mark-ups.

In the second stage, the study assesses the factors driving the market power of the banks through relating the Lerner index to both macroeconomic factors and bank specific factors using panel regression method. The macroeconomic variables of interest are economic growth and price stability measured by the inflation rate. The bank specific factors drawn for the study are profitability measured by return on assets, capital asset ratio, credit risk measured by non-performing loans and bank size.

The empirical model is expressed as:

$$LNDX_t = \alpha + \alpha_1 LI_{it-1} + \beta_1 ROA_{it} + \beta_2 CAR_{it} + \beta_3 CR_{it} + \beta_4 SIZE_{it} + \beta_5 GDPG_{it} + \beta_6 INF_{it} + \varepsilon_{it} \quad (5)$$

According to Arellano (2002), the best method for estimating the heterogeneity and endogeneity issue is the GMM approach. As a result, estimates of the parameters generated by this estimator may be dependent on endogeneity and heterogeneity issues. The obtained coefficients have better precision due to the large number of instruments used. The dependent variables' lag values are used by the GMM estimator. Endogeneity may influence additional regressors used as tools to address endogeneity problems. It enables the system to take into consideration the potential impact of endogeneity on the additional regressors. One variable that may have an impact on

Table 1. Variables and explanation.

Variable	Discussion
Return on Assets (ROA)	An institution that enhances profitability can reduce costs, increase turnover and productivity, and plan for change and growth. This improves its market power as it can bargain on the market.
Capital Asset ratio (CAR)	Capital asset ratio is expected to have a positive relationship with market power. The demand for higher capital requirements by the authorities forces banks to raise margins to build up aenough revenue buffer necessary for maintaining solvency.
Credit Risk (CRQ)	Market power is frequently linked to a decreased likelihood of bank failure. This suggests that banks with a monopoly on the market are less likely to experience non-performing loan losses, which lowers their credit risk.
Bank Size (SIZ)	Bank size and market power have a positive relationship that is consistent with both the idea of monopolistic competition and the Cournot model for oligopolistic collusion.
GDP growth (GDP)	Economic growth has a positive impact on market power/competition during a recession, mark-ups tend to decrease and increase in boom times.
Inflation (INF)	Inflation is an indicator of macroeconomic uncertainty and is expected to have a positive relationship with market power. Higher rate of inflation is expected to influence banks to increase prices of bank products whilst cutting down on operating costs to remain profitable. -

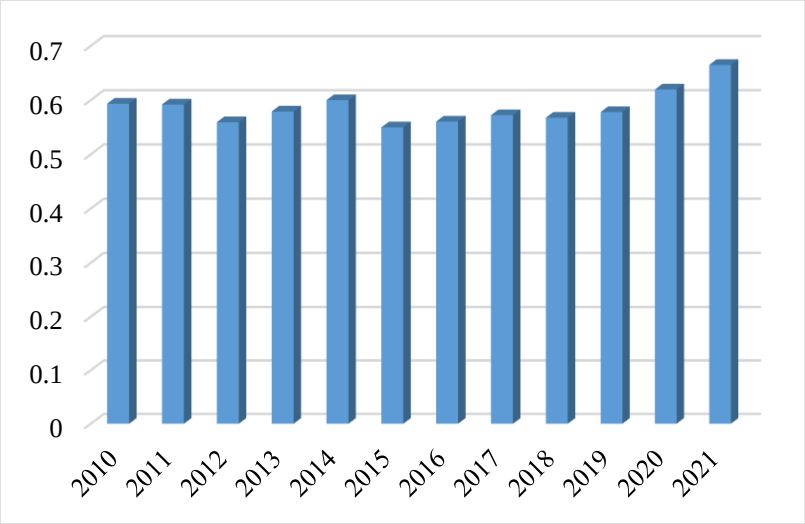

Fig. (1). Evolution of lerner index in SADC.

both kinds of regressors is endogeneity (Bond 2002). As suggested by Bond (2002), we employ lags in the endogenous variable values as instruments. All the regressors, except for those deemed exogenous, are instrumented in our method. Delays can also be found using the Arellano-Bond autocorrelation (AR) and over-identifying restriction tests. If the null hypothesis of the Hansen test is rejected, the instruments fail the orthogonality limitations. Only in the absence of idiosyncratic errors is the moment criteria accurate. If the second-order autocorrelation (AR2) is unable to rule out the null hypothesis, then the moment conditions are true (Hansen 1982).

The study involved banks in 8 SADC countries. These countries are Zimbabwe, Zambia, Namibia, Mauritius, Tanzania, South Africa Botswana, and Malawi. The period of the study was 2010-2021. There was a total of 408 observations drawn from 34 banks. The IRESS data base supplied the bank specific data used for the study. The IMF and World Bank provided the macroeconomic data. The availability of the data determined the choice of the study period of the data sets.

4. RESULTS PRESENTATION AND ANALYSIS

This section presents the findings of the study. It first presents the evolution of the Lerner index across all countries and then looks at country specific developments of the same. Figure 1 shows that the Lerner index has not been constant over the whole study period but has been moving up and down ranging between 0.59 and 0.67. The average Lerner index, which is a gauge of competition, is 0.5602, according to the results. This suggests that market structure of the banking industry is monopolistic competition. This suggests that the banks have some ability to influence market pricing decisions.

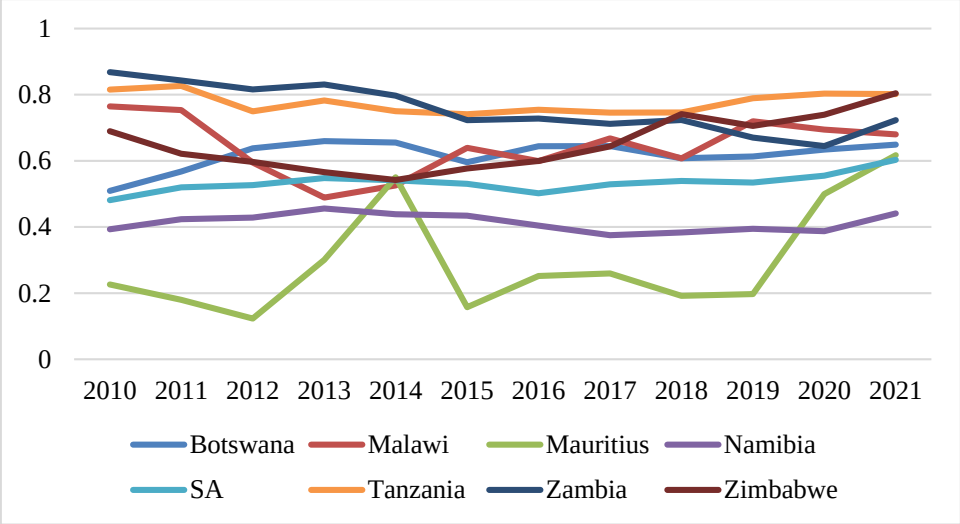

Fig. (2). Country level average annual lerner index.

Table 2. Descriptive statistics.

-	LINDEX	ROA	CAR	CRQ	SIZ	INF	GDP
Mean	0.5602	0.7823	0.0382	0.2355	17.4387	44.1287	-4.4309
Median	0.5927	0.8792	0.0231	0.1255	17.6074	5.2500	4.2600
Maximum	1.0000	1.0073	0.4161	0.9971	2.8972	2379.0000	21.4500
Minimum	0.0099	0.0046	-0.2134	0.0519	9.9760	-20.00000	-4.8500
Std Dev	0.2319	0.2385	0.0628	0.2429	2.9512	267.2787	63.755

A cross country comparison shows that the Mauritius has the smallest average Lerner Index of 0.29 while Tanzania has the highest average of 0.78. This means that though both countries are operating towards monopolistic competition, the Tanzanian banking sector is leaned towards monopoly while that of Mauritius is tilted towards perfect competition. This means that the Tanzanian banking industry has more market power as compared to the Mauritian one. The Mauritian banks have little power to influence the pricing of their products.

Having discussed the evolution of the market power in SADC, this section discusses the drivers of the market power. Table **1** provides a summary of the independent and dependent variables' descriptive statistics. The variables' properties are displayed in Table **1** along with their statistical mean, median, minimum, maximum, and standard deviation values.

The Lerner index has a limited variability of 0.2319 and ranges from 0.0099 to 1. The average return on asset, a measure of profitability, is 0.7823, indicating higher profitability. Given that the banking sector's return on assets is relatively high. The average ratio of capital to assets is 3.82%, indicating that banks have enough room to survive without additional capital from shareholders and other sources because their capital is smaller than their assets. The credit risk measured by non-performing loans shows that the average NPL ratio is 23.5 % which is higher. This shows that the banks are being affected by the poor quality of assets as client's default. Whilst the macroeconomic variables show that inflation is a challenge in the SADC region while growth is not stable over time given the minimum growth rate is negative and the maximum is positive. There is greater variability among the macroeconomic variables.

Table 3. Correlation matrix.

	ROA	CAR	CRQ	SIZ	INF	GDP
ROA	1.0000	-	-	-	-	-
CAR	0.3476	1.0000	-	-	-	-
CRQ	0.0887	0.0977	1.0000	-	-	-
SIZ	-0.3915	-0.4189	-0.3000	1.0000	-	-
INF	0.1466	0.0098	0.0290	0.0185	1.0000	-
GDP	0.0285	-0.0151	0.0109	-0.0728	0.0179	1.0000

The correlation matrix presented in Table **1** shows that there is not much of a correlation between the independent variables under study. This is supported by Gujarati (2007) who opines that multicollinearity is an issue when if there is more than 0.8 correlation between the independent variables. In this case each independent variable's correlation coefficient was less than 0.8 hence implying lack of multicollinearity. The correlation matrix shows that there is weak to moderate correlation among the independent variables of the study. Positive correlation is registered between return on assets and capital asset ratio, credit risk, inflation and economic growth;

capital asset ratio and credit risk and inflation. There is negative correlation between return on assets and size, capital asset ratio and economic growth, credit risk and bank size, and bank size and economic growth.

Table 4. Panel regression results.

Variable	Arellano and Bond Estimation	Arrellano – Bover/ Blundel Bond Estimation
LNDX (-1)	0.2454*** (0.0000)	0.2206*** (0.0000)
ROA	1.2039*** (0.0000)	0.7131*** (0.0000)
CAR	5.9623** (0.0380)	0.0498*** (0.0000)
CRQ	-0.0146*** (0.0010)	-0.0802* (0.0640)
SIZ	4.9721 (0.2081)	7.1532 (0.3040)
GDP	O.0189 (0.8650)	1.0732 (0.7210)
INF	-0.0697*** (0.0000)	-0.1840*** (0.0000)
Constant	0.1012*** (0.0000)	0.2751*** (0.0000)
Wald Chi(2)	747.87	129245.65
Prob(Chi(2))	0.0000	0.0000

The regression results are presented in Table 4 and shows that market power is positively impacted by capital asset ratio. This suggests that a sufficiently capitalized banking industry can set prices for goods higher than their marginal costs. Put differently, having adequate capital makes it possible for businesses to charge more for their goods than they would otherwise. Because depositors view highly capitalized banks as more secure, these banks may pay less for deposits, contributing to their greater market power. Enough capitalization improves the banks' solvency and liquidity. The result lends support to previous studies that established that market capitalization was positively related to competition in developed countries Studies (Delis, 2012; Tabacco, 2013; Mirzaei, 2014).

The findings show that market power and credit risk are negatively correlated. The findings imply that a rise in credit risk diminishes the bank's market dominance. Any decline in a bank's loan book lowers the bank's earnings. Banks are expected to lower loan prices or reduce lending once they determine that credit risk is rising. In these situations, there is more competition for high-quality clients with low risk profiles, who pay lower interest rates. This suggests that a rise in credit risk causes banks' pricing power to decline. Thus, the findings imply that a rise in non-performing loans may force banks to contend for loyal customers.

Market power is positively impacted by profitability, according to the study. The findings suggest that the bank's market power increases in tandem with its profitability. In a highly competitive market like banking, banks compete for quality customers, who are the main driver of profitability. A bank can gain more market power by attracting high-quality customers because it can guarantee higher returns. Banks can increase their capitalization through organic growth in addition to higher profitability. Banks can outcompete their rivals and gain an advantage once they have enough capitalization. Consequently, the banking industry's companies derive their market power from maintaining consistent profitability.

The findings suggest that banks' market power is diminished by inflation. The market power of banks decreases as the rate of inflation rises. This is because inflation affects operating costs, net interest margins, and fees, posing complex challenges to the banking sector. Bank budgets are strained by rising operating costs, which are a result of inflationary pressures on resources like labour and infrastructure. The net interest margin is also impacted by inflation since rising interest rates make borrowing more expensive and less likely to result in fixed-rate loans. Raising prices can cause dissatisfaction, so it's critical to strike a balance between profitability and customer experience. Additionally, banks are expanding their sources of income through partnerships with fintech companies, wealth management, and cutting-edge products.

The findings indicate that the institution's market power from the prior period has an impact on the market power in the present. This suggests that market power endures over time, with the banks with greater power now maintaining that position in the future. The idea of "too big to fail" then emerges from this. This results from the major banks' need to protect their dominance, which drives them to operate aggressively in order to prevent other banks from stealing it.

We evaluate the relationship between competition and bank size using the Tobit regression method in order to confirm the validity of the results. The Lerner Index can be thought of as a limited dependent variable because it ranges between zero and one. This then makes the model eligible for estimation using the censored regression model's Tobit regression method. The Tobit regression results are shown in Table **5**.

The results in Table **5** of the Tobit regression confirm the results of the dynamic GMM results. The results show that profitability and capital asset ratio are positively related to the Lerner Index confirming that the two variables positively influence market power in the banking industry. On the other hand, credit risk and inflation have a negative effect on market power implying thatmarket power is adversely affected by the two variables. As credit risk and inflation increase the market power of banks dwindles. Unlike in the GMM method, bank size is shown to have a negative effect on market power in the Tobit regression model at 5 percent level of significance. This is in line with previous studies (Abedifar, *et al*, 2014; Weill, 2013). This means that as banks grow their market power starts todwindle which can be explained by the concept of diseconomies of scale. There is a certain level of growth beyond which firms starts to incur huge costs.

Table 5. Robustness check: Tobit Regression.

Variable	Tobit Regression
ROA	1.2242 (0.0000)
CAR	0.4699 (0.0000)
CRQ	-0.0909 (0.2717)
SIZ	-0.0079 (0.0480)
GDP	0.7607 (0.96010
INF	-2.1102 (0.0567)
Constant	0.8302 (0.0000)
Mean dependent variable	0.5606
Standard error of regression	0.1959
Sum of squares of residual	15.1610
Log likelihood	86.1721
Average log likelihood	0.2138

CONCLUSION

The essence of competition in the banking industry has been well articulated in literature. Some of the benefits of competition include a decline in lending rates, efficient allocation of capital and improved service offering. Hardly does the notion of competitive banking exist since banks possess to some degree market power. It is hence important to study the importance of market power in the banking industry and other sectors. To this end the study sought to understand the evolution of market power and its driver among banks in the SADC region applying a two-step procedure based on the Lerner Index approach. Monopolistic competition defines the banking structure of the SADC region implying the banks have some market power hence ability to influence product pricing decisions. The spectrum of banks ranges from near competition to those closer to monopolies. The study established that profitability and capital asset ratio positively influence market power in the banking industry. On the other hand, bank size, credit risk and inflation have a negative effect on market power. The study recommends that bank managers should ensure financial institutions remains profitable and are adequately capitalised while moderating on the credit management to ensure credit risk does not increase exponentially. Furthermore, banks should pay more attention to credit risk management, especially bad debt prevention and credit risk management strategies. Policy should ensure that there is continuous monitoring of capital adequacy among banks as per Basel Accord recommendations.

REFERENCES

Anzoátegui, D., Pería, M. S. M., &Melecky, M. (2012). Bank competition in Russia: An examination at different levels of aggregation. *Emerging Markets Review*, *13*(1), 42-57.

Arellano, M. (2002). Sargan'sintrumental variables estimation and the generalized method of moments. *Journal of Business & Economic Statistics*, *20*(4), 450-459.

Bempong, E., &Sy, M. (2015). The banking system in Africa: Main facts and challenges. *African economic brief*, 6(5), 1-6.

Berg, T., Fuster, A., & Puri, M. (2022). Fintech lending. *Annual Review of Financial Economics*, *14*, 187-207.

Berger, A. N., & Hannan, T. H. (1998). The efficiency cost of market power in the banking industry: A test of the "quiet life" and related hypotheses. *Review of economics and statistics*, *80*(3), 454-465.

Bond, S. R. (2002). Dynamic panel data models: a guide to micro data methods and practice. *Portuguese economic journal*, *1*, 141-162.

Bokpin, G.A. and Aboagye,A.Q.Q (2020). The effect pf bank market power on economic growth in Africa: The role of institutions. *Cogent economics and finance*, 8(1).

Carletti, E.,Leonello, A., & Marquez, R.S., (2024). Market Power in Banking ECB Working Paper No. 2024/2886, Available at SSRN: https://ssrn.com/abstract=4691168 or http://dx.doi.org/10.2139/ssrn.4691168

Carlson, M., Correia, S., & Luck, S. (2022). The effects of banking competition on growth and financial stability: Evidence from the national banking era. *Journal of Political Economy*, *130*(2), 462-520.

Chaffai, M.&Coccorese, P., (2023). "Banking market power and its determinants: New insights from MENA countries," Emerging Markets Review, Elsevier, vol. 55(C).

Church, J. R., & Ware, R. (2000). *Industrial organization: a strategic approach* (pp. 367-69). Homewood, IL.: Irwin McGraw Hill.

Coccorese, P. (2014). Estimating the Lerner index for the banking industry: a stochastic frontier approach. *Applied Financial Economics*, *24*(2), 73-88.

Das, A., & Kumbhakar, S. C. (2016). Markup and efficiency of Indian banks: an input distance function approach. *Empirical Economics*, *51*, 1689-1719.

Divino, J. A., & Silva, R. S. (2017). Banking competition in the Brazilian economy. *Nova Economia*, *27*, 393-419.

Drechsler, I., Savov, A., Schnabl, P., & Wang, O. (2023). *Banking on uninsured deposits* (No. w31138). National Bureau of Economic Research.

Fernandez de Guevara, J., Maudos, J., & Perez, F. (2005). Market power in European banking sectors. *Journal of Financial Services Research*, *27*, 109-137.

Fischer, K. H., &Hempell, H. S. (2005). Oligopoly and conduct in banking, An Empirical Analysis. *Deutsche Bundesbank Research Centre, Discussion paper*.

Fungáčová 1, Z., Solanko 2, L., & Weill 3, L. (2010). Market power in the Russian banking industry. *Economieinternationale*, (4), 127-145.

Gambacorta, L., Pancotto, L., Reghezza, A., &Spaggiari, M. (2022). Gender diversity in bank boardrooms and green lending: evidence from euro area credit register data.

Guzman, M. G. (2000). Bank structure, capital accumulation and growth: a simple macroeconomic model. *Economic Theory*, *16*, 421-455.

Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. *Econometrica: Journal of the econometric society*, 1029-1054.

Idun, AA., Aboagye, A.Q. Q. &Bokpin, G.A. (2020) The effect of bank market power on economic growth in Africa: The role of institutions, Cogent Economics & Finance, 8:1, 1799481, DOI: 10.1080/23322039.2020.1799481

Igan, D., Mirzaei, A., & Moore, T. (2023). Does macroprudential policy alleviate the adverse impact of COVID-19 on the resilience of banks? *Journal of Banking & Finance*, *147*, 106419.

Issa, A., Yousef, H., Bakry, A., Hanaysha, J. R., &Sahyouni, A. (2021). Does the board diversity impact bank performance in the MENA countries? A multilevel study. *Corporate Governance: The International Journal of Business in Society*, *21*(5), 865-891.

Jimenez, G., Mian, A. R., Peydro, J. L., &Saurina, J. (2010). *Local versus aggregate lending channels: the effects of securitization on corporate credit supply in Spain* (No. w16595). National Bureau of Economic Research.

Kabir, M. N., & Worthington, A. C. (2017). The 'competition–stability/fragility' nexus: A comparative analysis of Islamic and conventional banks. *International Review of Financial Analysis*, *50*, 111-128.

Louhichi, A., Louati, S., & Boujelbene, Y. (2020). The regulations–risk taking nexus under competitive pressure: What about the Islamic banking system? *Research in International Business and Finance*, *51*, 101074.

Minh, S., Hong, V., Hoang, L., & Thuy, T. (2020). Does banking market power matter on financial stability? *Management Science Letters*, *10*(2), 343-350.

Mirzaei, A. (2019). Market power among UAE banks: The 2008 financial crisis and its impact. *The quarterly review of economics and finance*, *71*, 56-66.

Pagano, M. S. (2001). How theories of financial intermediation and corporate risk-management influence bank risk-taking behaviour. *Financial Markets, Institutions & Instruments*, *10*(5), 277-323.

Polemis, M. L. (2015). Does monopolistic competition exist in the MENA region? Evidence from the banking sector. *Bulletin of Economic Research*, *67*(S1), S74-S96.

Pruteanu-Podpiera, A., Weill, L., & Schobert, F. (2008). Banking competition and efficiency: A micro-data analysis on the Czech banking industry. *Comparative Economic Studies*, *50*, 253-273.

Rakshit, B., &Bardhan, S. (2019). Bank competition and its determinants: Evidence from Indian banking. *International Journal of the Economics of Business*, *26*(2), 283-313.

Risfandy, T., Harahap, B., Hakim, A. R., Sutaryo, S., Nugroho, L. I., &Trinugroho, I. (2020). Equity financing at Islamic banks: Do competition and bank fundamentals matter? *Emerging Markets Finance and Trade*, *56*(2), 314-328.

Simpasa, A. M. (2010). Performance of Zambian Commercial Banks in the Post-Liberalisation Period: Evidence on Cost Efficiency, Competition and Market Power.

Spierdijka, L., &Zaourasa, M. (2018). Measuring banks' market power in the presence of economies of scale: A scale-corrected Lerner index. *Journal of Banking & Finance*, *87*, 40-48.

OECD, (2002). Glossary of industrial organisation economics and competition law.

Wang, Y., Lucey, B. M., Vigne, S. A., &Yarovaya, L. (2022). The effects of central bank digital currencies news on financial markets. Technological Forecasting and Social Change, 180, 121715.

Delis, M. D. (2012). Bank competition, financial reform, and institutions: The importance of being developed. Journal of Development Economics, 97(2), 450-465.

Tabacco, G. A. (2013). A new way to assess banking competition. Economics Letters, 121(2), 167-169.

Mirzaei, A., & Moore, T. (2014). What are the driving forces of bank competition across different income groups of countries? Journal of International Financial Markets, Institutions and Money, 32, 38-71.

Abedifar, P., Giudici, P., & Hashem, S. Q. (2017). Heterogeneous market structure and systemic risk: Evidence from dual banking systems. Journal of Financial Stability, 33, 96-119.

Weill, L. (2013). Bank competition in the EU: How has it evolved? Journal of international financial markets, institutions and money, 26, 100-112.

Mi, B., Zhang, L., Han, L.& Shen, Y.(2024). "Bank market power and financial reporting quality," Journal of Corporate Finance, Elsevier, vol. 84(C).

D. Ofori-Sasu, E.K.Agbloyor, E. S. Kumankoma& J.Y. Abor (2023) Central bank coordinated policies and bank market power: an insight from the African context, Cogent Economics & Finance, 11:1, 2196851, DOI: 10.1080/23322039.2023.2196851

Mishi, S. and Khumalo, S.A (2019). Bank stability in SouthAfrica: what matters?. Banks and Bank Systems, 14(1), 122-136.doi:10.21511/bbs.14(1).2019.11

Copyright © 2026– All Rights Reserved
This is an open-access article.