



## Journal of Economics and Financial Analysis

Type: Double Blind Peer Reviewed Scientific Journal

Printed ISSN: 2521-6627 | Online ISSN: 2521-6619

Publisher: Tripal Publishing House | DOI:10.1991/jefa.v3i2.a26

Received: 11.09.2019 | Accepted: 03.12.2019 | Published: 31.12.2019

Journal homepage: [ojs.tripaledu.com/jefa](http://ojs.tripaledu.com/jefa)



# Income Diversification, Market Power and Performance

Peter Nderitu GITHAIGA\*

Department of Accounting and Finance, Moi University, Kenya

## Abstract

*This paper aims at examining the mediating role of market power on income diversification and performance nexus. Using 310 yearly observations drawn from a sample of 31 Kenyan commercial banks and panel data for the 2008–2017 periods, the study finds that market power significantly mediate the relationship between income diversification and performance. Thus, income diversification will have a larger impact on performance for banks with significantly high market power compared to those with low market power. Given the novelty of these findings, the study has implications for bank regulators, scholars and practitioners.*

**Keywords:** *Income diversification; Non-interest income; Market power; Firm performance; Herfindahl-Hirschman Index.*

**JEL Classification:** *G11, G21.*

## 1. Introduction

The importance of the banking sector cannot be overemphasized. The sector has an important influence on economic growth (Tongurai & Vithessonthi, 2018; Balcilar et al., 2018), entrepreneurship (Toms & Wright 2019, Cai et al., 2018; Khan & Anuar, 2018), resource allocation (Beck et al., 2007; Dwyer, 2018), poverty alleviation (Honohan, 2004; Abdin, 2016; Sikod & Baye, 2015), education (Sun & Yannelis, 2016; Goksu & Goksu, 2015) and agriculture (Anetor et al., 2016; Bustos et al., 2016). Besides, monetary authorities relay macroeconomic policies through the financial system (Valla et al., 2006). Moreover, bank credit spurs economic

---

\* E-mail: [nderitugithaiga@mu.ac.ke](mailto:nderitugithaiga@mu.ac.ke)

Tel: +254722350383

growth through increased capital investment on the production of goods and services (Sufian & Chong, 2008; Dietrich & Wanzenried, 2014).

Despite the significant role played by commercial banks, studies show that the global banking sector continues to grapple with numerous challenges that include rising non-performing loans, stringent regulations and unprecedented technological revolution (Gololo, 2018; Dimitrios et al., 2016; Psillaki & Mamatzakis, 2017). According to IMF<sup>1</sup>, the sector reported no growth in the last two decade as evidenced by the average return on assets. Over the same period, Kenya saw the collapse of three banks; Dubai Bank, Imperial Bank, and Chase Bank on the account of corporate governance mishaps, insolvency and overly non-performing loans<sup>2</sup>. Moreover, studies have singled out non-performing loans as a major cause of banks' failure (Laryea et al., 2016; Fofack, 2005; Zhang et al., 2016). Between 1986 and 1998, 37 banks collapsed in Kenya due to non-performing loans (Waweru & Kalani, 2009; Mwegu, 2009). Considering the high level of non-performing loans, it is apparent that the lending business is endangered and the future bleak. Additionally, banks have been losing a significant size of their business to telecommunication companies and microfinance institutions that engage in money transfers and lending (Paolo, 2014; Mudavadi & Weber, 2013).

In response to the deteriorating interest income, banks are shifting towards non-traditional activities for survival (Ferrari et al., 2018; Mohamed & Bett, 2018). In Kenya, the appetite for noninterest income has been fueled by the enactment of interest capping law, which limits lending rates to 4 percent above the central bank base lending rate. Olaka (2017) noted that interest capping created a fertile ground for informal lending besides a noticeable decline in individual lending that is likely to crowd out credit to the private sector. Presently it is estimated that non-interest income account for about 40 percent of banks totals income (Kiweu, 2012; DeYoung & Rice, 2004). Quite a number of scholars have examined the effect of non-interest income on bank performance (Saunders et al., 2016, Abedifar et al., 2014; Calmes & Theoret, 2015; DeYoung & Roland, 2001; Stiroh, 2004; Delpachitra & Lester 2013; Chen et al, 2017; Demirguc-Kunt & Huizinga, 1999). Despite their contribution to literature, their findings are inconclusive which can be attributed to two factors. First, are contextual issues since most of

---

<sup>1</sup> Financial Soundness Indicators. Retrieved on August, 2019 from <http://data.imf.org/?sk=51B096FA-2CD2-40C2-8D090699CC1764DA&sld=1411569045760/>

<sup>2</sup> Central Bank of Kenya Bank Supervision Annual Report 2017. Central Bank of Kenya. Nairobi

these studies focused on America, Europe, and Asia (Abedifar et al., 2014; Chen et al., 2017; Hahm, 2008; DeYoung & Rice, 2004), hence their results cannot be replicated to developing economies with underdeveloped financial markets.

Second, these studies examined the direct effect on the assumption that income diversification provides sufficient incentives to banks to improve their financial performance. Unfortunately, a decision to diversify will not always result in improved performance in the absence of requisite strategic resources and favorable market structures. In the twenty-first century, competition has changed not only in intensity but in nature. The drivers of competitive advantage are no longer tangible assets but firm knowledge and capabilities (Prahalad & Hamel 1990). Proponents of the resource-based view and dynamic capabilities theory contend that competitive advantage and superior performance emanates from firm resources and capabilities that are valuable, rare, imperfectly imitable and non-substitutable (Barney, 1986; Peteraf, 1993; Wernerfelt, 1984; Teece et al., 1997). Similarly, researchers claim that sustained financial performance is a function of firm resources and industry structure (Porter, 1991; Matsusaka, 2001; Grant, 1991). Besides, competitive advantage enables a firm to exercise market power which is a source of superior performance (Teece, 1984; Teece et al., 1997). Liu et al (2013) suggest that banks diversify to enhance their market power and reduce risk, ultimately improved performance.

On the contrary, Montgomery (1989) observed that highly diversified firms have lower market power in their respective markets than do less diversified firms. Thus, as a bank market power increases there are few incentives to engage in income diversification since managers can price their products above the market standard (Nguyen et al., 2012). Conversely, as market power decline banks are more likely to engage more in new activities thus considerably reducing the importance of lending base activities. Thus, income diversification is likely to have an indirect effect on performance through market power. Against this background, this study seeks to examine the mediating effect of market power on income diversification and firm performance relationship in developing countries using the Kenyan banking sector as a case study.

## **2. Literature Review: Income diversification, market power, and performance**

Income diversification refers to increasing the share of the fee, net trading profits and other noninterest income within the net operating income of a bank (Gurbuz et al, 2013). Besides, Ebrahim and Hasan (2008) opine that income diversification is the expansion into new income-earning financial services away from the traditional intermediation services. In principle, income diversification is

a shift from lending activities towards non-lending activities such as investment banking, trading and insurance (Busch & Kick, 2009). According to Mujeri and Younus (2009), income diversification encompasses advisory services, asset management services, underwriting, payment services, and sale of credit cards. For operational purposes, income diversification denotes engaging in other income-generating activities save for the traditional lending business.

Markowitz's (1952) modern portfolio theory postulates that a firm can reduce income volatility and improve its overall financial performance by engaging in a range of income-generating activities. In the context of the banking sector, banks diversify their income by venturing into non-lending activities such as investment banking, advisory, brokerage and underwriting (Saunders et al, 2016). Moreover, Sanya and Wolfe (2011) claim that income diversification absorbs the impact of information asymmetry through cross-selling while cushioning banks against cyclical variation in interest revenue. While, Khanna and Tice (2001) opine that diversified firms make optimal investment decisions, unlike focused firms. Also, Williamson (1986) opines that by holding a diversified portfolio of assets, a bank can cushion depositors from any possible losses arising from delegated monitoring. The relationship between income diversification and firm performance has been investigated extensively as shown in extant literature.

Chiorazzo et al (2008) examine the income diversification and bank performance causality using a sample of 85 Italian banks and panel data set for 1993-2003. The study finds a positive causality. Landskroner et al (2005) who use a sample of 5 largest banking groups in Israel during the period 1992- 2001 finds that diversification improved bank revenue and operational efficiency, especially where the scale and scope of operations expand. Similarly, Sanya and Wolfe who investigate the relationship between income diversification and performance under panel data set of 226 listed banks across 11 emerging economies and find that nonlending activities decrease insolvency risk and enhance profitability. Conversely, Berger et al (2010) who examine a sample of 88 Chinese banks during the period of 1996-2006 and document that income diversification lead to reduced profits. In a similar line, Lepetit et al (2008) examine the bank income structure and risk among 734 European banks for the period 1996-2002 and find that diversified banks has a higher risk and higher insolvency risk than focused banks. Consistent with portfolio theory, it can be argued that income diversification contributes to stable revenues and greater firm longevity (Fang & Lelyveld, 2014; Schoenmaker & Wagner, 2011; Berger et al., 2010).

**H<sub>1</sub>:** *Income diversification has a positive and significant influence on performance*

In an era of knowledge-based economies, amid increased competition, shortened product life cycle and globalization, firms should leverage their inimitable resources to boost their market power as the basis of monopolistic rent (Fornell et al, 2006). According to Shepherd (1970) the market power is *"the ability of a market participant or group of participants (persons, firms, partnerships, or others) to influence price, quality, and the nature of the product in the marketplace"*. The argument of market power theory originates from the study of Porter (1980) who use different strategies to distinguish a firm's position among the competitors, which he summarized as the five forces model.

The market-power and firm performance causality is a model around three paradigms theory. First, is the traditional Structure Conduct Performance (SCP) which claims that the positive relationship between market power and bank performance is attributed to the non-competitive pricing behaviors of monopolistic markets. The Relative Market Power (RMP) hypothesis argues that only banks with large market shares, notwithstanding market concentration, can exercise market power and earn abnormal returns. Third, the efficient structure hypothesis formalizes the concept that more efficient firms have lower costs, which in turn lead to higher profits; hence efficiency explains the relationship between concentration, market share, and profitability.

Though banks with high market power enjoy lower costs of screening and monitoring borrower, high profits and less moral hazard (Florian, 2014) finance and economic literature posit that high market power is an ingredient of low efficiencies in production and delivery of financial services (Delis and Tsionas, 2009; Casu & Girardone, 2009; Schaeck & Cihak, 2014). With guaranteed high-profit margin, managers lack incentives to focus on key success factors hence they might engage in rent-seeking behaviors (Griffiths et al, 2011). Scholars have investigated the association between market power and firm outcomes but the finding is largely contentious and inconclusive. A study by Chen and Lai (2017) that use a sample of 25 listed Taiwanese banks and panel data for the period from 1998 to 2013 found that market power had a positive and significant effect on profitability. Nguyen et al (2012) examine the relationship between market power and bank diversification. The study uses a sample of 153 commercial banks drawn from Malaysia, the Philippines, Thailand and Vietnam, and panel data for 1998-2008. The authors find that the relationship is a non-linear relationship, where banks with low market power concentrated on revenue diversification while those with greater market power-focused more on lending.

Al-Jarrah (2010) examines the nexus between market structure and profit in Jordan's banking sector. Data are extracted from 16 banks over the 2001-2005

periods. The findings re mixed since concentration has a significant effect on profitability while relative-market power has not.

Ovi et al (2014) uses a sample of 153 commercial banks during 1998–2010 periods, find that banks with greater market power manage their non-performing loans during the crisis period better than banks with lower marker power. Chortareas et al (2011) study the U.S banking sector with a bank-level data for the 1976-2000 periods; find that market power has a significant influence on performance. In contrast, Zhang et al (2016) find a negative relationship between market power and bank performance which supports “*quiet life*” hypothesis. The study uses an unbalanced data set consisting of 1001 bank-year observations and for the period 2003-2010.

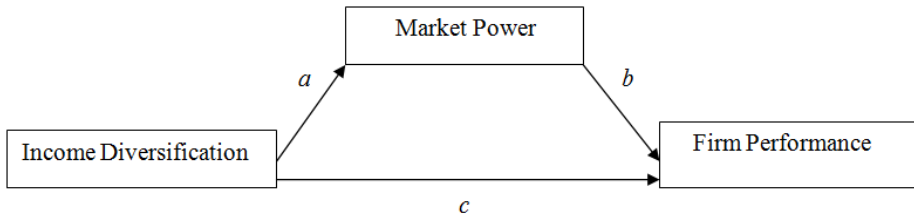
**H<sub>2</sub>: Market power has a positive and significant influence on performance**

Firms diversify to curb competition by enabling firms to increase market power because of the conglomeration of power emanating from the differentiated activities. Theoretically banks diversify into nonlending activities to cushion themselves against interest income instability, internal capital market efficiency and to build market power for competitive advantage (Shih et al, 2018; Montgomery & Wernerfelt, 1988; Chen & Keung, 2018; Alhassan & Tetteh, 2017; Ovi et al, 2014) and improved performance (Sanya & Wolfe, 2011). Through diversification, banks amass market power required to compete owing to their stake in other markets where their activities have been diversified into. Market power theory posits that diversification propels higher profitability in firms because firms with market power can cross-subsidize, that is; use the gain derived from one market to support other markets; mutual and reciprocal buying and selling in such a way that potential competitors find it hard to enter the industry. Also, banks can use information gathered from nonlending activities to improve their lending business (Laeven & Levine, 2007). Similarly, banks acquire information about clients during lending that may facilitate the efficient provision of nontraditional services Stein (2002).

Moreover, Porter (1991) asserts that sustainable competitive advantage and superior performance originate from a firm’s unique resources and its market position. Thus, in a dynamic market environment firms require market power to exploit opportunities arising from income diversification for superior performance (Teece, 2007). In the same line, Valverde and Fernandez (2007) conjecture that the bank's revenue and market power improve with increased engagement in non-traditional activities. However, the current literature lacks clear and robust evidence on income diversification, market power, and bank performance. Based

on empirical literature and portfolio theory the study's hypotheses are derived as follows.

*H<sub>3</sub>: Market power mediates the relationship between income diversification and firm performance*



**Figure 1.** Market Power, Income Diversification, Firm Performance

### 3. Research Design

According to Zikmund et al (2013) research design denotes methods and procedures for collecting and analyzing the needed information comprising of sampling methodologies, data collection techniques, data analysis, and cost schedules. This research is both longitudinal and explanatory. A longitudinal study uses continuous or repeated measures to follow specific individuals over an extended period (Caruana et al., 2015). In this study, the variables will be examined over the period between 2008 and 2017. Saunders et al (2016) affirms that explanatory studies seek to establish a causal relationship between variables with the main emphasis being to study a problem to explain the relationship between variables.

#### 3.1. Sample and data

The study population comprised of 42 commercial banks and 1 mortgage finance company<sup>3</sup>. The inclusion and exclusion criterion was based on whether the bank operated between 2008 and 2017. After data collection, only 31 banks qualified for further analysis. Data was extracted from the individual bank income statement and balance sheet and the Central Bank of Kenya's bank supervision annual reports and was analyzed through descriptive and inferential statistics. Specifically, the data was summarized through mean and standard deviations. Correlation analysis was used to establish the nature and magnitude of the

<sup>3</sup> Central Bank of Kenya Bank Supervision Annual Report 2017. Central Bank of Kenya. Nairobi

relationship between while multiple regression analysis was used to test the research hypothesis.

### 3.2. Measurement of variables

The study had five variables namely; the dependent variable (firm performance), the independent variable (income diversification), mediator (market power) and three control variables (bank size, bank age, and Bank liquidity. Firm performance as measured as a return on asset (Van Vu et al, 2018; Juma & Atheru, 2018; Eklof et al, 2018). The standard measure of income diversification is the Herfindahl-Hirschman Index (HHI) (Jouida, 2018; Olarewaju, 2018; Nepali, 2018; Batool & Jamil, 2019; Brahmana et al, 2018). HHI is computed as follows:

$$\text{Diversification} = \left[ 1 - \left\{ \left( \frac{\text{INT}}{\text{TOR}} \right)^2 + \left( \frac{\text{NINT}}{\text{TOR}} \right)^2 \right\} \right]$$

where

**INT:** *Amount of net interest income*

**NIN:** *Amount of noninterest income*

**TOR:** *Total operating revenue*

HHI varies between 0 and 1.00. HHI of 0.50 shows average income diversification while HHI closer to 1.00 represents the highest level of income diversification As HHI increases the bank becomes more diversified. Hence, the lower the value of HHI is the more the firm is concentrated.

The study controlled for factors that are likely to affect the endogenous variable to rule out alternative explanations and enhance the predictive power of the exogenous variable and the mediator. This study adopted market share as the measure of market power (Nickell et al., 1992; Brissimis & Kosma, 2007; Choi & Weiss, 2005). The Central Bank of Kenya measures a bank's market shares as a composite of the number of loan accounts and the number of deposit accounts<sup>4</sup>. The study has three control variables. Since banks at different levels of maturity may have different stages of growth have because younger firms display significantly higher growth opportunities than older firms and outperform older

---

<sup>4</sup> Central Bank of Kenya Bank Supervision Annual Report 2017. Central Bank of Kenya. Nairobi



firms. Similarly, older banks are likely to have a stronger identity and less amenable to diversification into unknown areas (Barnett & Carroll, 1987). The measure of bank age is the number of years since the incorporation of the firm (Lei & Chen, 2019; Ilaboya & Ohiokha, 2016). Large banks have vast resources that can be used for diversification purposes; therefore bank size is expected to have a positive effect on performance. The proxy for bank size is the natural logarithm of total bank assets (Wan & Zhang, 2018; Pucheta-Martinez & Bel-Oms, 2019; Chiorazzo et al., 2008). The third control variable was bank liquidity. On one hand, lower liquidity shows that banks are engaging more in lending activities which will enlarge the banking margins; whereas on the other hand, a lack of liquidity in banks increases the risk and bankruptcy cost and decreases. Hence, the effect of bank liquidity on performance is unclear. The proxy for bank liquidity denoted is the ratio of total loans to total assets (Ghosh, 2015; Klein, 2013).

### 3.3. Research model

The relationship between variables was examined through hierarchical regression equations as suggested by Baron and Kenny (1986).

**Step 1:** Testing the direct effect by regressing the dependent variable on the independent variable.

$$FP = \beta_0 + \beta_1 INDIV_{it} + \beta_2 BA_{it} + \beta_3 BS_{it} + \beta_4 BL_{it} + \varepsilon_Y \quad (1)$$

**Step 2:** Tests whether the independent variables and the mediator have a relationship. Hence, the mediator is regressed on the predictor variables as shown below.

$$MP = \beta_0 + \beta_1 INDIV_{it} + \beta_2 BA_{it} + \beta_3 BS_{it} + \beta_4 BL_{it} + \varepsilon_m \quad (2)$$

**Step 3:** Tests for mediation effect where regression of the criterion variable on the predictor variable and the mediator was done.

$$FP = \beta_{0*} + \beta'_1 INDIV_{it} + \beta'_2 MP_{it} + \beta'_3 BA_{it} + \beta'_4 BS_{it} + \beta'_5 BL_{it} + \varepsilon_{Y*} \quad (3)$$

where, *FP*, *INDIV*, *MP*, *BA*, *BS*, and *BL* are firm performance, income diversification, market power, bank age, bank size, and bank liquidity respectively at period “t” for the cross-sectional unit “i”. The  $\varepsilon$  is an error term,  $\beta_0$  is an intercept, and remaining *Bs* (betas) are estimated coefficients for the related input factors. The “i” is the cross-section units for 31 banks, whereas the period “t” ranges from 2008 to 2017.

However, Baron and Kenny's (1986) approach has been criticized by Zhao et al (2010) who claim that mediation should be measured by the size of the indirect effect. That is, a x b should be significant (see Figure 1). The authors further

contend that Baron and Kenny's (1986) tests are only useful in determining whether the mediation is full or partial. Guided by Baron and Kenny (1986) and Zhao et al (2010), the study tested the mediation as a x b (see Figure 1) where the significance of the interaction was tested using Preacher and Hayes's (2004) Sobel test calculator.

#### 4. Results and Discussion

Table 1 presents descriptive statistics for the research variables where the average industry return on asset during the analysis period of 2008-2017 is calculated as 3%. Moreover, the average bank age appears around 34 years with the mean bank size of Ksh 76.6 billion. Further, the table indicates that the average income diversification among 31 sampled banks is 0.40 which can be interpreted as a moderate level of diversification. Lastly, the table also reveals that the mean market power is around 3%.

**Table 1.** Summary descriptive statistics of research variable

Variable	Obs	Mean	Min	Max	Std. Dev
Firm Performance	310	0.03	0.00	0.10	0.02
Income Diversification	310	0.40	0.00	0.51	0.09
Market Power	310	3.09	0.00	20.62	4.60
Bank Liquidity	310	0.57	0.02	0.86	0.12
Bank Size	310	76.60	22.89	556.0	96.2
Bank Age	310	34.82	1.00	121.00	29.22

On the other hand, we also report correlation relationship between variables at table 2. This is also important indicators whether our final regression model comprise any endogeneity or collinearity problem or not. As expected, all independent variables are significantly correlated with the dependent variable FP. In other words, income diversification and market power are significantly and positively correlated with firm performance at 1% level; whereas bank age and bank size are positively correlated with firm performance at 5% significance level. On the other hand, bank liquidity and firm performance are negatively correlated at 1% significance level.

Although we detected few correlations between explanatory variables such as INDIV-MP, MP-BA, MP-BS, and BA-BS, they all remain at 10% level which can be tolerable.

**Table 2.** Results of Correlation Analysis

	FP	INDIV	MP	BA	BS	BL
<b>FP</b>	1					
<b>INDIV</b>	0.6990***	1				
<b>MP</b>	0.7130***	0.4560*	1			
<b>BA</b>	0.2940**	0.1770	0.5030*	1		
<b>BS</b>	0.3720**	0.2100	0.8080*	0.5420*	1	
<b>BL</b>	-0.1220*	-0.1040	-0.1880	-0.0560	-0.0320	1

**Notes:** FP is Firm Performance, INDIV is Income Diversification, MP is Market Power, BA is Bank Age, BS is Bank Size, and BL is Bank Liquidity. The asterisk \*\*\*, \*\*, and \* indicate significance at 10%, 5%, and 1% levels respectively.

Furthermore, we conduct our core fixed effect regression analysis and present its estimates at table 3. Prior to analysis analysis, it is worth to note that the data is log-transformed then subjected to several panel data diagnostic tests such as stationarity test, homoskedasticity, and autocorrelation and all the tests showed that the data is suitable for regression analysis. The results of the Hausman test favored fixed effect regression in all the models.

**Table 3.** Results of regression analysis

Variable	Model 1	Model 2	Model 3	Model 4
	Path A	Path B	Mediate effect	Path C
<i>INDIV</i>	0.2510 (9.41)*	0.2030 (10.91)*	0.119 (7.70)*	0.3220 (15.70)*
<i>MP</i>		0.4740 (12.93)*		
<i>BA</i>	-0.6040 (-3.30)*	-0.1060 (-0.94)	-0.286 (-3.19)*	-0.3920 (-2.78)
<i>BS</i>	0.0314 (2.88)*	-0.0020 (-0.30)	0.149 (2.81)*	0.1470 (1.74)
<i>BL</i>	-0.2370 (-1.73)	-0.0230 (-0.27)	-0.112 (-2.79)*	-0.1350 (-1.28)
<i>intercept</i>	-2.0000 (-3.86)**	-1.2700 (-3.08)**		2.0000 (-3.86)**
<b>R-square</b>	0.2860	0.6870		0.4960
<b>Obs.</b>	310	310		310
<b>Hausman stat.</b>	25.60	25.60		24.87
$\sigma_u$	0.7310	0.2160		0.2470
$\sigma_e$	0.2770	0.1680		0.2310
<b>Prob.</b>	0.000	0.000		0.000

The three hypotheses ( $H_1$ ,  $H_2$ , and  $H_3$ ) of this study are tested based on the results of hierarchical regression as shown in Table 3. The results of the Model 1 equation show that income diversification ( $\beta=0.251$ ,  $\rho<0.05$ ) and bank size ( $\beta=0.031$ ,  $\rho<0.05$ ) have a positive and significant impact on market power; while bank age ( $\beta=-0.604$ ,  $\rho<0.05$ ) and liquidity ( $\beta=-0.237$ ,  $\rho>0.05$ ) have a negative impact. Model 4 shows that income diversification have a positive and significant effect on firm performance ( $\beta=0.203$ ,  $\rho<0.05$ ), hence  $H_1$  cannot be rejected. These findings are supported by previous studies too (Carroll & Stater, 2008; Elsas et al., 2010; Chiorazzo et al., 2008; Edirisuriya et al., 2015). Engaging in non-lending activities enables banks to broaden their revenues stream which leads to income stability and organizational longevity. Moreover, income diversification is associated with efficient internal capital markets, economies of scale, cross-selling and cross-subsidization that improve firm financial performance.

Equally, market power also has a positive and significant impact on firm performance ( $\beta=0.203$ ,  $\rho<0.05$ ) implying that  $H_2$  could not be rejected. The results replicate those of Ying-Hsiu and Po-Lin (2016) and Chortareas et al (2011), but conflicts with Zhang et al (2016) and Awwad (2018). Banks with more market power can earn abnormal profits which can be attributed to price and non-price monopolistic behaviors as well as cost efficiency that arises from economies of scale. Moreover, a non-competitive banking environment is characterized by high lending rates and low returns on deposits which explain the high profits. The findings support the structure conduct performance paradigm and the relative market power hypothesis that increased mark power leads to high returns

Three control variables; bank size ( $\beta=-0.002$ ,  $\rho>0.05$ ), bank age ( $\beta=-0.106$ ,  $\rho>0.05$ ) and Bank liquidity ( $\beta=-0.023$ ,  $\rho>0.05$ ) have a negative impact on firm performance. The results of model 3 indicate that market power mediated the income diversification and firm performance relationship as reported by the indirect effect ( $\beta=0.119$  and  $\rho<0.05$ ) suggesting that banks higher volumes of non-traditional activities lead to higher market power and ultimately increased profitability. By engaging in nonlending businesses, banks develop market power that enables them to set prices above marginal costs thereby improving performance. Furthermore, the theoretical basis of diversification is spreading risks and gaining 'conglomerate powers'. As claimed by portfolio theory, through income diversification banks can enjoy stable incomes and lower operating risks. Market Power Theory conjectures that diversification is a strategy aimed at reducing competition by enabling firms to gain conglomerate powers. The theory further argues that diversification banks are more profitable owing to cross-selling and cross-subsidization. Besides, banks with market power spend more resources

on innovation and have an extra capacity to absorb operating losses due to economies of scale.

## 5. Conclusion

This paper contributes to the literature by examining how market power influences the relationship between income diversification and performance of commercial banks in developing countries, using Kenya as a case study. A sample of 31 banks, and panel data obtained from the individual bank's audited report and the Central Bank of Kenya's bank supervision annual reports over the period from 2008-2017 is used to test the hypotheses. The results of the study reveal that income diversification has a positive and significant effect on performance, which supports the portfolio theory. Further, the study finds that market power has a positive and significant effect as argued by the structure conduct and performance hypothesis. Additionally, market power has a significant mediating effect on the income diversification and performance nexus that can be explained by monopolistic behaviors and economies of scale. Thus, the study argues that banks engaging in nontraditional activities are likely to build more market power, through cross-selling and cross-subsidization, leading to higher profits. The study has two limitations. First, due to the unavailability of data, non-interest income is measured in aggregate form thus prospective researchers can consider decomposing non-interest income into its constituent elements. Second, the study considers a developing economy, hence it would be important to examine developing and economies for replication purposes.

## References

- Abdin, J. (2016). Financial development and poverty reduction: Exploring the links between the issues using evidence from Bangladesh. *International Journal of Financial Research*, 7(4), pp. 44-65.
- Abedifar, P., Molyneux, P., & Tarazi, A. (2014). Non-Interest Income Activities and Bank Lending. *Working Paper Responsible Banking and Finance*, No: 15-002.
- Alhassan, A.L., & Tetteh, M.L. (2017). Non-Interest Income and Bank Efficiency in Ghana: A Two-Stage DEA Bootstrapping Approach. *Journal of African Business*, 18(1), pp. 124-142.
- Al-Jarrah, I.M. (2010). The market structure-profit relationship in Jordan's banking industry. *Dirasat, Administrative Sciences*, 37(1), pp. 251-261.

- Anetor, F., Ogbechie, C., Kelikume, I., & Ikpesu, F. (2016). Credit supply and agricultural production in Nigeria: A vector autoregressive (VAR) approach. *Journal of Economics and Sustainable Development*, 7(2).
- Awwad, B.S.A. (2018). Market power and performance: An Islamic banking perspective. *Corporate Ownership & Control*, 15(3-1), pp. 163-171. DOI: 10.22495/cocv15i3c1p2
- Balcilar, M., Gupta, R., Lee, C.C., & Olasehinde-Williams, G. (2018). The synergistic effect of insurance and banking sector activities on economic growth in Africa. *Economic Systems*, 42(4), pp. 637-648.
- Barney, J.B. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *Academy of management review*, 11(3), pp.656-665.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), pp. 1173-1182.
- Batool, S., & Jamil, F. (2019). Rural employment and income diversification in Pakistan. *Pakistan Journal of Agricultural Sciences*, 56(2).
- Beck, T., Demirguc-Kunt, A. and Levine, R. (2007). Finance, inequality and the poor. *Journal of Economic Growth*, 12(1), pp. 27-49.
- Berger, A.N., Hasan, I., & Zhou, M. (2010). The effects of focus versus diversification on bank performance: Evidence from Chinese banks. *Journal of Banking & Finance*, 34(7), pp. 1417-1435.
- Brahmana, R., Kontesa, M., & Gilbert, R.E. (2018). Income diversification and bank performance: evidence from Malaysian banks. *Economics Bulletin*, 38(2), pp. 799-809.
- Brissimis, S.N., & Kosma, T.S. (2007). Market power and exchange rate pass-through. *International Review of Economics & Finance*, 16(2), pp.202-222.
- Busch, R. and Kick, T. (2009). Income Diversification in the German Banking Industry, Deutsche Bundesbank Euro system. *Discussion Paper*. Series 2: Banking and Financial Studies. No: 09/2009.
- Bustos, P., Garber, G., & Ponticelli, J. (2016). Capital allocation across sectors: Evidence from a boom in agriculture. *Banco Central do Brasil*, No: 414.

- Cai, D., Song, Q., Ma, S., Dong, Y., & Xu, Q. (2018). The relationship between credit constraints and household entrepreneurship in China. *International Review of Economics & Finance*, 58, pp. 246-258.
- Calmes, C., & Theoret, R. (2015). Product-mix and bank performance: new US and Canadian evidence. *Managerial Finance*, 41(8), pp. 773-805.
- Carroll, D. A., & Stater, K. J. (2008). Revenue diversification in nonprofit organizations: Does it lead to financial stability? *Journal of Public Administration Research and Theory*, 19(4), pp. 947-966.
- Caruana, E.J., Roman, M., Hernandez-Sanchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of Thoracic Disease*, 7(11), pp. 537-540. Doi: 10.3978/j.issn.2072-1439.2015.10.63
- Casu, B., & Girardone, C. (2009). Testing the relationship between competition and efficiency in banking: A panel data analysis. *Economics Letters*, 105(1), pp. 134-137.
- Chen, C.R., Huang, Y.S., & Zhang, T. (2017). Non-interest Income, trading, and bank risk. *Journal of Financial Services Research*, 51(1), pp. 19-53.
- Chen, G.Z., & Keung, E.C. (2018). Corporate diversification, institutional investors and internal control quality. *Accounting & Finance*, 58(3), pp. 751-786.
- Chen, Y.H., & Lai, P.L. (2017). Does diversification promote risk reduction and profitability raise? Estimation of dynamic impacts using the pooled mean group model. *Journal of Applied Statistics*, 44(10), pp. 1893-1901.
- Chiorazzo, V., Milani, C., & Salvini, F. (2008). Income diversification and bank performance: Evidence from Italian banks. *Journal of Financial Services Research*, 33(3), pp. 181-203.
- Choi, B.P., & Weiss, M.A. (2005). An empirical investigation of market structure, efficiency, and performance in property-liability insurance. *Journal of Risk and Insurance*, 72(4), pp. 635-673.
- Chortareas, G.E., Garza-Garcia, J.G., & Girardone, C. (2011). Banking sector performance in Latin America: Market power versus efficiency. *Review of Development Economics*, 15(2), pp. 307-325.
- Delis, M.D., & Tsionas, E.G. (2009). The joint estimation of bank-level market power and efficiency. *Journal of Banking & Finance*, 33(10), pp. 1842-1850.

- Delpachitra, S., & Lester, L. (2013). Non-Interest Income: Are Australian Banks Moving Away from their Traditional Businesses? *Economic Papers: A Journal of Applied Economics and Policy*, 32(2), pp. 190-199.
- Demirguc-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, 13(2), pp. 379-408.
- DeYoung, R., & Rice, T. (2004). Noninterest income and financial performance at US commercial banks. *Financial Review*, 39(1), pp. 101-127.
- DeYoung, R., & Roland, K.P. (2001). Product mix and earnings volatility at commercial banks: Evidence from a degree of total leverage model. *Journal of Financial Intermediation*, 10(1), pp. 54-84.
- Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-, middle-, and high-income countries. *The Quarterly Review of Economics and Finance*, 54(3), pp. 337-354.
- Dimitrios, A., Helen, L., & Mike, T. (2016). Determinants of non-performing loans: Evidence from Euro-area countries. *Finance Research Letters*, 18, pp. 116-119, DOI: 10.1016/j.frl.2016.04.008
- Dwyer, R.E. (2018). Credit, debt, and inequality. *Annual Review of Sociology*, 44, pp. 237-261.
- Ebrahim, A., & Hasan, I. (2008). The value relevance of product diversification in commercial banks. *Review of Accounting and Finance*, 7(1), pp. 24-37.
- Edirisuriya, P., Gunasekarage, A., & Dempsey, M. (2015). Australian Specific Bank Features and the Impact of Income Diversification on Bank Performance and Risk. *Australian Economic Papers*, 54(2), pp. 63-87.
- Eklof, J., Podkorytova, O., & Malova, A. (2018). Linking customer satisfaction with financial performance: An empirical study of Scandinavian banks. *Total Quality Management & Business Excellence*, pp. 1-19.
- Elsas, R., Hackethal, A., & Holzhauser, M. (2010). The anatomy of bank diversification. *Journal of Banking & Finance*, 34(6), pp. 1274-1287.
- Fang, Y., & van Lelyveld, I. (2014). Geographic diversification in banking. *Journal of Financial Stability*, 15, pp. 172-181.
- Ferrari, A., Masetti, O., & Ren, J. (2018). Interest rate caps: The theory and the practice. *Policy, Research Working Paper*, No.WPS 8398, World Bank, Washington, DC.



- Fofack, H.L. (2005). Non-performing loans in Sub-Saharan Africa: causal analysis and macroeconomic implications. *Policy, Research Working Paper*, No.WPS 3769, World Bank, Washington, DC.
- Fornell, C., Mithas, S., Morgeson III, F.V., & Krishnan, M.S. (2006). Customer Satisfaction and Stock Prices: High Returns, Low Risk. *Journal of Marketing*, 70, pp. 3-16. DOI: 10.1509/jmkg.2006.70.1.3.
- Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of Financial Stability*, 20(C), pp. 93-104.
- Goksu, A., & Goksu, G.G. (2015). A comparative analysis of higher education financing in different countries. *Procedia Economics and Finance*, 26, pp. 1152-1158.
- Gololo, I.A. (2018). Challenges of the Nigerian Banking Sector and the Way Forward. *American Finance & Banking Review*, 3(1), pp. 26-34.
- Griffiths, W., Jensen, P.H., & Webster, E. (2011). What creates abnormal profits? *Scottish Journal of Political Economy*, 58(3), pp. 323-346.
- Gurbuz, A.O., Yanik, S., & Ayturk, Y. (2013). Income diversification and bank performance: Evidence from Turkish banking sector. *Journal of BRSA Banking and Financial Markets*, 7(1), pp. 9-29.
- Hahm, J. (2008). Non-interest income of commercial banks: evidence from OECD countries. *BOK Working Paper*, No: 330. The Bank of Korea.
- Honohan, P. (2004). Financial development, growth and poverty: how close are the links? In C.A.E. Goodhart (ed.), *Financial Development and Economic Growth* (pp.1-37). Palgrave Macmillan, London
- Ilaboya, O.J., & Ohiokha, I.F. (2016). Bank age, Size and Profitability dynamics: A test of learning by doing and structural inertia hypotheses. *Business and Management Research*, 5(1), pp. 29-39. DOI: 10.5430/bmr.v5n1p29
- Jouida, S. (2018). Diversification, capital structure and profitability: A panel VAR approach. *Research in International Business and Finance*, 45, pp. 243-256.
- Khan, S.J.M., & Anuar, A.R. (2018). Access to Finance: Exploring Barriers to Entrepreneurship Development in SMEs. In N. Zakaria and L.A. Kaushal (eds.), *Global Entrepreneurship and New Venture Creation in the Sharing Economy* (pp. 92-111). IGI Global.

- Khanna, N., & Tice, S. (2001). The bright side of internal capital markets. *The Journal of Finance*, 56(4), pp. 1489-1528.
- Kiwu, J. (2012). Income diversification in the banking sector and earnings volatility: Evidence from Kenyan commercial banks. *KBA centre for Research on Financial Markets and Policy*, Working paper series, (2).
- Klein, N. (2013). Non-performing loans in CESEE: Determinants and impact on macroeconomic performance. *IMF Working Papers* 13/72. International Monetary Fund.
- Laeven, L., & Levine, R. (2007). Is there a diversification discount in financial conglomerates? *Journal of Financial Economics*, 85(2), pp. 331-36.
- Landskroner, Y., Ruthenberg, D., & Zaken, D. (2005). Diversification and performance in banking: The Israeli Case. *Journal of Financial Services Research*, 27(1), pp. 27-49.
- Laryea, E., Ntow-Gyamfi, M., & Alu, A.A. (2016). Nonperforming loans and bank profitability: evidence from an emerging market. *African Journal of Economic and Management Studies*, 7(4), pp. 462-481.
- Lei, Q., & Chen, H. (2019). Corporate Governance Boundary, Debt Constraint, and Investment Efficiency. *Emerging Markets Finance and Trade*, 55(5), pp. 1091-1108
- Lepetit, L., Nys, E., Rous, P., & Tarazi, A. (2008). Bank income structure and risk: An empirical analysis of European banks. *Journal of Banking & Finance*, 32(8), pp. 1452-1467.
- Liu, C., Reichert, A., & Gramlich, D. (2013). Diversification channels and bank holding company performance. *Journal of Accounting and Finance*, 13(2), pp. 109-124.
- Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), pp. 77-91.
- Matsusaka, J.G. (2001). Corporate diversification, value maximization, and organizational capabilities. *The Journal of Business*, 74(3), pp. 409-431.
- Mohamed, A.I., & Bett, S. (2018). Strategic resources and performance of commercial banks in Kenya: Case of Equity Bank Limited. *International Academic Journal of Human Resource and Business Administration*, 3(3), pp. 218-242.
- Montgomery, C.A., & Wernerfelt, B. (1988). Diversification, Ricardian rents, and Tobin's q. *The Rand Journal of Economics*, 19(4), pp. 623-632.

- Mudavadi, C., & Weber, C. (2013). Safaricom Kenya Ltd: 2000 to 2010. *2013 Proceedings of PICMET'13: Technology Management in the IT-Driven Services (PICMET)*, pp. 88-96. IEEE.
- Mujeri, M.K., & Younus, S. (2009). An analysis of interest rate spread in the banking sector in Bangladesh. *The Bangladesh Development Studies*, pp. 1-33.
- Mwega, F.M. (2009). Global financial crisis discussion series. *Overseas Development Institute*.
- Nepali, S.R. (2018). Income diversification and bank risk-return trade-off on the Nepalese commercial banks. *Asian Economic and Financial Review*, 8(2), pp. 279-293.
- Nickell, S., Wadhvani, S., & Wall, M. (1992). Productivity growth in UK companies, 1975–1986. *European Economic Review*, 36(5), pp. 1055-1085.
- Olaka, H. (2017). The Capping Interest Rates Debate: Market Failure or Necessary Intervention? Presentation at the 25th ICPAK Economic Symposium, 16th February 2017 Chief Executive Officer, Kenya Bankers Association
- Olarewaju, O.M. (2018). Income Diversification in Low Income Sub-Saharan African Countries' Commercial Banks: A "Blessing" or "Curse"? *Folia Oeconomica Stetinensia*, 18(2), pp. 90-105.
- Ovi, N.Z., Perera, S., & Colombage, S. (2014). Market power, credit risk, revenue diversification and bank stability in selected ASEAN countries. *South East Asia Research*, 22(3), pp. 399-416.
- Paelo, A. (2014). Mobile money: taking on the big banks. *CCRED Quarterly Competition Review*, 10.
- Peteraf, M.A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), pp. 179-191.
- Prahalad, C.K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68, pp. 79-91.
- Preacher, K.J., & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36, pp. 717-731.
- Psillaki, M., & Mamatzakis, E. (2017). What drives bank performance in transitions economies? The impact of reforms and regulations. *Research in International Business and Finance*, 39, pp. 578-594.

- Pucheta-Martinez, M.C., & Bel-Oms, I. (2019). What have we learnt about board gender diversity as a business strategy? The appointment of board sub-committees. *Business Strategy and the Environment*, 28(2), pp. 301-315.
- Sanya, S. and Wolfe, S. (2011). Can Banks in Emerging Economies Benefit from Revenue Diversification? *Journal of Financial Services Research*. 40, pp. 79-101.
- Saunders, A., Schmid, M., & Walter, I. (2016). Non-Interest Income and Bank Performance: Does Ring-Fencing Reduce Bank Risk? (No. 1417). University of St. Gallen, School of Finance.
- Schaeck, K., & Cihak, M. (2014). Competition, efficiency, and stability in banking. *Financial management*, 43(1), pp. 215-241.
- Schoemaker, D., & Wagner, W. (2011). The impact of cross-border banking on financial stability (No. 11-054/2/DSF18). *Tinbergen Institute Discussion Paper*.
- Shih, C.H., Wu, C.C., & Yang, T.H. (2018). Diversification, Internal Capital Market, and Information Advantage. *IMF Working Papers*, WP/19/111
- Sikod, F., & Baye, M. (2015). Microfinance Access and Poverty Reduction in Cameroon. *La microfinance en Afrique centrale: Le défi des exclus*, 253.
- Stein, J.C. (2002). Information production and capital allocation: Decentralized versus hierarchical firms. *The Journal of Finance*, 57(5), pp. 1891-1921.
- Stiroh, K.J. (2004). Diversification in banking: Is noninterest income the answer? *Journal of Money, Credit and Banking*, 36(5), pp. 853-882.
- Sufian, F., & Chong, R.R. (2008). Determinants of bank profitability in a developing economy: Empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting & Finance*, 4(2), pp. 91-112.
- Sun, S.T., & Yannelis, C. (2016). Credit constraints and demand for higher education: Evidence from financial deregulation. *Review of Economics and Statistics*, 98(1), pp. 12-24.
- Teece, D.J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), pp. 1319-1350.
- Toms, S., Wilson, N., & Wright, M. (2019). Innovation, intermediation, and the nature of entrepreneurship: A historical perspective. *Strategic Entrepreneurship Journal*, pp. 1-17. DOI: 10.1002/sej.1310

- Tongurai, J., & Vithessonthi, C. (2018). The impact of the banking sector on economic structure and growth. *International Review of Financial Analysis*, 56, pp. 193-207.
- Valla, N., Saes-Escorbiac, Beatrice & Tiesset, Muriel. (2006). Bank liquidity and financial stability. *Banque de France Financial Stability Review*, 9, pp. 89-104.
- Van Vu, H., Tran, T.Q., Van Nguyen, T., & Lim, S. (2018). Corruption, types of corruption and firm financial performance: New evidence from a transitional economy. *Journal of Business Ethics*, 148(4), pp. 847-858.
- Wan, G., & Zhang, Y. (2018). The direct and indirect effects of infrastructure on firm productivity: Evidence from Chinese manufacturing. *China Economic Review*, 49, pp. 143-153.
- Waweru, N.M., & Kalani, V.M. (2009). Commercial Banking Crises in Kenya: Causes and Remedies. *African Journal of Accounting, Economics, Finance & Banking Research*, 4(4).
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), pp. 171-180.
- Williamson, S.D. (1986). Costly monitoring, financial intermediation, and equilibrium credit rationing. *Journal of Monetary Economics*, 18(2), pp. 159-179.
- Zhang, D., Cai, J., Dickinson, D.G., & Kutan, A.M. (2016). Non-performing loans, moral hazard and regulation of the Chinese commercial banking system. *Journal of Banking & finance*, 63, pp. 48-60.
- Zhao, X., Lynch Jr, J G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), pp. 197-206.
- Zikmund, W.G., Babin, B.J., Carr, J.C., & Griffin, M. (2013). *Business research methods*. 9<sup>th</sup> Edition. Cengage Learning.