INCOME DIVERSIFICATION AND PERFORMANCE: SHOULD BANKS TRADE?

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Abstract

Unprecedented growth in financial innovations, changing customers' expectations, competition from non-banking entities and regulatory pressure have distorted interest income stream. Thus, banks are now searching for new ways of income generation to cushion themselves against dwindling interest income and as a survival strategy. Proponents of portfolio theory conjecture that income diversification reduces income volatility and increase the profitability. It's from this background the study sought to investigate the effect of income diversification on performance of Kenyan commercial banks.

Using 310 observations drawn from a sample of 31 commercial banks and panel data for the period 2008–2017, the study found that income diversification has a positive and significant effect on bank performance. Therefore, commercial banks are advised to consider investing in non-lending activities to better their financial performance. In view of this, the study has implications for bank regulators, scholars and practitioners

Key words: Income diversification, non-interest income, performance, Herfindahl-Hirschman Index

1. Introduction

The banking sector is important to practitioners and the regulator due to its influence on macro-economic factors such as 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). Moreover, monetary authorities transmit macroeconomic policies through the financial system rendering the banking sector one of the highly regulated sector (Valla *et al.,* 2006). Thus, an underperforming banking sector derails economic growth through reduced capital investment on production of goods and services (Sufian & Chong, 2008; Dietrich & Wanzenried, 2014).

Studies show that the global banking sector continues to grapple with numerous performance impediments ranging from rising non-performing loans, stringent regulations to technological revolution (Gololo, 2018; Dimitrios & Mike, 2016; Psillaki & Mamatzakis, 2017). According to IMF reports (2007-2017), the sector reported an insignificant growth in the last decade as evidenced by the average return on asset for example U.S. (0.2%, 2007; 0.3%, 2017), Japan (0.3%, 2007; 0.2%, 2017), China (0.6%, 2007; 1.0%, 2017), South Africa (1.6%, 2007; 1.7%, 2017), Ghana (3.2%, 2007; 4.3%, 2017) and Kenya (3.9%, 2007; 3.2%, 2017). Additionally, Kenya witnessed the collapse of three banks namely Dubai Bank, Imperial Bank and Chase Bank, because of corporate governance mishaps, insolvency and overly non-performing loans (CBK, 2017).

Researchers have singled out non-performing loans as a major cause of banks failure (Laryea *et al.,* 2016; Waweru & Kalani, 2009; Fofack, 2005; Mwega, 2009; Zhang *et al.,* 2016). During the period 2007-2017 the ratio of non-performing loans to gross loans and advances stood at U.S. (0.5%, 2007; 1.1 %, 2017), Japan (1.4 %, 2007; 1.2%, 2017), China (1.2%, 2007; 0.7, 2017), South Africa (3.9 % , 2007; 3.8 % ,2017), Ghana (7.7%, 2007; 21.6 %, 2017) and Kenya (16.2 % ,2007; 9.2% ,2017) (IMF 2007; 2017). Between 1986 and 1998, 37 banks collapsed in Kenya due to non-performing loans (Waweru & Kalani, 2009; Mwega, 2009). Taking into account the high level of non-performing loans and the average return on assets it is evident that the lending business is ailing and with a bleak future hence banks ought to consider engaging in nonlending activities for survival.

In Kenya, the situation has been exacerbated by the enactment of interest capping law that limits lending rates to 4 per cent above the central bank base lending rate (Banking Act (Amendment) 2016). 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 private sector. Researcher claim that interest capping and competition distorts interest income and banks must now shift focus on new income generating activities away from financial intermediation for survival (Ferrari *et al., 2018*; Mohamed & Bett, 2018; Ng'ang'a, 2019). Moreover, Kenyan banks have lost a significant size of their business to telecommunication companies, mainly Safaricom Ltd, engaging in money transfers and mobile loans in

addition to mobile loan apps (Paelo, 2014; Mudavadi & Weber, 2013). Against this background the study sought to examine the effect of income diversification on performance in the Kenyan banking sector. Furthermore, most of the previous studies focused on developed and emerging economies (Abedifar *et al.,* 2014; Chen *et al.,* 2017; Hahm, 2008)

2. Literature Review and Theoretical Foundation

2.1 Income Diversification

Income diversification refers to increasing the share of fee, net trading profits and other noninterest income within net operating income of a bank (Gurbuz *et al.,* 2013). Moreover, Ebrahim and Hasan (2008) view income diversification as an expansion into new income earning financial services save for 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), banks can widen and stabilize their income base by engaging in advisory, asset management services, and sale of insurance and mutual fund products, payment products, electronic bill payments and sale of credit cards. Borrowing from portfolio theory, non-interest income and interest income are uncorrelated thus, income diversification leads to income stability. DeYoung and Rice (2004) found that non-interest income accounted for approximately 40% of the banks total operating income.

2.2 Theoretical Foundation

The theoretical foundation of income diversification is Markowitz (1952) Modern Portfolio Theory. The theory postulates that banks can reduce income volatility and improve overall financial performance by engaging in a range of income generating activities (Matthies, 2014). 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. Similarly, Khanna and Tice (2001) opine that diversified firms make optimal investment decisions unlike focused firms. Besides, Williamson (1986) opines that by holding a diversified portfolio of assets, a bank is able to cushion depositors from any possible losses arising from delegated monitoring. Additionally,

Winton (1997) posits that in a highly competitive market, diversification improves the quality of service banks offer their customer.

According to Chiorazzo *et al* (2008), income diversification leads to economies of scale and scope owing to shared production in delivery of related financial. Landskroner *et al.,* (2005) infer that income diversification improves bank revenue and operational efficiency especially where the scale and scope of operations expands. Consistent with portfolio theory, it can be argued that income diversification contribute to stable revenues and greater firm longevity (Fang & Lelyveld, 2014; Schoenmaker & Wagner, 2011; Berger *et al.,* 2010). Castaldi and Giarratana (2014) and Matsusaka (2001) assert that diversification leverages utilization and preservation of firms' knowledge resources. Implying that income diversification is a strategy through which banks create value from intellectual capital for competitive advantage.

2.3 Income Diversification and Firm performance

Previous studies show that firms pursue income diversification in order to accomplish varied strategic objectives such as internal capital market efficiency (Shih *et al.,* 2018), competitive advantage (Montgomery & Wernerfelt, 1988), shareholder value (Bernardo & Chowdhry, 2002), managerial entrenchment (Cheng & Keung, 2018), economies of scale (Beccalli *et al.,* 2015), resource utilization (Alhassan & Tetteh, 2017), cross-subsidization (Lepetit *et al.,* 2008), lower bank spread (Mujeri & Younus, 2009), market power (Ovi *et al.,* 2014) and enhanced performance (Sanya & Wolfe, 2011).

However, through intermediation, banks earn interest revenue by attracting time and demand deposits from households and firms then repackaging such deposits into loans and other forms of advances (Craigwell & Maxwell, 2009). Studies show that competition, unprecedented financial innovations and regulatory pressure have adversely affected interest income forcing banks to engaging in nonlending activities for profit and survival (DeYoung & Rice, 2004).

Non-interest income consists of fee and non-fee incomes. Activities that generate fees income include loan processing, bill discounting, letters of credit and guarantee, account keeping, service and management (Lepetit *et al.,* 2008; DeYoung & Roland, 2001). While non-fee income arises from foreign exchange transactions, investment in government and corporate securities, rental premises owned by the bank and gains from the sale of premises (Rushdi & Tennant, 2003).

In spite of the unprecedented appetite for non-lending activities, the debate on whether income diversification improves financial performance continues to widen. Some studies claim that income diversification improve performance (Jen Huang & Cheng 2006), reduces risk exposure (Saunders *et al.,*

2016, Abedifar *et al.,* 2014; Calmès & Théoret, 2015), lowers banks spread (Mujeri & Younus, 2009; Kannan *et al*., 2001), increases market power (Ovi *et al.,* 2014) and enhances firm productivity (Alhassan & Tetteh, 2017)

Conversely, there are studies claiming that income diversification reduces profitability besides exposing banks to income volatility (DeYoung & Roland, 2001; Delpachitra & Lester 2013; Chen *et al*, 2017; Demirgüç-Kunt & Huizinga, 2009). Surprisingly, there exist studies arguing that income diversification has no significant effect on bank performance hence banks should focus on traditional activities (Hahm, 2008).

There are several explanations for the endless debate around income diversification and bank performance causality. First, interest income is earned through relationship based activities with high switching cost compared to fee-based transactions which occasionally are one-off hence the benefits of diversification are short-term (DeYoung & Rice, 2003). Second, nonlending activities are likely to impact adversely on banks operating and financial leverage thus lessening diversification gains (DeYoung & Rice, 2003). Third, through cross-subsidization and cross selling the effect of income diversification might be invisible (Lepetit *et al.,* 2008). Fourth, income diversification is likely to breed lazy banks (Kumhof & Tanner, 2005; Kumar & Hauner, 2006; Hauner, 2008). Based on empirical literature and portfolio theory the study's hypotheses are derived as follows,

H_o: *Income Diversification has no significant effect on performance*
H_a: *Income Diversification has a significant effect on 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 of time (Caruana, 2017). In this study, the variables will be examined over the period between 2008 and 2017. Saunders *et al.,* (2011) affirms that explanatory studies seek to establish causal relationship between variables with main emphasis being to study a problem in order to explain the relationship between variables.

3.1 Study Population

The study population comprised of 42 commercial banks and 1 mortgage finance company (CBK, 2016). The inclusion and exclusion criterion was guided by whether or not the bank was in operation between 2008 and 2017. Only 31 banks qualified for further analysis. The data collected was secondary and

quantitative in nature. Data 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 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), independent variable (income diversification) and control variable (firm size, firm age and lending strategy) as illustrated by a conceptual framework below
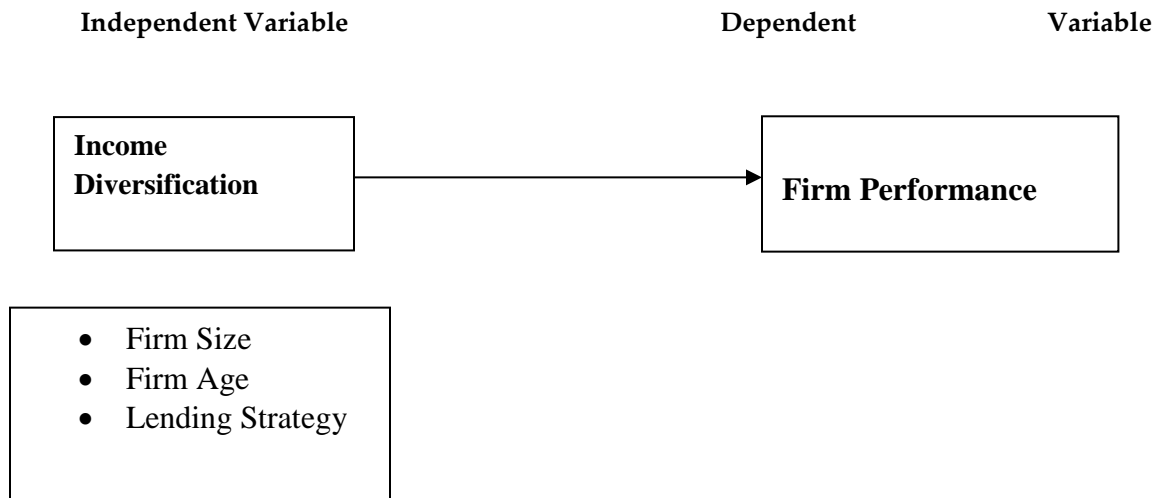
Independent Variable   **Dependent**   **Variable**

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┌─────────────────────┐                          ┌─────────────────────┐
│ Income              │                          │                     │
│ Diversification     │ ───────────────────────► │  Firm Performance   │
│                     │                          │                     │
└─────────────────────┘                          └─────────────────────┘

┌─────────────────────────────┐
│  • Firm Size                │
│  • Firm Age                 │
│  • Lending Strategy         │
│                             │
└─────────────────────────────┘
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Fig 1: Conceptual framework (Source Authors; 2019)

Financial performance was measured as return on assets, which is the ratio of firm's net earnings to total assets. ROA shows the extent to which a firm is utilizing its assets. A high ROA means that the firm is utilizing its assets efficiently and for value (Van Vu *et al.,* 2018; Juma & Atheru, 2018; Eklof *et al.,* 2018). ROA is computed as the ratio of net income/ profit to total assets. Banks' operating income comprise of interest income generated from lending activities and non-interest income earned from nonlending activities. The standard measure of income diversification is Herfindahl-Hirschman Index (Jouida, 2018; Olarewaju, 2018; Nepali, 2018; Batool & Jamil, 2019; Brahmana *et al.,* 2018). The study adopted Herfindahl Hirschman Index (HHI) as the measure for income diversification. HHI is computed as follows;

$$HHI = \{(NII/NOI)^2 + (NONI/NOI)^2\}$$

$$\text{Income Diversification (INDIV)} \quad = \quad \{1 - HHI\}$$

Where;

NII: Amount of net interest income

NONII: Amount of non-interest income

NOI: Net operating income

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 the more concentrated the firm is

The study controlled for factors that are likely to affect the endogenous variable to rule out alternative explanation and enhance the predictive power of the exogenous variable and the mediator. Specifically, the control variable comprised of;

i)   Firm age has an impact on financial performance. This variable was measured as the number of years since incorporation of the firm. (Lei & Chen, 2019; Ilaboya and Ohiokha, 2016)

Firm Age (FA) = Number of years since incorporation

ii) Firm size measured as natural logarithm of total bank assets (Wan & Zhang, 2018; Pucheta-Martínez *et al.,* 2019; Chiorazzo *et al.,* 2008). Large banks have more resources and opportunities for diversification compared to smaller banks.

Firm Size (FS)   = Logarithm Total Assets

iii) Lending Strategy denoted as ratio of total loans to total assets (Edirisuriya *et al.,* 2015; Gurbuz *et al.,* 2013; Buch *et al.,* 2019). This variable controls for the effects of lending strategy on risk-adjusted bank performance

3.3 Research model

The study used panel data for the period between 2008 and 2017. Panel data consist of observations on *n* and *t* years. The relationship between variables was examined through regression analysis as shown below;

$$FP_{it} = \beta_0 + \beta_1 INDIV_{it} + \beta_2 FA_{it} + \beta_3 FS_{it} + \beta_4 LS_{it} + \varepsilon_{it}$$

Where;

FP= Firm Performance

INDIV= Income Diversification

FA= Firm Age

FS= Firm Size

LS, = Lending Strategy

ε_{it} = Error term

4. Results and Discussion

Table I: Summary Descriptive Statistics of Research Variable

Variable	Obs	Mean	Min	Max	Std. Dev
Firm Performance	310	0.03	0.00	0.10	0.018354
INDIV	310	0.40	0.00	0.51	0.0915641
Lending Strategy	310	0.57	0.02	0.86	0.1216674
Firm Size	310	76600000000	2289000000	556000000000	96200000000
Firm Age	310	34.82	1.00	121.00	29.22061

Source: Author 2019

Table II: Results of Correlation Analysis

	FP	INDIV	FA	FS	LS
Firm Performance (FP)	1				
Income Diversification(INDV)	.699**	1			
Firm Age (FA)	.294**	.177**	1		
Firm Size(FS)	.372**	.210**	.542**	1	
Lending Strategy (LS)	-.122*	-0.104	-0.056	-0.032	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Source: Author 2019

Table III: Results of Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-2.123120	0.305680	-6.945559	0.0000
Income Diversification	0.332326	0.020073	16.55582	0.0000
Firm Age	-0.014009	0.065723	-0.213151	0.8314
Firm Size	0.124265	0.046308	2.683413	0.0077
Lending Strategy	-0.326297	0.126677	-2.575827	0.0105

R-squared	0.498306
Adjusted R-squared	0.491726
S.E. of regression	0.217604
F-statistic	75.73509

| Prob(F-statistic) | 0.000000 |
| Number of Observations | 310 |

Source: Researcher, 2019

Table I illustrates summary statistics for the research variables. Table II shows the results of pairwise correlation analysis while Table III shows the results of the random effect regression analysis. Before analysis the data was log transformed then tested for unit root, heteroskedasticity and autocorrelation and it was found suitable for regression analysis. The results of the Hausman test favoured random effect regression. Table I indicates that the average industry return on asset for the period 2008-2017 was 3%. Additionally, the table shows that average bank age is 34 years and the mean bank size is Ksh 76.6 billion. Further, the table shows that the average income diversification was 0.40 which can be interpreted as an intermediate level of income diversification.

The results of the pairwise correlation are shown in Table II. The table illustrate that the income diversification and performance is positive and significant (r=0.699, $\varrho<0.01$). The correlation between firm age and firm performance and significant (r=0.294, $\varrho<0.01$); same case to firm size and firm performance (r=0.372, $\varrho<0.01$) as well as firm size and firm age (r=0.542 $\varrho<0.01$). However, the correlation of the two control variables, firm size and firm age, with process capital was positive though nonsignificant at 1% and 5%. Table II further revealed that the relationship between bank lending strategy and performance was negative and significant at 1% (r=-0.122, $\varrho<0.01$)

The main objective of this study was to examine the effect of income diversification firm performance nexus. The regression results showed that the relationship was positive and statistically significant ($R^2 = 0.49$, $\beta= 0.332$, $\varrho <0.05$). As a result our null hypothesis that; income diversification has no significant effect on performance is rejected and the alternative hypothesis accepted. One percent change in income diversification lead to 33.2 % change in bank performance. Similarly, firm size had a positive and significant effect on performance ($\beta= 0.124$, $\varrho <0.05$). Conversely, the findings indicated that firm age ($\beta= -0.014$, $\varrho > 0.05$) and lending strategy ($\beta= -0.326$, $\varrho< 0.05$) had an adverse effect on performance. The overall the model predicts 49 % change in performance. Consistent with modern portfolio theory, the study argues that income diversification improves banks financial performance considering banks are facing declining interest income.

These findings are consistent with previous studies by Carroll and Stater (2008), Elsas *et al.,* (2006), Chiorazzo *et al.,* (2008) and Edirisuriya *et al.,* (2015). Income diversification enables banks to broaden revenues streams thus leading to income stability and organizational longevity. Income diversification is associated with efficient internal capital markets, economies of scale, cross selling and cross subsidization that improve firm financial performance.

Accordingly, in an era of interest capping, high competition from non-banking entities and unprecedented growth in financial innovation, banks should consider diversifying into nonlending businesses for competitive advantage and long-term profitability.

5. Conclusion

The study developed a conceptual framework through extensive literature review that also aided formulation of research hypotheses. The focus was on income diversification and bank performance. The unit of analysis was commercial banks in Kenya. Th study extracted data from annual financial data from the respective banks and Central Bank of Kenya annual supervisory reports. The findings of this study revealed that income diversification improves firm performance. Nonetheless, the extent banks can engage in non-lending activities is usually limited under banking laws and regulations. Specifically, banks are restricted to activities that either complement or are incidental to lending. Therefore, the study argues that such limit the impact of income diversification on performance. The study recommends that regulatory authorities should relax such regulations to allow banks engage in a wider scope of activities to exploit intellectual capital and ultimately improved performance. Alternatively, the regulator can impose diversification ceilings that are sufficient to cushion banks from interest income volatility. Due to unavailability of data, noninterest income was measured in aggregate form thus prospective researcher can consider decomposing non-interest income into its constituent elements.

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