Sectoral diversification and bank performance: An empirical study on domestic licensed commercial banks in Sri Lanka

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Abstract

While the traditional banking theory and portfolio theory favour diversification strategy for better performance the corporate finance theory supports concentration strategy. The empirical studies also provide mixed evidence on the relationship between sectoral loan diversification and the banks' performance. This paper empirically investigates the relationship between the sectoral diversification and the performance of Sri Lankan domestic licensed commercial banks over the period of 2008 to 2014 using Panel Least Squares, Random Effect Model and Dynamic Panel Model. The key finding of this study is that the sectoral loan diversification, on average, leads to poor performance in domestic LCBs in Sri Lanka when conditioned to log of total assets, personnel cost ratio, equity ratio, credit risk and ownership. In addition it also reveals that the less risky banks generated more return when they followed concentration strategy and the state ownership has further weakened the profitability of diversification.

Keywords: *Bank Performance, Diversification, Concentration, Bank Risk, Ownership*

1. Introduction

The financial crisis has once again shed the light on the importance of a stable banking system and the proper management of loan portfolio risk. The subprime crisis indicates the failure of the concentration strategy (housing market) which had strong interaction with macro-economic conditions (Demyanyk et al., 2001). The traditional banking theory and the portfolio theory encourage loan portfolio diversification for the better performance and to avoid banks failures. In the other hand the corporate finance theory recommends concentration strategy to limit value destroying effect of diversification.

As loan portfolio has been considered as a key factor for earning volatility and the major cause of bank losses and failures, the regulators around the globe provide incentives to either strategy to maintain a sound banking system. The banking sector in Sri Lanka significantly dominates the financial system of the country which comprises licensed commercial banks (LCBs) and licensed specialized banks (LSBs). As of 31.12.2014 the banking sector accounted for 70% (Rs. 8,436bn) of the assets of the major financial institutions and the LCBs maintain a share of about 69.8% of the banking sector assets (Annual Report, 2014). The domestic LCBs control 70.8% market share in terms of total assets of all LCBs. Thus sound domestic LCBs are inevitable for the financial system stability in Sri Lanka.

Accordingly the regulator imposes risk limits to enhance diversification while supporting focus through capital requirements and assets investment restrictions to maintain strong banking system. In other hand banks'

managements have been introducing sophisticated credit risk management frameworks to measure, monitor and control credit risk while moving towards risk-return tradeoff. However Sri Lankan banking system has not been empirically investigated yet to find which strategy yield higher return. Most of the empirical studies of both strategies mostly on US and Europe banking sector which provide mixed evidence on the performance of the banks. But there is no any empirical study conducted with regard to Sri Lanka. To the best of my knowledge this is the first paper investigates the impact of concentration/ diversification strategies on the performance of domestic licensed commercial banks in Sri Lanka.

The primary objective of this empirical study is to explore the relationship between the sectoral concentration and the performance of Sri Lankan domestic licensed commercial banks. Accordingly this study focuses on the following aspects.

(i) Estimate the average impact of the sectoral diversification on the return of domestic LCBs in Sri Lanka.

(ii) Examine whether the average impact of the sectoral diversification on the return changes when control for credit risk.

(iii) Explore the impact of state ownership on the relationship between the sectoral diversification and the return.

(iv) Study the impact of the previous period diversification level on the banks performance in the current period

(v) Investigate whether the relationship between diversification and return is non-linear.

The remaining part of this paper is structured as follows. A brief on relevant literatures both theories and empirical studies are given in section 2. The Section 3 presents sources, explanations and measurement framework of data. Research methodology and specifications are described in section 4. In section 5 the empirical results are discussed before concluding in section 6.

2. Literature review

Stable financial system is vital for efficient allocation of resources in an economy. The banking sector is the key driver in the financial system which acts as an intermediary between surplus spending unit and deficit spending unit. Therefore a safe and sound banking sector is required not only by investors but also by regulators as well. However banking is both a risk taking and profit making business. Primary business activity of banks is lending which is the largest asset that significantly contributes to revenue.

Banks are expected to support the communities, generate reasonable return to shareholders, and safeguard depositors' wealth by delivering consistent and reasonable return from loan portfolio. In the past loan portfolio has been considered as key factor for earning volatility and the major cause of bank losses and failures. Accordingly the poor credit risk management is seriously hider the safety and soundness of the banking system.

One of the major loan portfolio management strategies of banks is loan diversification which captures the risk of interrelationship of individual loans as a portfolio. The key principal in banking business is to diversify risk exposures (Basel Committee on Bank Supervision, 1991). Hence the banks tend to diversify their loan portfolio into different sectors, industries and geographies etc.

However theories and empirical studies show mixed evidence on the benefits of loan diversification. The traditional banking theory suggest that the loan portfolio diversification

helps to reduce risks and prevent banking failures while enhance performance and safety. Basel Committee on Bank Supervision (2013) states that failure to control the concentration on single counterpart is the major lesson learnt from financial crisis. In line with the traditional banking theory, the regulators impose risk limits to enhance diversification to maintain strong banking system.

Portfolio theory explains the relationships between risk and return. It claims that a rational investor would prefer highest return at a given level of risk, risk-return efficient. Financial management experts back diversification as banks are highly leveraged. Accordingly the diversification induces firms to achieve optimum level of return, a risk-reward trade-off. Winton (1999) explains that the diversification could offer greater benefit for banks with moderate downside risk.

In other hand corporate finance theory encourages firms to concentrate only on few selected sectors where the firms can enjoy competitive advantage. It supports focusing strategy as it utilizes management expertise for better performance and can avoid agency problem and value destroying effect (diversification discount). In order to control the risk on diversification the banking regulators support focus through capital requirements and assets investment restrictions. Winton (1999) states strong monitoring incentives are vital for diversification strategy to minimize credit risk thus diversification does not guarantee for reduced risk of failure. In addition he articulates that the focused bank with low down side risk would have no incentives to diversify.

The most of the empirical evidence supports for concentration strategy. The study of Rajan et al. (2000) shows that the increase in diversification can lead resource flows towards inefficient divisions within the firm which becomes poor investments and affect firm value negatively. Denis et al (1997) reported a strong negative impact between the extent of diversification and managerial equity ownership by studying US Corporation on excessive diversification. This paper also noted that the agency problem lead value reducing effect of diversification. According to Gehrig (1998) the banks enter into new sector will encounter adverse selection problem due to competition.

An investigation on Russian banks shows a non-linear relationship between focusing strategy and the performance (Berger et al.,2001). This analysis confirms that the focusing strategy increase profit and decrease risk only up to a certain threshold. Acharya (2002) studied 105 Italian banks over the period of 1993 to 1999 and concluded that the effect of sectoral diversification on moderately risky banks' performance is ambiguous but it is positive for highly risky banks. The study on German banks during the period of 1996 to 2002 by Hayden (2007) supports Acharya (2002) findings. The study indicates that all sectoral, industrial and geographical diversification tend to reduce profitability of German banks while focus increases return in general. In fact the impact of sectoral focus on return declines monotonous with increasing risk.

It is evident that the literatures supports both focus and diversification strategies based on the impact on performance. The majority of them largely studied developed countries and comprehensively investigated geographical diversification. The Sri Lankan banking system has never been studied in the context of sectoral diversification and its impact on the performance. Therefore, this paper examines the relationship between sectoral diversification and performance of domestic license commercial banks in Sri Lanka.

3. Data and measurement

This study uses panel data of 11 domestic licensed commercial banks during the period of 2008 to 2014. The annual data is extracted from the annual reports of each bank. However this data only represent individual banks position and does not cover subsidiaries or group.

The micro level data on disaggregated sectoral diversification of individual banks were extracted from disclosures of concentration risk. The sector classifications are slightly varied between few banks which were analyzed in detailed and incorporated in the relevant sectors. Accordingly the classifications of sectors comprises (1) Agriculture and Fisheries, (2) Manufacturing, (3) Banking and Finance, (4) Tourism, (5) Housing and Constructions (6) Trade, (7) Government, (8) Transportation and (9) Others. While the classification of "Housing and Constructions" includes loans to infrastructures the "Others", a hypothetical sector, includes consumption, services, miscellaneous and rest of the loan portfolio as well. In this study the total loan portfolio has been taken into account without considering any threshold limits.

3.1 Measurement of diversification

This study follows Hirschmann-Herfindahl Index to measure the extent of diversification as majority of the empirical studies did in the past for the comparability. The index is calculated as the sum of squares of exposures as a fraction of total exposure under a given classification. The formula for the calculation of diversification index for the bank i at time t is given below.

$$div_{it} = \sum_{itk=1}^{n} \left(\frac{X_{itk}}{\sum_{itk=1}^{n} X_{itk}} \right) \qquad (1)$$

Where n is the total number of sectors and the X_{itk} measure the exposure to the sector k for the bank i at time t. The range of the diversification index value would be between $1/n \leq div \geq 1$ where the 1/n means a perfect diversification and the 1 means perfect concentration.

3.2 Measurement of performance

The performance of the banks, $return_{it}$, is measured by the Return on Assets (ROA) which is calculated as Profit before Tax / Total Assets. In line with Hayden et al. (2007), the robustness check is performed by using ROE which is calculated as Profit before Tax / Equity.

3.3 Measurement of risk

The credit risk of each bank is captured by, $prov_{it,}$ the loan loss provisioning (impairment) which closely reflects the expected loss compare to the non-performing loans used byearlier studies as a proxy for the credit risk. The Sri Lanka Financial Reporting Standard (SLFRS) has been introduced in 2012 which required banks to measure the impairment of loan portfolio and make provision. Accordingly the banks disclosed impairment in their annual reports after 2102 instead of loan loss provisioning. The $prov_{it}$ is calculated as follows.

$$prov_{it,} = \text{Loan Loss Provision}_{it} / \text{Total Assets}_{it}$$

3.4 Control variables

There are other primary bank specific factors which significantly influence the performance of the banks which are capital structure, bank size, operating efficiency and ownership. Firstly raising and maintaining capital is costly compare to mobilizing deposits due to the residual risk. Therefore well-capitalized banks would incur high cost of capital compare to less-capitalized banks at a given level of assets which hinder the

performance. In addition, Vijayakumaran (2015) reports that the debt capital helps to improve performance of firms after a threshold level due to the liquidation threat.

Secondly the big banks can enjoy economies of scale compared to small banks which positively affect the performance. The studies conducted by Buch et al. (2011) on German banks shows more productive banks are larger. Thirdly the banks operate with different levels of cost efficiencies due to labour productivity and introduction of improved information technologies. Accordingly highly cost effective banks can generate more return. Therefore, as in the similar studies, $equity_{it}$, $size_{it}$ and $personnel_{it}$ are used to capture the impact of capital structure, scale efficiency and operating efficiency respectively (Acharya et al., 2002& Hayden et al. 2007).

The calculations of control variables are given below.

$equity_{it}$= Equity$_{it}$ / Total Assets$_{it}$
$lnsize_{it}$= log (Total Assets$_{it}$)
$personnel_{it}$= Personnel Cost$_{it}$/ Total Assets$_{it}$

Finally the empirical evidences show that the state banks are motivated to more risk taking and seemingly less efficient (Lassoued et al., 2015). Sapienza (2002) states that the Italian state banks tend to charge lower interest and expand business into depressed areas which results inefficiencies. Therefore a dummy variable is introduced to control the influence of ownership structure.

4. Estimation methods and model specifications

Investigating the impact of sectoral diversification of loan portfolio on the performance of Sri Lankan domestic licensed commercial banks is the primary objective of this paper. Thus this study explores several dimension of the relationship of the sector al diversification of loan portfolios and the banks' performances in a panel regression. The estimates are made using Panel Least Squares Model, Random Effects Model and Dynamic Panel Model.

4.1 Panel Least Squares Model (PLS)

Firstly I test the hypothesis that loan diversification induces banks to perform better by using PLS. The empirical model to capture the average impact of the sector al diversification on the return of domestic LCBs in Sri Lanka conditioned to capital structure, cost efficiency and scale efficiency is as follows.

$$return_{it}= \alpha+\beta_* div_{it}+\gamma_* v_{it} +u_{it} \qquad (2)$$

The $return_{it}$ dependent variable, captures the bank's performance through ROA for the bank i and time t. The div_{it} represents the extent of diversification for the bank i and time t. Further the model is conditioned with vector of control variables, v_{it}, which includes equity ratio, log of bank size and personnel cost ratio for the bank i at time t and u_{it} is the residual value. In addition, robustness test is also performed using ROE as a performance measure, as in Hayden et al. (2007).

Next this paper examines whether the average impact of the sectoral concentration on the return changes when control for credit risk. Thus $prov_{it}$ is employed into regression (2) as a proxy to riskiness which tests the effectiveness of the loan monitoring mechanism.

$$return_{it}= \alpha+\beta_{1*} div_{it}+ \beta_{2*} prov_{it} +\gamma_* v_{it} + u_{it} \qquad (3)$$

Further, in line with the Acharya (2002), this paper also investigates the influence of the state ownership on the relationship between loan

diversification and the performance by introducing own_i for banks i as follows.

$$return_{it}=\alpha+\beta_{1*}div_{it}+\beta_{2*}prov_{it}+\beta_{3*}own_i+\gamma_*v_{it}+u_{it} \quad (4)$$

Then the possibility of non-linear relationship between the loan diversification and the banks performance also tested by introducing squared term of diversification measures, div_{it}^2, into the regression as follows.

$$return_{it}=\alpha+\beta_{1*}div_{it}+\beta_{2*}div_{it}^2+\beta_{3*}prov_{it}+\beta_{4*}own_i$$
$$+\gamma_*v_{it}+u_{it} \quad (5)$$

In addition the time dummies for the period of 2009 to 2014 are introduced to all specification above to control for any temporal fixed effects.

4.2 Dynamic Panel Model (DPM)

Secondly, I use the Dynamic Panel Model in which diversification lagged variable, div_{it-1} is incorporated as a regressor in equation (4). This

is to capture the impact of the previous period diversification level on the banks performance in the current period and to remove any possible autocorrelation.

$$return_{it}=\alpha+\beta_{1*}div_{it}+\beta_{2*}div_{it-1}+\beta_{3*}prov_{it}+\beta_{4*}own_i$$
$$+\gamma_*v_{it}+u_{it} \quad (6)$$

As in PLS the time dummies for the period of 2009 to 2014 are used to above specification to control for any temporal fixed effects.

4.3 Random Effect Model (RE)

Finally, I test all hypotheses with Random Effect Model (Hayden et al, 2007). The Hausman specification test confirmed that the Random Effect Model is mostly appropriate for these specifications. The residual, u_{it}, is the combination of banks specific fixed effects and the disturbance term which is independent and identically distributed with mean zero and constant variance.

Table 1 Summary Statistics

	ROA	ROE	DIV	LNASSETS	PERSONNEL	EQUITY	PROV	OWN
Mean	0.0174	0.2250	0.2438	12.0177	0.0144	0.0896	0.0074	0.1818
Median	0.0181	0.2208	0.2381	12.0226	0.0139	0.0863	0.0061	0.0000
Maximum	0.0436	0.6756	0.4095	14.1000	0.0228	0.3419	0.0249	1.0000
Minimum	0.0010	0.0067	0.1396	9.4477	0.0100	0.0334	-0.0024	0.0000
Std. Dev.	0.0068	0.1144	0.0640	1.1957	0.0028	0.0452	0.0060	0.3882
Observations	77	77	77	77	77	77	77	77

Table 2 Correlation metrics

	ROA	ROE	DIV	ASSETS	PERSONNEL	EQUITY	PROV	OWN
ROA	1.000							
ROE	0.591	1.000						
DIV	0.141	0.305	1.000					
ASSETS	0.042	0.517	-0.107	1.000				
PERSONNEL	-0.144	0.096	0.386	-0.182	1.000			
EQUITY	-0.036	-0.549	-0.230	-0.440	-0.195	1.000		
PROV	-0.343	-0.304	0.058	-0.148	0.114	0.066	1.000	
OWN	-0.156	0.565	0.126	0.765	0.088	-0.488	-0.123	1.000

5. Empirical result

The univariate descriptive statistics is provided in Table 1. The low value of the diversification index, *div*, reveals that the domestics licensed banks in Sri Lanka is remarkably diversified. The Table 2 presents correlation matrix for all variables. The empirical results of the Panel Least Squares Model, Random Effect Model and Dynamic Panel Model are discussed below.

5.1 The average impact of the sectoral concentration on the return of domestic LCBs in Sri Lanka.

The results of estimation of the impact of diversification on the ROA while conditioning to log of bank size, personnel cost ratio and equity ratio, equation(2),are given in Table 3. The time fixed effects were allowed for robustness test. The results of Panel Least Squares (3a) show the diversification coefficient of 0.03 at the 5% significance level. The positive statistically significant coefficient indicates that, on average,

the concentration strategy increases the banks' returns. In other words the diversification strategy reduces the banks' returns.

However, when the time fixed effects (3b) is introduced into the regression the diversification coefficient becomes 0.029 at 10% significance. Accordingly the impact of the diversification become slow and less significant. However the Random Effects Model (3c)supports the null hypothesis which is in favor of diversification strategy. The White adjustment for heteroscedasti city also was performed for error correction. The robustness test using ROE has not made any significant changes to the coefficient. It is noted that the F-statistics are not statistically significant for all three scenarios which question the appropriateness of the specification.

5.2 The impact of the sectoral concentration on the return when control for credit risk.

Table 3 Effects of diversification on banks' performance

Dependent Variable: ROA

	Panel LS		Random Effects
	(3a)	(3b)	(3c)
Div	0.0313**	0.0292***	0.0292
	2.2146	1.9818	1.1007
Log(Assets)	0.0011***	0.0011	0.0009
	1.4095	1.2813	1.2662
Personnel	-0.5822	-0.6622**	-0.4481
	-1.9172	-2.1202	-1.2962
Equity	0.0129	0.0104	0.0134
	0.5991	0.4612	0.4525
Constant	0.0033	0.0033	0.0052
	0.2507	0.2486	0.3635
Observations	77	77	77
Adj. R-squared	0.0419	0.0370	0.0098
F-Stat	1.8307	1.2918	1.1878

*, **, *** - 1% , 5% and 10% Significant

Table 4 Effects of diversification on banks' performance

Dependent Variable: ROA

	Panel LS		Random Effects
	(4a)	(4b)	(4c)
Div	0.0307**	0.0315**	0.0294
	2.2837	2.2012	1.1432
Log(Assets)	0.0009	0.0010	0.0006
	1.1086	1.1617	0.9620
Personnel	-0.4888***	-0.5561***	-0.4356**
	-1.6828	-1.8142	-2.1587
Equity	0.0133	0.0155	0.0178
	0.6490	0.7046	0.8481
Prov.	-0.3673*	-0.3419**	-0.3704**
	-2.9403	-2.2675	-2.3911
Constant	0.0081	0.0056	0.0108
	0.6470	0.6698	0.8800
Observations	77	77	77
Adj. R-squared	0.1339	0.0938	0.1052
F-Stat	3.3491*	1.7154**	2.7877**

*, **, *** - 1% , 5% and 10% Significant

The Winton's model assumes the quality of the loan portfolios is endogenous as the levels of monitoring determined by bank's diversification strategy (Winton, 1999).

As can be seen in Table 4, the incorporation of the loan loss provision, equation (3), to control the influence of credit risk on the relationship between diversification and the returns of the banks in addition to log of bank size, personnel cost ratio and equity ratio revealed a positive significant coefficient for diversification. The PLS without time fixed effect (4a) and with time effects (4b) have similar diversification coefficient of 0.031 at 5% significant. It is confirmed that the diversification strategy yield low return even after conditioning to the different credit risk exposures of the banks.

However, the Random Effect model shows insignificant coefficient for diversification (4c). This result supports the null hypothesis even after controlling the expected credit risk which favored diversification strategy. The loan loss provision in all cases signals a negative statistically significant coefficient as expected. Importantly, the F-statistics of all specification are statistically significant which expose the explanatory power of regression.

5.3 The impact of state ownership on the relationship between the sectoral diversification and the performance.

Research on emerging markets provide evidence consistent with the notion that state and private controlled firms behave differently (Megginson et al., 1994; Shleifer, 1998 & Dxion et al., 2015). This suggests that the performance effect of diversification may be affected by ownership structure. Therefore, the base line specification is further expanded with the introduction of dummy variable to control the ownership structure (state vs. private) of the banks, Equation 4. The results

of PLS in Table 5 show a positive diversification coefficient of 0.04 for with and without time fixed effects (5a) & (5b) at the 1% significant level. Thus, the study strongly suggests that the diversification reduces the performance of domestic licensed commercial banks in Sri Lanka when conditioned to credit risk and ownership.

The Random Effect Model yields a positive weak significant diversification coefficient of 0.04. It is noted that the experience in Sri Lanka is similar to German and Italian banks (Hayden ,2007 and Acharya, 2002). The F-statistics are strongly significant at the 1% level, while five explanatory variables out of six show statistically significant coefficients, hence it is assumed the specification is mostly appropriate.

5.4 The potential non-linear relationship between diversification and performance

Table 5 Effects of diversification on banks' performance

Dependent Variable: ROA			
	Panel LS		Random Effects
	(4a)	(4b)	(4c)
Div	0.0410*	0.0414*	0.0398***
	3.1917	3.0572	1.8190
Log(Assets)	0.0023*	0.0025*	0.0022*
	2.7900	2.8566	3.7986
Personnel	-0.4923***	-0.5742*	-0.4627***
	-1.8246	-2.0275	-1.7532
Equity	0.0019	0.0059	0.0036
	0.0966	0.2868	0.2885
Prov	-0.3872*	-0.3763*	-0.3825**
	-3.3327	-2.6952	-2.4902
Own	-0.0081*	-0.008*	-0.0078*
	-3.5004	3.4889	-4.5111
Constant	-0.0092	-0.0126	-0.0083
	-0.7223	-0.9595	-0.6789
Observations	77	77	77
Adj. R-squared	0.2524	0.2267	0.2104
F-Stat	5.2754*	2.8571*	4.3754*

*, **, *** - 1% , 5% and 10% Significant

Table 6 Effects of diversification on banks' performance

Dependent Variable: ROA			
	Panel OLS		Random Effects
	(6a)	(6b)	(6c)
Div	0.0083	-0.0114	0.0096
	0.1116	-0.1457	0.1207
Log(Assets)	0.0023*	0.0026*	0.0023*
	2.8092	2.9233	3.9795
Personnel	-0.5025***	-0.5999**	-0.4926**
	-1.8450	-2.0915	-1.7969
Equity	0.0034	0.0085	0.0037
	0.1728	0.4073	0.2967
Prov.	-0.3897*	-0.3745*	-0.3886**
	-3.3309	-2.6706	-2.5735
Own	-0.0079*	-0.0080*	-0.0079*
	-3.3552	-3.3225	-4.0459
Div^2	0.0638	0.1022	0.0606
	0.4451	0.6871	0.4034
Constant	-0.0059	-0.0075	-0.0058
	0.0147	-0.4990	-0.3371
Observations	77	77	77
Adj. R-squared	0.2437	0.2203	0.2306
F-Stat	4.4983*	2.6519*	4.2547*

*, **, *** - 1% , 5% and 10% Significant

The possibility of non-linear relationship between the loan diversification and banks performance is also tested by introducing squired term of diversification measures, equation (5). The outcome (Table 6) rejects significance for PLS with and without time effects (6a) & (6b) and Random Effects (6c) and reveals that there is no non-linear relationship between diversification and the performance. These findings are similar to the experience in Chinese Listed Commercial Banks (Chen et al., 2013).

5.5 The influence of the previous period diversification level on the banks performance in the current period

The outcome of the Dynamic Panel Model which has been employed to test the lag effect of the diversification, equation (6) is given in Table 7. The PLS (7a) and Random Effect Model (7b) produce statistically insignificant coefficient for diversification whereas the PLS produces a positive significant (at the 5% level) coefficient for diversification lag effect.

In summary the diversification strategy, on average, reduces the performance of the domestic licensed commercial banks in Sri Lanka when conditioned to log of total assets, personnel cost ratio, equity ratio, credit risk and ownership with PLS and Random Effect models. This specification is considered as mostly appropriate since the F-statistics are strongly significant at 1% while five explanatory variables out of six

Table 7 Effects of diversification on banks' performance

Dependent Variable: ROA		
	Panel OLS	Random Effects
	(5a)	(5b)
Div	0.0062	0.0062
	0.3071	0.1692
Log(Assets)	0.0025*	0.0025*
	2.7181	3.1721
Personnel	-0.5221	-0.5213**
	-1.5976	-2.2185
Equity	0.0067	0.0067
	0.3281	0.4428
Prov.	-2.9224*	-0.3696**
	-2.9225	-2.4085
Own	-0.0083*	-0.0083*
	-3.3093	-6.6557
Div-1	0.0469**	0.0470
	2.2296	1.6366
Constant	-0.0157	-0.0157
	-1.0827	-1.0271
Observations	66	66
Adj. R-squared	0.2450	0.2435
F-Stat	4.0137*	3.9888*

*, **, *** - 1% , 5% and 10% Significant

show statistically significant coefficients at conventional significant levels.

6. Conclusion

The theories and empirical studies on the relationship between sectoral loan diversification and the banks' performance have not provided a clear direction. The traditional banking theory supports for loan portfolio diversification as it reduces risks and prevents banking failures while enhances performance and safety. In addition portfolio theory encourages the diversification for better performance. In the other hand the corporate finance theory motivates firms to concentrate only on few selected sectors where the firms can enjoy competitive edge on management expertise for superior performance. The empirical studies backed mostly to loan concentration over diversification strategy. However the Sri Lankan banking sector has not been investigated to find out what strategy leads to better performance.

Therefore this paper empirically investigates the relationship between the sectoral diversification and the performance of Sri Lankan domestic licensed commercial banks over the period of 2008 to 2014 using Panel Least Squares, Random Effect Model and Dynamic Panel Model.

The main finding of this study is that the sectoral loan diversification, on average, lead to poor performance in domestic LCBs in Sri Lanka when conditioned to log of total assets, personnel cost ratio, equity ratio, credit risk and ownership. The specification employed is considered as mostly appropriate since the F-statistics are strongly significant at the 1% level, while five explanatory variables out of six show statistically significant coefficients.

Positive diversification coefficients around 0.04 are observed in PLS with and without time fixed effect and the Random Effect models at the 1% and 10% significant levels for PLS and Random Effect models respectively. In other words the sectoral concentration of loan portfolios could provide better performance compared to diversification strategy as revealed in Hayden et al. (2007), Acharya (2002) and Chen et al. (2013).

This study also revealed that the state own banks reduces the average benefits of concentration in the banking sector in line with the findings of Sapienza (2002). In addition the possible non- linear relationship between diversification and return is ruled out by this study similar to Chen et al. (2013). As the ultimate objectives of the regulators and the managements of the banks are safe and sound banking system and better performance they should revisit their policies and strategies in line with the findings of this paper and improve the compositions of the incentives for either strategies.

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