Governance and bank's capital structure: empirical evidence from a cross countries analysis

Adeoye Amuda Afolabi

National Universities Commission,
PMB 237 Gariki GPO Maitama Abuja, Nigeria
Email: adeoye.afolabi@yahoo.co.uk

Abstract: This paper examines the role of bank ownership structure on capital structure by [using the financial and ownership data from Caprio et al. (2007) that covered 244 banks across 44 countries]. We classified banks across the countries with geographical regional dummies indicating if the banks are located in Asia, Africa and Latin America (the reference category being OECD countries). We find that family-owner managed firms tend to have a lower debt. In addition, excessive control right of the controlling owner may significantly increase bank leverage. We suggest that in a family-owner managed firms there should be more dilution of ownership so that minority are not exploited as too much loan may lower bank value. Thus, banks need to be better regulated as excessive leverage has been identified as one of the reasons for the current financial crisis.

Keywords: leverage; family owner managed; control rights; cash flow rights; OLS.

Reference to this paper should be made as follows: Afolabi, A.A. (2014) 'Governance and bank's capital structure: empirical evidence from a cross countries analysis', *African J. Accounting, Auditing and Finance*, Vol. 3, No. 2, pp.149–169.

Biographical notes: Adeoye Amuda Afolabi obtained his BSc from Obafemi Awolowo University IIe-Ife, MSc in Accounting and Finance from Ahmadu Bello University Zaria and his MPhil and PhD in Accounting and Finance from Brunel University, London, UK. Currently, he is a Principal Academic Standard Officer at National Universities Commission, Abuja, Nigeria.

1 Introduction

The current financial crisis of 2007 has highlighted the risks of unregulated privatisation. During the sustained period of high growth over the past decade or so, unfettered risk-taking by banks has been one major factor contributing to the outbreak of the financial crisis of 2007 (e.g., see Coricelli et al., 2009; de Haas and van Horen, 2009), necessitating huge government bail-out of banks. Accordingly, capital management of banks has come under increasing scrutiny in recent times. But it is only recently that the question of optimal bank capital structure has begun to be addressed (e.g., see Diamond and Rajan, 2000). Following the recent surge of literature for corporate governance of non-financial firms (La porta et al., 1999) some researchers (e.g., Caprio et al., 2007) have also highlighted the potential role of governance on bank valuation. In particular the

Copyright © 2014 Inderscience Enterprises Ltd.

paper examines whether strong shareholder's protection laws could improve bank governance and therefore bank valuation. More recently, Mehran and Thakor (2009) examine the link between bank capital and bank valuation. We are however not aware of any research exploring the possible role of corporate governance of banks on bank's capital management. Using cross-country bank-level data, the present paper aims to bridge this gap of the literature. As result, the analysis of bank leverage is very important because there is need to understand the relationship between leverage decision and the ownership structure of bank which has been emphasised in the wake of the current financial crisis that show the risk of lending boom which result to downturn of the global economy.

Caprio et al. (2007) claimed that ownership structure is an important mechanism for governing banks and the same most important aspect of corporate control mechanism that determine the governance of non-financial firms also determine the bank operations. Laeven and Levine (2008) revealed that ownership structure and shareholder protection law have impact on ability of owners to influence risk. The authors argue further that shareholders with higher voting than cash flow rights have the same greater power and incentives to change corporate behaviour than minority shareholders. Theory also suggests that how much a bank will deleverage will surely depend on how much leverage bank equity owners are willing to tolerate in future time and the level of leverage that will be profitable in the business with increased in cost of capital. Based on this perspective ownership structure determine the ability of owners to change bank risk in respond to standard risk shifting incentives and to incentives from official regulations. Consequently, the importance of banks to national economies is emphasised by the fact that banking is universally a regulated industry and banks have access to government safety net. In addition, the activities of banks have a number of intrinsic risks that can pull down the whole financial system of a nation economy. The intrinsic risks include, among others, operating with high leverage which can cause financial distress and bankruptcy. It is therefore very important that banks have strong corporate governance, in order to protect the interest of all the stakeholders and thus to better align the interests of bank managers, shareholders and the customers.

Furthermore, sizeable corporate governance literature on non-financial firms focuses heavily on firms' ownership structure (e.g., Claessens et al., 2000, 2002). The question is whether banks are different from these non-financial firms. Following Caprio et al. (2007), our analysis focuses on two key ownership variables, namely, whether a family is a controlling owner and also whether control rights of the controlling owner exceeds the corresponding cash flow rights. Our analysis however differs from Caprio et al. (2007) in that we consider the role of bank ownership structure on capital structure.

Moreover, conflicts of interests between managers and shareholders as well as those between controlling and minority shareholders lie at the heart of the corporate governance literature. With the exception of the USA and the UK, ownership concentration is highly common in all parts of the world. One important characteristic of the prevalent ownership structure around the world is the dominance of family ownership. Often in family controlled firms the controlling owner and the manager belong to the same family, which helps to align the interests of the manager with the controlling owner. It is also argued that owner-managed family firms tend to be more risk-averse than others, even at the highest level of concentration, which in turn may generate a negative relationship between family ownership and leverage structure and may thus contrast the conventional wisdom of a positive relationship. The conflict

between the controlling owner and the minority owners however continues to persist, thus generating some negative impact on bank valuation. Second, an often control right of the controlling owner often exceeds his/her cash flow rights. Higher control rights may give rise to serious agency problems and are often associated with pyramid ownership structures and crossholding. Such situations are associated with an over-reliance on debt due to large shareholders being unwilling to dilute their ownership, generally known as *non-dilution of entrenchment.*

The banking crisis has highlighted the adverse effects of much capital. In this context, the present study empirically examines if there is a link between ownership and bank capital. Our analysis particularly focuses on two ownership variables, namely, incidence of family ownership and also if control rights exceeds cash flow rights. This is because these two ownership variables have important implication for corporate governance of bank. Firstly, one can argue that family bank is more risk averse than others and therefore are less likely to have lower loan and lower capital structure than non-family banks. Secondly, the management of bank where control exceeds cash flow rights is more likely to take riskier decision since financial risks involved for them would be less than when cash flow rights are higher. We use bank-level cross-country data available from Caprio et al. (2007). Our results provide support to the two hypotheses not only for the full sample but also in some sub-samples. In particular, importance of control exceeds for cash is upheld in the OECD countries while importance of family ownership for capital structure is particularly pronounced in the non-OECD countries. This is because incidence of family ownership is less pronounced OECD countries.

In particular, estimates suggest that family-owner managed firms tend to have a lower liability. This result is consistent with Daly and Dollinger (1992) and Anderson et al. (2003). In addition, with equity ratio the result indicates that family-owner managed firms have a positively significant impact on equity ratio so that a family-owner managed firms tend to have higher equity to finance.

Furthermore, the coefficient of control exceeds cash flow right (CEC) has a significant positive relationship on bank leverage in term of liability ratio. This implies that bank leverage is higher if control exceeds cash flow rights. This result is consistent with Driffield et al. (2007). In addition, this also indicates that when control rights of the controlling owner exceeds cash flow rights there will be fear of sharing of control and being interfered by others and this often delays the decision of company to go for public offer. Consequently most companies will prefer to raise debt capital (Pandey, 1999). Furthermore, the coefficient of control exceeds cash flow right has a significant negative relationship on bank leverage in term of equity ratio as an alternative indicator of bank leverage. This finding further buttress the result when using liability ratio in term of bank leverage which reveals that bank leverage is higher when a control right of the controlling owner exceeds cash flow rights. This result also suggest that firms where control rights of the controlling owners exceeds cash flow rights, the equity is lower they will prefer debt financing because of fear of losing control. Situations like this are associated with an over-reliance on debt due to large shareholder being unwilling to dilute their ownership, generally this known as non-dilution of entrenchment. Our finding is consistent with Claessens et al. (2002).

The paper is organised as follows, Section 2 describes the contemporary literature review, Section 3 describes the methodology of the study, discusses the data sources and definitions of variables and Section 4 details the results of the study as well as the conclusions and policy implication.

2 Literature review

Past studies on ownership such as Claessens et al. (2000) claimed that separation of ownership and control was common among family-controlled firms and small firms, and voting rights exceeds cash flow rights and Claessens et al. (2002) posited that the excess of large shareholders' voting rights over cash-flow rights decreases the total value of the firm. The above finding is inconsistent with Cronqvist and Nilson (2003) reveal that in Sweden, the cash-flow ownership does not exceed voting rights, which negatively affected the value of the firm. Villalonga and Amit (2006) claim that family-owned firms create more value than non-family firms. There should be special attention to the three elements in the meaning to family firms, which are ownership, control and management. This finding is consistent with Anderson and Reeb (2003) explain that family firms performed better when family members served as CEO than non-family members served as CEO of the firm. From the above studies, these show that family or individual owner and excess of shareholder control rights over cash-flow rights are important mechanism in corporate governance structure. In addition, Driffield et al. (2007) found that family firms being managed by the owners higher concentration and incentives effect will likely have positive impact on both capital structure and firm value, but entrenchment effects (against minority shareholders) will likely increase leverage but decrease the value of the firm.

The question however remains whether the same corporate governance mechanisms that work for non-financial firms also work for banks. Caprio et al. (2007) explained that the moment a bank usefully mobilises and distributes funds, this will surely reduce the cost of capital to the firms and this will increase capital accumulation and productivity growth. In addition, in some countries banks act as major equity holders and creditors and this makes them useful in governing corporations. The authors further argue that once bank managers encounter sound governance mechanisms banks will raise capital at a lesser cost, allocate people's saving usefully and operate sound governance on the firms they fund. The important of bank capital structure cannot be overemphasised against this background. Diamond and Rajan (2000) posited that capital structure in a bank is affected by bank safety, the ability of banks to refinance at a lower cost and ability to obtain repayment from borrowers or to liquidate them. However, Berger et al. (1995) revealed that banks differ from other firms in two important areas that affect their capital structures. These are the availability of regulatory safety net that protects the safety and soundness of banks and this certainly reduce the bank capital. It also includes the regulatory requirement that increased the amount of capital of some banks.

In relation to ownership structure in banks, Caprio et al. (2007) found that banks are not widely held, instead a family or a state controls banks. Also, higher cash-flow rights by the controlling owner boost valuation, greater cash-flow rights reduced the unfavourable effect of weak shareholders protection laws on valuations. These results show that ownership structure is an essential mechanism for governing banks. In banking industry, Mehran and Thakor (2009) argue that the total value of banks and its equity capital are significantly correlated, and the bank's assets and liabilities, also the net present value (NPV) to shareholders, for investment is related to bank capital. From this point of view, those with higher control rights will have higher return on their investment. These indicate that those banks with sound governance may have a capital structure that will bring good returns.

Having said this, the objectives of this paper is to examine how family owner managed firm affect bank leverage. In addition, to assess the effect when control rights of the controlling owner exceeds cash flow rights on the bank leverage.

3 Determinants of capital structure of firms

Caprio et al. (2007) provides two questions on ownership. Firstly, are banks widely held or do they have controlling ownership with significant control and cash flow rights. Against this background, this study model Caprio et al. (2007) and advance the course of study of governance and bank capital structure by considering leverage as dependent variable and include family or individual owner and Control exceed cash flow rights has independent variables. A database from Caprio et al (2007) is used covering 244 banks across 44 countries to assess the impact of the family owner managed firms and control exceeds cash-flow rights on leverage In addition, Caprio et al. (2007) explained that owner's voting rights will exceed the owner's cash-flow rights when the owner controls votes through difference affiliated parties without having the rights to all cash-flow received by those affiliated parties.

3.1 A model of bank leverage

On the basis of the existing literature, we focus on the following hypotheses:

1 Bank leverage is likely to be lower in owner managed family firms.

2 Bank leverage is likely to be higher if control exceeds cash flow rights

Thus for the i^{th} bank, bank leverage can be determined as follows:

$$L_{it} = \beta_0 + \beta_1 \text{ family-ownership} + \beta_2 \text{ CEC} + \beta_3 \text{ X}_i + \text{ui}$$

where leverage is measured by the liability ratio (total liability as a share of total assets). Other control variables X includes bank size (proxied by bank assets), profitability and also geographical regional dummies indicating if the bank is located in Asia, Africa, Latin America (the reference category being OECD countries).

Finally, ui is the random error term, which is independently and identically distributed.

3.2 Data and variables

The data for study come from Caprio et al. (2007) a new data based covering 244 banks across 44 countries. The study indentified that

1 non-financial institutions own banks shares

2 BANKSCOPE and the BANKERS ALMANAC have only information on financial institutions

3 bank ownership was traced through corporations back to individuals.

The WORLDSCOPE have ownership data of firms, as a result, the study used WORLDSCOPE in addition with 20-F filings, company reports, and filings from National Stock Exchanges and Securities Regulations to know the ultimate owners of corporations that own share in banks. The ownership data are from year 2001, but there are some instance of using 2000 data this result that ownership pattern are very stable this will not bring any problems and bias to the result of the study.

The study uses Caprio et al. (2007) database that is made up of sample consisting 244 banks across 44 countries and focuses on the largest banks which depicts the level of comparisons across the countries. In addition, the largest banks tend to have the most liquid shares, make it to be less concern that liquidity differences drive the results.

3.3 Control rights

From the earlier study of Caprio et al. (2007), the data on control rights of banks which was build up from La porta et al. (1999, 2002) method for assessing the ownership structure of firms. The major shareholders are from financial or non-financial corporation. When a shareholder has x percent indirect control over bank A, if she control directly firm B that is if she hold at least 10% of voting rights of firm B, invariably she have direct control x percent of the vote of bank A. In another situation, a shareholder have x percent indirect control over bank A, if she controls directly firm C that invariably controls directly firm B, which directly controls x percent of the votes of bank A. The author further explained that the control chain from bank A to firm C can be with a long sequence of firms, in which each have control greater than 10% voting rights above the next one. In case there are many chains of ownership between a shareholder and the bank, then there will be sum up of control rights across all of these chains. The authors later indentify the multiple shareholders that have above 10% of the votes. Then later pick the largest controlling owner, and this analysis was carried out while including an indicator in case if a bank have multiple controlling owners. However, this did not change the result of the study. From this process banks are divided into these categories which are; widely held banks which do not have a controlling owner that is no shareholder owns 10% or more of the voting rights. Then, finally created controlling owner with minimum of 10% of voting rights of the banks to form:

a a family or individual owner

b a widely held financial institutions

c a widely held non financial institutions.

The following variables are associated with control and explained as follows, which is also described in Table 2 that shows the summary of the descriptive statistics.

- WIDELY: This is a dummy variable which is equal to one, if there is no legal entity owns 10% or more of the voting rights, and otherwise zero.

- CONTROL: This is equal to the fraction of the bank's voting rights, if any owned by its controlling shareholder.

- FAMILY: This is a dummy variable equal to one, if an individual or family is the controlling shareholder, and zero otherwise.

3.4 Cash flow rights

Cash flow rights are the amount invested in the equity share capital of the firm. Caprio et al. (2007) data shows that the direct and indirect cash flow right of the controlling (CF) are calculated as follows: the direct and indirect cash flow right can obtained by shareholder, for example if the controlling shareholder of bank A holds the fraction y of cash flow in firm B then firm B invariably holds the fraction x of the cash flow rights in bank A. Therefore, the indirect cash flow rights in bank A of the controlling shareholder are equal to the product of x and y. Assuming, there is a long chain of controlling ownership, therefore the products of the cash flow rights along the long chain will be used. In addition, CF is equal to the fraction of the bank's cash flow rights owned directly and indirectly by its shareholder.

3.5 Measurement of variables

For the purpose of this study, the paper considers corporate governance as an independent variable which is proxie in the study by family –owner managed firm, and control exceeds cash-flow rights, and dependent variable as leverage. This used to find out how family or individual owner, control exceed cash flow rights is significantly associated with leverage. For a balance econometric definition of the model, the study equally considers inclusion of both control and dummy variables which include profitability ratio, bank size, and Asia, Africa and Latin American countries.

3.5.1 Control exceeds cash-flow rights (CEC)

Claessens et al. (2002) have shown that the separation of control and cash flow rights of the controlling owner has important implications for corporate governance. The particular interesting case is when control rights exceed cash flow rights because it may give rise to some agency costs. Higher voting rights are often associated with pyramid ownership structures and crossholding. Such situations are associated with an over-reliance on debt due to large shareholders being unwilling to dilute their ownership by raising equity finance, generally known as *non-dilution of entrenchment.*

Caprio et al. (2007) data provides information on controlling owner's cash flow and control rights. The paper classifies a bank as having controlling owner if the shareholder has direct and indirect voting rights that sum up to 10% or more (measured by the variable control10). Assuming no shareholder holds 10% of voting rights, the study classify the bank as widely held. Conventionally, 10% voting rights are adequate to exert control; this cut-off is used in the literature (e.g., see La porta et al., 1999, 2002). Similarly, cash flow rights refer to direct and indirect cash flow rights of the controlling shareholder (CF), which equals the fraction of the bank's cash flow rights, at 10% (measured by the variable CF10). Using these two variables, we generate a variable control exceeds cash flow (CEC) as follows: CEC = Control10-CF10.

3.5.2 Family

Family is defined as a group of people in relationship through by blood or marriage according to this study. The computation of family was based on Caprio et al. (2007) with following assumption that family is equal to 1 if an individual or family is the controlling shareholder and zero otherwise. This computation was done for each of the banks across the countries in the regions.

3.5.3 Size

This is the logarithm of the bank's total asset, this bank total asset is in million of US dollars, the sources of the data is from Bankscope. In this study the size is used as one of the control variable in measurement of leverage, and this indicates the business structure of each of the bank in each country in the region.

3.6 Performance ratio

3.6.1 Profitability ratio and return on asset

Pandey (2005) profitability ratio is calculated so as to know the operating efficiency of the banks. Apart from management of bank, creditors and owners are interested in the profitability of the company. The creditors need their interest and the repayment of principal regularly, and the shareholders need a required rate of return on their investment. All these are possible only when the company earn enough profits. In this study, the profitability ratio was measured by profit over total assets. This was used as a controlling variable in order to determine the association between the governance and bank capital structure in term of leverage. The return on asset (ROA) is calculated as pre-tax profit over total assets which is used as performance ratio.

3.6.2 Capital structure

Pandey (2005) defined capital structure of a corporation as the proportionate relationship between debt and equity. The equity includes paid up capital, share premium and reserves and surplus (retained earnings). In addition the author explained that the company assets can be financed either by increasing the owner's claims or the creditors' claim. The owners' claims is high immediately the firm raises fund by means of issuing ordinary shares, or through retaining the earnings, and also the creditors' claims shut up by borrowing . Therefore these various ways of financing representing financial structure of firm, traditionally, short-time borrowing are not part of methods of financing the firm capital expenditure, hence the long-term claims form the capital structure of the firm. From the above point of view capital structure decision is an important aspect of managerial decision. In this study the dependent variables is the capital structure in term of leverage which was calculated as follows; liability ratio which is the total liability over the total assets and equity ratio is equity over total assets. The figure used in this calculation is obtained from BANKSCOPE (Caprio et al., 2007).

3.6.3 Dummy variable

The study classifies banks in each country into regions, e.g., Asian, Africa, Latin America, and OECD, and this was arranged alphabetically. Each of the columns corresponding to every bank in the classification is done according to the region, with Asia, Africa, Latin America and OECD equal to 1 or otherwise zero. In addition, Asia, Africa, and Latin America banks are used as the dummy variable relative to the banks in OECD countries, which serves as a base. The reason is to control for possible differences in leverage across the banks in the countries in each of the three regions.

3.7 Descriptive statistics of bank ownership around the world

Table 1 summarises the quartile distribution of these three variables, namely, control10, CF10 and CEC. It follows from our sample distribution that CEC takes a value 0 for about 78.7% banks in our cross-country sample. Given this skewed distribution of the variable, first three quartiles for CEC10 turn out to be zero while the maximum value of CEC10 is as high as 94. We include this variable CEC10 to capture the implication of underlying agency problem of this type of ownership structure for bank leverage and performance.

Table 1 Showing the distribution of control exceeds cash flow (CEC)

Quartile	*Control 10 (percentiles)*	*CF10 (percentiles)*	*CEC10 (percentiles)*
Minimum			
Q1	0	0	0
Q2	26	18	0
Q3	56.750	43.750	0
Maximum	100	100	94

Table 2 provides summary statistics for all the countries in the samples. While Table 3 provides statistical summary base on each region, what extent to which banks are widely held, and also show the controlling owner if the banks are not widely held. The result indicates that about 48.1% of the samples are widely held in the OECD region, which is the highest, follow by 13.6% for the Latin America region, 9% in Asia region, while 7.7% in Africa. This indicates that Africa has the least widely held banks. Table 2 also provides the summary statistics of the family or individual owners. The result indicates 64% in the Latin America, which is the highest percentage, followed by 47% in Asia, 38% in Africa and OECD with 21%.

Table 3 also indicates the summary of the statistics on divergent between control rights and cash flow rights [control exceeds cash flow rights (CEC10a)]. There is a variation in the average percentage of control exceeds cash flow rights across the region of the sample of 244 banks. Latin America has the highest with 63.6%, with 38.5% in Africa, 16.7% in Asia, while OECD has the least with 15.3%.

Table 2 Summary of descriptive statistics based on region

Region	*Variable*	*Mean*	*S.D.*	*Minimum*	*Maximum*	*N*
Latin America	Pftta	0.018	0.015	0.000	0.060	22
	Cec10a	0.636	0.492	0.000	1.000	22
	Family1	0.640	0.492	0000	1.000	22
	Widely held	0.136	0.351	000	1.000	22
	Size	15.498	1.389	12.25	18.080	22
	Liability ratio	0.900	0.037	0.800	0.950	22
	Equity ratio	0.100	0.371	0.050	0.200	22
Asia	Pftta	0.009	0.009	–0.020	0.030	78
	Cec10a	0.167	0.375	0.000	1.000	78
	Family1	0.470	0.503	000	1.000	78
	Widely held	0.090	0.288	0.000	1.000	78
	Size	15.532	1.447	12.550	18.08	78
	Liability ratio	0.913	0.045	0.760	0.970	78
	Equity ratio	0.086	0.046	0.030	0.240	78
Africa	Pftta	0.017	0.012	0.000	0.040	13
	Cec10a	0.385	0.506	0.000	1.000	13
	Family1	0.380	0.506	000	1.000	13
	Widely held	0.077	0.277	0.000	1.000	13
	Size	14.411	2.033	11.160	17.300	13
	Liability ratio	0.883	0.071	0.720	0.940	13
	Equity ratio	0.119	0.071	0.060	0.280	13
OECD	Pftta	0.007	0.019	-0.150	0.060	131
	Cec10a	0.153	0.361	0.000	1.000	131
	Family1	0.210	0.412	000	1.000	131
	Widely held	0.481	0.502	0.000	1.000	131
	Size	17.274	1.930	13.650	20.770	131
	Liability ratio	0.939	0.023	0.840	0.980	131
	Equity ratio	0.061	0.023	0.020	0.160	131
						244

Notes: This table reports the summary statistics for the variable for the study. Pftta is the profitability ratio, which is calculated as profit over total assets of the bank, Cec10a is the control exceeds cash flow rights at 10% in the bank, Family 1 is a dummy variable that is equal to 1 if a family or individual is the controlling shareholder, and zero otherwise. Widely held is a dummy variable that equal to one if there is no controlling shareholder, and zero otherwise, Size is the logarithm of the bank's total assets, Liability ratio which is the leverage is calculated as the total liabilities over total assets of the bank, Equity ratio also know as leverage is calculated as the equity over total assets of the bank.

Table 3 OLS estimates of bank capital structure

	Liability ratio		*Equity ratio*		*Liability ratio (outlier-free)*		*Equity ratio (outliers free)*	
	Specification 1	*Specification 2*	*Specification 1*	*Specification 2*				
Variables	Model 1 Column 1	Model 1 Column 2	Model 2 Column 3	Model 2 Column 4	Model 1 Column 5	Model 1 Column 6	Model 2 Column 7	Model 2 Column 8
Intercept	0.816**	0.830**	0.183**	0.169**	0.823**	0.835**	0.176**	0.165**
	0.026	0.024	0.025	0.024	0.026	0.025	0.026	0.026
	(31.713)	(34.012)	(7.317)	(7.135)	(31.804)	(33.500)	(6.629)	(6.441)
Size	0.007**	0.007**	–0.007**	–0.007**	0.007**	0.006**	–0.007**	–0.006**
	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
	(5.016)	(4.773)	(–5.173)	(–4.927)	(4.674)	(4.490)	(–4.504)	(–4.322)
Profitability	–0.587*	–0.613*	0.595*	0.621*	–0.528*	–0.547*	0.518*	0.536*
	0.299	0.270	0.295	0.265	0.281	0.251	0.285	0.255
	(–1.96)	(–2.268)	(2.017)	(2.344)	(–1.876)	(–2.180)	(1.817)	(2.104)
Family is the controlling owner	-	–0.019**	-	0.019**	-	–0.018**	-	0.018**
		0.005		0.005		0.005		0.005
		(–3.473)		(3.591)		(–3.305)		(3.203)
Control exceeds cash flow at 10%	-	0.011*	-	–0.011*	-	0.008	-	–0.007
		0.006		0.006		0.001		0.006
		(1.730)		(–1.771)		(4.490)		(–1.188)

Notes: Dependent variable is leverage which are liability and equity ratios. Size of the bank is Log(total assets) and Profitability ratio is profit over total assets are control variables. Family is the controlling owner is a dummy variable equal one if a family is the controlling shareholder and zero otherwise. CEC at 10% is equal to 1 if CEC at 10% is greater or equal to 2 and zero otherwise. Geographical regional dummies indicating if the bank is located in Asia, Africa and Latin America (reference category being OECD countries). Columns 5–8 indicate the test for outliers in order to examine the robustness of the samples.
The numbers with significant level are coefficient value, while the middle numbers are the standard error and Numbers in the parentheses refer to t-statistics.
**Significant at 1% level.*
**Significant at 5% level.*
*Heteroskedasticity is corrected using White-adjusted standard errors.

Table 3 OLS estimates of bank capital structure

	Liability ratio		*Equity ratio*		*Liability ratio (outlier-free)*		*Equity ratio (outliers free)*	
	Specification 1	*Specification 2*	*Specification 1*	*Specification 2*				
Asia	–0.013*	-0.010*	0.014*	0.011*	–0.017**	–0.013*	0.015**	0.012*
	0.006	0.005	0.005	0.005	0.006	0.005	0.006	0.005
	(–2.291)	(-1.891)	(2.553)	(2.160)	(–2.970)	(–2.520)	(2.684)	(2.222)
Africa	–0.023*	-0.023*	0.022*	0.022*	–0.025*	–0.023*	0.025*	0.023*
	0.010	0.011	0.010	0.011	0.010	0.011	0.010	0.011
	(–2.280)	(-2.075)	(2.321)	(2.103)	(–2.449)	(–2.062)	(2.413)	(2.036)
Latin America	–0.026**	–0.025**	0.026**	0.025**	–0.020**	–0.018*	0.020**	0.018*
	0.009	0.009	0.009	0.009	0.008	0.007	0.008	0.007
	(–3.047)	(–2.889)	(3.046)	(2.912)	(–2.601)	(–2.428)	(2.617)	(2.429)
R^2	0.34	0.38	0.35	0.40	0.33	0.37	0.32	0.35
F-statistic	24.60	20.68	26.15	22.10	22.12	18.44	20.54	17.08
No of observation	244	244	244	244	228	228	228	228
Number of countries	44	44	44	44	44	44	44	44

Notes: Dependent variable is leverage which are liability and equity ratios. Size of the bank is Log(total assets) and Profitability ratio is profit over total assets are control variables. Family is the controlling owner is a dummy variable equal one if a family is the controlling shareholder and zero otherwise. CEC at 10% is equal to 1 if CEC at 10% is greater or equal to 2 and zero otherwise. Geographical regional dummies indicating if the bank is located in Asia, Africa and Latin America (reference category being OECD countries). Columns 5–8 indicate the test for outliers in order to examine the robustness of the samples.
The numbers with significant level are coefficient value, while the middle numbers are the standard error and Numbers in the parentheses refer to t-statistics.
**Significant at 1% level.*
Significant at 5% level.
*Heteroskedasticity is corrected using White-adjusted standard errors.

Table 3a Showing diagnostic test for Table 3

Test	*Liability ratio*	*Equity ratio*	*Liability ratio free outlier*	*Equity ratio free outlier*
JB test (normality)	108.15	109.24	3.28	115.86
JB test p value	0.00	0.00	0.19	0.00
Ramsey's RESET test	51.70(0.00)	51.23(0.00)	22.27(0.00)	48.41(0.00)

Note: Numbers in the parentheses refer to P-value.

4 Results of the data analysis

4.1 Regression results

In this section this paper present OLS estimates of the empirical model using two alternative indices of bank capital structure, namely, liability ratio and equity ratio. Following our central hypotheses the study includes family ownership and control exceeds cash (CEC) flow as the two key explanatory variables. Other control variables include bank size, profitability ratio and geographical dummies indicating if the bank is located in Asia, Africa, Latin America (the reference category being OECD countries); these regional dummies control for variation in bank capital structure across the regions. For each dependent variable, the study uses two specifications. Specification (1) does not include family ownership and control exceeds cash flow rights which are included in specification (2). Thus, specification (2) is a more complete model of our interest and we couch our discussion in terms of specification (2). These estimates are summarised in Table 3.

Table 3 shows the OLS estimates of the two key governance variables, namely, family-ownership and control exceeds cash flow rights. It follows from column 2 of Table 3 that the estimated coefficient of family ownership is –0.019, suggesting that bank leverage is significantly lower in banks which are family owned. This in turn highlights that family owned firms tend to be more risk averse than others, even at the highest level of concentration, which in turn may generate a negative relationship between family ownership and bank leverage. This result is consistent with Daly and Dollinger (1992) who found that family owner managed firms are more risk-averse at highest level of concentration. Also the results is consistent with Anderson et al. (2003) who suggested that the consequence of family managed firms for a long term is that the firm will enjoy a lower cost of debt financing compared to other non-family managed-owner firms. More interestingly, the estimated coefficient of Control exceeds cash flow rights (CEC) is 0.011, which is statistically significant too. This implies that control exceeds cash flow has a positive effect on liability ratio. Consequently, higher control rights (in relation to cash flow rights) may give rise to serious agency problem and therefore an over-reliance on debt due to controlling shareholders being unwilling to dilute their ownership. Our finding is consistent with prior study by Driffield et al. (2007). In addition, this also suggests that the control rights of the controlling owner exceeds cash flow rights there will be fear of sharing of control and being interfered by others and this often delays the decision of company to go for public offer. Consequently most companies will prefer to raise debt capital (Pandey, 2005).

Column 2 of Table 3 shows the estimates of equity ratio as an alternative indicator of bank leverage. These results are generally in line with the results obtained from using liability ratio as a measure of leverage. In particular, we find a positive significant effect of family ownership on equity (estimated coefficient of 0.019), thus revealing preference for equity financing. This further strengthens the position of our result in model 1.where the inverse relationship between leverage and family owner managed firm is interpreted as dependence on equity rather on liability. This result is consistent with James (1999) who revealed that in a family-managed firms which made up of higher equity, there is possibility of holding long on investment and this will result in higher investment efficiency. In addition, the coefficient of control exceeds cash flow rights has a significant negative relationship on leverage but not so strong. This suggests that firms where control rights of the controlling owners exceed cash flow rights, the equity is lower, they prefer liability financing because of fear of losing control, generally known as non-dillution of entrenchment (Claessens et al., 2002).

Among other results, there is evidence that the size of bank has a positive and significant effect on debt with coefficient of 0.007. This indicates that larger banks tend to have significantly higher leverage. The latter can be facilitated by greater transparency of larger bank activities. This finding is consistent with Friend and Lang (1988) that revealed that size of firms is positively related to leverage. Similarly, bank size has a negative and significant effect on equity ratio. Moreover, profitability ratio has a negative significant effect on bank leverage and this estimated coefficient of –0.613. This result is consistent with Friend and Lang (1988) who revealed there is negative relationship between profitability and leverage in term of debt. Thus, more profitable banks have lower loan, but higher equity as there the more profitable banks find it easier to raise finance from markets. There is also significant regional variation in this respect. All three regional dummies for Asia, Africa, and Latin America have negative and significant coefficients, suggesting that banks in each of these regions has a significantly lower debt relative to their counterparts in the more developed world. However, in Table 3 column 4 using equity ratio as an alternative indicator of bank leverage, these dummies variables have a positive significant effect. This suggests that banks in each of this region rely more on equity (rather than debt) finance.

Moreover, outlier test is used to examine robustness results and it shows that control exceeds cash flow have insignificant effect on leverage. Thus before testing for the outlier of the sample, there is a weak significant effect which indicates that when controlling owner rights exceeds cash flow rights it might not have strong effect on equity and liability. In addition, all others variables have the same effect as when the outliers which are observation which are numerically distant from the rest of the data have not being removed.

The result of Jarque-Bera (JB) test from the above table show that for both liability ratio and equity ratio the p-value is significant, this indicates that the series are not following a normal distribution. This suggests that the data is non-normality. However, when the sample is free outlier the p-value of liability ratio indicates insignificant, this confirmed with normality of the data.

The Ramsey RESET test indicates shows that there are no misspecifications this because coefficients of the variable are not equal to zero. This suggest that the model is correctly specified, no omitted variables and there is correlation between explanatory variable (independent variable) and error.

4.2 OLS estimation of bank capital structure and performance in OECD and non-OECD countries

Ownership concentration is prevalent both in OECD countries and non-OECD countries, but among the OECD countries except USA and UK where ownership concentration is not prevalent the reason is that the changing pattern of share ownership lead to a greater concentration of ownership in the hand of institutional investors such as pension fund and insurance companies. This indicates that in UK and USA most of the firms are relatively widely held. In Germany and Japan, equity ownership are more concentrated where bank play a significant roles in governance. This suggests that within the OECD countries there are market-centred economies which are USA and UK and also bank-centred economies which are Japan and Germany where financial institution have significant control over firms. In non-OECD countries, there are high ownership concentration but being developing countries introduction of sound corporate governance principle into the banking sector have not being possible because of poor legal protection, weak information disclosure requirement and dominant owners (Arun and Turner, 2004). Compared with OECD countries where there are better sound corporate governance principles in the banking sector. In addition, in most developing countries that are non-OECD countries the banking sectors are not intermediate efficiently because of management performance and market structure compared with OECD countries with well developed financial intermediation.

Against this background, in this section the study classified the banks in each country to OECD and non-OECD with OLS estimates of the empirical model using two alternative indices of bank capital structure, namely, liability ratio and equity ratio in addition bank performance indicator as ROA in OECD and non-OECD countries.

Table 4 columns 1 and 3 illustrate how family owner-managed and control exceeds cash flow affect bank leverage in OECD countries. The result indicates that family owner managed is insignificant on bank leverage. This suggests that in OECD countries the family owner managed effect is not so important because ownership is more dispersed. However, control exceeds cash flow rights have a positive significant effect on liability ratio and a negative significant effect on equity ratio. This implies that when controlling owner control rights exceeds cash flow they will depend more on debt financing rather on equity financing so that they will not lose control. This result is consistent with Table 3 result.

In Table 4, columns 2 and 4 show how family owner managed firm and control exceeds cash flow affect ROA. There is indication that the two variables are insignificant in OECD and non-OECD countries. Moreover, liability has a negative significant effect on ROA while equity has a positive significant impact on ROA. This show that when firm rely on liability the ROA may be lower and when they rely more on equity the ROA may be higher. However, in non-OECD countries control exceeds cash flow has a positive significant effect on ROA.This suggests that when controlling owner control right exceeds cash flow rights the ROA increased which show an indication of more performance. Generally, ROA indicates the same effect on both liability and equity ratios.

Table 4 OLS estimation of bank capital structure and performance in OECD countries and non-OECD countries

Variable	*OECD countries*				*Non-OECD countries*			
	Liability (1)	*ROA (2)*	*Equity (3)*	*ROA (4)*	*Liability (5)*	*ROA (6)*	*Equity (7)*	*ROA (8)*
Intercepts	0.894**	0.095**	0.070**	–0.011	0.683**	0.105**	0.300**	0.004
	0.038	0.021	0.016	0.007	0.047	0.029	0.042	0.013
	(23.837)	(4.534)	(4.379)	(–1.557)	(14.478)	(3.661)	(7.12)	(0.333)
Size	0.004*	6.96E	–0.001	0.000	0.016**	–0.001	–0.015**	–0.001
	0.002	0.000	0.001	0.000	0.003	0.001	0.003	0.001
	(1.806)	(0.018)	(–1.373)	(0.404)	(5.483)	(–0.819)	(–5.602)	(–0.826)
ROA	–1.706**	-	1.124**	-	–1.269**	-	0.899**	-
	0.439		0.251		0.003		0.320	
	(–3.885)		(4.487)		(–3.364)		(2.810)	
Liability	-	–0.090**	-		-	–0.099**	-	-
		0.021				0.033		
		(–4.364)				(–3.029)		
Equity		-	-	0.315**	-	-	-	0.003**
				0.063				0.040
				(5.004)				(2.826)

Notes: Dependent variable is leverage in term of liability and equity ratios and return on asset (ROA). Log(total assets) is size of bank. Family is the controlling owner is a dummy variable equal one if a family is the controlling shareholder and zero otherwise. CEC at 10% is equal to 1 if CEC at 10% is greater or equal to 2 and zero otherwise.

The numbers with significant level are coefficient value, while the middle numbers are the standard error and Numbers in the parentheses refer to t-statistics.

**Significant at 1% level.

*Significant at 5% level.

*Heteroskedasticity is corrected using White-adjusted standard errors.

Table 4 OLS estimation of bank capital structure and performance in OECD countries and non-OECD countries (continued)

Variable	*OECD countries*				*Non-OECD countries*			
	Liability (1)	*ROA (2)*	*Equity (3)*	*ROA (4)*	*Liability (5)*	*ROA (6)*	*Equity (7)*	*ROA (8)*
Family is the controlling owner	–0.000	0.004	0.008	0.000	–0.012	0.004	0.017*	0.004
	0.014	0.003	0.006	0.003	0.010	0.003	0.008	0.003
	(–0.017)	(1.277)	(1.391)	(0.150)	(–1.167)	(1.651)	(2.142)	(1.314)
Control exceeds cash flow rights at 10%	0.033*	0.005	–0.012*	0.006	–0.014	0.005*	0.003	0.006*
	0.014	0.004	0.005	0.004	0.009	0.002	0.008	0.002
	(2.427)	(1.192)	(–2.388)	(1.440)	(–1.598)	(2.068)	(0.406)	(2.599)
R^2	0.21	0.21	0.41	0.40	0.40	0.27	0.42	0.25
F-statistic	7.54	7.62	19.80	19.01	16.68	9.11	18.17	8.47
No. of observation	121	121	121	121	107	107	107	107
No. of countries	23	23	23	23	21	21	21	21

Notes: Dependent variable is leverage in term of liability and equity ratios and return on asset (ROA). Log(total assets) is size of bank. Family is the controlling owner is a dummy variable equal one if a family is the controlling shareholder and zero otherwise. CEC at 10% is equal to 1 if CEC at 10% is greater or equal to 2 and zero otherwise.

The numbers with significant level are coefficient value, while the middle numbers are the standard error and Numbers in the parentheses refer to t-statistics.

**Significant at 1% level.*

**Significant at 5% level.*

*Heteroskedasticity is corrected using White-adjusted standard errors.

Table 4a Showing diagnostic test for Table 4

Test	*OECD countries*				*Non-OECD countries*			
	Liability (1)	*ROA (2)*	*Equity (3)*	*ROA (4)*	*Liability (5)*	*ROA (6)*	*Equity (7)*	*ROA (8)*
JB test	9.96	1362.35	6.56	1210.43	0.23	51.18	0.98	58.32
JB P-Value	0.01	0.00	0.04	0.00	0.90	0.00	0.61	0.00
Ramsey's RESET test	3.55	5.65	3.60	11.07	4.21	0.95	10.53	0.02
	(0.06)	(0.02)	(0.06)	(0.00)	(0.04)	(0.33)	(0.00)	(0.90)

Note: Numbers in the parentheses refer to P-Value.

Table 4 columns 5 and 7 illustrate the effect of family owner managed and control exceeds cash flow on bank leverage. The result show that family owner managed firm have a positive significant effect with equity ratio this indicate that in non-OECD countries family owner-managed firm rely more on equity financing. This result is consistent with Table 3 result. However, in case of control exceeds cash flow there is evidence of insignificant relationship on bank leverage.

The result of Jarque-Bera test (JB normality test) from Table 4a show that for ROA the p-value is significant, this indicates that the series are not following a normal distribution. This suggests that the data is non-normality. However, for liability ratio and equity ratio the p-value indicates insignificant, this confirmed with normality of the data.

The Ramsey RESET test indicates diagnostic test shows that there are no misspecifications this because coefficients of the variable are not equal to zero. This suggest that the model is correctly specified, no omitted variables and there is correlation between explanatory variable (independent variable) and error.

4.3 Conclusions and policy implication

This paper provides empirical results to show important characteristics of the prevalent ownership structure around the world by reveals the effect of family-owner managed firms and control exceeds cash flow rights on bank capital structure. Based on the evidence from the study, family owner managed firms prefer bank with more equity financing than debt financing as a result of a positive relationship between family-owner managed and equity. This suggests that family owner-managed firms prefer lower leverage in term of debt, by injecting more equity and minimised the level of liability. This analysis also implies that family owner-managed firms believed in firm survival by having strong equity to assets base so that they can pass firm on to their heirs. In OECD countries, there is insignificant effect of family owner managed firm on bank leverage but in non-OECD countries the family owner managed have a significant effect by rely more on equity financing as indicated in Table 4.

Moreover, the study also examine the relationship that occur when control rights of the controlling owner exceeds cash flow rights and bank leverage and it has a negative significant effect on bank leverage using equity ratio as indicator for bank leverage. However, using liability ratio as indicator for bank leverage there is a positive significant effect. This suggests when control right of the controlling owner exceeds cash flow rights, the equity is lower and they prefer debt financing because of fear of losing control. This result is consistent for banks in Asia, Africa and Latin America countries relative to OECD countries but with weak significant effect on bank leverage as indicated in Table 3. Furthermore, for bank in OECD countries there is a strong significant effect of control exceeds cash flow on bank leverage compared with bank in non-OECD countries does not have significant effect on bank leverage with reference to Table 4.

Higher control rights may give rise to serious agency problem and this associated with over reliance on debt due to controlling shareholders being unwilling to dilute their ownership for fear of losing control. Rather controlling shareholders may prefer firms to use more debt since debt holders have no voting rights. However, in this study there is evidence that when controlling owner control rights exceeds cash flow rights they may rely more on debt (liability) financing with higher ROA increase. Consequently, controlling shareholders and management of the banks should not allow excessive

building up of bank leverage through debt (liability) level as excessive leverage may be one of the reasons for current financial crisis.

In addition, in a family-owner managed firms they should be involved more to a certain level of risk taking because from the above evidence when a family owner-managed firm rely on debt the ROA is more higher, but if they rely on equity there is no significant effect especially bank in non-OECD countries relative to banks in OECD countries. As a result, this may improved the financial intermediation of bank in non-OECD.

Moreover, the regulators should consider the measure to control bank leverage by including leverage ratio in pillar 2 as part of indicator for monitoring bank supervision in order to avoid excessive bank leverage. Also the regulators should be mandatory the bank with optimal capital structure that indicates a balance between the proportion of debt (liability) and equity hold. This will also allow the bank not to build up excessive leverage. Furthermore, the improvement of governing of banks depends on debt because investors use debt to generate information and monitor the management. Therefore, there is need for tighten capital requirement which will reduce the risk of bank failure.

References

Anderson, R.C. and Reeb, D.M. (2003) 'Founding-family ownership and firm performance: evidence from the S&P 500', *Journal of Finance*, Vol. 58, No. 3, pp.1301–1328.

Anderson, R.C., Mansi, S.A and Reeb, D.M. (2003) 'Founding family ownership and agency cost of debt', *Journal of Financial Economics*, Vol. 68, pp.263–285.

Arun, T.G. and Turner, J.D. (2004) 'Corporate governance of banks in developing economies: concept and issues', *Journal of Corporate Governance Review International*, Vol. 12, No. 3, pp.371–377.

Berger, A.N., Herring, R.J. and Szegö, G.P. (1995) 'The role of capital in financial institution', *The Journal of Banking and Finance*, Vol. 19, pp.393–430.

Caprio, G., Levine, R. and Leaven, L. (2007) 'Governance and bank valuation', *Journal of Financial Intermediation*, Vol. 16, pp.584–617.

Claessens, S., Djankov, S. and Fan, J.P.H. (2000) 'Separation of ownership from control of East Asian firms', *Journal of Financial Economics*, Vol. 58, pp.81–112.

Claessens, S., Djankov, S. and Fan, J.P.H. (2002) 'Disentangling the incentive and entrenchment effect of large shareholding', *Journal of Finance*, Vol. 57, No. 6, pp.2741–2771.

Coricelli, F., Driffield, N. and Pal, S. (2009) *Excess Leverage and Productivity Growth in Emerging Economies: Is there a Threshold Effect?*, Institute of Labour IZA Discussion (Working) Paper 4834.

Cronqvist, H. and Nilsson, M. (2003) 'Agency costs of controlling minority shareholders', *Journal of Financial Quantitative Analysis*, Vol. 38, No. 4, pp.695–719.

Daly, C.M. and Dollinger, M.J. (1992) 'An empirical examination of ownership structure in a family and professionally managed firms', *Journal of Family Business Review*, Vol. 5, No. 2, pp.117–136.

De Haas, R. and van Horen, N. (2009) *The Strategic Behaviour of Banks During a Financial Crisis; Evidence from the Syndicated Loan Market*, MPRA Working University Library of Munich.

Diamond, D.W. and Rajan, R.G. (2000) 'A theory of bank capital', *The Journal of Finance*, Vol. 55, No. 6, pp.2431–2465.

Driffield, N. Sarmisthal, P. and Vidya, M. (2007) 'How does ownership structure affect capital structure and firm value', *Journal Economics of Transition*, Vol. 15, No. 3, pp.535–573.

Friend, L. and Lang, H. (1988) 'An empirical test on the impact of managerial self interest on corporate capital structure', *Journal of Finance*, Vol. 43, No. 2, pp.271–281.

James, H. (1999) 'Ownership as manager, extended horizons and the family firm', *International Journal of the Economics of Business*, Vol. 6, No. 1, pp.41–56.

La porta, R., Lopez-de-Silanes, F. and Shleifer, A. (1999) 'Corporate governance around the world', *Journal of Finance*, Vol. 54, No. 2, pp.471–517.

La porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (2002) 'Investor protection and corporate valuation', *Journal of Finance*, Vol. 57, No. 3, pp.1147–1170.

Laeven, L. and Levine, R. (2008) 'Bank governance, regulation and risk taking', *Journal of Social Science Research Network*, Vol. 93, No. 2, pp.259–275.

Mehran, H. and Thakor, A. (1995) *Bank Capital and Value in cross section. Federal Reserve Bank of New York Staff Reports*, Staff Report, No. 390.

Pandey, I.M. (2005) *Financial Management*, 8th ed., Viskas Publishing House, PVT Ltd., New Delhi, India.

Villalonga, B. and Amit, R. (2006) 'How do family ownership, control and management effect', *Journal of Financial Economic*, Vol. 80, No. 1, pp.385–417.