EXCERPT

CEO power and bank risk nexus: Evidence from commercial banks in Uganda

Richard Kajumbula, Patricia Lindelwa Makoni

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Richard Kajumbula (University of South Africa - UNISA), Patricia Lindelwa Makoni (University of South Africa - UNISA)

Corresponding author: Patricia Lindelwa Makoni (makonpl@unisa.ac.za or patricia.makoni@gmail.com)

Abstract

This study aimed to establish the nexus between CEO power and bank risk. Previous studies on how CEO power affects risk-taking have produced mixed results. Some studies show that CEO power reduces risk, while others show the reverse. This lack of conclusive findings motivated this study. This study used secondary data from a sample of 14 commercial banks in Uganda covering a period from 2010 to 2020. System GMM was used to establish the relationship between variables, while ARDL was used to infer causality. Findings show that commercial banks with powerful CEOs have lower risk. Such powerful CEOs have prestige power, are internally hired, have ownership, and have served for more than 4 years up to 7 years, and hence possess expert power. We further found a long-run positive relationship between previous bank risk and current bank risk, as well as a causal relationship between CEO power and bank risk. In case there is a need to reduce bank risk in Uganda, making adjustments in CEO power will help. It may also be necessary for persistent adjustment and implementation of decisions and policy actions, if bank risk is to be minimized.

1. Introduction

A Chief Executive Officer (CEO) can act in the interest of shareholders as per the stewardship theory. However, with excessive power, he/she can make decisions that are not in line with the interests of shareholders (Hua, Song and Talavera, 2019; Berle and Means, 1932) leading to exposing a bank to risk. CEO power includes structural power, ownership power, expert power, prestige power, CEO being a former executive, and CEO being a founder member of the bank. It would be overly high-handed to deny banks the opportunity to undertake risks, or even misleadingly optimistic to expect that the risk level of a bank should be zero. It is through accepting a certain level of risk, that innovation can take place. We acknowledge the scholarly contribution made by the work of Agosto, Cerchiello and Giudici (2023) who emphasized the significance of Environmental, Social and Governance (ESG) factors to the benefit of the best-performing companies in terms of sustainable behaviour and risk management. ESG refers to how businesses promote sustainability, social responsibility and ethical governance practices within their organisation. Similarly, Fafaliou, Giaka, Konstantios and Polemis (2022) argued about the negative impact of ESG factors on reputational risk. As such, we locate the present study in ESG since governance is one of the pillars that contributes to sustainable risk management principles, such as CEO power in the financial sector.

Previous studies on how CEO power affects risk-taking have produced mixed results. Fernandes, Farinha, Martins, Francisco, and Mateus (2021) and Fang, Lee, Chung, Lee and Wang (2020) found that CEO power reduces risk while Hunjra, Hanif, Mehmood and Nguyen (2021) and Altunbaş, Thornton and Uymaz, (2020) found that it increases risk. These mixed findings call for a confirmatory study. Research on CEO power in Africa is also scanty (Anaso, 2020) and no known study has been undertaken regarding CEO power and bank risk nexus in commercial banks in Uganda. Although Uganda has enjoyed relative political and macroeconomic stability over the last thirty years and banks are highly regulated, the banking industry has suffered turbulence with bank closures over that period. In policy, although there is a Financial Institutions Statute (2004), Capital Markets Corporate Governance Guidelines and Table F of Uganda's Companies Act (2012), these do not guide on how CEO power affects risk-taking of banks.

2. Review of theoretical and empirical literature

Various theories have been advanced to explain the dimensions of CEO power and the effect of CEO power on bank performance outputs. The two key theories underpinning CEO power are the upper echelons theory (Hambrick and Mason, 1984) and the agency theory (Berle and Means, 1932; Jensen and Meckling, 1976; Fama and Jensen, 1983). Background theories include stewardship theory (Donaldson and Davis, 1991), resource-based theory (Wernerfelt, 1984 and later developed by Penrose, 1959) and the social network theory (Saidu, 2019; Kavitha and Bhuvaneswari, 2016) which guide CEO power. Risk frameworks and theories include portfolio theory/model, contracting model, regulatory hypothesis theory, risk balancing hypothesis and the Managerial overconfidence hypothesis. These theories underpin the various risks faced by a bank including liquidity risk, market risk, credit risk, operational/transactional risk, external business risk, legal and regulatory risk, liquidity risk, foreign exchange risk, interest rate risk, counterparty risk, reputation risk, fraud risk, strategic risk, technology risk, off-balance sheet risk, governance risk and solvency risk (Gurendrawati et al., 2021; Osayi, Dibal and Ezuem, 2019; Okafor and Fadul, 2019; Buston, 2015; Ishtiaq, 2015; Shafique, Hussain and Hassan, 2013; Abu and Al-Ajmi, 2012; Hassan, 2011; Kuritzkes and Schuermann, 2010; Al-Tamimi and Al-Mazrooei, 2007; Crouhy, Galai and Mark, 2006; Bessis, 2002; Pyle, 1999; Santomero, 1997). Ferretti and Gonnella (2021), after studying an Italian bank, found that bank CEOs have hubris which can be seen in the CEO's relations with the self, with others and with the world. This prevents them from following good advice, leads to poor governance, and consequently to financial distress. A powerful CEO with hubris will lead to a bank facing excessive risk.

CEOs intervene in company affairs, and this affects risk taking behaviour. We thus seek to assess how these various CEO powers affect bank risk. Structural power comes from a CEO holding a high position in the organisation's hierarchy, having many positions

and many titles and where one holds both the title of CEO and that of Board Chairman culminating into CEO/Chair duality (Hemdan, Suhaily and Ur Rehman, 2021; Saidu, 2019). A CEO who chairs the board and also operates the firm influences decisions of the board and can easily implement his/her decisions. That CEO also has a role in channelling a bank's strategy since the board influences the strategy of a bank as was found by Ferretti, Gonnella and Martino (2024) in their assessment of Italian banks. After a study of Chinese banks for the period 2006 to 2016, Fang *et al.,* (2020) found that bank risk taking is significantly improved by CEO structural power. Wang (2018) while studying listed banks in Mainland China, Hong Kong and Taiwan found that separating the CEO role from the chairman of the board increased the risk-taking behaviour of banks.

Regarding ownership power, an individual holding shares in a company gives that individual advantage over others. The higher the percentage of shares one holds, the more power has such an individual (Hamidlal and Harymawan, 2021). Where a CEO is also a shareholder, his/her interests will be in sync with those of the other shareholders hence reducing the information and decision asymmetry that exist between shareholders and managers arising out of the agency problem. Monitoring costs will be reduced with higher managerial/ director ownership because when the ownership of a CEO in the firm increases, it will result in the convergence of interests between company CEO and shareholders (Florackis, 2008; Jensen and Meckling, 1976).

Expert power is where a CEO exhibits extraordinary experience and knowledge of the tasks done, and decisions made and is thus considered to be an expert. A CEO who has worked in different industries, companies and organizations has a lot of experience which can benefit the bank (Li and Patel, 2019). The professionalism and expertise of the CEO tend to improve with longer tenure (Hamidlal and Harymawan, 2021). Individuals who have served longer than others are believed to have experience, and are believed to serve better. Although a long CEO tenure increases CEO entrenchment, Mostafa, Hasnan and Saif (2021) believe that an entrenched CEO is more involved in activities that increase corporate values.

Prestige power arises out of personal status, respect, admiration accorded to the person, reputation and connections that one has and other people's perception of that person's influence through contacts and qualifications. The reputation one has acquired in the office, positive perceptions that he/she has, relationships with external parties like government coupled with a good educational background reflect that person's power (Saidu, 2019; Fetscherin, 2015). Prestige power gives the CEO confidence to take on more successful projects as he/she will be comparing himself to other successful CEOs or getting advice. Such CEOs are likely to make decisions that align with the company's best interests (Fang *et al.,* 2020; Saidu, 2019). This will reduce the risk of failure. However, very powerful CEOs tend to take on more risk by over-investing (Barnea and Rubin, 2010).

A CEO being a former executive is another source of power. The resource-based view encourages firms to depend on their internal resources to improve performance. One of the executives can be promoted to the position of CEO. Such a move will be less costly in terms of hiring and orienting the individual (Saidu, 2019; Wernerfelt, 1984). An internally appointed CEO will have more power than one who is hired from outside of the organization, since the former will have more information about the firm. This move is motivating to the individual and will enable him/her to work towards the expansion and sustainability of the firm. However, such a CEO may suffer from 'arrivalism', that is, the excitement of attaining a leadership position, as he/she may want to show other employees that he/she is now more powerful than them. Such excitement may lead to reckless behaviour, thereby exposing the bank to more risk. Barron, Chulkov and Waddell (2011) opined that hiring a CEO from within the firm prevents discontinuation of operations due to the similarity-attraction as would be for a CEO hired from outside and this reduces risk. A CEO hired from outside the bank would lead to some temporary discontinuation of operations as they need time to study the firm. Such CEOs come with a mandate for strategic change which may or may not be successful.

CEO being a founder member is another source of power. Where a founder member becomes CEO, he/she attains power (Hemdan, Suhaily and Ur Rehman, 2021). The performance of founder and non-founder CEOs differs significantly with regard to achieving organizational goals (Abebe and Alvarado, 2013) since founder CEOs have more commitment to the firms they founded. They look at the firm as part of them, and its growth is their growth; as opposed to non-founder CEOs who look at the firm as one of those which they will serve and move on. A founder will be eager to see the bank survive, and will therefore take less risk. However, to expand widely, such a CEO may take on too much risk and this overconfidence may lead to more risks (Yi, Jiatao and Yu, 2015).

The review above shows mixed findings regarding the effect of CEO power on bank risk. The dimensions of CEO power largely have a contradicting relationship to bank risk in different studies. When it comes to Uganda, no related literature in this field of study is available.

3. Research Methodology

3.1 Data and sample

The banking market in Uganda comprises of 25 commercial banks, of which four are domestic and the others have foreign ownership. This study used secondary data to establish the nexus between CEO power and bank risk in commercial banks in Uganda covering a period from 2010 to 2020. A list of commercial banks as of the data collection date is as captured below:

Table 1: List of commercial banks operating in Uganda

Bank name	Market capitalisation (US$)	Assets under management (Uganda Shillings)
ABC Bank Uganda Limited	Not listed	62.1 billion
Absa Bank Uganda Limited	Not listed	4210.0 billion

Bank of Africa Uganda Limited	Not listed	1100.1 billion
Bank of Baroda Uganda Limited	US$81.08m	2138.9 billion
Bank of India Uganda Limited	Not listed	333.3 billion
Cairo Bank Uganda Limited	Not listed	193.4 billion
Centenary Rural Development Bank Limited	Not listed	4499.9 billion
Citibank Uganda Limited	Not listed	1200.8 billion
Development Finance Company of Uganda Limited (DFCU)	US$45.50m	3539.4 billion
Diamond Trust Bank Limited	Not listed	1774.7 billion
Ecobank Uganda Limited	Not listed	997.0 billion
Equity Bank Uganda Limited	US$1209.35m	3459.6 billion
Exim Bank (Uganda) Limited	Not listed	407.0 billion
Finance Trust Bank Limited	Not listed	393.9 billion
Guaranty Trust Bank (Uganda) Limited	Not listed	251.1 billion
Housing Finance Bank Limited	Not listed	1914.2 billion
I&M Bank Uganda	Not listed	866.4 billion
KCB Group Uganda Limited	US$736.81m	657.3 billion
NCBA Bank Uganda	Not listed	823.0 billion
Opportunity Bank Uganda Limited	Not listed	262.0 billion
Stanbic Bank Uganda Limited	US$512.55m	8572.2 billion
Standard Chartered Uganda Limited	Not listed	3617.2 billion
Tropical Bank Limited	Not listed	310.5 billion
United Bank for Africa Uganda Limited	Not listed	492.5 billion
Postbank Uganda Limited	Not listed	815.4 billion

Source: Bank of Uganda (2024); individual bank websites.

Of the banks in Table 1 above, the listed banks include Bank of Baroda, DFCU Bank, Stanbic Bank Uganda, Equity Bank Limited and KCB Group. The majority of the commercial banks in Uganda are not listed on a stock exchange, but are all under the centralised supervision of the Bank of Uganda. Although Uganda has a total of 25 commercial banks, the final sample was purposively selected and comprised of 14 banks which had full information for the period under review, resulting in a balanced panel giving 140 data points. While carrying out panel research in banks, banks that do not have full information can be left out of the sample, as was done by La Torre, Bittucci, Paccione and Palma (2024) in their study aimed at evaluating the sustainability profile of banks through a comprehensive benchmarking analysis in the Italian context. The same approach was also applied by Menicucci and Paolucci (2020) while gathering evidence from Italian financial institutions on whether gender diversity matters for risk-taking. Data were obtained from sources included the individual bank annual reports, electronic and print media, websites, and the World Bank database and reports, all of which are in the public domain.

3.2 Measurement of variables

The independent variable was CEO power ($CEOP_{it}$) including structural power, ownership power, expert power, prestige power, CEO being a former executive of that bank and founder CEO. Structural power ($STRP_{it}$) was measured based CEO duality, ownership power ($OWNP_{it}$) was measured using the percentage of shareholding of the CEO, expert power ($EXPP_{it}$) was measured using CEO tenure, prestige power ($PREP_{it}$) was binary where a code of "1" was given if CEO also holds other directorships and "0" otherwise, CEO being a former executive, that is, Internally-hired ($CFEP_{it}$) was coded "1" if CEO was an executive before appointment as CEO, and "0" otherwise and founder CEO ($CFOP_{it}$) was binary coded "1" if CEO is also a founder member, and "0" otherwise.

The dependent variable, bank risk, (BR_{it}) was measured using the Z-score which shows bank stability (Hua *et al.,* 2019;). Control variables are included to normalise the results for better and more reliable inference. Bank size ($BKSZ_{it}$) was measured as the logarithm of total banks assets, listing status ($LSST_{it}$) was coded 1 for a listed bank, otherwise zero, Gross Domestic Product (GDP) growth ($GDPG_t$) was measured by GDP growth for year *t* rate is measured relative to last year's GDP, and non-performing loans was measured by the absolute figure of non-performing loans.

3.3 Model specification

In line with Altunbaş *et al.* (2020) and Wooldridge (2010), a simple unobserved panel data model for the study is specified as below:

$$BR_{it} = \alpha_0 + \alpha_1 CEOP_{it} + \delta X_{it-1} + D_t + \varepsilon_i \quad (1)$$

Where:

BR_{it} is risk taking of the bank i in period t as measured by the Z-score. $CEOP_{it}$ represents an index of CEO power. X_{it-1} is a vector of other bank-specific characteristics commonly employed in the bank risk literature that include measures of bank size, listing status, Gross Domestic Product (GDP) growth, nonperforming loans and unemployment. D_t is a dummy variable meant to capture any structural breaks in the model. ε_{it} is the error term.

The two-step System Generalised Method of Moments (GMM) model by Arellano and Bond (1991), Holtz-Eakin *et al.,* (1990) and Arellano and Bover (1995) was applied to examine the relationship between CEO power and bank risk since this study has lagged endogenous variables as instruments and cross-section fixed effects. The GMM model in banking research was also applied by Barra and Ruggiero (2023) in their assessment of the effect of bank-specific factors on credit risk in Italian banks. The GMM-based estimator allows for efficient estimation in the presence of arbitrary heteroscedasticity, helps to overcome the challenge of endogeneity, solves the problems of serial correlation and takes advantage of the use of orthogonal conditions (Leitao, 2010; Hansen, 2000). GMM handles modelling concerns such as fixed effects and endogeneity of regressors, while at the same time avoiding dynamic panel bias, accommodating unbalanced panels and multiple endogenous variables (Roodman, 2009; Nickell, 1981).

To test the causality relationship between CEO power and bank risk, we used the Auto Regressive Distributed Lag (ARDL) where causality was inferred from the significance of the Error Correction Term (ECT) (for joint causality), long-run coefficients (for long-run causality) and short-run coefficients (for short-term causality) (Gwachha, 2023; Narayan, 2004). A negative ECT implies the presence of causality.

The basic ARDL model is specified as:

$$BR_{it} = \alpha_0 + \sum_{k=1}^{\rho} \emptyset_k BR_{it-k} + \sum_{k=0}^{q} \varphi_k' X_{it-k} + \varepsilon_{it} \quad (2)$$

Where $\emptyset_k$ and φ_k are the coefficients of the lags of the dependent variable and the independent variables respectively. The lags in equation (2) imply a set of dynamic responses in bank risks (BR) to any given change in explanatory variables (x). There is an immediate response followed by short run and long run responses. Reparameterization of the model in equation (2) gives rise to the error correction version of the ARDL model shown in equation 3:

$$\Delta BR_{it} = \beta_0 - \alpha[BR_{it-1} - \theta' X_{it-1}] + \sum_{k=1}^{\rho-1} \gamma_k \Delta BR_{it-1} + \sum_{k=0}^{q-1} \lambda_k' \Delta X_{it-k} + \varepsilon_{it} \quad (3)$$

In the model specified in equation (3), X and BR are as defined earlier on, $\alpha = 1 - \sum_{k=1}^{\rho} \emptyset_k$ is the speed of adjustment coefficient and $\theta = \frac{\sum_{k=0}^{q} \varphi_k}{\alpha}$ is a vector of long run coefficients. γ and λ are the short run coefficients and the term in the brackets is the Error Correction Term.

4. Data analysis and discussion

4.1 Descriptive Statistics

Table presents the summarised statistics for the variables resulting from the pooled estimations:

Table 2: Summary statistics for variables used in the pooled estimation (2010 - 2020)

Variables	Obs	Mean	Std, Dev,	Minimum	Maximum
CORE	154	15.34	11.97	0.06	39.68
OWNP	154	0.00000227	0.0000104	0.00	0.00005
EXPP	154	3.59	2.78	0.70	14.00
PREP	154	0.23	0.42	0.00	1.00
CFEP	154	0.28	0.45	0.00	1.00
STRP	154	0.00	0.00	0.00	0.00

	N	Mean	Std Dev	Min	Max
CFOP	154	0.00	0.00	0.00	0.00
CEOP	154	0.4	0.49	0.00	1.00
CEOP_INDEX	154	- 0.00	1.14	-3.76	2.42
BKSZ	154	27.18	1.23	23.06	29.32
LSST	154	0.45	0.50	0.00	1.00
GDPG	154	5.09	1.78	3.00	9.40
NPL	154	27,400,000,000	36,700,000,000	0	219,000,000,000
UNEMPL	154	2.44	0.72	1.91	3.59

Note: These are raw data derivations before transformation.

Source: Authors' own computation

Note: Z-score is proxy for bank risk. CEOP is CEO power. STRP is structural power. OWNP is Ownership power. EXPP is Expert power. PREP is Prestige power. CFEP is CEO being a former executive, i.e., Internally-hired. CFOP is CEO founder. BKSZ is Bank size. LSST is Listing status. GDPG is Gross Domestic Product (GDP) growth. NPL is Non-performing loans. UNEMPL is Unemployment.

Table shows the summary of descriptive statistics for the pooled results for all the banks in this study covering the period 2010 – 2020. The descriptive statistics reflect that bank risk, as measured by the Z-score, was at an average of 15.34. A bank with a high Z-score is unlikely to default and is therefore seen as having low risk (Tran *et al.*, 2019). Using this figure alone is not sufficient to conclude whether banks in Uganda have a high risk or low risk since the Z-score can be interpreted relatively and not absolutely. However, the table also shows that banks in Uganda had a Z-score with a minimum of 0.06 and a maximum of 39.68 over the research period implying that the level of risk in commercial banks in Uganda varies tremendously among banks and is not the same with a range of 39.62 and a standard deviation of 11.97. Ownership power (OWNP) by CEOs reflected minimal influence on bank risk. Our results show that there are banks where the CEO has no shareholding, and so yield little power.

On the other hand, expert power (EXPP), indicated by CEO tenure, is low and does not change by a large margin as shown by the standard deviation of only 2.79 years. On average, most CEOs have spent 3.59 years as CEOs. Those CEOs with more years of experience increase value as was alluded to by Chiu, Chen, Cheng and Hung (2019) and Wu, Quan, and Xu (2011) who found that a CEO with experience can deal with environmental dependency, has cognitive work experience gained with time and can deal with critical contingencies is said to have expert power.

This further confirms the findings of Byrd, Cooperman and Wolfe, 2010) who concluded that the tenure of bank CEOs was between 3 and 6 years. In Uganda, CEOs do not derive a lot of power from other directorships, as reflected by prestige power (PREP). However, the few that have other directorships have more power than those who do not, as was also suggested by Yusuf, Abubakar, Aliyu and Aneitie (2022). Ugandan commercial banks reflected a 28% internal hire where the CEO was a former executive (CFEP). This is contrary to the findings of Agrawal, Knoeber and Tsoulouhas (2006) who concluded that firms will always opt for insiders to take on CEO position, as this is at a low rate among commercial banks in Uganda.

4.2 Correlation results

Bivariate correlation was done to measure the strength and direction of the linear association between two variables. The Pearson correlation coefficient results are shown in Table 3 below:

Table 3: Correlation matrix

Variables	Z-SCORE	CEOP	CFEP	EXPP	GDPG	LSST	NPL	OWNP	PREP	UNEMPL	BKSZ
Z-SCORE	1.000										
CEOP	0.034*	1.000									
CFEP	0.052*	0.117*	1.000								
EXPP	0.139**	0.472***	0.052*	1.000							
GDPG	-0.008*	-0.090*	0.013*	-0.084*	1.000						
LSST	0.096**	-0.062*	0.050*	0.045*	0.038**	1.000					
NPL	0.021*	0.058*	0.209***	0.255***	-0.161***	0.093*	1.000				
OWNP	0.360***	-0.177***	-0.136**	-0.137**	-0.036**	0.242***	-0.021*	1.000			
PREP	0.339***	0.337*	0.067*	0.063*	-0.027**	-0.097*	0.037*	-0.121*	1.000		
UNEMPL	-0.043*	-0.233***	-0.038*	-0.159**	0.272***	0.179**	-0.227***	-0.121*	-0.084*	1.000	
BKSZ	0.102*	0.194**	0.187**	0.441***	-0.118*	0.399***	0.505***	0.158**	0.139**	-0.238***	1.000

Source: Authors' own computations

Note: Z-SCORE is proxy for bank risk. CEOP is CEO power. OWNP is Ownership power. EXPP is Expert power. PREP is Prestige power. CFEP is CEO being a former executive i.e. Internally-hired. BKSZ is Bank size. LSST is Listing status. GDPG is Gross Domestic Product (GDP) growth. NPL is Non-performing loans. UNEMPL is Unemployment

* significant at 10%; ** significant at 5%; *** significant at 1%.

There was a positive relationship between ownership power and Z-score (r = 0.36) indicating that the more a CEO owns shares in the bank, the less risky the decisions they will make, and hence the bank will experience less risk. The possible explanation for this is that share ownership by the CEO creates a sense of cautiousness, care and concern for the survival of the bank. Pathan (2009) found that CEO ownership is negatively related to systematic risk. There is a positive relationship between expert power and Z-score (r = 0.139) indicating that the more experienced the CEO, the lower the bank risk. The findings are in line with those of Hemdan, Suhaily and Ur Rehman (2021) who found that an experienced CEO can deal with environmental dependency, has learned the dynamics of running a bank in Uganda, has cognitive work experience gained with time, and can deal with critical contingencies, hence exposing the bank to less risk. However, these findings contradict the managerial entrenchment theory which considers long-serving managers as becoming entrenched and therefore following personal interests and not organizational interests.

With regards to prestige power, there was a positive relationship between prestige power and Z-score (r = 0.339); confirming that the more prestigious a bank CEO in Uganda is either through his connections, education or directorships in other firms, the lower the bank risk of the bank in which he or she is CEO. In addition, where the CEO was a former executive of the bank, we found this to be positively correlated with the Z-score (r = 0.052), indicating that commercial banks in Uganda whose CEOs were former employees before being appointed into CEO positions, have lower bank risk. These findings justify the resource-based theory's assertion that the valuable resources that a firm has access to like employees and managers, if deployed well as vital intellectual capital can improve that firm's competitive advantage (Daryaee, Pakdel, Easapour and Khalaflu, 2011; Barney, 2001; Wernerfelt, 1984; Penrose, 1959). A person promoted to the CEO position from within the bank has an interest in the bank's growth and knowledge of the bank's internal and external operating environments will reduce the bank's risk exposure.

CEO power had a positive relationship with Z-score (r = 0.034). This implies that the more power a CEO has, the lower the bank risk. The possible explanation is that when a CEO is powerful, they will have confidence in making quick decisions and will be able to deploy resources, both human and financial, to ensure that the bank runs successfully and remains solvent, hence reducing risk.

Regarding the control variables, there was a positive relationship between bank size and the Z-score (r = 0.102). This affirmed that as commercial banks expand in Uganda, they lower bank risk probably due to the large assets base and liquidity. This confirms the finding of Cipollini, Ielasi and Querci (2024) who aver that systematic risk is significantly driven by bank size. Listing status had a positive relationship with the Z-score (r = 0.096). This suggests that when a bank gets listed, bank risk reduces probably because getting listed increases public confidence and scrutiny. However, high market power may reduce public scrutiny of the bank (Cardillo, Cotugno, Perdichizzi and Torluccio, 2024) hence exposing it to more risk. There was a negative relationship between GDP growth and the Z-score (r = - 0.008), implying that a low rate of GDP growth will increase the Z-score and accordingly decrease bank risk probably because during recess and slowdown in economic activity in Uganda, banks will be reluctant to give out loans because the ability for borrowers to pay back is perceived to be low. This perceived increase in credit risk exposure will lead to banks' lending less hence a decrease in bank risk.. There was a positive relationship between non-performing loans and the Z-score (r = 0.021), suggesting that when nonperforming loans increase, bank risk decreases probably because when more people start to pay back their loans, the bank's exposure to credit risk, the threat of insolvency and default risk reduces. Exposure to credit risk could also probably reduce due to automation of the credit risk assessment as was the case in Italy (Branzoli, Rainone and Supino, 2024). Commercial banks in Uganda also impose restrictions over the use of encumbered assets and this could have reduced exposure to risk since bank systematic risk is affected by changes in the encumbered assets (Cipollini, Ielasi and Querci, 2024). Table 3 also shows a negative relationship between unemployment and the Z-score (r = -0.043). As such, when unemployment increases, the Z-score reduces, thus bank risk increases probably because when more people who have bank loans stop working, they will not be able to pay back the loans. As more and more people lose jobs or fail to get jobs, banks perceive a higher loan default rate and an increase in credit risk.

4.3 GMM results for the relationship between CEO power and bank risk

Table below presents the results of the relationship between CEO power and bank risk for 2010-2020 using the system GMM technique. The GMM estimator is consistent since the null hypothesis for the Hansen test is not rejected and the presence of first-order serial correlation (AR1) and the absence of second-order serial correlation (AR2) are confirmed. The Hansen test checks the validity of instruments (Dahir, Mahat and Ali, 2018).

Table 4: Control variables as determinants of bank risk

	2-Step System GMM Model
Variables	Z-score
L.Z-score	0.354***
	(0.0956)
CEOP	-3.168*
	(1.369)
NPL	2.210*

	(0.934)
GDPG	0.199***
	(0.0360)
UNEMPL	0.791**
	(0.263)
BKSZ	2.012**
	(0.671)
LSST	-2.946*
	(1.447)
N	126
Groups	14
Instruments	12
AR(1)	-3.05*
AR(2)	-0.84
Sargan test	3.60
Hansen test	3.98

Source: Authors' own computations.

Note: Z-score is proxy for bank risk. CEOP is CEO power. BKSZ is Bank size. LSST is Listing status. GDPG is Gross Domestic Product (GDP) growth. NPL is Non-performing loans. UNEMPL is Unemployment. AR(1) is autoregression of order 1. AR(2) is autoregression of order 2.

* significant at 10%; ** significant at 5%; *** significant at 1%.

The coefficient of the relationship between the previous year's bank risk (L.Z-score) and the current year's bank risk (Z-score) is positive and significant. The relationship between current and previous bank risk is positive and significant, confirming a long-run positive relationship between previous bank risk and current bank risk. A unit change in the previous year's bank risk level will lead to an increase in the current year's bank risk by 0.354. This shows that bank risk is persistent over time and cannot just be eliminated instantly. It has a persistent behaviour in that the bank risk faced by a given bank in a certain year depends on the bank risk of the respective bank for the previous year. If, in a given year, banks take steps to reduce risk, it will take a year to realize the effect of those efforts. This is consistent with theoretical models which allude that bank risk is persistent (See Dahir *et al*., 2018; Bharati and Jia, 2018) and should be managed gradually.

CEO power (CEOP) has a negative and statistically significant impact on Z-score. A unit change in CEO power leads to a 3.168 units' reduction in Z-score hence an increase in bank risk. This implies that as CEO power increases, bank risk increases in the long-run. The plausible reason might be that whenever a CEO is entrusted with a lot of power, he or she will be ambitious, have hubris, have overconfidence and will take many decisions without consulting. These findings are consistent with the findings of Barnea and Rubin (2010) and Malmendier and Tate (2015) who found that very powerful and entrenched CEOs tend to take on more risk by over-investing.

Control variables including non-performing loans, economic growth, unemployment and bank size had a positive impact on the reported Z-score, while listing status exerted a negative effect on the Z-score. A unit increase (decrease) in these measures will lead to an increase (decrease) in the Z-score, hence a decrease (increase) in bank risk.

In the absence of independent directors on the board, a positive and statistically significant impact of non-performing loans (NPL) on the Z-score is reported, translating to a decrease in bank risk, as more people start to pay back their loans, the bank's exposure to credit risk and default risk reduces and so does the threat of insolvency. Similarly, economic (GDP) growth has a positive relationship with Z-score. A unit change in GDP growth will lead to an increase in the Z-score by 0.199 without board independence, implying that as economic growth increases, the Z-score will also increase, thus leading to a decrease in bank risk and this positively enhances bank stability. When economic growth is positive, commercial banks in Uganda lend out more money on the assumption that borrowers are capable of paying back the loans since the economy is growing and there is more economic activity and more money generation. These findings are consistent with those of Khan, Scheule and Wu (2017) who found that GDP growth leads to revenue growth; so, borrowers will be expected to repay loans, hence reducing the bank credit risk. Also, GDP growth implicitly assures that bank lending will function effectively and there will be a reduction in the incidence of non-performing loans.

A unit change in unemployment leads to a significant increase of 0.791 units of the Z-score without board independence. When there is a decline in unemployment, borrowing rates tend to be low as banks tighten their lending policies, hence reducing default risk and hence risk of insolvency. We further found that bank size has a positive relationship with the Z-score. A unit change in the size of a commercial bank will lead to an increase in the Z-score, hence a change in bank risk by 2.012 when the board is not independent,

alluding to that as bank size increases, bank risk will decrease. When banks expand, their resilience increases and their large assets base and liquidity increase, which makes it possible for them to reduce unnecessary investment and lending out money. Since these banks are already established, their ambition for expansion and lending is low, hence their low risk-taking behaviour. These results align with those of Adusei (2015) who found that bank size reduces bank risk.

Lastly, listing status has a negative relationship with the Z-score without board independence. When listing status increases by one unit, the Z-score reduces by 2.946 units hence increasing bank risk. This confirms that when a bank is listed, the risk to which it is exposed increases due to the additional pressure to generate earnings originating from the public. This pressure can inadvertently force the banks to take on several projects on an urgent need to expand, which increases their risk. Further to this, by listing the bank, there will be more outside shareholders whose individual monitoring of the bank will be limited. These findings are in line with those of Alsharif (2020) who found that the pressure to generate earning, which is exerted on listed companies by the public intending to invest or the shareholders, also encourages banks to increase risk. Moreover, agency problems derived from the separation of ownership and control make publicly listed banks riskier than their unlisted peers.

4.4 Causality results

Using ARDL, causality was inferred from the significance of Error Correction Term (ECT) (for joint causality), long-run coefficients (for long-run causality) and short-run coefficients (for short-term causality) (Gwachha, 2023; Narayan, 2004). A negative ECT implies the presence of causality. The causality effect of CEO power on bank risk was established using the ARDL PMG results as shown in Table 5 below:

Table 5: ARDL results for PMG

	PMG
	D.Z-score
Long-run	
L.CEOP	8.461***
	(17.62)
ECT	-0.0258***
	(3.37)
Short-run	
D.CEOP	0.151
	(0.28)
_cons	-1.015
	(-1.24)
N	140

Source: Authors' own compilation

Note: Z-score is proxy for bank risk. CEOP is CEO power. ECT is Error Correction Term.

* significant at 10%; ** significant at 5%; *** significant at 1%.

From Table 5 above, ECT is negative (- 0.0258) which shows that there is a causal relationship between the CEO power and bank risk. CEO power has a long-run positive and significant causal impact on the Z-score and reduces bank risk with a coefficient of 8.461, significant at the 1% level. This implies that changes in CEO power will cause a change in bank risk in the long run. There is however no short-run causality. Any changes in CEO power will have an impact on bank risk only in the long run. Where there are changes in CEO power to reduce bank risk, the results will be seen in the long run. This is because of the need for the CEO to first adjust to the new position especially if he/she has just been appointed. For a CEO of a commercial bank to be able to reduce bank risk in Uganda, they must first study the environment, get acquainted with it, and introduce strategies gradually but consistently. This will lead to a reduction of bank risk in the long run. These findings are consistent with those of Victoravich, Buslepp, Xu and Grove (2011) who concluded that the short-term decisions of a CEO can impact the bank in the long run. As chief planners, CEOs are considered architects of the long-term strategy of the firm (Sheikh, 2019). Since ECT is negative and significant, it can be concluded that there is joint causality of the independent variables of CEO power on bank risk. A significant coefficient of 8.461 shows that there is a positive causality between CEO power and the Z-score, implying that CEO power causes the Z-score to increase showing a reduction in bank risk.

4.5 Robustness Checks

Using the Jarque-Bera test, data was found to be normally distributed. Using the Arellano-Bond test for autocorrelation, there was no problem of autocorrelation or serial correlation. VIF was used to measure multicollinearity and all values were less than 5, which

implies that there was no problem of multicollinearity in all the models. Pesaran's test was used to establish any cross-sectional independence among the variables, and none was established. Using the Breusch-Pagan test for heteroskedasticity, we discovered that the data had a problem of heteroscedasticity with $X^2 = 6.71$ and a p-value of 0.0096, which led to the rejection of the null hypothesis of constant variance or absence of heteroscedasticity. To curb this problem, and to correct for heteroskedasticity, we ran our models using robust standard errors that are not affected by outliers and other data irregularities. Robust standard errors can be used to run regression models in cases where heteroskedasticity exists (Huang, Wiedermann and Zhang, 2022). All models were run with the number of instruments (13) less than the number of groups (14), confirming that the models were robust. The Sargan test and Hansen test were used to establish the validity of the instruments and the robustness of the model, respectively. The instruments were found to have validity.

5. Conclusion, recommendations and limitations

This study concludes that, among commercial banks in Uganda, banks with lower bank risk are headed by CEOs with more power. The more shares a bank CEO in Uganda owns in the respective bank, the less risky the decisions they will make and, hence the bank will experience less risk. Furthermore, the more prestigious a CEO is either through his networks, connections, education or other directorships, the lower the bank risk. Similarly, where a CEO was a former employee before being appointed to that position, there will be low bank risk probably due to vested interests and familiarity with the bank operations. Also, the actions of powerful CEOs cause a reduction in bank risk in Uganda especially in the long run. There is a joint causality of the elements of CEO power on bank risk in the long run. Despite using Uganda as the unit of analysis, these findings can be generalised to commercial banks in other developing countries, as most of these financial institutions adhere to Basel III, which globally regulates banks insofar as risks are concerned, and equally exposed to the actions of their respective CEOs.

The most relevant CEO power elements in Uganda affecting bank risk include expert power, prestige power, ownership power and the CEO being a former executive or internally hired. Although it is not common to have owners as CEOs of commercial banks in Uganda, for the years when the situation was such in certain commercial banks, such banks exhibited less risk. CEO tenure should be maintained between 4 and 7 years for effective management of risk, since the higher the CEO tenure, the lower the bank risk. From a policy and regulation perspective, it is recommended that the Central Bank of Uganda and the Uganda Stock Exchange continue to closely monitor the actions of CEOs regarding their role in influencing bank risk. Specific statements in this regard should be put in the Financial Institutions Statute and the Uganda Securities Guidelines for Banks.

This study had some limitations, which can be overcome by future research. The sample was based on Uganda as the unit of analysis. In order for findings on CEO power and bank risk to be impactful, comparative analysis can be undertaken across regions, and economic blocs. Similarly, the period of study can be extended beyond the ten years used herein, so that the effect of structural breaks can be considered. Agosto *et al*.'s (2023) study particularly underpins the role of statistical learning and artificial intelligence methods in the financial sector. As governance is one of the factors encompassed in ESG, future studies on governance in the financial sector of developing countries could combine different ESG scores into a single ESG index thereby enabling comparative analysis across firms within the sector.

Author contributions

These authors contributed equally.

Conflicts of interest

The authors declare no conflict of interest.

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