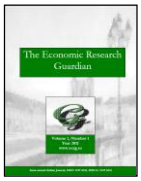
The Economic Research Guardian – Vol. 14(2)2024
Semi-annual Online Journal, www.ecrg.ro
ISSN: 2247-8531, ISSN-L: 2247-8531
Econ Res Guard 14(2): 127-150



Cointegration between CEO Power and Bank Risk: the Case of Commercial Banks in Uganda

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Abstract
This study assesses the cointegrating relationship between CEO power and bank risk. Using a sample of commercial banks drawn from Uganda, we consider the possibility of CEO power and bank risk regaining long-term equilibrium despite short-term disequilibrium. This paper adopts the Autoregressive Distributed Lag (ARDL) to analyse the short and long-run linkages between CEO power and bank risk. The speed of adjustment of the model in the long run was established using the Error Correction Term (ECT). Findings show that CEO power is positively and significantly related to Z-score in the long run, but such a relationship is not significant in the short run. A negative and significant ECT of -0.0258 was established, implying cointegration between CEO power and bank risk. If the model is destabilised and moves away from equilibrium, it will be re-coded back to equilibrium at a speed of approximately 2.58% annually. CEOs, bank managers, employees and policymakers should not expect immediate results regarding expected changes in bank risk. There is a need for persistent innovation, adjustment and observation of decisions and policy actions if bank risk is to be minimised.

Keywords: CEO power, Bank risk, Commercial banks, Cointegration, Uganda

JEL classification: G30, G32, G39

Received: 23 May 2024; Received in revised form: 12 August 2024; Accepted: 16 August 2024

1. Introduction

Powerful Chief Executive Officers (CEOs) can improve a bank's efficiency due to their ability to make good decisions. Although they can act in the interest of shareholders as per the stewardship theory, with excessive power, they can make decisions that are not in line with the interests of shareholders (Hua et al., 2019; Berle and Means, 1932), hence increasing the risk exposure of the firm. In a banking industry highly susceptible to risks, the role of the CEO becomes more pertinent. Although risk management has dominated bank management literature and discourse, policy and practice, previous studies on how CEO power affects risk-taking have not investigated the cointegration relationship between CEO power and bank risk. Unlike several CEO power and bank risk-taking-related empirical studies that have been conducted in developed and developing countries with a relatively large number of banks, like Malaysia, Pakistan and Kenya, no such

research has been undertaken in the context of Uganda, a country with a relatively small, but innovatively adoptive growing banking industry. Given the need for sub-Saharan economies to contribute more to the global economy and financial systems, a study of bank risk-taking in these areas is pertinent. Moreover, when it comes to CEO power in Uganda, no study has yet been undertaken in this regard, explicitly considering the cointegrating relationship between CEO power and risk-taking in the banking industry in Uganda, despite the many bank challenges therein. Furthermore, no such study has been conducted in Uganda and sub-Saharan Africa. By studying the cointegration relationship between CEO power and bank risk in Uganda, this study exhibits the possibility of CEO power and bank risk regaining long-term equilibrium despite short-term disequilibrium over the years.

Although Uganda has enjoyed relative political, macroeconomic, social and technological stability over the last thirty years, the banking industry has suffered turbulence. Despite this stability, coupled with enacting a financial institution's statute and publishing commercial bank corporate governance guidelines, there have been several bank closures over those thirty years. In policy, although banks are highly regulated, regulation is insufficient to cover all the dynamics affecting managerial decision-making, especially the decisions of the CEO (Mourouzidou-Damtsa et al., 2017). The Financial Institutions Statute (2004) of Uganda, although amended in 2016, is still silent on matters about regulating or utilising CEO power regarding risk-taking levels of banks (The Financial Institutions Statute of Uganda, 2004). The Capital Markets Corporate Governance Guidelines mention directors' independence but do not guide how this affects or moderates the relationship between CEO power and banks' risk-taking. The same is missing from Table F of Uganda's Companies Act (2012) of Uganda, which deals with the Code of Corporate Governance Boards and Directors (See The Companies Act of Uganda, 2012).

This paper contributes to banking literature, policy, practice and context in various ways. In literature, the absence of a single agreed-upon CEO power index that takes care of multicollinearity among the individual indicators of CEO power has led to the need to develop a composite proxy index in this study. The inconclusive findings regarding the effect of CEO power on bank risk further inspired this study, and we went on to confirm an inverse relationship between CEO power and bank risk. Research on CEO power in Sub-Saharan Africa is scant despite increased studies about CEO power in developed and developing countries. Regarding CEO power in commercial banks in Uganda, no known research has yet been undertaken in this regard, explicitly considering CEO power and risk-taking in the banking industry in Uganda, despite the many bank challenges therein. This paper will thus provide a basis for future studies to undertake comparative analyses. This study further points out the essential elements of CEO power in Uganda and sub-Saharan Africa, which vary among commercial banks over the years of the study to include expert power, prestige power, ownership power, and the CEO being a former executive or internally hired. In policy, this study will contribute to the existing efforts to stabilise the banking industry in Uganda by suggesting to policymakers and bank directors how bank risk can be managed through CEOs exercising certain types of power. The Financial Institutions Statute (2004) of Uganda, amended in 2016, is still silent on matters about managing or utilising CEO power regarding risk levels of banks. There should be specific statements advising on the education level required by the CEO and the directorships that a CEO can hold to be regulated by the board. In practice, as commercial banks report, they should include the extent to which CEO power influences bank risk in their annual reports. They should hire CEOs internally since those are the ones whose effect on bank risk can be affected by an independent board of directors. Commercial banks should encourage their CEOs to have external networks outside the banks in which they are CEOs. These connections and networks will improve their prestige power. Banks should promote CEOs to stay in that position for at least 4 – 7 years. This is because the longer a CEO stays in that position, the lower the bank

risk. Experienced CEOs can reduce bank risks. It is pertinent for the policy makers and stakeholders to know that there is cointegration between CEO power and bank risk and that if the model is destabilised and moves away from equilibrium or has short-run disequilibrium, it will be recoded back to equilibrium. It will also correct its previous period of disequilibrium at a speed of approximately 2.58% annually to get back to a steady state. However, this speed of readjustment is low. This could be due to the several investigations that were taking place in the banking sector, which probably made it difficult for bank CEOs, staff, and clients to make quick decisions regarding correcting disturbances in bank operations. The significant informal sector and reliance on the private sector leads to economic adjustments to equilibrium since both sectors take a long time to adjust to formal organisational processes. CEOs and bank staff must find new credit products like low-interest specialised loans that will attract people in the informal sector. These may speed up the readjustment of operations to equilibrium.

Therefore, findings from this study will feed into bank policy and practice in Uganda and extend the scope of scholarly studies on CEO power and bank risk-taking to include Uganda as a developing economy. Findings from this study contribute to empirical studies that lack conclusive results regarding the cointegrating relationship between CEO power and bank risk. The need to stabilise the turbulence of the banking sector in Uganda is a further contribution of this study.

2. Literature review

Various theories have been advanced to explain the dimensions of CEO power and its effect on bank performance outputs. The two fundamental theories underpinning CEO power are the upper echelons theory (Herman and Smith, 2015; 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, 1985; Ng et al., 2005; Donaldson and Preston, 1995; 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 et al. 2019; Okafor and Fadul, 2019; Buston, 2015; Ishtiaq, 2015; Shafique et al., 2013; Kuritzkes and Schuermann, 2010; Crouhy et al., 2006; Bessis, 2002; Pyle, 1999; Santomero, 1997).

2.1. Theories relating to CEO power and bank risk

The leading proponents of the upper echelons theory were Hambrick and Mason (1984), who opined that organisational outcomes such as strategic choices can be predicted from a managerial background and that top managers are responsible for and can produce results in an organisation. In the case of a bank, managers have much discretion in choices such as which loans to give, which combination of business portfolios to hold, what investments to make, and the capital structure (Bonini and Taatian, 2021).

The main proponents of the agency theory were Berle and Means (1932), Jensen and Meckling (1976) and Fama and Jensen (1983). The shareholders, as principals, entrust the operations and

running of a company to managers, who are agents, to run the company on their behalf, hence, the agency relationship between shareholders and managers. The separation of ownership from control in firms leads to conflicts of interest between managers, including the CEO, who are agents, and shareholders, who are the principals (Ochieng, 2016). Agency theory puts the CEO at the helm of a firm as an agent of the shareholders and hence has power.

According to Donaldson (1985), Ng et al. (2005), Donaldson and Preston (1995), and Donaldson and Davis (1991), the stewardship theory contextualises situations in which managers are not motivated by individual goals but rather are stewards whose motives are aligned with the objectives of their principals. The CEO is viewed as a good steward who always has the bank at heart; thus, they need support from the board in their decisions. Such support can be proffered through counselling and advice (Saidu, 2019; Hu and Alon, 2014). Faithful individuals will quickly rise to the CEO position, and as they remain faithful, they will be trusted by shareholders and other stakeholders, increasing their power.

As postulated by Wernerfelt (1984) and later refined by Penrose (1959), the resource-based theory advanced the argument that the valuable intangible and tangible resources to which a firm has access, if applied well, will improve that firm's competitive advantage. The resource-based theory suggests that a company's resources are the main drive behind its competitiveness and performance. These resources include tangible and intangible assets (Daryaee et al., 2011). The resources must be non-substitutable, valuable, inimitable, and rare (Barney, 2001). Employees and managers form an essential resource base that will be vital intellectual capital to the firm when trained and invested in. In such cases, an executive with superior performance can be promoted to CEO. This will give him the power to perform even better at a strategic level.

The social network theory says that the way individuals, organisations and groups interact with one another to achieve their common goal is the core of this theory (Kavitha and Bhuvaneswari, 2016). A CEO is expected to have an excellent reputation and to reflect good values for the bank (Hamidlal and Harymawan, 2021). A CEO with vast connections and social networks wields more power than one without connections and networks outside the organisation.

The leading proponent of the portfolio theory was Harry Markowitz in 1950, who stated that the decision to take on risk must be guided by the return expected from that venture. High-risk investments must have high expected returns. This is the essence of the modern portfolio theory (MPT). According to this model, banks become reluctant to invest in ventures that bring high returns, albeit with low profitability, where deposit markets are more concentrated. A bank CEO must analyse every potential project return relative to its risks. Thus, there is a need to maximise the expected return of a portfolio given the amount of risk (Osayi et al., 2019).

According to the contracting model, increasing competition in deposit and loan markets increases risk. Boyd and De Nicoló (2003) opined that as a bank's market becomes more concentrated, a bank becomes risky. When a bank aims to win the market, such a bank's management tends to take on more risk. A bank may reduce its loan interest and take on risky investments in such cases. To further affirm this, Li (2019) noted that bank risk-taking is affected by the competitive environment. However, with little or no competition, a bank will be cautious and selective of how it lends out and the risk charged. In this theory, competition is a driver of risk-taking and risk exposure. This creates volatility in the assets section of the bank's statement of financial position or balance sheet.

The regulatory hypothesis theory proposes increasing the capital ratio with an increase in the risky portfolio. Koehn and Santomero (1980) in Abbas *et al. (*2021) conclude that the rise in capital increases banks' risk. A bank's CEO must take on risky ventures to have a solid capital base, albeit legally.

The risk-balancing hypothesis implies that as a bank attempts to reduce one risk, it may increase another. Attempting to reduce one risk may ignite another type of risk (Danaan, 2018). The risk balancing hypothesis suggests that banks, other businesses, and individuals have an equilibrium level of total risk they are comfortable with (Hulinsky, 2015). At that level, they are willing to take on certain risks as long as doing that can reduce another risk. In the same spirit, banks can perform risk balancing by altering one type of risk opposite to the other to maintain the equilibrium level of total risk.

The managerial overconfidence hypothesis says that managers credit themselves for successes while blaming outside factors for failures, causing managerial overconfidence to increase following successes but not commensurately decrease following failures (Adam et al., 2015). Managers base their current decisions on the outcomes of their past financial decisions. If a manager decided in the past, and it was successful, such a manager will develop confidence and decide in a similar situation, even if this may lead to adverse results. An overconfident CEO tends to make riskier decisions and increase the likelihood of bankruptcy when they delay reaction to bad news (Leng et al., 2021), especially in innovative environments such as the banking sector. CEOs intervene in company affairs, and this affects risk-taking behaviour. We thus seek to assess how these various CEO powers affect bank risk.

2.2. Types of CEO power

Structural power comes from a CEO holding a high position in the organisation's hierarchy, having many positions and titles. By being in a top position, a CEO gains power to make decisions in the company and the other managers and staff respect the hierarchy and will accord them respect. Structural power will also arise when one holds both the title of CEO and that of Board Chairman, culminating in CEO/Chair duality (Hemdan et al., 2021; Saidu, 2019). A CEO responsible for running the board and operating the firm will be able to influence the board's decisions and implement his decisions and plans. Such a CEO has more insider information about the bank and its operations. After a study of Chinese banks from 2006 to 2016, Fang Lee et al. (2020) found that bank risk-taking is significantly improved by CEO structural power. Wang (2018) examined listed banks in three capital markets, that is, Mainland China, Hong Kong and Taiwan, and 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 an advantage over others. Similarly, a CEO's being a shareholder indicates such a CEO's power. The higher the percentage of shares one holds, the more power such an individual has (Hamidlal and Harymawan, 2021). Pathan (2009) proposes that the effect of CEO shareholding on bank risk-taking is an empirical issue worth pursuing. When a CEO is also a shareholder, their interests will be in sync with those of the other shareholders, reducing the information and decision asymmetry between shareholders and managers arising from 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 the 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 decision-making and is considered to be an expert. A CEO who has worked in different industries, companies, and organisations has a lot of experience that 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 et al. (2021) believe that an entrenched CEO is more involved in activities that increase corporate values. However, an entrenched CEO may be reckless and eager to spend without caution, increasing the bank's risk.

Prestige power arises out of personal status, respect, admiration accorded to the person, reputation and connections, and other people's perception of that person's influence through contacts and qualifications. The reputation one has acquired in the office, positive perceptions, relationships with external parties like government and other influential people, and an excellent educational background reflect that person's power (Saidu, 2019). Prestige power gives the CEO confidence to take on more successful projects as they will be comparing himself to other successful CEOs or getting advice. Such CEOs will likely make decisions that align with the company's best interests (Saidu, 2019; Fang et al., 2020). This will reduce the risk of failure. However, very powerful CEOs tend to take on more risk by over-investing, especially in corporate social responsibility, to build their reputation (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 for hiring and orienting the individual (Saidu, 2019; Wernerfelt, 1984). An internally appointed CEO will have more power than one hired from outside the organisation since the former will have more information about the firm. This move motivates the individual and will enable them to work towards expansion and sustainability of the firm. However, such a CEO may suffer 'arrivalism', that is, the excitement of arriving at a leadership position, as they may want to show other employees that they are now more powerful than them. They may want to implement projects they had all wanted to implement but could not since they were not the CEO. Such excitement may lead to reckless behaviour, thereby exposing the bank to more risk. Conversely, a CEO hired from outside the bank would temporarily disrupt 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. However, Barron et al. (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. Companies with internally developed or "home-grown" CEO talent significantly outperform those with CEOs hired from outside the firm (Kearney, 2011).

CEO being a founder member is another source of power. It is common for entrepreneurs to start firms and become managers thereof. When a founder member becomes CEO, they attain power (Hemdan et al., 2021). The performance of founder and non-founder CEOs differs significantly in achieving organisational goals (Abebe and Alvarado, 2013). This could be because founder CEOs tend to have more commitment to the firms they founded. They look at the firm as part of them, and its growth is their growth, unlike non-founder CEOs who look at the firm as one of those they will serve and move on with their careers. 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, leading to bank insolvency. The overconfidence of founder CEOs makes them take more risks (Yi et al., 2015).

The review above shows mixed findings regarding the effect of CEO power on bank risk. Although CEOs are known for initiating various strategic changes (Li and Patel, 2019), such changes may increase a bank's risk if not carefully executed. Different studies have shown that the dimensions of CEO power essentially have a contradicting relationship to bank risk. Regarding Uganda, no related literature in this field of study is available.

3. Research methodology

3.1. Data and sample

This explanatory panel research aimed to establish the relationship between CEO power and bank risk in commercial banks in Uganda, covering the period from 2010 to 2020. Secondary data was collected from various sources, including the World Bank's WDI database, the Uganda Securities Exchange, Uganda Ministry of Finance and individual bank websites for 14 commercial banks, which had complete information for the period under review, giving us 140 data points. Although there are 25 commercial banks in Uganda, we could only source complete data on the required variables for 14 banks.

3.2. Measurement of variables

The independent variable of the study was CEO power. CEO power ($CEOP_{it}$) data was collected on its attributes, including structural power, ownership power, expert power, prestige power, CEO being a former bank executive (internally hired CEO), and founder CEO. Structural power ($STRP_{it}$) was measured based on CEO duality, as was done by Saidu (2019). Ownership power ($OWNP_{it}$) was calculated using the percentage of shareholding of the CEO as was applied by Saidu (2019). Expert power ($EXPP_{it}$) was measured using CEO tenure as was applied by Saidu (2019). Prestige power ($PREP_{it}$) was binary where a code of "1" was given if CEO also holds other directorships and "0" otherwise as was applied by Saidu (2019). 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 as was applied by Pathan (2009). Founder CEO ($CFOP_{it}$) was binary coded "1" if CEO is also a founder member, and "0" otherwise as was applied by Cormier, Lapointe-Antunes and Magnan (2016).

The dependent variable was bank risk. Bank risk (BR_{it}) was measured using the Z-score, which shows bank stability (Hua *et al.,* 2019;). A high Z-score indicates less risk and more stability for a bank (Berger et al., 2016).

Control variables are included to normalise the results for better and more reliable inference. They include bank size, listing status, Gross Domestic Product (GDP) growth, nonperforming loans and unemployment. Bank size ($BKSZ_{it}$) was measured as the logarithm of total banks assets for bank *i* at time *t* as was applied by Ramly *and* Nordin (2018). Listing status ($LSST_{it}$) was coded one for a listed bank, otherwise zero as was done by Tran *et al.* (2019). Gross Domestic Product (GDP) growth ($GDPG_t$) was measured by GDP growth for year *t* rate is measured relative to last year's GDP as was applied by Wehncke et al. (2022). Non-performing loans were measured by the absolute figure of non-performing loans of bank *i* for year *t*, stated in the financial statements of the respective commercial bank in year t and is labelled as 'non-performing loans' as was applied by Mazreku *et al.* (2018).

3.3. Model specification

The baseline model used in this study was adopted from Altunbaş *et al.* (2020) who investigate bank risk factors. A simple unobserved panel data model for the study is specified below:

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

Where BR_{it} is the dependent variable which measures risk taking of the bank i in period *t*. This study employed the Z-score. Z-scores measure the distance from insolvency and higher Z-scores indicate that the bank is more stability. $CEOP_{it}$ represents an index of CEO power which was obtained using principal component analysis from the six proxies of CEO power, that is: structural power, ownership power, expert power, prestige power, whether the CEO is a former executive, and CEO founder. 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, non-performing loans and unemployment. D_t is a dummy variable meant to capture any structural breaks in the model. ε_{it} is the error term.

3.4. Measuring cointegration

Based on the Error Correction Term, the study sought to analyse the cointegrating relationship between CEO power and bank risk in the long run. The speed of adjustment of the model in the long run was also established using the Error Correction Term (ECT). A negative and significant value of ECT (-1) indicates cointegration. Unit root testing was carried out to establish stationarity.

Stationarity means that the panel data of the variables is time-invariant, meaning that over time, the key moments: the mean, variance and auto-covariance of the series do not change, that is to say, it is stationary over time (Witt et al., 1998). Stationary data has all its covariances, variances and mean constant over time and, therefore, needs no differencing or transformation before analysis. A unit root is like a marker of non-stationarity pointing to a long-term trend that does not go away even when attempts are made to remove it through differencing.

A stationarity test examines whether the series are integrated of order 0 ($I(0)$), that is, stationary in level and therefore do not need any differencing, or the individual time series within the panel are all non-stationary and constantly changing with time-varying means, variances and covariances and with no constant relationship between variables over time and therefore have a unit root or long-run trend component that persists over time and does not disappear when the series is differenced, whether the series are integrated of order 1 ($I(1)$), that is, non- stationary in level and therefore need first-differencing because the individual time series within the panel are all non-stationary and thus have a unit root and stationary after first difference to make the data stationary and fit for analysis, or whether series are integrated of different orders, that is, having a combination of $I(0)$ and $I(1)$ series (Singhal et al., 2022).

Upon testing for unit roots, it is essential to establish whether a linear combination of I(1) variables is a stationary process of I(0). If that happens, then the variables are said to be cointegrated. Cointegration is viewed as the statistical expression of the nature of long-run equilibrium relationships. In this case, variables are linked by some long-run relationship, from which they can deviate in the short run but must return in the long run, and the residuals are stationary.

Having established that variables are either integrated of order zero, I(0) or integrated of order one, I(1), this study used the Autoregressive Distributed Lag (ARDL) approach developed by Pesaran et al. (2001) to analyse the short and long run linkages between CEO power and bank risk The ARDL approach offers several advantages. Firstly, as opposed to traditional co-integration methods such as Johansen (1991) tests, Granger and Engle causality test (Engle and Granger, 1987)) and Vector Autoregressive (VAR) model, ARDL can be utilised to test for a level relationship for variables that are either *I*(0) or *I*(1) as well as for mix *I*(0) and *I*(1) variables (Duasa 2007; Adom et al., 2012). However, the ARDL approach does not apply with non-stationary variables integrated of order two *I* (2). The possibility of combining *I*(0) or *I*(1) variables is an excellent advantage as economic data series often are either *I*(0) or *I*(1). The ARDL approach solves the problem of endogeneity. Pesaran and Shin (1998) argued that modelling the ARDL with the appropriate lags will adjust for both serial correlation and endogeneity problems. Jalil et al. (2011) contend that endogeneity is less of a problem if the estimated ARDL model is free of serial correlation. The impact on a given variable is due to its past values and the values of other variables and their lagged values.

The basic ARDL model in the literature is given as follows:

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

Where $\emptyset_k$ and φ_k are the coefficients of the lags of the dependent variable and the independent variables, respectively. There is an immediate response followed by short-run and long-run responses. Reparameterisation 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, 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, that is:

$$ECT_{it-1} = BR_{it-1} - \theta' X_{it-1} \quad (4)$$

Thus, the model in equation (4) can be written as:

$$\Delta BR_{it} = \alpha_0 + \sum_{k=1}^{\rho-1} \gamma_k \Delta BR_{it-1} + \sum_{k=0}^{q-1} \lambda_k' \Delta X_{it-1} + \omega ECT_{it-1} + \varepsilon_{it} \quad (5)$$

Where $\omega = -\alpha$ is the speed of adjustment towards long run equilibrium. In this case, φ must be negative and statistically significant if long run equilibrium is to be restored.

4. Results and discussion

The following section provides the results from our regressions. Table 1 presents the summarised descriptive statistics for the variables resulting from the pooled estimations:

Table 1 - Summary statistics for variables used in the pooled estimation (2010 - 2020)

Variables	Obs	Mean	Std Dev	Minimum	Maximum
Z_SCORE	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
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 a 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 the 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 1 summarises descriptive statistics for the pooled results for all the banks in this study covering 2010 to 2020. The descriptive statistics, based on the raw data before any transformations, 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 insufficient to conclude whether banks in Uganda have a high 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. This implies 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 was low, as shown by the percentage of shareholding by the CEOs of those banks. On average, CEOs held 0.00227% of the shares in the bank with a standard deviation of 0.00104%, a minimum of 0% and a maximum of 0.005%. There are banks where the CEO has no shareholding and little power. For those few CEOs with a small fraction of shareholding, their power is more than those who have none. This confirms assertions by Baker et al. (2019) that CEO share ownership is one of the sources of the power of CEOs, which has a negative influence on agency costs and that a CEO who owns shares commands respect as one of the owners of the company.

Regarding expert power (EXPP) indicated by CEO tenure, on average, most CEOs have spent 3.59 years as CEOs, with a standard deviation of 2.79 years. The minimum number of years is 0.70 years, which is less than a year, while the maximum is 14 years. A maximum of 14 years but an average of 3.59 years implies that the expert power is taken to be less than seven years, which is half of the maximum. This means that CEO expert power is low and does not change by a large

margin, as shown by a standard deviation of only 2.79 years. Those CEOs with more years of experience increase value as was indicated by Chiu et al. (2019) and Wu et al. (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 et al. (2010), who established that the tenure of bank CEOs was between 3 and 6 years. The expert power of CEOs of commercial banks in Uganda at an average of 3.59 years of CEO tenure is considered average compared to others in Africa. For instance, after a study in Nigeria, Josephine et al. (2022) concluded that an average of 1.57 years of CEO tenure is short, while an average of 5.52 years of CEO tenure is long.

Focusing on prestige power (PREP) as a source of CEO power, this was at an average of 0.23 with a standard deviation of 0.42. This looked at CEO holding directorships in other firms as their power source. With a minimum of 0 and a maximum of 1, half of this is 0.5. However, for CEOs of commercial banks in Uganda, the mean is 0.23, which is relatively low. This implies that these CEOs do not derive much power from other directorships. However, the few with other directorships have more power than those who do not have it, as was also suggested by Yusuf et al. (2022).

Table 1 further shows that the CEO being a former executive, that is, internally hired (CFEP), had a mean of 0.28 and a standard deviation of 0.45. The minimum was 0, while the maximum was 1.00. An internally hired CEO wields more power than one brought in from outside the bank. In Uganda, on average, 28% of the CEOs are hired externally. This implies that their CEO power is slightly low, below 0.5. This confirms the findings by Agrawal et al. (2006), who found that firms will always opt for insiders to take on CEO positions, although this is not at a low rate among commercial banks in Uganda. Balsmeier and Buchwald (2015) also confirm that firm-specific knowledge applies to most firms where innovations have improved due to promoting top managers from within. From Table 1, structural power (STRP) and CEO being a founder (CFOP) were presumed to be variables at the commencement of the study but were found not to be variables based on the fact that they did not change or vary within the banks and across all the years under observation.

CEO power (CEOP) gave a minimum of 0.00 when the CEO power index was lower than the medium CEO power index and a maximum of 1.00 when the CEO power index was higher than the median CEO power index of a particular bank. The individual CEO power components were not used due to the multicollinearity among them. Hence, the CEO power index (CEOP_INDEX) was determined after a Principal Component Analysis of the variables. From the table, the average CEO power is 0.4, which is moderate. This implies that the CEOs of commercial banks in Uganda have moderate power.

Regarding control variables, the average Bank size (BKSZ) was 27.18, with a minimum of 23.06 and a maximum of 29.32. The variations among banks regarding size, as shown by the standard deviation of 1.23, were slight. This means most banks are almost the same size and can be reasonably compared. The listing status of commercial banks in Uganda is moderately low, with an average of 0.45. This implies that, on average, 45% of the commercial banks are listed. Getting listed on the stock exchange opens a firm up for scrutiny by the Uganda Securities Exchange, the Capital Markets Authority of Uganda, and the public. GDP growth (GDPG) in Uganda has been on an average of 5.09% for the years of the study period, with a minimum of 3.0% and a maximum of 9.40. Uganda's average GDP growth rate during the study period was high, given that the East African GDP growth for 2020 was 0.4% (African Development Bank, 2021). This implies the potential for an increase in banking activity due to a rise in demand for financial services like savings

and credit. Non-performing loans (NPL) for the commercial banks averaged at UGX.27,400,000,000 with a minimum of UGX.0 and a maximum of UGX.219,000,000,000. This implies that the level at which banks are cautious towards lending and the efforts made to recover the money lent out differ. The extent of loan default rate widely differs in the given range, as shown by the standard deviation. The unemployment rate (UNEMPL) was at an average of 2.44%, with a minimum of 1.91% and a maximum of 3.59%. The high level of employment in an economy would increase demand for banking services since people will have the income to save. Employed people also have the opportunity to get salary loans. This has an impact on a bank's load default risk.

4.1. 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 2 below:

Table 2 - 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. * significant at 10%; ** significant at 5%; *** significant at 1%.
Note: Z-SCORE is a 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 ie 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.

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. 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 bank's survival. 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 in Uganda, the more experienced the CEO, the lower the bank risk because experience as a CEO leads to more caution when making decisions. The findings are in agreement 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, the findings contradict the managerial entrenchment theory, which considers long-serving managers entrenched and, therefore, follow personal interests, not organisational ones.

Regarding prestige power, there was a positive relationship between prestige power and Z-score (r = 0.339). This indicated 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 is the CEO. A CEO with connections and other directorships, relationships with external parties like government and other influential people, and an excellent educational background can consult on decisions and has reference points that guide them in decision making. That CEO will want to please the members of those other networks that they are successful and can manage a bank and keep it solvent.

CEO being a former bank executive was found to have a positive relationship with Z-score (r = 0.052), indicating that commercial banks in Uganda whose CEOs were former employees before being appointed into CEO positions have low bank risk. These findings justify the resource-based theory's assertion that the valuable resources a firm has access to, like employees and managers, if deployed well as vital intellectual capital, can improve that firm's competitive advantage (Daryaee et al., 2011). A person promoted to the CEO position from within the bank with 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. Such CEOs are usually familiar with board members and other bank employees. They would easily lead the team to making and implementing prudent decisions in the bank's interest.

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

Regarding control variables, there was a positive relationship between bank size and Z-score (r = 0.102). This indicated that as commercial banks expand in Uganda, they lower bank risk. The possible explanation is that when banks expand, their resilience increases and their large asset base and liquidity increase, making it possible to reduce unnecessary expansion, investment and lending out money. Listing status had a positive relationship with Z-score (r = 0.096). This indicates that when a bank gets listed, bank risk is reduced. The possible explanation is that when banks get listed, they attain public confidence and scrutiny. A negative relationship existed between GDP growth and Z-score (r = - 0.008). This indicated that a low GDP growth rate would increase Z-score and decrease bank risk. The possible explanation is that when GDP growth reduces, there is a recession and slowdown in economic activity, and the goods and services produced in the country are reduced. There was a positive relationship between nonperforming loans and Z-score (r = 0.021). This indicated that when nonperforming loans increase, bank risk decreases. The possible explanation is that 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. The results revealed in Table 2 further reveal a negative relationship between unemployment and Z-score (r = -0.043). This indicated that when unemployment increases, the Z-score reduces, increasing bank risk. The possible explanation is that as more people stop working, they cannot access credit and salary-secured loans, which they would have paid back if they had jobs. As a result, banks will perceive a higher risk and lend less to individuals because of the increased possibility of borrowers defaulting on their loans. The risk of lending to the unemployed increases as the number of unemployed customers increases.

4.2. The cointegrating relationship between CEO power and bank risk

Cointegration is viewed as the statistical expression of the nature of long-run equilibrium relationships (Gwachha, 2023). In this case, variables are linked by some long-run relationship, from which they can deviate in the short run but must return in the long run, and the residuals are stationary. Cointegration or long-term relationship was ascertained by interpreting the significance of the long-run coefficients and the Error Correction Term (ECT). Before performing the cointegration test, the stationarity of the data was established using unit root tests. Furthermore, as a robustness check, we applied Pesaran's test of cross-sectional independence, which returned a result of -1.403, with a p-value of 0.1932 (insignificant). We therefore concluded that there is cross-sectional inter-dependence in this study.

4.3. Unit root analysis for stationarity

Standard unit root tests such as Dickey-Fuller (DF), the augmented Dickey-Fuller (ADF) and the Phillips-Peron (PP) tests have been criticised by earlier scholars as they cannot distinguish the unit root null from stationary alternatives. Gujarati and Porter (2010) described the ADF as an improved version of the DF test as it considers autocorrelations in residuals, if they exist, by including additional lags of the first differenced variable. On the other hand, the Phillips-Perron (PP) test applies non-parametric statistical methods to overcome serial correlation in the error terms without the need to add lagged difference terms. It is thus ranked higher than the ADF because its test statistics have been modified to capture serial correlation and heteroskedasticity (Makoni, 2016). The Phillips-Perron (PP) test statistics can, therefore, be viewed as Dickey-Fuller statistics that have been made robust to serial correlation by applying the Newey-West (1987) heteroskedasticity- and autocorrelation-consistent covariance matrix estimator. In the PP test, the null hypothesis is that the variable contains a unit root; the alternative is that a stationary process generates the variable. The asymptotic distribution of the PP test is the same as the ADF test statistic (Gujarati and Porter, 2010).

For this study, unit root analysis was done using the Levin, Lin and Chu (LLC) test. The LLC test used to test for unit roots in panel data settings is a combination of the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test (Brooks, 2014; Koutsoyiannis and Tsekouras, 2012; Gujarati and Porter, 2010; Enders, 2010). It takes into account the correlation between the series being tested. The LLC test tries to determine if the panel's mean is stable over time. This test takes the unit root as the null hypothesis Ho: $\varrho = 1$. The null hypothesis was tested against the alternative H_1: $\varrho < 1$. Spurious regressions may occur when a non-stationary series is regressed on another nonstationary series. Spurious results are characterised by a reasonably high R^2, highly uncorrelated residuals, significant coefficients of the regressors and very low Durbin-Watson statistic (Gujarati and Porter, 2010).

Table 3 below shows the unit test results under the alternative hypothesis that panels contain unit roots (are non-stationary).

Table 3 - Unit root test results

Variable	Levin, Lin & Chu Statistic	Order of integration
Z-score	-10.5786***	*I*(0)
CEOP	-10.2330***	*I*(0)
CFEP	-2.16320**	*I*(1)
EXPP	-10.2571***	*I*(0)
BKSZ	-1.64127**	*I*(1)
GDPG	-6.00586***	*I*(0)
NPL	-9.60134***	*I*(0)
UNEMPL	-6.16521***	*I*(0)
Variable	ADF Statistic	
Z-score	65.3319***	*I*(0)
CEOP	45.3504***	*I*(0)
CFEP	17.7999***	*I*(0)
EXPP	43.2662***	*I*(0)
BKSZ	42.6213**	*I*(0)
GDPG	186.259***	*I*(0)
NPL	57.9379***	*I*(0)
UNEMPL	102.214***	*I*(1)
Variable	PP Statistic	
Z-score	175.417***	*I*(0)
CEOP	74.1863***	*I*(0)
CFEP	63.5698***	*I*(0)
EXPP	86.7977***	*I*(0)
BKSZ	110.597***	*I*(0)
GDPG	87.7884***	*I*(0)
NPL	119.862***	*I*(0)
UNEMPL	151.900***	*I*(1)

Source: Authors' own computations.

Note: Z-score is a proxy for bank risk. CEOP is CEO power. EXPP is Expert power. CFEP is CEO being a former executive ie 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%. We reject the null hypothesis of unit root tests at 1%, 5% and 10%, respectively.

From Table 3 above, all the absolute figures of the LLC test statistic are negative and significant, which indicates that the null hypothesis of a unit root is rejected. And since, even when ADF and PP are used, all the variables have significant probabilities at levels or first differencing, we can reject the null hypothesis and conclude that the panel data for all the variables are stationary and, therefore, contain no unit roots. Analysis can thus be performed on them. The data is stationary. Since the data is stationary, the series is unlikely to exhibit random walk behaviour, which suggests that the series is suitable for use in subsequent regression and ARDL analysis. From the series examined at either level *I*(0) or *I*(1), Z-score, CEOP, EXPP, GDPG, NPL and UNEMPL became stationary at level and were statistically significant at 1%, while CFEP and BKSZ were stationary in first difference and statistically significant at 5%. These findings agree with those of Oduori and Kosgei (2020), who conducted a study about the influence of chief executive officer power on diversity of gender and dividend policy in Kenya and found CEO power non-stationary.

Having tested for collinearity, cross-sectional dependency, and unit roots and established that our variables are either integrated of order zero, I(0) or integrated of order one, I(1), we tested whether CEO power and bank risk have a long-run relationship.

4.4. Cointegration results using ARDL

We used the Autoregressive Distributed Lag (ARDL) approach developed by Pesaran et al. (2001) to analyse the short and long-run linkages between CEO power and bank risk among selected commercial banks in Uganda. To determine cointegration, we first established whether the data was homogeneous or not. Several estimators can be used to assess cointegration depending on the homogeneity of the data, but the common ones include Mean Group (MG), Dynamic Fixed Effects (DFE) and Pooled Mean Group (PMG). To determine which estimator was the most efficient, the Hausman (1978) test was used to determine whether the data was homogeneous or heterogeneous. This would, in turn, be used to determine the most suitable estimator to run the cointegration test.

A comparative analysis was done on the mean group (MG), dynamic fixed effects (DFE), and pooled mean group (PMG). Abdulqadir (2022) used the Hausman (1978) test to choose between the MG and the PMG on one side and the PMG and the DFE on the other while studying the applicability of capital theories in the BRICS banking sector focusing on capitalisation and profitability. PMG is the most efficient where data is non-random and homogeneous (Banda, 2021; Ferrucci, 2003). Where data is heterogeneous, MG is the most efficient DFE estimator, which can handle both homogeneous and heterogeneous data. However, the three were compared to find the most efficient. By performing the PMG analysis, you can infer cointegration by interpreting the significance of the long-run coefficients and the Error Correction Term. Hausman (1978) test was used to measure homogeneity.

Results of the Hausman (1978) test revealed that when MG was compared to PMG under the null hypothesis that data was homogeneous, it returned a probability of 0.9877, which is less than 0.05. Hence, we do not reject the null hypothesis that data is homogeneous and conclude that PMG is a better estimator than MG. When DFE was compared to PMG under the null hypothesis that data was homogeneous, it returned a probability of 0.2466, which is less than 0.05. Hence, we do not reject the null hypothesis that data is homogeneous and conclude that PMG is a better estimator than DFE. As a better estimator for the data, PMG was adopted, as was the case in Singhal et al. (2022).

From the Hausman (1978) test, we estimated the models. Since the Hausman (1978) test favoured the PMG estimator, we observed the statistical significance of the long-run coefficient, the Error Correction Term (ECT) and the short-run coefficients to interpret the results. The results of the cointegrating relationship between CEO power and bank risk using the models are indicated in the table below:

Table 4 - Cointegrating relationship between CEO power and bank risk

	PMG	MG	DFE
	D.Z-score	D.Z-score	D.Z-score
Long-run			
L.CEOP	8.461***	8.471	-4.852
	(17.62)	(1.57)	(-0.60)
ECT	-0.0258***	-0.137***	-0.0841
	(3.37)	(2.94)	(-1.15)
Short-run			
D.CEOP	0.151	-0.736	-0.197
	(0.28)	(-0.82)	(-0.37)
Constant	-1.015	-5.560*	0.777
	(-1.24)	(-2.33)	(0.41)
N	140	140	140

Source: Authors' own computations
Note: Z-score is a proxy for bank risk. CEOP is CEO power. ECT is an Error Correction Term.
* significant at 10%; ** significant at 5%; *** significant at 1%.

From Table 4 above, the results for the PMG estimator were the only ones considered for interpretation. The table shows that CEO power (CEOP) is positively and significantly related to Z-score in the long run, but such a relationship is not significant in the short run. This means that in the long run, when CEOP increases, the Z-score increases, and bank risk reduces since the extent of bank risk is inversely proportional to the Z-score. When given power, the CEO can reduce bank risk in the long run. As per stewardship theory, this incentive comes from the need to protect shareholder's wealth. The experience that the CEO may have accumulated due to long tenure enables such a CEO to make good decisions because they will have gotten used to the environment. In Uganda, most CEOs have experience and can operate in the dynamic and rapidly changing private sector-led economy with many risks, especially credit risk, given the increase in borrowers. It turns out that bank CEOs who are used to that environment will quickly foresee and avoid possible risks. These results agree with Fernandes et al. (2021) and Fang et al. (2020), who found that increased control over risk-taking is possible with more substantial CEO power.

The speed of adjustment of the model in the long run was established using the Error Correction Term (ECT). A negative and significant value of ECT (-1) indicates cointegration (Gwachha, 2023; Singhal et al., 2022). From Table 4, when CEO power was related to the Z-score, a negative and significant Error Correction Term (ECT) of -0.0258, significant at a 1% level, was obtained. This implies that there is cointegration between CEO power and bank risk as measured by the Z-score in the panel and that if the model is destabilised and moves away from equilibrium or has short-run disequilibrium, it will be recoded back to equilibrium or it will correct its previous period disequilibrium at a speed of approximately 2.58% annually to get back to the steady state. However, the speed of readjustment is low. This could be due to the several investigations that were taking place in the banking sector, which probably made it difficult for bank CEOs, staff, and clients to make quick decisions regarding correcting disturbances in bank operations. During the ten years under study, there was GDP growth volatility, with the highest being 9.4% and the lowest being 3%. This unstable volatility could have led to more skepticism and slow adjustment in the financial sector. Gwachha (2023), after studying the economic system of Napal using ARDL to analyse the data, concluded that the fragility of a financial system could render it unable to react swiftly to shocks.

5. Conclusion

There is cointegration between CEO power and the Z-score, and hence bank risk in commercial banks in Uganda. The low speed of adjustment of the model back to equilibrium could be due to the several investigations that were taking place in the banking sector, which probably made it difficult for bank CEOs, staff, and clients to make quick decisions regarding correcting disturbances in bank operations. The big informal sector and reliance on a private sector-led economy make adjustments to equilibrium slow since both those sectors take long to adjust to formal organisational processes. CEOs need to strategise how best to grow their respective banks by expanding current product offerings to include low-cost accounts and digital banking, attracting people from the informal sector. These may speed up the readjustment of operations to equilibrium. CEOs, bank managers, employees and policymakers should not expect immediate results regarding expected changes in bank risk. This is because there is a lagged relationship between current risk, previous year's risk and prior actions of CEOs. The results of actions taken in the current year to improve a bank's risk profile can be seen in the following year. There is, therefore, a need for persistent adjustment and observation of decisions and policy actions if bank risk is to be minimised.

From a policy perspective, it is recommended that the board of directors play an active role in ensuring that CEOs do not assume more-than-necessary risk and that the growth of banks is in line with the broader macroeconomic environment.

This study is not without any limitations. It is focused on the data of commercial banks in Uganda over a ten-year period, which limits its applicability to other parts of the world in both developed and developing countries. Further research needs to be done to test if the results hold when dealing with other jurisdictions. Similarly, due to time lags, future studies can consider assessing CEO power and bank risk nexus before, during and post-pandemics such as COVID-19, which may have impacted these variables. By including structural breaks, the results could be more robust.

Declaration of conflicting interests: the authors declare that there is no conflict of interest.

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