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The Effect of CEO Expert Power on the Diversification Of Banks Listed on the Tehran Stock Exchange

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Abstract


The purpose of this study is to examine the effect of CEO expertise on bank diversification and to analyze the moderating role of competition in this relationship. This research is applied in purpose and descriptive-correlational in method. The statistical population includes banks active in the Tehran Stock Exchange, and based on specific criteria, the financial data of 14 banks were collected and analyzed over a 13-year period (2010–2022). To test the research hypotheses, multiple regression analysis and panel data analysis were conducted using EViews software. The results indicate that CEO expertise has a positive and significant impact on bank diversification, meaning that the more the CEO possesses expertise and knowledge in banking and financial management, the more the bank under their management tends to diversify its activities. Furthermore, the findings show that the level of competition in the banking industry plays a moderating role in this relationship, such that under more intense competition, the positive effect of CEO expertise on bank diversification is strengthened. These results can be valuable for policymakers, bank managers, and shareholders in formulating optimal strategies to improve bank performance and enhance competitiveness.

Keywords: CEO expert power, Bank diversification, Market competition.

1 | Introduction

Banks, as one of the most important institutions in the money and capital markets, play a valuable role in economic development. Rapid economic growth and increasing competition among banks in the optimal allocation of financial resources have made the market power of the banking system highly significant. Consequently, banks seek to attract more depositors and loan applicants by increasing creativity in using diversification strategies. The concept of diversification depends on the subjective interpretation of a new market or product, which should reflect customers' perceptions rather than managers' of that market or product. In fact, products lead to the creation or stimulation of new markets, while new markets, in turn,

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promote product innovation [1]. In general, diversification in manufacturing companies refers to product diversity, whereas in financial institutions such as banks, diversification refers to income diversification [2], asset diversification [3], and geographic diversification [1]. In other words, three types of diversification—geographic, asset, and activity diversification—are examined in the context of banks [4]. Diversification is an important managerial strategy adopted to enhance bank income growth. Diversifying bank income by producing and selling fee-based services may reduce operating costs, create economies of scale, and provide benefits for banks [5], [6]. The income structure of banks includes two types of revenues: interest and non-interest income. Interest income arises from lending and traditional banking activities, whereas non-interest income includes revenues from fees, commissions, foreign exchange transactions, and other sources [7].

Based on the above, numerous studies have been conducted on the impact of income diversification on performance, profitability, and risk reduction. Among these are the works of Abuzayed et al. [8], Wu et al. [9], Liang et al. [10], and Adesina [11], most of which suggest that income diversification enhances bank profitability and market value. Clearly, an increase in a bank's market value leads to improved overall performance. On one hand, offering a wide range of financial services motivates customers to use those services, while on the other hand, it creates new investment opportunities for banks [7]. However, some studies indicate that the benefits of diversification may be limited. For example, Stiroh [12] argued that when banks diversify their products, the costs may outweigh the revenues, thereby reducing their market power. The CEO plays a central role in banks' strategic decision-making, making key investment and financing decisions. The extent of the CEO's influence on these decisions depends on their power and expertise [13–15]. Expert CEOs tend to increase banks' risk-taking behavior, which ultimately leads to greater diversification. They strengthen risk management practices, resulting in improved risk control and enhanced diversification [13], [16], [17]. CEO compensation is another channel through which expertise affects bank diversification. Expert CEOs, due to higher demand for their skills, typically receive greater incentives and rewards [18], [19]. CEO expert power enhances a bank's risk-taking ability, decision-making quality, and profitability [20]. A powerful CEO is believed to be more likely to invest in shareholder value-enhancing portfolios, such as acquisitions and research and development [18], to ensure the bank's growth, maintain their reputation, and secure potential incentives [13]. Expert CEOs receive stronger performance-based incentives, which encourage them to diversify their banks' operations and expand into new areas [16].

Competition in the banking industry can act as a key factor in determining the extent to which CEO characteristics influence a bank's strategic choices [21]. In highly competitive environments, banks are compelled to adopt more diversified strategies to maintain their market share and competitive advantage, which may amplify the effect of CEO expert power on bank diversification [22]. In other words, under such conditions, expert CEOs utilize their knowledge and experience to pursue more innovative approaches aimed at creating new opportunities and reducing risk [23].

In contrast, in less competitive markets, banks' motivation for diversification decreases, as a more monopolistic market structure ensures profitability without the need to adopt diversified strategies [24]. Under such conditions, even if the CEO possesses high expert power, there may be less incentive or pressure to expand the bank's activities into new areas [18]. Therefore, banking competition can act as a moderating variable that alters the strength and direction of the effect of CEO expert power on the bank's strategic decisions.

2 | Theoretical Framework and Hypothesis Development

2.1 | Diversification and Its Importance in the Banking System

Diversification in the banking system refers to expanding the scope of activities, services, and markets in order to reduce risks and enhance financial stability. Due to the sensitive and complex nature of their operations, banks are exposed to various types of financial, credit, operational, and market risks. Diversification helps banks mitigate the adverse effects of sudden changes in a particular sector or market by

distributing resources and activities across different areas. This strategy may involve diversifying financial services, entering new geographic markets, or targeting different customer segments [25].

The importance of diversification in the banking system stems from the fact that banks, as key institutions in the economy, are responsible for mobilizing resources and allocating them to different economic sectors. By offering a variety of products such as deposits, lending, investments, and innovative financial services, banks can meet the diverse needs of their customers and take advantage of new market opportunities. Particularly in times of economic instability or financial crises, diversification allows banks to remain resilient against the negative impacts of concentration in a single activity or market [9].

Moreover, diversification can help banks enhance their competitive strength in the market. Offering innovative services and products alongside expanding into new geographic markets leads to increased revenues, the attraction of new customers, and improved customer satisfaction. Furthermore, banks that effectively implement diversification strategies are better equipped to manage risks and adapt to environmental changes. Thus, diversification serves not only as a tool for risk management but also as a strategy for sustainable growth and long-term success in the banking system [26].

2.2 | Advantages and Disadvantages of Diversification for Banks

Diversification, as a key strategy for risk management and performance improvement, offers numerous benefits in the banking sector. One of the most significant advantages of this approach is the reduction of operational and financial risks. By expanding their activities into new markets, offering a variety of services, and targeting different customer segments, banks can protect themselves against the negative consequences of concentration in a single activity or market. This strategy plays a crucial role, especially in times of economic crises or sudden changes in the business environment. For instance, a bank that, in addition to lending, also engages in investment and asset management services can offset a decline in loan demand by increasing revenue from other services [27].

Another advantage of diversification for banks is the increase in revenue and improvement in profitability. Offering a variety of services and products to different customers allows banks to capture a larger market share and create new growth opportunities. Moreover, geographic diversification through entry into international markets or new regions enables banks to exploit growth potential in these markets and expand their revenue sources. This contributes to greater financial stability and sustainability for banks [28].

Despite these benefits, diversification can also bring challenges and disadvantages. One of the most significant drawbacks is the increased complexity in operations management. Entering new areas or offering diverse services requires substantial investments in infrastructure, technology, and human resources. This can raise the bank's costs and make efficient operational management more difficult. Additionally, diversification may lead to resource dispersion, resulting in reduced focus and productivity [29].

Another challenge in diversification is the risk of strategic misalignment across different divisions. Banks operating in multiple areas may face strategic conflicts and lose the ability to coordinate these activities. This can lead to lower service quality and reduced customer satisfaction. Overall, successful diversification requires careful planning, effective management, and optimal use of resources to allow banks to reap its benefits while avoiding potential drawbacks [30].

2.3 | CEO Power

The CEO is the highest executive authority in a company, with primary responsibilities including major corporate decision-making, managing operations, and overseeing the company's general resources. The CEO serves as the main link between the board of directors and the company's operations. The scope of a CEO's authority generally covers all matters related to the management of the company and the handling of routine day-to-day affairs, such as buying, selling, and leasing property; hiring new employees when necessary; initiating or defending legal actions; protecting the company's rights; signing letters, correspondence, and

commercial documents; and other related matters, except for those specifically restricted by the company's bylaws. In essence, the CEO acts as a trustee and representative of the company, and all actions taken must aim to preserve the interests and benefits of the partners or shareholders. Overall, the CEO's main responsibility is to develop, define, and lead the company's policies and general procedures. However, the role of a CEO may vary depending on the company's context and conditions, such as its size and overall structure [31]. In relatively small companies, the CEO often plays a very significant role, with authority over many business decisions, including lower-level matters such as employee recruitment. In larger companies, however, the CEO typically focuses on high-level corporate strategy and overall growth, while most other duties are delegated to other managers or departments.

The chairman of the board has the authority to control the agenda and lead board meetings. If the interests of the CEO conflict with those of the shareholders, the CEO's influence can become problematic [32]. identified four sources of CEO power, which are defined as follows:

- I. **Structural Power:** this refers to the company's potential ability to balance the relationship between management and economic outcomes in the market to control the company. The structure of corporate power is largely determined by the CEO's tools of influence over the board, such as board composition, CEO duality, and organizational tenure [33].
- II. **Ownership Power:** this power can take two forms. First, ownership power belongs to a CEO who is both a manager and a shareholder, using their ownership stake to maintain their position in the company. A CEO who is a major shareholder has a stronger influence on key corporate decisions compared to a CEO without ownership interests. Second, ownership power may arise from the CEO's position as a founder or an associate of the founders, who hold strong organizational influence. A CEO who is the founder or closely connected to the founder can gain significant power through increased interactions and long-term relationships with board members and other key organizational structures [34].
- III. **Expert Power:** a CEO exposed to a wide range of practical areas has greater opportunities to develop information both within and outside the company compared to a manager with limited functional experience. The breadth of managerial responsibilities during a CEO's tenure may provide evidence of expert power as a critical service of the CEO. The rationale for a CEO serving on the board is that they gain access to important resources or information that others may provide to the company. Expert power offers a means to exert control over other managers [35].
- IV. **Status Power:** this refers to the executive level derived from an individual's personal credibility or status. It concerns CEOs who are recognized as expert managers, more influential than others, and who may be selected from inside or outside the organization. A credible CEO helps legitimize the company and its personnel. Beyond the services a CEO provides, activities such as serving on other boards or graduating from a prestigious educational institution serve as evidence of a CEO's status level [32].

It should be noted that these dimensions of power are not mutually exclusive and do not necessarily operate independently. A CEO's power is determined by a combination of these dimensions, as well as the significance of each dimension relative to the organizational environment. Furthermore, CEO power can be exercised across a wide range of decisions, including corporate strategy, operations, business development, organizational design, and governance [36].

Most governance guidelines emphasize the independence of the board chairman. Corporate governance regulators have concluded that the CEO, as a source of executive power, can influence the board. The role of the board chairman is to oversee the CEO [37]. Yermack [38] demonstrated that companies with an independent (non-executive) chairman perform better than those under the influence of the CEO.

Gul and Leung [39] found that CEO influence is associated with lower voluntary disclosure in Hong Kong companies. They argue that CEO influence combines management and control over decisions, which can gradually undermine the board's ability to exercise effective oversight. Empirical evidence supports the view that CEO influence, by reducing effective board supervision of executive staff, is likely to lead to more opportunistic behavior [40]. In other words, there is a significant positive relationship between CEO influence

and earnings manipulation. Furthermore, if a CEO expects a long tenure, they will have the opportunity to focus on shareholder interests, and long-term strategies can yield investment benefits for shareholders. Conversely, a CEO with a short tenure will act with a short-term perspective, emphasizing immediate wealth and stock price increases [41]. Short-tenured CEOs tend to make decisions that maximize their own benefits and minimize company costs, often foregoing investment in long-term projects with positive net present value [41].

2.4 | Banking Competition, CEO Expert Power, and Diversification

In management and finance studies, banking competition is recognized as an important factor in shaping banks' strategies. Competition can act as a moderating variable in the influence of CEO characteristics on banks' strategic decisions. On one hand, intense competition in the banking industry compels managers to adopt more diverse and innovative strategies, as banks must use various methods to attract customers and mitigate risks in order to maintain market share and counter competitive threats [24]. In this context, CEO expert power plays a vital role in developing and implementing such strategies. Highly skilled CEOs, due to their knowledge and experience, can identify new opportunities for diversifying banking products and services and effectively adapt to market changes [18], [42].

In highly competitive environments, banks are forced to diversify their products and services to prevent profit decline or loss of market share [23]. In such cases, highly skilled managers, who have a deeper understanding of market changes and customer needs, are able to make better decisions for developing diversified strategies. On the other hand, in less competitive or monopolistic markets, banks do not need to diversify and can maintain profitability by following simpler strategies [24]. Under these conditions, even highly skilled managers may be less inclined to develop new services or enter new sectors.

According to various theories, including corporate governance theory (Jensen & Meckling, [43]), competition can influence the relationship between CEO expert power and bank diversification. In competitive conditions, managers are more likely to pursue innovative strategies, as competition motivates them to manage market risks more effectively and preserve their market share. Conversely, in less competitive environments, these incentives are weaker, and managers may be less willing to diversify, even if they have sufficient expertise. Overall, banking competition, as a moderating variable, can alter the strength of the impact of CEO expert power on bank diversification, making this effect stronger in competitive markets and weaker in less competitive ones.

2.5 | Research Hypotheses

H1- CEO expert power has a significant effect on the diversification of banks listed in the Tehran Stock Exchange.

H2-CEO expert power has a significant effect on bank diversification, moderated by market competition.

3 | Research Method

3.1 | Statistical Population

The statistical population of this study includes companies listed on the Tehran Stock Exchange, and the study period spans from the beginning of 2010 (1389 in the Iranian calendar) to the end of 2022 (1401). Considering certain conditions and limitations, a total of 14 banks from those listed on the Tehran capital market were selected based on the following criteria:

- I. The banks must have been members of the Tehran Stock Exchange throughout the period from 2010 to 2022.
- II. The banks must not have changed their financial year during the study period (2010–2022).
- III. The banks' data must be available.

Based on these restrictions, 14 banks from the Tehran Stock Exchange were selected as the sample for this study.

The number of banks listed in Tehran's capital market	24
The banks under consideration have been listed on the Tehran Stock Exchange from the beginning of 2010 (1389) until the end of 2022 (1401).	4
The banks have changed their fiscal year during the period under review (2010–2022, 1389–1401).	-
Their data were not available.	6
The number of banks available	14

3.2 | Research Model and Variables

In this study, to test the hypotheses, the following regression model derived from the research by [18]. was used. Empirically, we examine the relationship between CEO expert power and bank diversification using the following regression model:

$$\text{Bank diversification}_{it} = \alpha_0 + \alpha_1 + \text{CEOexpertise power}_{it} + \alpha'_k \text{CV}_{it} + \delta_t + \varepsilon_{it} \quad (1)$$

$$\text{Bankdiversification}_{it} = \alpha_0 + \alpha_1 \text{CEOexpertise power}_{it} + \alpha_2 \text{Competition}_{it} + \text{Ceo expertise power}_{it} \times \text{Competition}_{it} + \alpha_j \text{Contorol variable} + \varepsilon_{it} \quad (2)$$

where bank diversification represents bank diversification, and CEO Expert Power refers to the CEO's expertise. CV is a matrix of other control variables, which are defined in the following paragraphs. The subscripts *i* and *t* represent the cross-sectional unit and time period, respectively. δ_t indicates fixed time effects, and ε_{it} is the error term. The key variable of interest in this study is CEO expert power.

3.2.1 | Dependent variable (bank diversification)

To measure this variable, following [18], the HHINT index is used, which captures both diversification and specialization. This measure has been widely employed in previous literature, including [23], [44]. A higher HHINT value indicates greater bank diversification, while a lower value indicates less diversification. Various measures of diversification exist in corporate and financial literature. Among them, the Herfindahl index is a commonly used measure for diversification. HHINT is calculated as follows:

$$\text{HHINT} = \ln \left| \frac{\text{Fee-based Income}}{\text{Total Assets}} \right|.$$

In this formula, Fee represents interest-based income, and Total Assets refers to the bank's total assets.

3.2.2 | Independent variable (ceo expert power)

CEO expert power is measured as an index of the following: 1) the number of CEO positions (titles) in the bank, such as Chairman, CEO, Chief Operating Officer (COO), Chief Financial Officer (CFO), Vice President, Director, and member of key committees Hines et al., [13], 2) CEO qualifications [45], 3) CEO functional expertise [46], and 4) CEO experience (tenure) [35].

CEO positions (titles) variable

this variable considers the number of CEO-related positions held by the CEO. If the CEO has experience in positions such as Vice President, Ministry roles, Ministerial Advisor, membership in specialized committees (e.g., audit, banking, insurance), or experience as a CEO and board member of a bank, a score of 1 is assigned for each position. The total CEO position score is calculated by summing the points across all positions.

CEO qualifications variable

This variable is defined based on the CEO's educational background. If the CEO holds an MBA, CPA, or PhD, a score of 1 is assigned. If the CEO holds a Master's, Bachelor's, or lower degree, a score of 0 is assigned.

CEO functional expertise variable

This variable considers the CEO's expertise in financial and banking affairs. If the CEO has expertise in finance and banking, a score of 1 is assigned; if not, a score of 0 is assigned.

CEO experience variable

This variable is measured based on the duration of the CEO's tenure in CEO positions at different banks. To calculate CEO expert power, the scores obtained from these variables are summed, resulting in the CEO expert power for each year.

3.2.3 | Moderator variable: market competition (Competition)

The literature offers various proxies for measuring market competition. For banks, the deposit concentration index is used as a proxy for competition.

$$HHI = \sum_{i=1}^n \left(\frac{\text{deposit}_{ijt}}{\sum \text{deposits}_{ijt}} \right)^2.$$

This measure has been used in previous studies [6], [47], [48]. The Herfindahl-Hirschman Index (HHI) calculates the concentration of banking activities in a region, where the numerator is the deposits of each bank in period (t) and the denominator is the total deposits of the banking industry at time (t).

3.2.4 | Control variables

Financial leverage: total debt to total assets ratio [18].

Bank profitability: net income to total assets ratio [18].

Bank free cash flow: operating cash flow to total bank revenue ratio [18].

Bank revenue growth: change in bank revenue [18].

Non-performing assets: total value of non-performing loans of a bank [18].

Loan loss reserves: expenses in the income statement set aside as provisions for uncollected loans and loan payments [18].

GDP growth: calculated as the difference between GDP in year (t) and GDP in year (t-1), divided by GDP in year (t-1) [18].

Unemployment rate: defined as the ratio of unemployed individuals to the economically active population or labor force in a society [18].

4 | Findings

4.1 | Descriptive Statistics

In this section, descriptive statistics are first presented, including central tendency measures (maximum, minimum, mean) and dispersion measures such as variance and standard deviation, as well as skewness and kurtosis indices

Table 1. Statistical index of dependent and independent variables.

Variable	Symbol	Mean	Median	Max	Min	S. D
Bank diversification	BANKDIV	0.09	0.02	0.99	0.0001	0.18
CEO expertise power	CEOPOWER	2.14	2	4	1	0.81
Financial leverage	LEV	0.97	0.93	0.076	0.36	0.33
Profitability	PROFIT	0.011	0.009	0.35	-0.53	0.071
Cash flow	CASHFLOW	0.01	0.008	2.12	-0.23	0.064
Bank growth	GROW	0.82	0.2	0.41	-1.96	1.22
Non-current Assets	NONASSET	0.13	0.118	0.026	0.022	0.08
Loan loss provisions	LOAN	0.009	0.007	7.51	0.00001	0.005
Gross Domestic Product (GDP)	GDP	7.109	7.065	7.065	6.68	0.24
Unemployment	UN	1.35	1.48	1.67	0.95	0.26
Market competition	COMPETITION	0.64	0.71	0.97	0.001	0.26

The mean is the primary and most commonly used measure of central tendency. The mean value lies exactly at the balance point or center of gravity of the data. Variables are considered of good quality if there is little difference between their mean and median. For example, the mean of the bank diversification variable is 0.09, indicating that, on average, the level of bank diversification among the sampled banks is 9%, with the maximum and minimum values being 0.99 and 0.0001, respectively. Similarly, the mean of the CEO expertise power variable is 2.14, showing that, on average, the level of CEO expertise power among the sampled banks is 2.14, with the maximum and minimum values being 4 and 1, respectively.

Table 2. Correlation coefficient.

	BANKDIV	CEOPOWER	COMPETITION	LEV	PROFIT	CASHFLOW	GROW	NONASSET	LOAN	GDP	UN
BANKDIV	1										
	0.0000										
CEOPOWER	0.48	1									
	0.000	0.0000									
COMPETITION	0.0031	0.0045	1								
		0.2164	0.0000								
LEV	0.003	0.07	0.149	1							
	0.96	0.36	0.053	0.0000							
PROFIT	-0.008	0.11	-0.232	-0.83	1						
	0.908	0.15	0.002	0.0000	0.0000						
CASHFLOW	-0.017	0.13	-0.003	-0.203	0.34	1					
	0.82	0.091	0.96	0.008	0.0000	0.0000					
GROW	0.0109	-0.013	-0.203	0.007	-0.47	0.001	1				
	0.88	0.85	0.008	0.92	0.53	0.98	0.0000				
NONASSET	-0.053	0.0057	0.318	0.33	-0.38	-0.16	0.058	1			
	0.48	0.94	0.0000	0.0000	0.0000	0.029	0.44	0.0000			
LOAN	0.209	0.0041	0.697	-0.211	0.203	0.149	-0.054	-0.203	1		
	0.0063	0.95	0.000	0.0058	0.0082	0.053	0.48	0.008	0.0000		
GDP	-0.029	0.065	-0.047	0.302	0.277	-0.232	0.016	0.318	-0.205	1	
	0.7	0.39	0.53	0.0001	0.0003	0.002	0.83	0.0000	0.007	0.0000	
UN	0.028	0.071	-0.38	0.19	-0.147	-0.003	0.037	0.225	-0.198	0.55	1
	0.71	0.3592	0.0000	0.133	0.236	0.96	0.63	0.0032	0.01	0.000	0.0000

According to the results obtained from the Pearson correlation coefficient *Table 2*, the correlation coefficients and significance levels of the variables CEO expertise power and market competition on bank diversification are less than 5%. Therefore, CEO expertise power and market competition have a significant relationship with bank diversification.

4.2 | Model Diagnostic Test

Before estimating the model, it is necessary to perform the relevant diagnostic tests. The first test conducted examines the following hypothesis: given the assumption of constant coefficients for the variables, is the intercept constant across all years or not?

In general, to choose between a pooled model and a panel model, the following test is used:

- I. Pooled model: all intercepts are assumed to be equal $H_0: \alpha_1 = \alpha_2 = \alpha_3 = \dots = \alpha_{T-1}$.
- II. Panel model: at least one of the intercepts differs from the others. $H_1: \alpha_i \neq \alpha_j$.

To test the above hypothesis, the Chow test statistic is used. The results of this test are summarized in the table below. If the P-Value is greater than 5%, the Pooled method is used for estimation.

Table 3. Model detection test (fixed effects test).

Model Title	F Stat	p-value	Comparison with 0.05	Test Result
Model 1	11.087	0.0000	Less than	Reject null hypothesis–Pooled Model
Model 2	3.84	0.0000	Less than	Reject null hypothesis–Pooled Model

According to *Table 3*, the significance level of the F-statistic for the regression models in this study is less than 0.05. Therefore, it can be concluded that Hypothesis H1 (pooled model) is supported.

4.3| Test for Determining Pooled Regression with Random or Fixed Effects (Hausman Test)

After it is determined that the intercept is not the same across different years, the method for estimating the model (fixed or random effects) must be chosen. For this purpose, the Hausman test is used. The null and alternative hypotheses are as follows:

- I. H_0 : The pooled model with random effects is appropriate.
- II. H_1 : The pooled model with fixed effects is appropriate.

If at the 95% confidence level (error 5% = α) the statistic χ^2 calculated from the regression equation is less than the value χ^2 obtained from the H_0 the null hypothesis H_2 cannot be rejected; otherwise, it is rejected. In other words, if the significance level of the Hausman test is greater than 0.05, the random effects model is used, and if the significance level of this test is less than 0.05, the fixed effects (or combined effects) model is used.

Table 4. Hausman test.

Model Title	χ^2	Stat	p-value	Test Result
Model 1	25.4817	0.0001		Reject null hypothesis–Pooled Model with Fixed Effects
Model 2	22.321	0.022		Reject null hypothesis–Pooled Model with Fixed Effects

Based on the Hausman test in *Table 4*, fitting the regression models in this study using the fixed effects estimation method for the panel data model will be appropriate.

4.4| Estimation of the Overall Model Using Panel Analysis and Model Estimation

In this section, panel analysis is used to examine and estimate the overall model. The reason for using this method is due to the nature of the data. In panel analysis, the data are collected in a cross-sectional–time series format. In datasets collected in this manner, the independence of observations is not maintained, because multiple observations exist for each company across different years, and these observations are interdependent. In other words, in this analysis, the total number of data points equals the number of companies multiplied by the number of years.

4.4.1| Estimation of the first model

Based on the diagnostic tests explained above, and given that the Limer test indicated that the data are of a panel (combined) type and the model exhibits heteroscedasticity, the GLS method was used to estimate the model.

Table 5. Result of model 2 test.

Variable	Symbol	Coefficient	t-Stat	Sig
Intercept	C	-0.64	-3.915	0.0001
CEO Expertise Power	CEOPOWER	0.173	2.364	0.0194
Market Competition	COMPETITION	-0.245	-2.597	0.0104
Moderator	CEOPOWER*COMPETITION	-0.279	-2.96	0.0036
Financial Leverage	LEV	-0.01	-0.566	0.5721
Profitability	PROFIT	0.13	1.609	0.1097
Cash Flow	CASHFLOW	0.079	1.876	0.0626
Bank Growth	GROW	-0.0002	-2.626	0.0096
Non-current Assets	NONASSET	0.071	1.033	0.3032
Loan Loss Provisions	LOAN	0.366	0.247	0.8051
Gross Domestic Product (GDP)	GDP	0.076	3.914	0.00001
Unemployment	UN	0.015	1.517	0.1314
R-squared	R-squared	0.402		
Adjusted R-squared	Adjusted R-squared	0.301		
F Statistic	F-statistic	4.01		
		(0.0000)		
Durbin-Watson Statistic	Durbin-Watson stat	1.641		

According to *Table 5*, the significance level between the two variables is 0.0036, which is lower than the significance level considered in the present study (1%). In addition, the absolute value of the t-statistic, which is 2.96, is greater than 2.58, corresponding to the standard normal distribution at the 0.99 confidence level. Therefore, at the 99% confidence level, the null hypothesis—that the CEO's specialized expertise does not have a significant effect on banks' diversification with the moderating role of market competition—is rejected, and the null hypothesis is confirmed.

5 | Conclusion

Scientific explanation of the Hypothesis 1

The CEO's specialized expertise has a significant effect on banks' diversification.

The hypothesis states that the CEO's specialized expertise, determined by the number and diversity of their managerial positions within the bank and membership in key committees, has a significant impact on banks' diversification. In this context, the CEO's specialized expertise refers to a set of managerial skills, experiences, and competencies acquired through holding various responsibilities at different managerial levels within the organization, particularly in key positions such as Chairperson, CEO, Chief Financial Officer (CFO), Vice President, and membership in important decision-making committees.

The CEO's specialized expertise, particularly in banks, is considered a critical factor in making strategic decisions and guiding the organization's overall policies. This expertise may include technical and managerial capabilities in various areas such as risk management, financial strategies, long-term planning, new product development, and market expansion. In banks, experienced and highly skilled CEOs have the ability to leverage different opportunities and design complex strategies to expand and diversify products and services. These capabilities are realized through key decisions in various banking sectors, including resource allocation, development of new services, entry into new markets, and management of risks arising from market changes. Moreover, a CEO's presence in multiple positions and key committees (such as finance, risk, strategy, and investment committees) provides greater access to strategic information and facilitates effective decision-making. This involvement also enables stronger connections with other senior managers and access to financial and human resources. Such CEOs are typically able to design diversification strategies while carefully considering all aspects of risk and return, especially when the bank seeks to expand its scope of activities and enter non-traditional areas such as fintech or international markets. Ultimately, in terms of diversification, the CEO's specialized expertise can help the bank effectively manage risks while creating new opportunities for expanding products and services. Banks generally strive to reduce both systematic and unsystematic risks by

implementing diverse business models. Highly skilled CEOs can utilize their experience and knowledge to implement diversified business models, which may include various types of loans, investments, and even non-banking services.

Scientific Explanation of the Hypothesis 2

The CEO's specialized expertise has a significant effect on banks' diversification with the moderating role of market competition.

The CEO's specialized expertise refers to a set of skills, experiences, and strategic capabilities in bank management. This expertise is typically acquired through holding multiple managerial positions and participating in key decision-making committees. CEOs with high specialized expertise are better equipped to make complex and strategic decisions. This expertise enables them to manage risks effectively and identify new opportunities in the market. One such opportunity is revenue diversification, which experienced managers can achieve by expanding new products and services within the bank.

Market competition in deposits, measured using the Herfindahl–Hirschman Index (HHI), acts as a moderating factor in the relationship between the CEO's specialized expertise and revenue diversification. The HHI measures market concentration and indicates the level of competition: the lower the HHI, the more intense the competition; conversely, the higher the HHI, the lower the market competition.

When competition in the deposit market is intense (low HHI), there is greater pressure for innovation and diversification of revenue sources. In this environment, highly specialized CEOs, capable of making complex strategic decisions, are generally inclined to steer the bank toward expanding new products and services to maintain their competitive position. Intense competition appears to provide stronger motivation for managers to leverage their specialized expertise and create new revenue streams.

However, when competition decreases (higher HHI), market rivalry weakens, and CEOs may be less inclined to expand and diversify revenue sources. In this case, even with high specialized expertise, there is less pressure for innovation and revenue diversification because banks in a less competitive market may perceive less need to broaden their activities. In other words, under lower competition, CEOs tend to focus on maintaining the status quo and reducing risks rather than pursuing innovative and risk-taking strategies to increase revenue diversification.

Ultimately, competition in the deposit market acts as a moderating factor that reduces the impact of the CEO's specialized expertise on bank revenue diversification. Under low-competition conditions (high HHI), market rivalry weakens, and CEOs may have less motivation to expand and diversify revenue sources, even if they possess high specialized expertise. Consequently, competition in the deposit market can diminish the effect of the CEO's specialized expertise on revenue diversification. In fact, in less competitive environments, the pressure for innovation and strategic changes decreases, and managers tend to focus more on maintaining the status quo and minimizing risks.

5.1 | Research Recommendations

Recommendation Based on the Hypothesis 1

Considering the scientific interpretation of the first hypothesis, it is recommended that banks design their managerial structures to maximize the utilization of CEOs' expertise by ensuring their presence in key positions and various strategic committees. This can be achieved by planning to expand the scope of managerial responsibilities, including financial, risk, and strategic roles. Additionally, banks should place greater emphasis on specialized competencies and experience in selecting and developing CEOs to enable effective decision-making for diversifying banking products and services. Organizing training workshops and professional development programs for CEOs, particularly in risk management and service innovation, can strengthen these capabilities and ultimately improve the bank's performance and sustainability in competitive markets.

Recommendation Based on the Hypothesis 2

Considering the impact of CEOs' specialized expertise and market competition on bank revenue diversification, it is recommended that banks focus on enhancing their managers' managerial and specialized skills in finance, strategy, and risk-taking. This can be achieved through training programs and professional development initiatives. In highly competitive markets, banks should create conditions that enable CEOs with broad expertise to make innovative and strategic decisions to expand services and diversify revenue streams. In less competitive environments, banks should focus on preserving existing resources and adopting conservative strategies. Establishing a supportive environment and encouraging calculated risk-taking allows CEOs to make strategic decisions with greater confidence.

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