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Corporate Governance Determinants of Bank Profitability and Market Valuation in Jordan

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A B S T R A C T

Firm Performance Related Research The aim of the current study is to examine how firms' financial performance is associated with corporate governance in Jordanian commercial banks during 2010–2013. Utilizing a panel of bank- year observations, this study distinguishes between overall corporate governance quality as well as specific board-level governance mechanisms and considers the relationship in terms of both accounting-based performance measures (i.e., return on assets and return on equity) and market-based valuation (as captured by Tobin's Q). Fixed-effects panel regression methods are employed to control for unobserved bank-specific factors and time effects. The results indicate that the overall quality of corporate governance, as represented by a combined Corporate Governance Index, is not significantly related to bank profitability or market value. Yet, as governance is decomposed at the mechanism level, board gender diversity (versus other board characteristics) appears to have a positive and statistically significant relationship with both ROA and ROE. Moreover, the valuation seems not to be significantly associated with governance arrangements, as indicated by the insignificant relationship with Tobin's Q. The findings collectively imply that governance impacts bank performance in Jordan selectively rather than through a comprehensive system of governance. Enhancements in performance are associated more closely with certain composition attributes of the board than with strength of governance as a whole. Through evidence from a rarely studied emerging banking market, this analysis highlights the need to emphasize mechanism-specific governance attributes in studies of performance implications of corporate governance.

JEL Classification: *G21, G34, G32, & M40*

1. Introduction

Corporate governance is a major factor that influences the performance of firms, especially in banks where agency cost, information asymmetry and regulatory pressure are more severe when compared to non-financial firms [6, 13]. Good corporate governance systems are likely to ensure that incentives for managers are not misaligned with the interests of shareholders, leading to improved monitoring and better decision-

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making and impacting the profitability and market valuation. The role of corporate governance is more essential in developing countries where institutional framework is not well developed, while ownership becomes more concentrated and regulatory environment still evolving [11, 18]. In these circumstances, internal governance (in particular board aspects) are very important in reducing agency problems and determining firm outcomes when external market discipline is weak. Empirical evidence on the relationship between corporate governance and bank performance is, however conflicting despite a wealth of literature that has been devoted to scrutiny this issue. While certain studies find that stronger governance mechanisms are related to higher bank profitability and valuation, indicative of better monitoring and strategic oversight [7, 8] others have found weak or no such association. This heterogeneity of results may indicate that the impact of mechanisms of governance is likely to be highly context specific and influenced by differences in institutional environments, stringency of regulation or bank specific characteristics.

The case of Jordan is very suitable for investigating the relationship between governance and performance in banking, which has not been widely studied. The banking system in Jordan is relatively small and highly regulated, with extensive measures taken to gradually liberalize and reform the sector to improve corporate governance and financial stability. [These reforms] are part of the general drive to conform governance with international norms: they retain system resilience [3, 11]. In addition, board composition and others differ among Jordanian commercial banks; hence, there is a significant cross-sectionalist for empirical analysis. Previous Jordanian and similar emerging market studies have highlighted the importance of this variation in order to be able to claim anything on performance effects of governance mechanisms, especially for the regulated organizations [26, 29].

In light of this, the aim of this study is to investigate the impact corporate governance has on bank financial performance in Jordanian commercial banks during 2010-2023. The evidence, based on a panel data set and fixed-effects regression models, concentrates on accounting performance measures (ROA and ROE) and market valuation measured by Tobin's Q. By controlling for unobserved bank-specific heterogeneity and common time effects, the analysis aims to offer robust findings about governance systems impact on bank performance in an emerging-market setting. This study has several key implications for the literature. From a knowledge perspective, it introduces new empirical insights into the governance–performance link in Jordanian banking that is underexplored by previous work. Second, the governance implications are more complete in that profitability and market valuation is tested while examining. Third, the long panel period of similar length spanning over a decade ensures that we are able to capture any regulatory changes and structural evolvements in corporate governance that have an impact on its effectiveness.

2. Literature Review and Hypotheses Development

2.1 Corporate Governance and Bank Performance

Internal agency problems between shareholders and managers Corporate governance theory stresses the role of internal monitoring mechanisms in mitigating agency force resulting from the separation of ownership and control [13, 15]. In banking, these issues are particularly severe owing to high leverage and the complexity and opaqueness of asset structure, as well as substantial regulatory intervention that feeds greater managerial discretion and risk-taking [2]. Accordingly, effective corporate governance and in particular board-level mechanisms are likely to have a key impact on managerial behavior and bank performance. Based on empirical data concerning the link between corporate governance and bank performance is still unsettled. For instance, it has been previously suggested that well-structured boards improve monitoring, strategic direction and decision quality [2, 21], some studies find that strong corporate governance systems are linked with higher profitability and market valuation. These results reinforce the idea that efficient governance leads to less agency problems and better financial performance in banks. Other studies, however, report negative or not significant relationships between governance and

performance, suggesting that institutionalized governance structures do not always contribute to economic success [6]. These findings may be the product of governance mechanisms instituted to comply with regulations more than to meaningfully monitor, in turn having limited effects on firm outcomes. On the whole, these conflicting results show that the influence of corporate governance on bank performance is subject to strong context sensitivity. The effect of the practice of governance mechanisms depends on institutional quality, regulation enforcement, ownership structures (and market discipline). In developing economies, where external monitoring through markets and legal structures is less developed, internal governance institutions are more important in shaping firm behavior and performance [11, 17]. This brings out the importance of country-specific studies that consider institutional and regulatory environments when investigating the relationship between governance and performance in banking.

2.2 Board-Level Corporate Governance Mechanisms and Bank Performance

2.2.1 Board Size and Bank Performance

Size of the board is one of the most frequently studied corporate governance mechanisms in the literatures with conflicting theoretical arguments about its impact on firms 'performance. Small boards should be better monitors based on agency theories because they have better communication and coordination, clearer accountability, and the problem of free riders is also less common among them than their large counterparts do, hence an enhancement in managerial discipline and operational performance [14, 25]. Empirical investigations provide evidence in favor of this perspective, as they find a negative association between board size and accounting-based performance measures like return on assets (ROA) and return on equity (ROE), especially within the banking industry [21, 25]. In contrast, other views suggest that larger boards are better in sophisticated organizations such as banks, due to the diversity of expertise it brings in and broader range of external resources that become available, not to mention the greater advisory skill brought by large boards [2]. Under this view, a bigger board may assist in guiding banks through onerous regulatory complexity and emerging strategic challenges. Evidence on market-based performance is also inconclusive, since larger boards can be interpreted by the capital market as a sign of better monitoring or as a source of inefficiency and bureaucratic lag [7, 17]. This has led to the existence of conflicting empirical evidence on the relationship between board size and firm value, especially as measured by Tobin's Q.

2.2.2 Board Independence and Bank Performance

The independence of board members is considered as an important instrument in corporate governance to safeguard the effectiveness of monitoring and reduce managerial opportunism, primarily through non-governing or independent directors [13]. Especially in the banking industry where managerial discretion is very high and risk-taking is expensive, independent boards are supposed to be of essential importance with respect to enhancing monitoring and decision quality [20]. Existing empirical literature has shown a positive relationship between board independence and accounting-based performance, such as improvements in ROA and ROE, which are results of better monitoring and strategic management [6]. But the influence of board independence and market-based valuation is less certain. Despite a strong eye towards governance quality, independent directors are also assumed to not hold deep firm-specific or industry expertise that would allow them to contribute to value creation in easily observable ways through capital markets [7]. Therefore, based on studies exploring the relationship between board independence and Tobin's Q mixed results are found, especially in emerging market economies with information asymmetries and institutional efficiency levels that may constrain further the market's ability to price governance attributes [7, 11].

2.2.3 Board Meetings and Performance

Frequency of board meetings has long been used to indicate board activity and monitoring intensity. In terms of governance issues, more frequent meetings can help timely information sharing and monitoring, thus aid in the board's capacity to address strategically- and risk-based action triggers, which may lead to better operational performance and higher profitability [24]. In banks, which face the continuing need to manage risk-taking and regulatory compliance in real time, active boards are often considered an important channel for ensuring that financial stability endures. Nevertheless, there are indications from the empirical literature that the relationship between frequency of board meetings and firm performance is multidimensional including possible nonlinearity. While some studies indicate a positive relationship of meeting frequency with accounting-based return measures based on assets (ROA) and equity (ROE), others suggest only marginal or no impact to them [16, 24]. One possibility is that excessive meetings could be a symptom of reactive governance where boards meet more (often) when performance is poor, under regulatory scrutiny, or facing internal control difficulties, but do not necessarily hold meetings because of proactive monitoring. the evidence is also mixed in regards to market-based performance. Investors may perceive frequent board meetings as a sign of good oversight and governance quality, leading to higher firm valuation. Or, excessive meetings could be seen to reflect manager discomfort or a lack of strategic resolution which will not garner favorable market perceptions [19]. Thus, the effect of board meeting frequency on Tobin's Q is unclear especially in emerging and regulated banking markets that experience low external market discipline.

2.2.4 Board Commitment and Experience

Board commitment and experience can be regarded as directors' ability to monitor management efficiently and make a strategic contribution in banks. #Research rank 18 Conditioning on governance, experienced directors are expected to improve monitoring quality by utilizing the knowledge and skills acquires over time either from the industry in which they work or their professionalism, as well as with their acquaintance with risk management and regulatory environments which is particularly thorny in banking sector [15, 16]. Previous research has indicated that larger board experience is positively related to higher accounting-based performance, especially ROA, as experienced boards are more likely to enhance operational efficiency and the use of assets [5, 20]. Board involvement, frequently proxied by directors' frequency of participation and involvement in meetings, is also considered to represent monitoring strength and governance quality. Greater commitment may result in better decision making and timely corrective managerial actions which contribute to internal performance measures, ROA and as a corollary to some extent ROE [9]. Yet the evidence with respect to market-based performance is less clear. Enhancements in board commitment and experience may not have any immediate translation into Tobin's Q, as investors might be less informed about inner workings within the boards or more focused on determinants of financial outputs rather than governance inputs [13, 4]. Hence, although board commitment and expertise are anticipated to boost internal bank performance (for the purpose of market valuation, their effect can be weaker or go through an intermediate channels).

2.2.5 Board Gender Diversity and Bank Performance

Board gender diversity has attracted much attention in corporate governance studies as a tool for boosting board effectiveness via increased cognitive diversity, better monitoring and reduction of groupthink. According to both agency and resource dependence theories, gender diverse boards profit from wider views, increased stakeholder awareness and increased monitoring of the board on management that leads to improved firm condition [21, 22] The banking industry where decision-making is convoluted and risk-laden might be especially well served by such diversity. The empirical consensus that analyzes the relation of

board gender diversity with accounting-based performance measures is in favour of a positive relationship between them, [23] particularly among financial institutions. These results indicate that gender-diverse boards potentially play a role in enhancing monitoring and strategic discipline. The literature on market-based performance is, however, inconsistent. While some studies report that there are no immediate valuation implications, others claim gender diversity is a good signal of the quality of governance: especially in emerging markets where women are still scarce in the board and therefore more informative to investors [4, 24].

2.2.6 Aggregate Corporate Governance and Performance

In addition to any individual governance mechanisms, work also relies on aggregate corporate governance indices as proxies for the overall quality of governance. These indices provide a comprehensive perspective of governance systems by integrating different board and governance characteristics into one index. Yet, the extant empirical evidence consistently shows that the association of aggregate governance indices with firm performance is relatively weak or mixed, and even uni-directional in case of market-based measures such as Tobin's Q [9, 19]. This inconsistency has also driven researchers to contend that composite indices are likely to hide the impact of distinct governance mechanisms which are more closely related to managerial behavior and performance [13]. Accordingly, recent studies emphasize the need to disaggregate governance indices to pinpoint which particular mechanism drives performance, particularly in regulated sectors such as banking.

2.2.7 Board Characteristics and Bank Profitability

Quality of the board is one major aspect of corporate governance particularly in banking firms. Characteristics such as the size, independence, meeting regularity, experience and gender diversity of board membership have been extensively considered when exploring whether a board is effective or not. Larger boards can bring more general expertise and connections to outside resources, but can also face coordination issues or free-rider problems that erode monitoring strength [12]. Likewise, outside directors are supposed to improve quality of monitoring with the effectiveness may be compromised by insufficient knowledge about individual firm in complicated nature of banking [25]. The evidence regarding the impact of board characteristics on bank profitability is mixed. Although board independence, diversity and activity have been found to have positive effects on profitability proxies such as ROA and ROE in some studies, other research has found no relationships or negative ones [5, 16]. Taken together, these mixed results indicate that the impact of board governance mechanisms is contingency based and may differ across institutional and regulatory contexts.

Based on agency theory and previous empirical studies, it is anticipated that sound corporate governance can improve monitoring quality, mitigate managerial opportunism and enhance operating performance leading to better bank profitability. In the light of this, we formulate the following hypotheses:

H1: Corporate governance has a significant effect on bank profitability, as measured by return on assets (ROA).

H2: Corporate governance has a significant effect on bank profitability, as measured by return on equity (ROE).

2.2.8 Corporate Governance and Market Valuation

Further than that, corporate governance may impact firms' market-based valuation. Strong governance systems have signal effects towards outside investors in terms of transparency and credibility [26] and effective risk management that affect market perceptions and valuation results. In this context, market value in the banking industry is a measure of both current financial performance and investors' outlook on

future profitability, risk portfolios and compliance with regulation. However, despite this theoretical relationship, empirical evidence on the association of corporate governance with market value in banks is mixed and less clear cut than that for dimensions of profitability. A few studies establish a positive relationship between good governance and measures of market valuation (such as Tobin's Q,) but others report weak or non-significant impacts, particularly in the context of emerging markets where capital markets may be less efficient in incorporating governance related information into the stock prices [4, 14]. These conflicts indicate that observable firm performance is given more weight by investors than actual internal arrangements, or that specie governance changes a market valuation only in an indirect way and on the long term. Unavailability in emerging banking markets, low level of disclosure, information asymmetry and concentration owners' structure-all may aggravate the relationship linking governance to value. As a result, the question arises whether corporate governance mechanisms are priced by investors in a systematic fashion in such environments. A joint examination of this correlation in the Jordanian banking industry thus presents an excellent opportunity to investigate whether such governance systems are perceived by investors and have implications on market performance indicators. Therefore, the following hypotheses is suggested:

H3: Corporate governance has a significant effect on bank market valuation, as measured by Tobin's Q.

3. Methodology

3.1 Sample and Data Sources

The sample of this study includes Jordanian commercial banks for the full period of 2010–2023. The full sample size is 12 commercial banks with 168 bank-year observations. The sample period is chosen so as to account for the long-running events in the banking industry as well as an evolution of corporate governance practices.

The study only targets commercial banks, and Islamic banks are left out from the sample. This exclusion is due to the fundamental difference in their business models, governance structures and financial reporting approach of conventional and Islamic banks. Islamic banks are guided by Shariah principles, they hold Shariah supervisory boards and have unique profit-and-loss sharing incentives; this may have implications on both (a) corporate governance structures and (b) measures of performance. The inclusion of Islamic banks could thus bring about structural non-homogeneity and the comparability of findings. Financial information is collected from the banks' annual reports and public financial statements. Corporate governance data is hand-collected from banks' annual accounts, board reports and corporate governance statements released by the banks. Market valuation data are from available stock market records. All data collection is in line with the methodology of the underlying doctoral thesis to ensure reliability, comparability and replicability.

3.2 Dependent Variables

Bank performance is evaluated through both accounting and market-based measures of performance to cover two dimensions of performance. Return on Assets (ROA) is derived by dividing net income by total assets. ROA represents the banks' management performance in using their asset base to generate profits, which is significantly adopted as a managerial efficiency measure in banking industry. Return on Equity (ROE) is calculated as net income/gross equity. ROE represents profit as seen by equity holders and how efficiently balances are used to generate returns. Based performance measure, Tobin's Q is the worth indices and it defined as market value of equity added with book value of total liabilities divided by the book value of total assets. Tobin's Q captures the value placed by investors on banks as a function of their assets and takes into account expectations in the market for future performance and risk. Combined with the use of both accounting-basis and market-basis performance measures, the approach also provides an opportunity

to make a holistic evaluation of bank performance, which is useful for comparison with previous studies in banking as well as corporate governance literature.

3.3 Corporate Governance Proxies

Corporate governance is proxied by a series of board-related variables that incorporate the main dimensions of board structure, monitoring efficiency and diversity. Based on agency theory, these proxies are broadly used in empirical research papers on bank governance including in the context of emerging markets where internal governance mechanism become an important tool for overcoming t Board Size is the total number of board directors in that year. The size of the Board represents the monitorability and diversity of expertise for oversight/strategic guidance. A larger board may improve monitoring by bringing in a more diverse set of skills and experience but an overly large board may suffer from coordination and free-rider issues [5, 12]. Board Independence is proxied for by the level of independent non-executive directors on the board. Independent directors are perceived as enhancing the quality of oversight by mitigating managerial domination and conflicts of interest and, therefore, improving board independence and monitoring [15, 25]. Purpose 4 Board Meetings are counted as the number of board meetings held in that financial year. The number of meetings reflects the level of board activity and involvement; higher frequency of meeting suggests the intensity in monitoring, as well as reaction to manager decisions [17].

Board Experience Number of directors with previous financial/banking/managerial experience Seasoned board members are likely to improve the quality of the decision-making process by offering insider industry information and rational scrutiny, which are particularly relevant for an intricate and hazard-sensitive banking market [6]. Board Gender Diversity is represented as the proportion of females in the board. Gender diversity is claimed to enhance the quality of governance, by improving board independence, ethical sensitivity and decision effectiveness [10, 25]. It has also been found to be associated with greater monitoring and reduced excessive risk-taking in financial institutions. Besides as the governance proxy individual level, the overall quality of governance mechanism in each bank is represented by a Corporate Governance Index as aggregated based on PCA. Greater value of the index implies stronger governance structure.

Rationale for proxy selection:

These five board-related proxies were chosen because they clearly represent the monitoring and advisory function highlighted by agency theory, have been used frequently as governance measures in banking studies, and are uniformly disclosed in annual reports. A narrow set of non-controversial proxies are used to simplify the model, reduce multicollinearity and obtain clear and interpretable indicators of governance impact.

3.4 Control Variables

In order to control for the impact of corporate governance on banks' financial performance, the analysis also employ some standard control variables used in the traditional banking literature. Bank Size is reported as natural logarithm of the total assets. Bank size adjusts for scale effects, because larger banks could gain economies of scale, more market power and have flexible operation risk positions, and those will affect profitability and market valuation [27]. Leverage is measured as the ratio of total liabilities to total assets. The different capital structure and the exposure to risk between banks are reflected by leverage, which is quite common in banking because a higher level of leverage could magnify returns as well as financial risk-taking [20] Bank Age is defined as the age of the bank (in years). Bank age is a proxy for institutional maturity and context-specific experience (by extension the absorptive capacity) in the economy, which may impact governance quality, risk management approaches, and performance end results [4, 10]. These control variables contribute to ensuring that the estimated effect of corporate governance on bank performance is not due to differences in size, leverage, or institutional development.

3.5 Econometric Model Specification

The relationship between corporate governance and bank financial performance The study uses panel data regression models with bank-level fixed effects to assess the impact of corporate governance on bank (financial) performance. The "baseline" econometric specification is formulated:

$$Performance_{\{it\}} = \alpha + \beta, Governance_{\{it\}} + \gamma, Controls_{\{it\}} + \mu_i + \lambda_t + \varepsilon_{\{it\}}$$

Where *Performance* $_{it}$ indicates either ROA, ROE or Tobin's Q of bank i at year *t.* $Governance_{it}$ is the corporate governance variable, which refers to any of the board-specific governance proxies or an aggregate governance index. Controlstis a vector of control variables, including bank size, leverage and bank age. The term in represents unobserved, time-invariant bank-specific effects including manager's culture or ownership structure, and λ is the year fixed effect to control for macroeconomic environment, regulation changes--or easy and better common shocks that affect all banks within a single time (year) unit. The term captures the idiosyncratic shocks. This specification permits the estimated coefficients to account for within-bank variation over time and therefore controls omitted-variable bias due to unobserved heterogeneity across banks.

3.6 Estimation Technique

The fixed-effects (FE) estimator is used to investigate the effect of corporate governance on bank financial performance. The use of fixed-effects is justified because there are unobserved, time-invariant bank-specific characteristics (such as managerial practices, organizational culture or ownership structures) that could be correlated with both governance mechanisms and performance measures.to control for general conditions in the macroeconomy and across all banks, we add year fixed effects in every specification. This helps to filter out the influence of economic factors on one hand from corporate governance on other. Standard errors are clustered on the bank level in order to adjust for potential heteroskedasticity and serial correlation within banks over time. This way of estimating the model allows for robust inferences and is also in accordance with the best practice on panel data analysis of banks.

4. Empirical Results

4.1 Descriptive Statistics

The descriptive statistics of bank financial performance, corporate governance proxies and control variables for 168 bank-years of Jordanian commercial banks are summarized in Table 1 from the period 2010–2023.With respect to financial performance, the mean ROA is 1.108% with a standard deviation of 0.507, suggesting moderate profitability and substantial variance among banks and over time. Average ROE (average of the last 3 years) is 8.234%, which allows for a standard deviation of 3.554 that signalizes diversity across shareholders' returns. The average Tobin's Q is 1.051 with a standard deviation of 0.534, which implies that there is heterogeneity in market valuation across banks.In terms of corporate governance attributes, the average size of board is 11.5 members, with a range from 8 members to 15 members, which suggests there are moderate differences between boards. Board independence is measured as the average of 4.696 independent directors, and board meetings are used as the average of 7.631 meeting per year, to capture variance in activity across banks. As the mean for Board commitment is 0.976, it indicates that overall board members attend or engage at a relatively high rate. Average length of service on the board is 21.821 representing long term managerial and financial ability at the board level. Board gender diversity is still not common, with an average of 0.201 women directors that reflect low levels of female presence on bank boards. The corporate governance index has an average of 0.000 and a standard deviation of 1.418, so that there is significant dispersion in terms of overall level quality or governance across banks and through

time. As a control for leverage, bank leverage is on average 0.924, indicating the high-leveraged status of commercial banks. The bank size (log total assets) is 21.704 on average with moderate variation across banks. The average age of bank is 45.416 years with minimum and maximum ages at 15 and 93 years, showing a mix of new as well as long established banks within sample period. Thus, the summary statistics indicate moderate diversity with respect to financial for corporate governance and control variables, which is a reasonable setting for empirical analysis in subsequent cross-sectional regressions.

Table 1. Descriptive Statistics for Financial Performance, Corporate Governance, and Control Variables

Variable	Mean	Std. Dev.	Min	Max
Return on Assets (ROA)	**1.108**	**0.507**	**-0.160**	**2.050**
Return on Equity (ROE)	8.234	3.554	-0.990	16.870
Tobin'sQ	1.051	0.534	0.200	7.706
Board size	11.500	1.476	8.000	15.000
Board Independence	4.696	1.413	2.000	8.000
Board Meetings	7.631	1.325	5.000	12.000
Board Commitment	0.976	0.050	0.830	1.000
Board Experience	21.821	3.737	15.000	27.000
Board Gender Diversity	0.201	0.442	0.000	2.000
Corporate Governance Index (GG Index)	0.000	1.418	-1.668	5.098
Leverage	0.924	0.535	0.065	7.626
Size	21.704	0.906	20.334	24.049
Age	45.416	17.415	15.000	93.00

Note: This table presents descriptive statistics for financial performance measures (ROA, ROE, Tobin's Q), corporate governance proxies, and control variables for 12 Jordanian commercial banks over the period 2010–2023, yielding 168 bank-year observations. Corporate governance is captured using board-related proxies and an aggregated corporate governance index. All variables are defined in Section 3.

4.2 Correlation Analysis

The Pearson correlation matrix for the bank financial performance measures, the corporate governance proxies and control variables is reported in Table 2 (for 168 bank-year observations). The correlation coefficients, show that ROA has a strong positive relation with ROE ($r = 0.903$, $p < 0.01$) although the measure's aim and purposes are different between one another; such high coefficient prove that there is a close relationship among operating efficiency and shareholder returns. By contrast, there is a weak association between Tobin's Q and ROA or ROE, implying that valuation ratios are capturing unique dimensions of bank performance. Regarding governance variables, most of the governance indicators belong to statistically significant regression equations with account-based performance measures. Board experience is significantly positively correlated with ROA ($r = .330$, $p < 0.01$) and REO ($r = .233$, $p < 0.05$), and gender diversity is also positively correlated with ROA ($r = .162$, $p < 0.10$) and ROE ($r = .299$, $p < 0.01$). On the other side, board independence and frequency of board meetings are also found to have significantly small negative relationship with ROA.

The corporate governance index also correlates significantly with several individual board characteristics; namely, board size ($r = 0.514$, $p < 0.01$), board independence ($r = 0.348$, $p < 0.01$) and the proportion of female directors on the board ($r = 0.920$, $p < 0.01$), lending evidence to the construction of this measure from underlying governance attributes. The high correlations between the governance index and certain individual proxies indicate they capture similar aspects of governance quality. Leverage is strongly correlated with Tobin's Q ($r = 0.994$, $p < 0.01$) among the control variables and bank size along with the age have positive association with few governance attributes such as board independence and experience.

Table 2. Correlation Matrix for Financial Performance, Corporate Governance, and Control Variables

	ROA	ROE	Tobin's Q	Board Size	Board Independence	Board Meetings	Board Commitment	Board Experience	Board Gender Diversity	CG Index	Leverage	Size	Age
ROA	1												
ROE	0.903***	1											
Tobin's Q	-0.0113	-0.016	1										
Board Size	-0.0895	-0.099	-0.058	1									
Board Independence	-0.194*	-0.151	0.102	0.383***	1								
Board Meetings	-0.158*	-0.123	-0.090	-0.018	-0.076	1							
Board Commitment	-0.077	-0.227**	-0.002	-0.101	-0.038	-0.075	1						
Board Experience	0.330***	0.233**	-0.018	-0.123	0.036	-0.073	0.105	1					
Board Gender Diversity	0.162*	0.299***	0.005	0.289***	0.139	-0.117	-0.813***	-0.173*	1				
CG Index	0.006	0.149	0.011	0.514***	0.348***	-0.059	-0.831***	-0.290***	0.920***	1			
Leverage	-0.0697	-0.059	0.994***	-0.026	0.136	-0.086	-0.001	-0.061	0.014	0.035	1		
Size	-0.001	0.026	-0.006	-0.046	0.381***	0.289***	-0.130	0.386***	-0.047	0.021	-0.026	1	
Age	-0.0762	-0.0609	0.176*	0.225**	0.580***	0.216**	-0.299***	0.198*	0.190*	0.334***	0.178*	0.710***	1

Note: *This table reports Pearson correlation coefficients among financial performance measures (ROA, ROE, Tobin's Q), corporate governance proxies, the corporate governance index, and control variables for 12 Jordanian commercial banks over the period 2010–2023 (N = 168). Statistical significance is denoted as follows: * p < 0.10, ** p < 0.05, *** p < 0.01.*

4.3 Corporate Governance and Bank Profitability (ROA)

4.3.1 Corporate Governance Index and ROA Performance

The fixed-effects regression results for the relationship between CG Index and bank profitability (ROA) are presented in Table 3. The coefficient for the CG Index is positive (β = 0.138) but insignificant, which suggests that there is no significant concurrent adjustment bank operational profitability with overall governance quality holding time and bank fixed effect constant.by doing so, our findings indicate that changes in ROA of Jordanian commercial banks at aggregate level is not well elicited by CG index in the short-term horizon. Our findings may be attributed to aggregating of heterogeneous governance mechanisms that have different effects on performance amplifying (or muting) each other at the same time. Regarding the control variables, leverage and bank size are positively related to the dependent variable but their coefficients are not statistically significant; likewise, bank age has a negative impact on ROA, although such effect is not significantly different from zero at conventional levels. The model provides some information about variation in ROA within a bank, with a within R-squared of 0.383.

Table 3. Fixed-Effects Panel Regression Results: Corporate Governance Index and Bank Profitability

VARIABLES	ROA
CG Index	0.138
	(1.490)
Leverage	0.016
	(0.212)
Size	0.121
	(0.568)
Age	-0.026
	(-1.335)
Constant	-0.269
	(-0.065)
Observations	168
R-squared	0.383
Number of bank_id	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.383
R^2 (between)	0.00193
R^2 (overall)	0.0979
N	168

*Note: This table demonstrates the estimation results of fixed-effects panel regressions with respect to the relationship between corporate governance and bank profitability, where overall corporate governance quality is proxied by the Corporate Governance Index and profit performance by ROA. The CG Index is an additive measure that reflects different board-level governance mechanisms. All regressions are adjusted for bank leverage, bank size and the age of the bank and include both bank-and- year fixed effects. Heteroscedasticity-robust standard errors clustered at the bank level are reported in parentheses. Statistical significance is indicated by * p < 0.01, ** p < 0.05, * p < 0.10.*

4.3.2 Individual Corporate Governance Mechanisms and Bank Profitability (ROA)

Panel fixed-effects: Corporate governance and profitability Table 4 presents the results of the panel fixed effects regressions for individual board-level corporate governance mechanisms on bank profitability (ROA). The model incorporates both bank- and year-fixed effects, as well as control variables of leverage, bank size, and bank age. The findings show that board gender diversity is the only corporate governance mechanism associated with a significant positive effect on ROA. We find that the coefficient on board gender diversity is positive and significant at the 5% level (β =0.312, t =2.684), indicating that banks with higher female participation in their boards are more profitable in terms of operations performance. This result suggests that board diversity has more to do with the effectiveness of monitoring, decision quality and operating efficiency. In contrast, board size and board independence have positive but insignificant coefficients, implying that changes in board characteristics along these dimensions would not directly positively influence ROA during the sample period. Nor does the frequency of meetings and the commitment of the board correlate with profitability confirming that more (or less) meeting or higher attendance do not imply better operational performance. The coefficient on board experience is negative but not statistically significant, suggesting that higher average board tenure or experience does not have a clear effect on ROA of banks once unobserved heterogeneity is taken into account. With respect to the control variables, leverage and bank size do not demonstrate significant effects on ROA in this model. Overall, the model stands for a large part of variation in profitability at bank level (a within R-squared value of 0.408), showing then their importance in explaining performance differences overtime.

Table 4. Fixed-Effects Panel Regression Results: Individual Corporate Governance Mechanisms and Bank Profitability (ROA)

VARIABLES	ROA
Board Size	0.022
	(0.616)
Board Independence	0.035
	(0.795)
Board Meetings	-0.012
	(-0.324)
Board Commitment	1.742
	(0.761)
Board Experience	-0.049
	(-1.242)
Board Gender Diversity	0.312**
	(2.684)
Leverage	-0.022
	(-0.299)
Size	0.113
	(0.535)
Age	-0.023
	(-1.201)
Constant	-1.207
	(-0.239)
Observations	168
R-squared	0.408
Number of Banks	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.408
R^2 (between)	0.0655
R^2 (overall)	0.0250
N	168

*Note: This table reports fixed-effects panel regression results of the relationship between individual board level corporate governance mechanisms and bank profitability, which is proxied by ROA. The governance variables are bored size, board independence, board meeting frequency, board commitment, length of experience of the board and gender diversity on the board. All regressions are taking into account control for bank leverage and bank size, and year fixed effects among the covariates (not reported). Heteroskedasticity-robust standard errors are clustered at the bank level, and t-statistics are in parentheses. Statistical significance is indicated as * p < 0.01, ** p < 0.05 and * p < 0.10.*

4.3.3 Summary and Contextual Evidence on Corporate Governance Effects on ROA.

Finally, the results suggest that corporate governance plays an aggregate role in determining profit of bank in Jordan as the Corporate Governance Index is positive but is not significant. This result is consistent with previous evidence in Jordan and other developing countries, which indicates that there is weak or mixed relationship between composite governance measures and accounting-based performance [27, 28]. The strong positive impact of board gender diversity on ROA, in contrast, is consistent with prior research that claims the composition of the board is more important to enhance operating efficiency rather than formal governance structures [25, 24]. Evidence from the Jordanian context also highlights that particular board features and not general governance strength are more likely to lead to firm performance improvements. Finally, the overall finding is that ownership has a positive impact on bank profitability through specific board attributes instead of global governance quality in Jordan. This points to the need for governance reform to be concerned with board composition and diversity, more so than general governance measures.

4.4.1 Corporate Governance Index and Bank Profitability (ROE)

Table 5 provides the fixed-effects regression estimates lin kin g corporate governance quality overall, as indicated by the Corporate Governance Index, and bank profitability, which is proxied by return on equity (ROE). The model is bank and year fixed effects and controls for leverage, bank size and bank age.

The result reveals that the CG score is positively related to ROE ($\beta = 1.233$) and insignificant, suggesting that the increase in overall quality governance does not lead to better shareholder value because of unobserved heterogeneity and time trend observed. The inferences imply that the aggregate governance strength, in the Jordanian banking sector at least, may not be directly able to impact on equity-based performance.

Of the control variables, leverage is positively significant in impact on ROE, highlighting the sensitivity of shareholder return to leverage. It's interesting to note that size of bank also has a positive relationship with ROE that means larger banks on average generate higher return for equity holders. On the other hand, bank age exhibits a negative and statistically significant relationship with ROE which indicates that older banks can face lo were returns in equity, perhaps reflecting a more conservative risk profile or because they are in more mature growth phases. In sum, the results show that although corporate governance is positively associated with ROE, its effect is not statistically different from 0 at the market level. This suggests that individual governance mechanisms rather than aggregate governance quality are important determinants of shareholder returns.

Table 5. Fixed-Effects Panel Regression Results: Corporate Governance Index and Bank Profitability (ROE))

VARIABLES	ROE
CG Index	1.233
	(1.547)
Leverage	1.301*
	(2.025)
Size	4.016**

	(2.305)
Age	-0.372*
	(-2.019)
Constant	-62.356*
	(-1.951)
Observations	168
R-squared	0.379
Number of bank_id	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.379
R^2 (between)	0.0276
R^2 (overall)	0.0923
N	168

Note: This table presents fixed-effects panel regression estimates of the effect of overall corporate governance quality, as measured by the Corporate Governance Index, on bank profitability (proxied by Return on Equity-ROE). All regressions also adjust for bank leverage, bank size and age of the bank, as well as include both bank- and year-fixed effects. Heteroskedasticity-robust standard errors are clustered at the bank level, and t-statistics are given in parentheses. Significance is indicated by * $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$.

4.4.2 Individual Corporate Governance Mechanisms and Bank Profitability (ROE)

The fixed effects regression results with return on equity (ROE) as dependent variable and the board-level individual corporate governance mechanisms are reported in table 6. The model contains bank- and year-fixed effects and a control for leverage, bank size, and a dummy variable of the age of bank.

The findings demonstrate that the gender diversity of the board has a positive influence on ROE; this impact is statistically significant ($\beta = 0.153$, $p < 0.01$), which means banks with more female involvement on the board have better returns for equity holders. This observation suggests that board composition contributes to the determination of level outcomes at the shareholder level, possibly as a result of enhanced monitoring, risk analysis and strategic decision making. Board size, board independence, the frequency of board meetings, board commitment and experience have non -significant relationships with ROE. These findings indicate that, like those of ROA, most historical board governance mechanisms are not associated with shareholder returns after controlling for unobservable bank-specific features and the influence of time. Regarding the control variables, we find bank size is positively and weakly associated with ROE, suggesting that larger banks have higher equity returns. Leverage and bank age are not statistically significant at traditional levels in this specification. Thus, the results are consistent with prior research that suggests that certain board characteristics (specifically, gender diversity) may be more important in explaining differences in shareholder performance than the larger suite of formal governance mechanisms.

Table 6. Fixed-Effects Panel Regression Results: Individual Corporate Governance Mechanisms and Bank Profitability (ROE)

VARIABLES	ROE
Board Size	0.118
	(0.412)
Board Independence	0.332
	(1.015)
Board Meetings	-0.224
	(-0.755)
Board Commitment	6.174
	(0.345)
Board Experience	-0.384
	(-1.227)
Board Gender Diversity	3.011***
	(3.405)
Leverage	0.938
	(1.400)
Size	3.833*
	(2.144)
Age	-0.325
	(-1.739)
Constant	-59.654
	(-1.457)
Observations	168
R-squared	0.414
Number of Banks	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.414
R^2 (between)	0.00315
R^2 (overall)	0.0529

*Note: This table reports the fixed effects panel regression estimation of the relationship between individual board-level CG mechanisms and banks' profitability, in terms of regulatory capital (ROE). The governance control variables consist of size, independence, frequency of meetings, commitment, experience and gender diversity of the board. All regressions adjust for bank leverage, bank size and bank age and control for both the year- and banks fixed effects. Standard errors are clustered at the bank level; t-statistics in parentheses. p < 0.05, and * p < 0.10, respectively. Statistical significance is indicated by * p < 0.01*

4.4.3 Summary and Contextual Evidence on Corporate Governance Effects on ROE

Collectively, the findings suggest that corporate governance has no major cumulative influence on shareholder returns in Jordanian banks given that Corporate Governance Index is positively related to ROE, but statistically not significant. This result corroborates previous evidence in Jordan and comparable developing markets, where composite governance indices tend to exhibit vague or negative relationships with equity-based performance indicators [8, 24]. On the other hand, we find that the positive impact on ROE of board gender diversity is consistent with previous work arguing that diverse boards are more effective at monitoring strategy and risk-adjusted decision-making in added value to equity holders [25, 30, 31]. Evidence from the MENA region too underscores that board diversity has a more substantive effect on shareholder returns as opposed to conventional governance mechanisms. Collectively, the dominant result is that corporate governance impacts bank ROE in Jordan mainly through certain aspects of Board Structure rather than general governance quality. This adds weight to the debate that governance characteristics

surrounding board diversity and inclusiveness are likely more influential in determining shareholder outcomes than formal or composite governance measures.

4.5.1 Corporate Governance Index and Market Valuation (Tobin's Q)

Table 7 reports the fixed-effects regression results for aggregate quality of corporate governance as examined in relation to bank market value proxied by Tobin's Q. The model controls for leverage, bank size, and bank age and includes time and bank-fixed effects. Results reveal that the Corporate Governance Index is positively and not significantly related to (Tobin's Q) ($\beta = 0.002$), indicating that increasing overall governance level does not lead to an increase in market valuation of Jordanian banks. This result suggests that equity markets may not generally value aggregate governance improvements once unobserved bank-specific factors and time effects are controlled for. Of the control variables, leverage has a strong positive relationship with Tobin's Q indicative of this capital structure sensitivity in banking. In a contrary manner, to public banks the coefficient on bank age is negative and significant in relation to Tobins's Q showing that also for private banks being younger with respect to peers is associated with a greater valuation: this result could be interpreted as due to less conservative business model or low opportunities of growth in older institutions. As to the size of the bank, it seems not to have a great impact on market valuation in this specification. Collectively, the results indicate that aggregate corporate governance quality has little explanatory value for market-based performance and reflects a loose relationship between formal governance mechanisms and investor valuation in Jordanian banking.

Table 7. Fixed-Effects Panel Regression Results: Corporate Governance Index and Market Valuation (Tobin's Q)

VARIABLES	**Tobin's Q**
CG Index	0.002
	(0.426)
Leverage	0.992***
	(96.564)
Size	-0.004
	(-0.154)
Age	-0.007**
	(-2.863)
Constant	0.522
	(1.167)
Observations	168
R-squared	0.998
Number of bank_id	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.998
R^2 (between)	0.149
R^2 (overall)	0.940
N	168

Note: This table displays the results of fixed-effects estimates for the panel regression model on overall corporate governance quality, as measured by the Corporate Governance Index, for bank market valuation (Tobin's Q). All estimates control for bank

*leverage, size and age and include both bank- and year-fixed effects. Heteroscedasticity-robust standard errors are clustered at the bank level, and t-values are in parentheses. Significance is indicated by * p < 0.01, ** p < 0.05, and * p < 0.10.*

4.5.2 Individual Corporate Governance Mechanisms and Market Valuation (Tobin's Q)

Table 8 reports the fixed-effects regression analysis of the association between individual board-level corporate governance mechanisms and bank market valuation, represented by Tobin's Q. The model includes bank- and year-fixed effects, as well as leverage, bank size, and age.

Table 8. Fixed-Effects Panel Regression Results: Individual Corporate Governance Mechanisms and Market Valuation (Tobin's Q)

VARIABLES	Tobin's Q
Board Size	0.001
	(0.578)
Board Independence	-0.001
	(-0.306)
Board Meetings	0.000
	(0.018)
Board Commitment	0.353
	(1.509)
Board Experience	-0.000
	(-0.208)
Board Gender Diversity	0.008
	(0.798)
Leverage	0.992***
	(86.492)
Size	-0.000
	(-0.005)
Age	-0.007**
	(-2.851)
Constant	0.109
	(0.168)
Observations	168
R-squared	0.998
Number of Banks	12
Bank FE	Yes
Year FE	Yes
SEs	Clustered by bank
R^2 (within)	0.998
R^2 (between)	0.0966
R^2 (overall)	0.931
N	168

*Note: This table reports the fixed-effects panel regression results of individual board-level corporate governance mechanisms on bank market valuation, as represented by Tobin's Q. Corporate governance mechanisms are proxied as and interchanged with board size, board independence, Frequency of Board Meetings, Commitment of the Board (BOARD COMMITMENT), Experience of the Board (EXP), and Gender diversity in Board membership respectively. All regressions are again adjusted for bank leverage, size and age, as well as bank- and year-fixed effects. Heteroskedastic-robust standard errors are clustered at the bank level and t-statistics appear in parentheses. Significant levels are indicated with *, at p < 0.01, and * p < 0.10.*

The results reveal that no one of the corporate governance mechanisms (board size, board independence, meetings, commitment, experience and gender diversity) is statistically associated with Tobin's Q, indicating that differences in the structure and composition of 3.5 Board Structure and Composition Has Contingency Effect not systematically affect how capital markets are valuing Jordanians banks.

4.5.3 Summary and Contextual Evidence on Corporate Governance Effects on Market Valuation.

Overall, the findings suggest that corporate governance (be it in the form of combined degree of board independence or board mechanisms separately) accounts for a negligible portion of variation in bank stock valuation in Jordan. These results are in line with previous studies on Jordan and other developing countries which point to weak or no correlation between governance mechanisms and Tobin's Q [7, 8]. These results are in line with the finding that Formal represents the other non-significant component of governance and indicates that markets might assign more importance to balance-sheet fundamentals, and/or the capital structure, than to formal treatment when pricing bank securities. In summary, the primary result is that corporate governance has a stronger impact on internal performance measures rather than external market valuation, which supports that markets may not be fast enough in capitalizing corporate governance improvement in emerging banking economies. From the control variables, leverage has a strong positive correlation with Tobin's Q, suggesting that in banks market valuation is mainly driven by capital structure. By contrast, a bank's age is negatively and significantly associated with Tobin's Q, suggesting that older banks are likely to be valued lower in the market (one reason being their limited growth opportunities or more conservative strategies). Bank size does not appear to have a significant impact in this specification. On the whole, evidence provided in this study indicates that (market-based) performance is essentially unaffected by board-level governance features once bank-specific and time effects are controlled for.

5. Integrated Discussion of Findings

5.1 Aggregate Corporate Governance and Bank Performance

The results suggest that the overall quality of corporate governance, as represented by a composite Corporate Governance Index, has no statistically significant impact on bank profitability (ROA and ROE) or market valuation (Tobin's Q). This result is supported by earlier findings in Jordan and other transitional countries that investigate the weak or conflicting associations between aggregated governance indices and firm performance [7, 8]. One interpretation is that the effect of some governance mechanisms are homogenous and others have compensating effects (with higher values masking lower values) in composite indices, thereby dampening the impact of individual governance mechanisms relevant to performance achievements.

5.2 Individual Governance Mechanisms and Accounting-Based Performance

As opposed to the overall outcomes, the decomposed governance mechanisms indicate that board gender diversity is a significant determinant of banks profitability. Yet, boards with gender diversity is related to superior ROA and ROE, which reflects enhance of both operating efficiency and shareholder return. This evidence is consistent with agency-based theories that advocate the benefits of board diversity for monitor quality and decision effectiveness [25, 30]. There exists some such evidence from Jordan and the MENA region, indicating that board composition is more important than formal governance structures in explaining firm performance [24, 32]. Other governance attributes (board size, independence, frequency of board meetings, commitment and experience) are not found to be consistently significant by banks, indicating that these characteristics may play a role as formal-type monitoring devices when it comes to bank governance in Jordan.

5.3 Corporate Governance and Market Valuation

The findings also indicate that market-based performance, proxied by Tobin's Q, is generally insensitive to both aggregate governance quality and specific board attributes. This finding is consistent with results from international studies that report that necessity-based firms are valued less than opportunity-driven firms by the equity market, especially in developing countries where banks have an important role to play [8, 13]. The significant and persistent effect of leverage on Tobin's Q supports this interpretation.

5.4 Key Insights and Implications

The results taken as a whole imply that in the case of Jordanian banks corporate governance matters more through board composition characteristics than through composite governance mechanisms, and that these effects are stronger for internal performance rather than for external market valuation measures. These findings underscore the need for mechanism-specific tests, and indicate that overreliance on general governance indices may understate the actual effect of corporate governance on performance in bank markets of emerging economies.

6. Additional Tests and Robustness Checks

In order to ensure that the conclusions are not based on model specification, endogeneity concerns or the impact of extreme observations, additional tests and robustness checks were carried out. 18 Secondly, besides the fixed-effects baseline regressions, analyses were also rerun using a dynamic panel GMM (Generalized Method of Moments) specification to alleviate concerns on potential endogeneity due to reverse causality and unobserved persistence in bank performance. The results of the GMM support for the fixed-effects estimates, particularly regarding the minor importance of aggregate corporate governance and the positive impact of board gender diversity on accounting-based performance. Second, all regressions control for bank- and year-fixed effects to absorb unobservable bank-specific heterogeneity as well as common macro shocks. Throughout, we use robust standard errors clustered by bank to address heteroskedasticity and serial correlation. Diagnosis of multicollinearity by the variance inflation factors (VIFs) shows that there are no serious correlations between explanatory variables. Third, the sensitivity of findings was tested by using outlier and influence diagnostics: new models were estimated removing extreme observations in terms of performance and governance variables. The qualitative results are robust to the reported specifications, so that the conclusions do not only reflect those from few extreme bank-year observations. Last, it's diverse performance measurement alternatives such as ROA, ROE and Tobin's Q are analyses in isolation from the others which enables to test the governance–performance association along both accounting-based and market-oriented axes. Taken together, these supplementary tests indicate that the results are not driven by alternative estimation approaches, endogeneity and sample issues. Full tables of results from these additional analyses are not reported here for the sake of space but may be obtained on request.

7. Conclusion

This study examines the association of corporate governance with bank performance in Jordanian commercial banks during 2010–2023 adopting both accounting-based performance (ROA and ROE) and market-based valuation measurement (Tobin's Q), but also between overall governance quality and separate board-level mechanisms. Based on fixed-effects panel regressions, the study offers new insights into governance in a developing banking market. The results suggest that overall corporate governance quality, as measured by composite Corporate Governance Index, has no statistical impact on bank profit performance and market valuation. This implies that 'one size fits all' governance codes may not immediately lead to better financial performance in the Jordanian banking industry even when important for regulatory fetish. By contrast, the findings for individual governance mechanisms indicate that board

gender diversity has a positive and statistically significant effect on both ROA and ROE providing evidence of the influence of specific board characteristics as opposed to overall strength in control.

The study also suggests that market valuation, as proxied by Tobin's Q, is highly inelastic to aggregate governance quality and each board attribute. This result suggests that Jordanian stock markets give relatively more emphasis to financial fundamentals and regulatory stability rather than internal governance mechanisms in their valuation for banks. Overall, corporate governance seems to have a greater impact on internal performance measures than on external market valuation. From a policy and managerial point of view, it seems that governance reforms need to go beyond formal compliance and focus more on enhancing the composition of board, specifically gender diversity. This work contributes to the literature by offering evidence from a less investigated banking market and by providing empirical support that governance effects are indicative on how governance is quantified. Future investigations could widen the scope of this paper by exploring other governance media, ownership patterns, or international contexts.

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