


Ownership structure and firm performance: Evidence from non-bank financial institutions in Jordan



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ABSTRACT

Article History

Received: 29 March 2024

Revised: 26 July 2024

Accepted: 8 August 2024

Published: 15 August 2024

Keywords

Firm performance
Jordan
Non-bank financial institutions
Ownership
Pedroni cointegration test
Pooled mean group
System GMM.

JEL Classification:

D22; G23; G32; L25.

This study examines the relationship between ownership structure and firm performance using empirical data on non-bank financial institutions (NBFIs) in Jordan. The study employed a cross-sectional dependency test, the Levin–Lin–Chu panel data regression test, the Im–Pesaran test (CIPS), panel causality test, Pedroni regression analysis, generalized method of moments (GMM), and pooled mean formula. The sample consisted of 80 NBFIs listed on the Amman Stock Exchange (ASE). Four-panel unit root tests show that ownership concentration dynamics are robust at the first variance, and the Pedroni panel cointegration results demonstrate a long-run link between ownership concentration processes and corporate value. Similarly, research using GMM and pooled mean group (PMG) approaches reveals that ownership concentration procedures have a major impact on firm performance, as evaluated by Tobin's Q . The study also reveals that government ownership boosts the profitability of NBFIs, contradicting previous research that suggests a strong inverse relationship between government ownership and NBFIs efficiency. Conversely, the results of this study are not consistent with those of other studies which found a significant negative correlation between the efficiency of NBFIs and government ownership.

Contribution/Originality: This study makes a significant contribution to the literature by being the first to examine the NBFIs sector in Jordan and investigate the relationship between ownership structure and firm performance within Jordanian institutions. Furthermore, the study confirms the influence of ownership concentration on firm performance in developing economies, such as Jordan.

1. INTRODUCTION

To a great extent, the ownership structure of Jordanian public shareholding companies is important. The impact of certain firms' ownership structure on their financial performance, especially non-banking firms, has been discussed in terms of their strength and sustainability (Alkurdi, Hamad, Thneibat, & Elmarzouky, 2021). The crucial role of ownership structure in determining corporate objectives, shareholder wealth, and manager discipline was also investigated.

Maximizing a firm's profitability aligns with the goals of managers and shareholders, as explained by (Allahham et al., 2024). Companies are likely to develop innovative and cutting-edge strategies to improve their financial performance in response to investors' interest in rapidly growing and multiplying their investments (Javaid, 2022). This involves hiring a third party to oversee the management's performance, which gave rise to the agency theory

(Ahmed, Hussin, & Pirzada, 2022). Several studies have clarified the relationship between ownership structure and firm performance. They concluded that concentrating on agency between managers and shareholders to guarantee the survival and health of the business, proprietors typically raise the ratio of indebtedness in the capital structure to put pressure on the management and reduce their freedom of movement and their ability to achieve their interests by finding an external party to monitor the performance of the administration (Zeitun, 2009; Zraiq & Fadzil, 2018). The companies are divided into four groups: companies with separate ownership, those owned by financial institutions, family-owned companies, and foreign-owned companies (Zraiq & Fadzil, 2018).

Corporate law assists participants in aligning objectives with their organization's goals (Blair & Stout, 2017). Because of the deception and bankruptcy of major corporations, such as Enron and WorldCom, corporate governance (CG) and company structure (a CG technique) have become controversial topics in the financial and business sectors. Because of these calamities, corporate governance has undergone a tremendous transformation (Agyei & Owusu, 2014). According to McCann and Vroom (2009) company structure is the relative quantity of ownership rights issued by management as well as shareholders who have no direct relevance to the firm's operations. Furthermore, prior studies have shown that one of the most significant corporate governance frameworks and a key component of CG practices is the ownership model (Loay, Jamal, & Mah'd, 2018; Mai, Bilbard, & Som, 2009).

The mismatch of objectives between managers and investors or between dominant and minority ordinary owners is one of the issues that contemporary businesses face (Mang'unyi, 2011). The cost of agency is the expense of this conflict (Abedalqader, Abdulmohsen, & Abdulrahman, 2016; Aguilera, Judge, & Terjesen, 2018; Tahir & Sabir, 2014). To address this problem, recommended activities include utilizing a firm's cash investments rather than remuneration to match the interests of investors and management (Jensen & Meckling, 1976). The agency problem is heavily influenced by corporate structure. Ownership structure is crucial in establishing the center of alternative theoretical work. Irrespective of agency theory's theoretical and practical relevance, scientific data has been unable to convince; therefore, disagreement remains on whether institutional ownership is vital for company performance (Ducassy & Guyot, 2017). As a result, investors believe that a firm with a high CG is more profitable and reliable (Wijethilake, Ekanayake, & Perera, 2015).

In Jordan, a group of experts developed the first corporate governance code in 2009 to reinforce the argument for poor financial performance (Abed, Al-Attar, & Suwaidan, 2012; Alabdullah, Yahya, & Ramayah, 2014; Makhoulf, Binti Laili, & Basah, 2014). Jordan's monetary and fiscal circumstances are weak. According to the World Bank Group (2014) service and production industries have recently experienced a GDP decrease due to local unpredictability, massive unemployment, dependence on Gulf economic structures for currency exchanges and subsidization, and growing pressure to obtain environmental changes. Moreover, its macroeconomic picture in recent years has not been favorable for businesses (Nemer Badwan, Al-Zoubi, & Al-Khazaleh, 2023). Cases of fraud, controversial issues, and misconduct have caused a significant reduction in Jordanian strategic interest and deterioration of Jordanian business confidence, especially following the financial ruin of five public stock owners' automakers in 2017.

After Jordan demonstrated that it is unable to control its financial and operational issues, the most valid arguments concentrated on non-compliance with governance mechanisms (Mohammad Mustafa Dakhallh, Rashid, Abdullah, & Al Shehab, 2020). Jordan has underutilized CG procedures and legislation (Mohammed, 2018). As a result, the ASE revised the CG code in 2017 to use the "complaint or punishment" method rather than the "adherence or justification" method.

This study investigates the link between ownership structure and firm performance and the influence of ownership concentration (government, household, shareholder bloc, and concentrated ownership) on company performance using empirical data on NBFIs' performance in developing nations such as Jordan. It is hoped that this study will contribute to the literature in this field by adding more information about the industrial and service sectors in Jordan and filling the gaps in the literature by addressing this uninvestigated issue. This study intends to provide comprehensive proof of the effect of ownership concentration (leadership, government, household, block shareholders,

and concentrated ownership) on business performance in growing economies such as Jordan during the 2018–2022 period.

The structure of this study is as follows: Section 1 introduces the paper, the theoretical background and hypotheses are explained in Section 2, the methodology and materials are detailed in Section 3, the results and discussion are contained in Section 4, Section 5 contains the conclusion, Section 6 discusses the implications and recommendations, and Section 7 outlines the study limitations and future research directions.

2. THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1. Ownership by Management and Organizational Performance

The government is committed to a CG strategy because it combines the interests of investors and leadership (Brickley, Lease, & Smith, 1988). Jensen and Meckling (1976) explained that value integration develops between managers and shareholders as management involvement grows, and increased staff ownership reduces overheads, hence improving the value of the company. According to recent research, enhancing a company's current ownership is an essential instrument for decreasing agency issues and developing performance (Arora & Sharma, 2016; Kumar & Singh, 2013). Increasing managerial ownership also increases company performance (Fauzi & Locke, 2012; Kumar & Singh, 2013).

Iwasaki, Ma, and Mizobata (2022) compared ownership structure and firm performance in China, Russia, and East European EU countries. The findings show that having both domestic and foreign investors as firm owners, regardless of their location, has a positive impact on firm performance. These results support standard theory, which holds that state ownership impairs the performance of companies in which the state makes investments. Additionally, it was found that managers' ownership typically has a favorable effect on the success of companies and that there is no association between corporate ownership and performance. The study suggests that investment management discipline in developing markets is insufficient compared to developed ones.

In the same vein, Vu, Phan, and Le (2018) conducted an empirical analysis of 557 companies registered in Vietnamese stock markets from the year of their listing to 2014 to test the link between board ownership structure and financial performance. According to the findings, there is no significant influence of return on equity (ROE), and the number of members on the board of directors (BOD), ownership concentration and CEO ownership positively correlate with return on assets (ROA). The financial performance of firms (ROE and ROA) is adversely affected by BOD stability. No substantial influence was detected by the firm's ROA or ROE, independent members, the proportion of female members, or the positions of the Chairman and CEO.

Furthermore, Song, Wei, and Wang (2015) examined whether ownership arrangements impact the link between managerial ownership (MO) and the performance of innovations. To achieve better innovation performance, it was proposed that companies should match three distinct ownership structure aspects with MO (Al-Khazaleh, Badwan, Eriqat, & El Shlmani, 2024). Three distinct data sources were combined to create a unique dataset of 242 publicly listed firms to test the study approach. The findings confirm that ownership structure moderates the relationship between market orientation and business innovation performance in China. If all else is equal, non-state-owned businesses that use MO may outperform their state-owned counterparts in terms of innovation.

Allowing senior managers to own a portion of the company (managerial ownership) allows them to transfer their preference for time and risk to shareholders, and this may strengthen the impact of MO on innovation performance (Al-Khazaleh et al., 2024). The association between MO and innovation success may also be strengthened by a high ownership concentration ratio, often known as the ratio of major owners to minor owners. This ratio has the potential to encourage and empower shareholders to monitor managers' actions.

Alabdullah (2018) investigated companies registered on the Amman Stock Exchange and found specific insights regarding managerial ownership. On the other hand, Khamis, Hamdan, and Elali (2015) found that management ownership negatively impacted Bahraini companies' Tobin's Q scores. Mohammed (2018) found that between 2013

and 2016, there was a statistically significant negative association between executive ownership and firm performance. Furthermore, in a study conducted by [Dakhlallah, Rashid, Abdullah, and Dakhlallah \(2019b\)](#) 80 Jordanian companies were investigated from 2018 to 2022. It was discovered that the financial performance and institutional ownership of firms were significantly negatively correlated. The agency hypothesis and prior discussion led to the development of the following hypothesis:

H1: Managerial ownership concentration has a significant impact on the performance non-banking financial institutions in Jordan.

2.2. Ownership by the State and Firm Performance

Nationalization is needed for growing nations to boost both monetary and fiscal policy development and, eventually, GDP growth ([Lassoued, Sassi, & Attia, 2016](#)). Many studies have demonstrated that government investment promotes firm success ([Liao & Young, 2012](#)).

[Jiang, Laureceson, and Tang \(2008\)](#) found that public ownership positively impacts business performance due to the government's significant role in monitoring and managing large corporations. Moreover, in the Jordanian context, [Dakhlallah, Rashid, Abdullah, and Dakhlallah \(2019a\)](#) showed a favorable and significant correlation between governmental management and corporate performance. Similarly, there is a strong inverse relationship between public ownership and performance among Jordanian companies. According to [Zeitun \(2009\)](#) it is possible that the state ownership of a company's shares has more to do with geopolitics than with economics ([La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999](#)).

[Amoako-Gyampah, Boakye, Adaku, and Famiyeh \(2019\)](#) examined the moderated mediation relationships between the sector rotation model (SRM), operational flexibility, ownership structure, and the performance of firms using information obtained from companies in Ghana, a developing nation. According to the findings, operational flexibility capabilities mediate the relationship between supplier relationship management and company performance. Moreover, the SRM affects domestically held companies more than foreign-owned companies in terms of their performance. This implies that domestic companies gain more from SRM investments than foreign companies do. This conclusion is significant because locally held businesses may lack funds to invest in SRM procedures, necessitating an understanding of the advantages of SRM.

In the same manner, [Ting, Kweh, Lean, and Ng \(2016\)](#) revealed a substantial and negative correlation between state ownership and the performance of firms, measured by Tobin's Q. Based on the investigation and assessment, the following hypothesis was developed:

H2: State ownership has a significant impact on the performance of non-banking financial institutions in Jordan.

2.3. Foreign Ownership and Firm Performance

[Hennart \(2012\)](#) proposed a framework for multinationals, stating that multinational enterprises (MNEs) have significant intangible resources, such as technology, proper management procedures, customer and provider cooperation, and international relationships. Multinational companies (MNCs) are likely to be more effective and competitive than domestic companies. According to several studies, such as [Arnold, Mattoo, and Narciso \(2008\)](#); [Beltrán \(2020\)](#); [Benfratello and Sembenelli \(2006\)](#); [Griffith \(1999\)](#) and [Ullah, Wei, and Xie \(2014\)](#) foreign-owned businesses are more efficient than domestic businesses, as the efficiency of foreign-owned enterprises surpasses that of domestic companies.

Previous research, such as [Benfratello and Sembenelli \(2006\)](#); [Halkos and Tzeremes \(2010\)](#); [Huang and Yang \(2016\)](#); [Griffith \(1999\)](#); [Al-Khazaleh, Ibrahim, MIA, and Badwan \(2023\)](#) and [Wang and Wang \(2015\)](#) has focused on wealthy nations or selected developing nations, including Vietnam and China. The global connection between success and international ownership has not received much academic attention. After evaluating the available data, they suggested four different ways in which foreign investment might affect a company's productivity. Creativity is one

such strategy for this purpose. Company innovation and foreign ownership are related (Luong, Moshirian, Nguyen, Tian, & Zhang, 2017).

Boubakri, Cosset, and Saffar (2013) stated that companies with a larger percentage of foreign ownership invest more in R&D. According to this study, research and innovation are strongly linked to improved productivity. Another alternative is the use of telecoms. Foreign-owned companies must use technology more often than their local rivals (Paunov & Rollo, 2016). Since telecom activities promote corporate efficiency, firms with overseas investments may perform better as a result of greater telecom usage (Dakhlallah et al., 2019b; Paunov & Rollo, 2016). Labor cost administration, the third choice, has received little attention in previous studies. Companies with overseas investments have stronger management techniques (Dunning, 1977). Consequently, they are better at managing human resources.

Businesses with overseas investment are less likely to expand their number of permanent employees and are more likely to hire temporary employees (Ullah, Ali, & Mehmood, 2017). Businesses with overseas investment will have better control over labor expenses and, as a result, will be able to simplify processes. Financial aid was the fourth option. International investors can increase corporate efficiency by alleviating financial constraints. According to some research, state investors are related to fewer financial obstacles (Chen, Li, Xiao, & Zou, 2014; Knack & Xu, 2017).

Webster, Okafor, and Barrow (2022) investigated how foreign ownership affects the productivity, profitability, export intensity, and skill acquisition of businesses in Sub-Saharan African (SSA) countries. Propensity score matching (PSM) and least squares dummy variable (LSDV) estimates revealed a favorable correlation between foreign ownership and increased profitability of the financial sector, exports, productivity, and the acquisition of skilled workers.

Lindemanis, Loze, and Pajuste (2022) investigated the connection between company performance and the shift from domestic to foreign ownership. The findings support the management discipline theory by demonstrating that foreign investors, originating from larger, wealthier, and more developed nations, buy larger but less lucrative businesses. They found that, in the short term, changing ownership is associated with increased sales growth. However, this can lead to lower profit margins and returns on assets. The study matched businesses based on factors including country, size, return on assets, industry, and leverage to arrive at this conclusion. On the other hand, over time, ownership and asset turnover have a favorable relationship with operational efficiency. The findings also demonstrate that a firm's performance is affected by the acquiring company's country of origin. Research shows that firms acquired by foreign owners from countries with stronger governance systems exhibit greater performance enhancements than those acquired by foreign owners from nations with less developed governance frameworks.

Financing obstacles have been connected to decreased company productivity and efficiency (Beck, Demirgüç-Kunt, & Maksimovic, 2005). Overseas-owned companies may have expanded their production because of financial support from different countries. The third hypothesis is as follows:

H3: Foreign ownership has a significant impact on the performance of non-banking financial institutions in Jordan.

2.4. Ownership Control and Firm Performance

One way to define an owner-managed company is to examine how ownership and control are separated. The owner/manager of such a business has two crucial features: (1) The owner/manager makes company management decisions, and (2) is entitled to the firm's revenue (these claims are commonly referred to as residual claims as they come after all costs and fixed claims have been met) (Faza, Badwan, Hamdan, & Al-Khazaleh, 2023). Owners have residual interests in a large publicly listed company but have little direct influence on management choices. On the other hand, managers wield considerable authority. The lack of a control mechanism is often attributed to free riders, collective action, or coordination concerns.

Investors in listed firms have little legal authority over the company (Al-Khazaleh et al., 2023). They have no opportunity to participate in a firm's daily management, and they are also powerless to influence legislation or set compensation (Chen et al., 2014). Furthermore, although investors may propose governors, the management controls the voting (proxy) process. In the United States, leadership may use business cash to find proxies, but insurgents can only use corporate funding if they succeed.

Jin and Hu (2024) examined how the distribution of control rights affected the performance of Chinese family-owned businesses. It is postulated that in a Chinese family business, strong firm performance would be favorably connected with a high degree of control dispersion among family members, and that this link would be positively moderated by family members' tenure. Most findings support the validity of the model and emphasize how crucial it is for family members to engage in a variety of cultural situations to advance the profession.

Chen et al. (2014) conducted a study to examine the impact of controlling ownership on the performance of Taiwanese companies. This study aimed to determine whether controlling ownership negatively affects a firm's performance and whether external governance is more crucial than internal governance. Additionally, researchers have investigated whether internal governance is inferior to external competition. The study revealed a curvilinear relationship between controlling ownership and firm performance, suggesting that firm performance improves when controlling ownership is low, but declines when it reaches a high level. When internal governance or external competition is weak, high controlling ownership adversely affects firm performance. Conversely, when these factors are strong, this adverse effect disappears. Additionally, external competition outweighs internal governance in mitigating the negative impact of controlling ownership on corporate performance (Eriqat & Al-Khazaleh, 2023).

Lai, Liang, Liu, Pu, and Zhang (2022) investigated ownership control and found that the concentration of entrepreneurial enterprises varies greatly over time and across cross-sections. The decision to choose low ownership concentration appears to be primarily motivated by growth potential and risk sharing, and the need for outside funding with diluted ownership exhibits robust growth. The results showed no evidence that ownership concentration and other aspects of company performance are related, even after adjusting for sample selection bias and firm fixed effects. Thus, when it comes to choosing an ownership structure, entrepreneurial enterprises may need to weigh the trade-off between their need for expansion and the desire to maintain a dominant influence over the business.

Goergen and Mira (2023) demonstrated that it can be difficult to determine this structure for a UK public limited company using information that is readily available to the public. The recent modifications made to the UK listing regulations in response to Hill (2021) might worsen matters by increasing the number of listed businesses that have dual-class shares. We illustrate some of the methodological difficulties encountered by researchers with the use of case studies and further empirical research, and recommendations are offered regarding how to address these problems.

Liu, Boubaker, Liao, and Yao (2024) evaluated how common state ownership control affects the environmental performance of corporations, using a considerable sample of Chinese companies, and found that state-owned common ownership considerably improves the environmental performance of corporations. An examination indicated that common state-owned owners encourage environmentally sustainable practices by employing resource allocation methods that alleviate financial constraints within corporations. Furthermore, these owners take the lead by encouraging green corporate innovation and increasing industry performance. Specifically, increased industrial profitability and green total factor productivity are associated with common state ownership. Moreover, privately held companies and those without politically linked CEOs or chairs have a stronger positive correlation between environmental performance and common state ownership.

In the absence of difficulties, choosing may be an effective control tool. However, difficulties in collective action often preclude voting as an effective management tool. A stakeholder seeking to remove the current leadership will incur tremendous costs. However, the expected return to the investor on such an acquisition is a negligible part of

the entire return and is, more importantly, minimal compared to the expenses incurred. Thus, the following hypothesis was developed:

H4: Ownership control has a significant impact on the performance of non-banking financial institutions in Jordan.

2.5. Institutional Ownership and Firm Performance

Financial businesses often invest resources in pursuit of high profits. Moreover, they play a vital role in CG by exercising greater oversight over the principals' performance or directing various business activities. As a result, investment firms with greater interest in the firm are more engaged in overseeing management via board participation (Al-Khazaleh, Zulkafli, & Dargiri, 2021; Badwan & Awad, 2023). Conversely, Shleifer and Vishny (1997) suggested that corporate governance is critical in reducing opportunistic and agency issues.

Duggal and Millar (1999) examined corporate takeover choices to learn more about how institutional ownership affects company performance. Bidder gains and institutional ownership have a positive relationship according to the bidder gains OLS regressions. The findings show that insider ownership, business size, and a firm's inclusion in the S&P 500 index strongly influence institutional ownership. Hence, the recursive estimates contradict the association suggested by the OLS regressions, particularly when bidder gains are regressed against the anticipated values of institutional ownership in two-stage regressions. Moreover, the results show no proof that the collective action of active institutional investors (such as CalPERS) improves market efficiency for corporate control. These results call into question institutional investors' improved monitoring and selection skills.

Corporate governance has a favorable and substantial effect on the performance of firms (Lin & Fu, 2017; Soufeljil, Sghaier, Kheireddine, & Mighri, 2016). Moreover, corporate governance has been found to have a considerable beneficial influence on Jordanian firm performance (Khamis et al., 2015). Dakhlallah et al. (2019a) utilized Tobin's Q to identify a detrimental and substantial connection between organizational ownership and the performance of firms.

Lin and Fu (2017) utilized a simultaneous equations model and a GMM estimator to investigate the influence of institutional ownership on the performance of Chinese listed firms. Their study, which encompassed a substantial sample of companies, indicated a favorable association between institutional ownership and firm performance. This association persisted, even after accounting for factors such as deregulation, market conditions, and various stock market boards. However, they noted that not every institutional investor actively tracked and enhanced company performance. The findings showed that large institutional owners who are international and pressure-insensitive have a greater beneficial impact on the success of the company than small institutional shareholders who are local and pressure-sensitive. The findings also suggest that institutional investors raise shareholder value by attracting more analysts and reducing insider ownership.

Ozdemir (2020) investigated how institutional ownership within the US tourism sector influences the relationship between board diversity and firm performance. The study sample included US restaurants, hotels, and airline sectors. The results indicate that the financial performance of a firm (measured by Tobin's Q) benefits from board diversity, with the extent of institutional ownership playing a significant role in this association. The hypotheses were examined using a two-way fixed effects regression. Additionally, the financial success of a company is more positively affected by board diversity when institutional ownership is minimal.

Drobetz, Ehlert, and Schröder (2021) analyzed how institutional investors affect the value of listed shipping companies. Institutional investors positively influence the market value of shipping companies, demonstrating that it serves as a widely applicable corporate governance approach. The results show that in companies where institutional investors have a dominant position and a short investment horizon, this value effect is especially noticeable. It is also more pronounced in companies with significant stock liquidity, indicating that short-term investors might reduce agency conflicts and enhance corporate governance by threatening to sell. According to the investment regressions, shipping companies are better equipped to take advantage of growth possibilities when their share of short-term investors is higher.

Gao, Han, Kim, and Pan (2024) examined the effects of supply chain overlapping institutional ownership on supplier companies' profits management strategies using a dataset of publicly listed US supplier companies from 1988 to 2016. The results showed lower levels of discretionary accruals among suppliers whose key clients also had institutional ownership overlaps. This result suggests that suppliers are deterred from manipulating discretionary accruals to increase profitability. Additionally, it was found that overlapping institutional ownership reduces accrual-based profit management by strengthening external oversight and improving relationships among supply chain participants and lessens the degree to which the provider manages its true revenues.

Liu and He (2024) examined whether companies in the same industry behave more similarly to one another when they have common institutional ownership (CIO). A sample of Chinese A-share listed companies spanning from 2003 to 2021 was used. The findings indicate that stronger Chief Information Officer ties between two organizations at the firm-pair level are associated with greater similarity in investment behavior. Additionally, the impact of CIO on investment similarity is more significant in firms operating in less concentrated markets characterized by intense competition. Contrary to the expectations of underinvestment, CIO involvement is linked to enhanced investment efficiency and overall business value. However, the increased industry sway possessed by typical institutional investors may intensify the adverse relationship between investment dissimilarity and CIO.

These results do not support the idea that knowledge-sharing with CIO leads to anti-competitive implications, but rather support the rationale behind such sharing. Additionally, the relationship between government ownership and firm performance is highly unfavorable (Arora & Sharma, 2016). Using the previous premise and idea of responsibility, the following hypothesis was developed:

H5: Institutional ownership has a significant impact on the performance of non-banking financial institutions in Jordan.

3. METHODS AND MATERIALS

3.1. Measurement of Variables, Data Sources and Sample Selection

The data used in this research comes from companies whose common shareholders are registered on the ASE, with the exception of the banking industry. The banking industry was removed from the study's sample since its laws and practices differ from those of other businesses. Financial statements in the banking industry are the most conservative. Another explanation for the banking sector's omission from the study is that banking follows a distinct corporate governance framework established in 2017, and the sample selection follows Jordan's listed companies (September 2018). Thus, Jordanian companies' consecutive reports (2018–2022) were analyzed by the researcher.

The data collected for this research comprise characteristics of NBFIs listed on the ASE from 2018 to 2022. Statistics from public yearly reports are now accessible from the ASE, Datastream websites, and the World Bank. This study used a quantitative research method, and secondary data was also collected. The survey covered a sample of 80 ASE firms from 2018 to 2022 that were used to forecast the performance of companies using this approach. In this study, econometric techniques, such as Pedroni regression analysis, GMM systems, pooled mean formula, Im-Pesaran test (CIPS panel causality test), panel data regression test (Levin–Lin–Chu), and cross-sectional dependency tests, were employed.

Pedroni's team cointegration results demonstrate a long-term relationship between ownership concentration processes and firm value, and four-panel unit root tests demonstrated that ownership concentration dynamics are resilient to the initial variance. Similar findings were obtained from the research methodologies employed by the GMM and PMG, which showed that ownership concentration measures significantly affect company performance, as measured by Tobin's Q .

To the best of our knowledge, the methodology used in this study is the first to examine the ownership structure and firm performance of Jordanian companies. This methodology is suitable for the Jordanian setting and can yield the most desirable outcomes when applied to the study's aims and issues.

The goal of this study is to use Tobin's Q (TQ) as a statistic to assess the significance of ownership structure on organizational profitability. Tobin's Q (Tobin, 1982) is a collection of NBFIs evaluations based on a firm's market value. Tobin's Q is a useful tool for assessing competitiveness; it is a long-term price system that evaluates the present value of future cash flows using current and expected data (Buluma, 2022). Table 1 lists the measurement parameters used in this study.

Table 1. Measurements and sources of the variables.

Variable	Symbol	Measurement	Data Sources
Independent variables			
Ownership structure			
Managerial ownership	MO	(Enterprises of total stock + debt in books) Books guarantee that obligations are disclosed as a proportion of shareholdings by the board of managers' members to the total portfolio of securities allowed. The state's ownership in the corporation is calculated as a proportion of total ordinary shares. The proportion of the average household shareholdings concerning the entire number of units supplied. The proportion of shares held by institutions and other corporations concerning the total of ordinary shares. The percentage of shares held by blocking owners is 5% or more than the overall amount of equity.	Annual reports
State ownership	SO		Annual reports
Foreign ownership	FO		Annual reports
Ownership control	OC		Annual reports
Institutional ownership	IO		Annual reports
Dependent variables			
ROA	ROA		Thomson Datastream
Tobin's Q	TQ		
Control variables			
Firm size	FZ		Annual reports
Firm age	FA		Annual reports
Firm leverage	FLEV		Annual reports
Firm liquidity	FLIQ		Annual reports
Economic variables			
GDP			Annual reports
Inflation			World Bank
Interest rate			World Bank
Financial sector development			World Bank

3.2. Econometrics Procedure

3.2.1. Cross-Section Dependence Test

Pesaran (2004) developed the cross-section dependence test. A crucial aspect of this step is to eliminate cross-sectional dependence. The following regression analysis test uses standard ordinary least squares (OLS) for exponential growth:

$$Z_{it} = \varphi_i + \omega_i \gamma_{it} + \theta_{it} \quad (1)$$

They might be cross-sectionally interconnected for each i , $\vartheta_{it} \sim iid(0, \sigma_{i\theta}^2)$ an θ_{it} . The dependency on the crossing could manifest in a variety of ways. This might be due to unobserved particular θ_{it} and θ_{ij} for $i \neq j$. The predictors in the regression analysis may have Z_{it} that are either stationary or non-stationary. The cross-sectional dependence test was designed to address the following scenarios:

$$CD = \sqrt{\frac{2Q}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N R_{ij} \quad (2)$$

R_{ij} is a clear estimation of the residuals of pairwise association.

$$R_{ij} = R_{ij} = \frac{\sum_{q=1}^Q \pi_{ij} \pi_{ij}}{\sum_{q=1}^Q \pi_{iq}^{1/2} (\sum_{q=1}^Q \pi_{jq}^{1/2})} \quad (3)$$

π_{ij} in formula (3) is an ordinary least square, θ_{it} , and is specified as follows:

$$\pi_{it} = Z_{it} - \varphi_i - \omega_i y_{it} \quad (4)$$

3.2.2. Unit Root Test Panel

The feature of the variable's confirmations was determined in the second phase using the panel unit root test. There are two panel unit root test categories. The first category is composed of first-generation unit root checks that ignore pass dependence, and the second category comprises second-generation unit root testing that allows for pass increasing dependency (Moon & Perron, 2004; Pesaran, 2007).

There are numerous methods to verify panel cointegration. In this research, the Levin–Lin–Chu (LL) test, Maddala and Wu test, and Im–Pesaran–Shin (IPS) test were employed. For sufficient panel data, the LLC panel system root test is feasible. The LLC test limits personal association, and a pass means never eradicating it.

$$Z_{it} = \tau_i \chi_{i,t} t_{-1} + v_{it} \chi + \theta_{it} \quad (5)$$

v_{it} are the relativist factors, θ_{it} is iid $(0, \sigma_{i\theta}^2)$ and the $\tau_i = \tau$.

The IPS is the Pesaran panel root test module. The IPS unit root test was used to determine whether the factors exhibited stationarity or not. It builds on Levin and Lin’s work by allowing for variations in the coefficient of the lagged dependent variable. The IPS also suggests suitable t-bar test statistics based on the average Dickey–Fuller statistics across the variables. A continuity formula was used to evaluate the null hypothesis of the IPS test.

$$Z_{it} = \partial_{1i} + \partial_{2i} Z_{it-1} + \varepsilon_{it} \quad (6)$$

$$U_{IPS} = \frac{\sqrt{N}(t - [E \frac{t_i}{\rho_i} = 0])}{\sqrt{\text{var}[\frac{t_i}{\rho_i} = 0]}} N(0, 1) \quad (7)$$

$t = N^{-1} \sum_{i=1}^N t_i$ the times of $E[t_i /$

$\rho_i]$ var $[\frac{t_i}{\rho_i} = 0]$ Monte Carlo simulation can be found and analyzed in IPS.

Similarly, the Maddala and Wu metrics rely on the level of significance obtained from each individual unit root. When the test results are ongoing, the significance levels of $\delta_i (= 1, 2, 3, \dots, N)$ were independent and standardized between 0 and 1. This analysis utilized p-values, which can be expressed as follows:

$$T_{MW} = -2 \sum_{t=1}^N \log \delta_i \quad (8)$$

Where $-2 \sum_{t=1}^N \log \delta_i$ has a X^2 distribution to $2N$ stages or levels of liberty.

The ensured consistency shown here was also provided by Dakhllalh, Rashid, Abdullah, and Dakhllalh (2021).

$$Z_{MW} = \frac{\sqrt{N}[N^{-1} T_{MW} \varepsilon(-2 \log \delta_i)]}{\sqrt{\text{var}[-2 \log \delta_i]}} \quad (9)$$

This conclusion conforms to a reasonable daily allocation under the merger premise of independence (Shahbaz, Khan, & Tahir, 2013). However, the merging Im–Pesaran (CIPS) test, unlike the Levin, Lin, and IPS analysis, permits convergence dependency and has a unit root in the null hypothesis. Pesaran's continuous characteristic is the cross-sectional mean of delayed data. The CIPS t-statistic was developed by applying the merging augmented Dickey–Fuller ADF t-synergies:

$$CIPS = N^{-1} \sum_{i=1}^N t_i(N, T) \quad (10)$$

$t(N, T)$ is the t-statistic of the slope.

3.2.3. Panel Cointegration Test

If the sequences belong to the same series, the second stage estimate approach predicts a long-term cointegrating relationship between them. The multivariate cointegration test results of Pedroni (1999) and Pedroni (2004) were employed. Four of the seven recommended tests focus on adjusting for serial correlation within the group evaluations (segment data point, segment statistic, segment ADF statistic, and segment PP statistic), while the remaining three concentrate on amalgamating royalty rates for a more precise transnational calculation (collective ADF statistic, collective p statistic, and collective PP statistic).

The heterogeneity subgroup and homogeneous panel mean multivariate cointegration values were examined using the v-statistic for a panel as follows:

$$Z_v = \left(\sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} e_{it-1}^2 \right)^{-1} \quad (11)$$

The panel p statistic is given by the following equation:

$$Z_\rho (\sigma^2 \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} e_{it-1}^2) - 1 \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} (e_{it-1} \Delta e_{it} - \gamma_i) \quad (12)$$

The panel PP statistic is given by the following equation:

$$Z_\rho = (\sigma^2 \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} e_{it-1}^2) - 1/2 \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} (e_{it-1} \Delta e_{it} - \gamma_i) \quad (13)$$

The panel ADF statistic is given by the following equation.

$$Z_\rho^* = (S^{*2} \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} e_{it-1}^{*2}) - 1/2 \sum_{i=1}^N \sum_{t=1}^T L_{11i}^{-2} e_{it-1}^{*2} \Delta e_{it}^* \quad (14)$$

The group p-value is calculated using the following equation:

$$Z_\rho = \sum_{i=1}^N (\sum_{t=1}^T e_{it-1}^2) - 1 \sum_{t=1}^T (e_{it-1} \Delta e_{it} - \gamma_i) \quad (15)$$

The group PP statistic is given by the following equation:

$$Z_\rho = \sum_{i=1}^N (\sigma^2 \sum_{t=1}^T e_{it-1}^2) - 1/2 \sum_{t=1}^T (e_{it-1} \Delta e_{it} - \gamma_i) \quad (16)$$

The group ADF statistic is presented in the following equation:

$$Z_t^* = \sum_{t=1}^N (e^2 \sum_{t=1}^T S_t^2 e_{it-1}^{*2}) - 1/2 \sum_{t=1}^T (e_{it-1} - e_{it}^{*2}) \quad (17)$$

In the above equations, e_{it} represents the approximation equation residue (2.6), and L_{11i} represents the estimated long-run linear combination for Δe_{it} . The panel v-statistic does not support the null hypothesis of no cointegration with significantly positive outcomes, but other independent analyses do not maintain the null hypothesis that no cointegration occurs with significantly adverse moral codes (Pedroni, 1999; Pedroni, 2004). Pedroni (1999) provides significant results and other statistical software solutions.

3.2.4. The GMM Approach System

The GMM dynamic panel estimation method is appropriate for mathematical analysis when the contributory elements are related to earlier or present variance decomposition computations. This approximation is more useful than the quantity (N) of merging for a dynamic panel with a minor video sequence (T) (Roodman, 2006). In contrast, GMM analysis may provide inaccurate and misleading results as T increases, unless the gradient parameters remain unchanged throughout merging (Pedroni, 1999). A long-time-dimensional issue (T = 6, N = 80) was examined. Finally, the initial alterations were incorporated into the experimental GMM estimation as an extra adaptive optics discriminant validity assessment.

Allocating additional GMM estimation instruments in this system enhances the accuracy of the generated estimates. GMM estimation is available in one-step and two-step variants, as well as in the technique and first-difference variants. Two-step approximation is thought to be more effective (Arellano & Bover, 1995). According to Windmeijer (2005) the GMM variant of the approach mitigates this difficulty by including a statistical adjustment in the generated two-step correlation matrix. Therefore, the two-step GMM estimation approach was selected to conduct a regression analysis. The system estimation GMM specifies two screening procedures, and the Hansen J test validates the dependability of the sinusoidal parameters. To obtain a reliable result, two lags of the response

variable, coupled as instruments in the GMM multivariate techniques, were used. The Hansen J test result validates this strategy since, in most cases, the common belief that material possessions are mutually independent of royalties is not accepted. A GMM multiple regression analysis of the system was performed using:

$$\Delta(Tq_{it}) = \sigma + \rho\Delta(MO_{it}) + \tau\Delta(FO_{it}) + \varphi\Delta(GO_{it}) + \delta\Delta(IO_{it}) + \gamma\Delta(BH_{it}) + \varepsilon_{it} \quad (18)$$

3.2.5. Effect Panel of ECM Estimations for the Short Run and Long Run

The long- and short-run variables were used to determine the methodology of the pooled mean group (PMG) created by Pedroni (1999). Therefore, these variables are categorized as instances of a variety of parameters that can be described as uniform by both organizations: arbitral proceedings and building a better future. The PMG estimation assumes homogenous long-run values, providing a convenient intermediary choice for comparing various multiple regression analyses. Consequently, the PMG technique incorporates the following long-term interaction of variables: $\Delta TQ_{it} = \beta_1 + \sum_{j=1}^{p-1} \partial_{ij} \Delta TQ_{it-j} + \sum_{i=0}^{q-1} \gamma_{ij} \Delta MO_{ij-1} + \sum_{i=0}^{r-1} \delta_{ij} \Delta FO_{ij-1} + \sum_{i=0}^{s-1} \varphi_{ij} \Delta GO_{ij-1} + \sum_{i=0}^{z-1} \varphi_{ij} \Delta IO_{ij-1} + \sum_{i=0}^{w-1} \varphi_{ij} \Delta BH_{ij-1} + \pi_1 TQ_{ij-1} + \pi_2 MO_{ij-1} + \pi_3 FO_{ij-1} + \pi_4 GO_{ij-1} + \pi_5 IO_{ij-1} + \pi_6 BH_{ij-1} + \mu_{1it} + \varepsilon_{1it}$ (19)

4. FINDINGS AND DISCUSSION

The experimental results of the study are presented in this section. Table 2 provides the descriptive and inferential statistics for the parameters employed. According to the t-statistics, the mean is the data average, which is a reliable indicator of the computational power of the data. Consequently, the characteristics were spread evenly over the random data sample. The variance also determines whether distributed processing deviates from the mean. Larger data dispersion predicts a greater number of standard variations.

Table 2. Summary of descriptive statistics.

Variable	TQ	MO	SO	FO	OC	IO	ROA
Mean	0.796	0.003	0.034	0.012	0.213	0.132	0.677
Std. dev.	0.002	0.021	0.034	0.077	0.212	0.173	0.225
Skewness	-5.898	9.113	0.335	9.244	0.955	1.998	-0.753
Kurtosis	112.5	97.58	76.99	89.42	2.844	8.212	2.844

Table 3 provides the correlation coefficient of all variables considered during the empirical investigation to ensure that the multicollinearity problem does not generate any issues.

Table 3. Correlation analysis.

Probability	TQ	MO	SO	FO	OC	IO	ROA
TQ	1.210						
MO	0.652 0.068	1.210 -					
SO	0.786 0.879	0.057 0.665	1.210 0.642				
FO	-0.079 0.895	1.224 0.089	0.889 0.453	1.210 -			
OC	0.097 0.001	-0.398 0.001	-0.887 0.034	-0.022 0.826	1.210 -		
IO	-0.353 0.001	0.435 0.001	-0.568 0.001	-0.347 0.001	-0.639 0.001	1.210 -	
ROA	-0.310 0.001	-0.030 0.879	0.562 0.001	0.286 0.001	0.791 0.001	0.098 0.001	1.210 0.001

Moreover, since merger dependence has been established, it is important to account for this when selecting unit root and cointegration tests that are designed to accommodate such changes. The outcomes in Table 4 show that the

series is nonstationary at each step; even though the initial inconsistencies become constant, they are the first consolidated I(1).

Because the subgroups under consideration are absorbed within the same sequencing, the cointegration relationship between these components can be investigated in this test.

Table 4. Panel of the unit root test.

Variable	CD	Im et al.		Breitung		CIPS		LLC	
		At level	1 st diff.	At level	1 st diff.	At level	1 st diff.	At level	1 st diff.
TQ _{it}	48.70***	0.778* (0.899)	-67.44** (0.001)	2.246** (0.999)	19.87*** (0.001)	0.88**	4.67**	-1.12* (0.897)	-3.24* (0.001)
MO _{it}	22.76***	2.876* (0.662)	-89.22* (0.001)	3.643** (0.997)	23.99*** (0.001)	-2.97	-4.79*	0.676** (0.987)	-11.42* (0.001)
SO _{it}	26.22***	1.998* (0.896)	-77.34** (0.001)	2.674* (0.345)	28.67*** (0.001)	1.76***	-4.36*	-1.971* (0.745)	-5.56* (0.001)
FO _{it}	33.62***	0.985 (0.843)	-97.66* (0.001)	2.987** (0.687)	18.76*** (0.001)	1.88***	-5.56*	-1.887* (0.875)	-3.76** (0.001)
OC _{it}	28.79***	1.662* (1.442)	-11.226* (0.001)	7.443** (.998)	142.884*** (0.001)	1.98***	4.88*	0.869** (0.982)	-4.45* (0.001)
IO _{it}	30.67***	0.895 (0.477)	-13.73* (0.001)	2.987** (0.267)	181.78*** (0.001)	-2.78	-4.76*	-1.254* (0.377)	-8.66* (0.001)
ROA _{it}	37.22***	-2.661 (0.228)	-14.641* (0.001)	0.986* (0.428)	162.796*** (0.001)	-4.22	4.26*	-0.355* (0.421)	-2.84** (0.001)

Note: *, ** and *** denote rejection of the null hypothesis at the 1%, 5% and 10% levels, respectively.

Table 5 presents the results of the suggested panel data studies (Pedroni, 1999; Pedroni, 2004). Among the seven examinations conducted by Pedroni (2001) are dynamic panel analyses, with the others being subgroup median panel data tests, which are more often used to prepare for heterogeneity correlations.

Table 5. Pedroni cointegration test.

The cointegration panel test	Statistic	Probability
V statistic panel	-1.142*	0.7886
Rho statistic panel	8.315**	0.0001
PP statistic panel	-7.415*	0.0001
ADF statistic panel	-2.175*	0.0001
The cointegration test group	Statistic	Probability
Rho statistic group	9.311**	0.0001
PP statistic group	-6.314*	0.0001
ADF statistic group	-1.113**	0.0878

Note: There is no cointegration for the null hypothesis.

* and ** denote rejection of the null hypothesis at the 1% and 5% levels, respectively.

Several laticies were randomly selected to enhance the Schwartz estimation technique. In the case of no cointegration null hypothesis rejection, the calculation of the long-run relationship between the dependent and multiple regressions can be restarted. According to the data, a minority of the test techniques rejected the null hypothesis of no cointegration.

Table 6 displays the Hansen J test and second-order Johansen cointegration findings. Also, since the Hansen J error contradicts the null hypothesis in the vast majority of situations, the regression analysis is correct. Furthermore, the standard error does not reveal serial second-order associations, implying that second-order sequential composite reliability fails to reject the null hypothesis.

Table 6. GMM estimation system.

Dependent variables: TQ_{it} , ROA_{it}		
Independent variables	Coefficient	p-value
MO_{it}	0.001* (4.26)	0.008
SO_{it}	0.003*	0.062
FO_{it}	0.003* (16.21)	0.002
OC_{it}	0.001* (4.62)	0.048
IO_{it}	0.002* (13.67)	0.001
ROA_{it}	0.009* (8.24)	0.001
No. of observations	400	400
No. of companies	80	80
Lag	1	1
Wald test	18257.31	0.001
Hansen	187.35	0.977
The test correlation serial order 2	-1.01	0.421

Note: * denotes rejection of the null hypothesis at the 1% levels.

The data also revealed that ownership structure strategies (management, household, government, institutions, and blocking shareholders) have a considerable beneficial competitiveness influence on Jordanian NBFIs. Consequently, the selection of the PMG model was performed by choosing and analyzing the Hausman test results. The regression results show that there is no rejection of equivalence between the MG and PMG computations, and the findings are compatible with projected long-run adaptation. Hence, the considerations would have depended on the PMG results generated using prior distribution, but the appropriate lag time would be determined using the Schwartz Bayesian Criterion.

4.1. Return on Assets (ROA) and Ownership Structure

This study seeks to establish a relationship between firm size and asset returns. Table 1 summarizes the results of this model. The chi-squared statistic (565.32) was substantial, demonstrating that the model could calculate the ROA, and the R-squared value was 0.5351. This means that changes in company ownership account for 53.51% of the changes in financial firms' ROA. The variables of governmental ownership (-0.0497), corporate capital (-0.0341), and overseas investment (-0.0341) were negligible, as shown in Table 7. According to the figures, management ownership, state ownership, and foreign ownership do not influence the ROA of NBFIs. In contrast, the ownership concentration coefficient (-0.0079) was statistically significant. This shows that ownership concentration has a significantly negative influence on financial institutions' ROA; a 1% rise in concentrated ownership causes ROA to decrease by 3.57%. The study's findings support those of Charfeddine and Abdelaziz (2011) and Saleh, Halili, Zeitun, and Salim (2017), who discovered a negative correlation between ownership concentration and profitability.

This finding is contrary to the conclusions of researchers who found that institutional ownership and the performance of NBFIs are positively correlated (Alanazi, 2021; Alexiou, Mohamed, & Nellis, 2021; Alhassan & Mamuda, 2020; Oudat, Ali, Hezabr, & Qeshta, 2021). Furthermore, the findings of this research are in contrast to the findings of Lin and Fu (2017) and Cho and Kim (2007) who observed that NBFIs' results are linked to ownership concentration, which provides high-quality administration and enhances organizational administration. According to this study, corporate governance is associated with poor corporate strategies. Increased institutional ownership in NBFIs, particularly if institutional shareholders serve their own best interests at the cost of smaller investors, leads to a reduction in profitability (Kirimi, Kariuki, & Ocharo, 2022).

Table 7. Return on assets (ROA) and structure ownership.

Variable	Coefficient	Std. error	Z	p-value
MO	-0.0341*	0.022	-1.42*	0.084
SO	-0.0497*	0.031	-1.12*	0.412
FO	-0.0655*	0.018	-3.22*	0.085
OC	-0.0062*	0.016	-0.09*	0.911
IO	-0.0357*	0.011	-1.78*	0.216
R-squared	0.5351**	-	-	0.001
Chi ²	565.32***	-	-	0.000

Note: At 5%, the response variable ROA shows statistical significance.

*, ** and *** denote rejection of the null hypothesis at the 1%, 5% and 10% levels, respectively.

Table 8. Estimations of the pooled mean group.

Dependent variables: TQ_{it} , ROA_{it}					
Short-run estimations			Long-run estimations		
Variable	Coefficients	p-value	Variables	Coefficients	p-value
ΔMO_{it}	0.241 (0.784)	0.832	MO_{it}	0.467* (18.743)	0.001
ΔSO_{it}	0.226 (0.963)	0.063	ΔSO_i	0.622** (9.052)	0.001
ΔFO_{it}	0.298* (14.914)	0.001	FO_{it}	0.584** (10.531)	0.001
ΔOC_{it}	0.698** (4.735)	0.073	OC_{it}	0.674 (9.832)	0.001
IO_{it}	0.143 (0.275)	0.975	IO_{it}	0.898 (10.475)	0.001
ROA_{it}	0.646** (8.647)	0.003	ROA_{it}	0.317* (8.316)	0.001
-	-0.078* (-4.362)	0.768	ect_{t-1}	-0.067* (-5.213)	0.001

The ideal latency period [1, 1, 1, 1, 1, 1]

Note: * and ** denote rejection of the null hypothesis at the 1% and 5% levels, respectively.

Table 8 shows the short and long-term findings. The long-run correlations for MO_{it} , FO_{it} , OC_{it} , IO_{it} , and ROA_{it} are all statistically positive at the 1% level. This suggests that these factors have a significant long-term association with the dependent variables. In contrast, the short-run coefficients for FO_{it} , OC_{it} , and ROA_{it} are positive but not statistically significant, implying that their short-term influence is minimal. The numbers in parenthesis are the t-values for these coefficients, which indicate their importance. In the short term, FO_{it} has a t-value of 14.914, suggesting a high degree of significance. However, the t-value for FO_{it} is 0.298, indicating it is not significant. According to Banerjee, Dolado, and Mestre (1998) and Jwair, Zoghalmi, and Al-Khazaleh (2024) a relatively substantial value further indicates the structure. In the absence of changes in the independent variables, they expected to exhibit significant negative values, which aligns with the study's findings. The coefficient for ect_{t-1} is -0.067 with a t-value of -5.213, significant at the 1% level. This suggests that deviations from the long-term equilibrium are corrected by 18% annually, meaning that any short-term deviations will gradually return to the long-term trend. Moreover, MO_{it} and IO_{it} are significantly positively affected in the long run, as evidenced by their t-values of 18.743 and 10.475, respectively, both at the 1% significance level. This indicates strong, positive effects of managerial ownership and insider ownership on the dependent variables over the long term. The long-term indications for all variables are consistent with theoretical expectations.

This study investigates the influence of governance model processes on the outcomes of Jordanian NBFIs from 2018 to 2022; thus, more sophisticated empirical methodologies can be employed. The findings show that management engagement has a positive and substantial impact on the performance of NBFIs. This study challenges the findings of previous studies (Dakhallh et al., 2019b; Mohammed, 2018). Furthermore, similar to previous results, there is a strong and positive connection between management engagement and NBFIs (Alabdullah, 2018; Arora &

Sharma, 2016). This illustrates that operating profit may be a deciding factor in corporate governance, as managers or investors will have a higher stake in the business if it is acknowledged for its efficacy and financial worth. In contrast to the preponderance of empirical studies, our findings support the idea that modest quantities of management ownership may impair business performance owing to directors' remuneration and high levels of ownership concentration.

Therefore, in the middle stage, managerial ownership is significant and beneficial. This research proves the agency hypothesis, which states that because shares and partnerships are scattered and consist of well-diversified holdings, investors transfer budgetary and other judgments to firm leaders. Furthermore, the findings imply that foreign investment boosts the profitability of NBFIs. This is consistent with the findings of previous studies (Wang & Shailer, 2017; Zraiq & Fadzil, 2018) but is incompatible with that of other studies (Shen, Au, & Yi, 2018). The supremacy of foreign investment in Jordan indicates that it is directly tied to the performance of NBFIs, where a family has a stronger need to maximize the rate of production to satisfy its needs and achieve greater sales for these institutions.

Foreign owners have better internal information than other investors and can predict the future of a firm more accurately. This advantage assists management ownership, foreign ownership, institutional ownership, and ownership control in making informed judgments about reducing or increasing investment. Such results may be useful in directing business funding and investment choices as well as providing fresh data on the application of current agency theory. Foreign ownership, institutional ownership, and return on assets serve as completely designed instruments for a firm's strategic decisions, resulting in reduced transaction costs.

5. CONCLUSIONS

In summary, the results of this study demonstrate that government ownership increases NBFIs profitability. The results corroborate those of previous studies (Dakhlallah et al., 2019b; Liao & Young, 2012). Nonetheless, the current findings contradict those of other researchers, who found a strong negative relationship between government ownership and NBFIs efficiency (Ting et al., 2016; Zeitun, 2009). The data shows that the government's support trumps the "grasping palm" and that the government's intervention enhances the quality of NBFIs.

Furthermore, the data demonstrates that influence matters rather than just ownership. More precisely, new research adds to the data and demonstrates that a larger degree of state ownership enhances the effectiveness of NBFIs. Because shareholder activism in Jordan is low and police officers are fairly weak, the government, as a majority investor, can assist in terms of assets and funding. Its larger shareholding may also positively influence the fixing of structural issues in Jordanian public and multiracial firms (Zraiq & Fadzil, 2018).

In addition, the findings of the present study provide practical suggestions for ideal ownership arrangements to improve the performance of Jordanian NBFIs. The strategic conclusion is that educational establishments and reforms are crucial to Jordan's capital stock development and corporate privatization. Moreover, when financial statements and institutional ownership are used as independent variables, the results indicate a positive relationship between institutional ownership and firm performance.

These findings are consistent with some research (Dakhlallah et al., 2019a; Lin & Fu, 2017) but contradict other studies (Arora & Sharma, 2016; Khamis et al., 2015; Lin & Fu, 2017). This indicates that managerial ownership and NBFIs profits are inextricably intertwined in Jordan. Finally, as experimentally shown in earlier research, ROA ownership has a regular favorable and substantial influence on the profitability of NBFIs. This finding contradicts those of some studies that found a considerable negative impact (Dakhlallah et al., 2019a; Mohammed, 2018). According to these findings, the market pays enterprises' block owners. According to the activity idea, the markets are concerned that strong shareholders may use their influence to extend their holdings at the expense of smaller shareholders, favoring dispersed managerial ownership. Real-life scenarios are predicted to become increasingly typical in developing Asian countries where financial regulation is considered a minor issue.

Therefore, the positive influence of ROA for the ownership structure of NBFIs is consistent with the hypothesis. According to the findings, increasing block ownership in Jordanian firms is associated with lower economic rates, showing that the engagement of a large ROA is the greatest advantage for other investors.

6. PRACTICAL IMPLICATIONS AND RECOMMENDATIONS

Based on the results of this study, several implications are presented. For example, structure affects the outcomes of Jordan's NBFIs, and managerial ownership (MO) and ROA have the greatest impact on financial success. Consequently, NBFIs should ideally adjust their arrangements to improve NBFIs.

Furthermore, the analysis revealed a substantial inverse relationship between government ownership and MO. On the contrary, state ownership has a minimal influence on return on shares, return on assets, and return on equity. The research found that state ownership is ineffective owing to the government's inadequate control attempts. Banks with a high proportion of public participation should consider full or partial legalization to enhance the rules of listed firms, which are crucial for the performance of NBFIs. Third, a significant inverse link was found between leadership ownership concentration and MO and foreign ownership (FO), as well as a beneficial correlation between ownership structure and ROA.

In addition, the research indicated that a negative connection may be due to managers' control over a high degree of property ownership and acquiring additional powers to influence strategic choices that benefit themselves rather than striving to enhance company performance. Jordan's policymakers should implement a managerial ownership strategy that regulates the proportion of NBFIs' executives and the number of shares that they can own. This restricts their authority and subjects them to examination by other stock investors.

Furthermore, the analysis revealed a negative relationship between company ownership and return on assets. A considerable percentage of the institutional contributions may be attributable to negative associations. Consequently, a large amount of institutional ownership, particularly by a small number of institutional investors, tends to result in choices for self-benefits rather than enhancing corporate governance.

Since institutional ownership does not influence financial performance indicators, executive directors of Jordan's NBFIs must ensure the correct amount of institutional ownership to prevent a negative impact on their return on assets. This report also suggests that institutional investors' proportion of equity shares should be limited.

The research indicates that foreign ownership benefits the performance of NBFIs. Nevertheless, this study discovered a minor influence between foreign ownership and managerial ownership, ROA, and foreign ownership, as well as a strong negative link between overseas investment and IO. The study determined that this outcome was caused by foreign companies' lack of control over banking activities.

As a result, the report recommends that bank authorities plan and allocate the role and position of international investors in decision making. This guarantees that their impact is evident in all the executive financial decisions.

7. LIMITATIONS AND SUGGESTIONS FOR FUTURE STUDIES

This study has several limitations. Initially, the research only examined one aspect (ownership concentration) of company administration in NBFIs. As a result, the research attempted to conduct a supplemental study covering all other aspects of corporate governance, such as the composition of a company's executives, the autonomy of the board, the committee's skills, the knowledge and skills of the committee members, and the council members' strategic orientation. Moreover, the research concentrated on Jordanian firms registered on the ASE in the non-banking sector. Hence, comparable research encompassing a larger area, particularly the Middle East region, such as Palestine, Syria, and Lebanon, is suggested. Considering these constraints, the findings of this study add to the findings of previous studies on the management structure of firms listed on stock markets.

Funding: This study received no specific financial support.

Institutional Review Board Statement: Not applicable.

Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

Data Availability Statement: Suhaib Mohammed Sulaiman Alkhazaleh can provide the supporting data of this study upon a reasonable request.

Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

REFERENCES

- Abed, S., Al-Attar, A., & Suwaidan, M. (2012). Corporate governance and earnings management: Jordanian evidence. *International Business Research*, 5(1), 216–225.
- Abedalqader, A.-T. A., Abdulmohsen, A.-A. H., & Abdulrahman, A.-S. S. (2016). The effect of corporate governance mechanisms on earnings management: Evidence from Saudi Arabia. *Review of International Business and Strategy*, 26(1), 2–32. <https://doi.org/10.1108/RIBS-10-2013-0100>
- Aguilera, R. V., Judge, W. Q., & Terjesen, S. A. (2018). Corporate governance deviance. *Academy of Management Review*, 43(1), 87–109.
- Agyei, A., & Owusu, A. R. (2014). The effect of ownership structure and corporate governance on capital structure of Ghanaian listed manufacturing companies. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(1), 109–118. <https://doi.org/10.6007/ijarafms/v4-i1/547>
- Ahmed, Z., Hussin, M. R. A., & Pirzada, K. (2022). The impact of intellectual capital and ownership structure on firm performance. *Journal of Risk and Financial Management*, 15(12), 1–15. <https://doi.org/10.3390/jrfm15120553>
- Al-Khazaleh, S., Badwan, D. N., Eriqat, I., & El Shlmani, Z. (2024). COVID-19 pandemic and linkage between stock markets in Middle Eastern countries. *Journal of Chinese Economic and Foreign Trade Studies*.
- Al-Khazaleh, S., Ibrahim, H., MIA, M. A., & Badwan, N. (2023). Board structure and firm performance: Evidence from non-bank financial institutions in Jordan. *Journal of Namibian Studies: History Politics Culture*, 35, 1059–1092. <https://doi.org/10.7176/rjfa/14-4-04>
- Al-Khazaleh, S. M. S., Zulkafli, A. H., & Dargiri, M. N. (2021). A conceptual model for the role of corporate governance in increasing venture capitalist firms performance in the uae. *Turkish Online Journal of Qualitative Inquiry*, 12(5), 1–9.
- Alabdullah, T. T. Y. (2018). The relationship between ownership structure and firm financial performance: Evidence from Jordan. *Benchmarking: An International Journal*, 25(1), 319–333. <https://doi.org/10.1108/bij-04-2016-0051>
- Alabdullah, T. T. Y., Yahya, S., & Ramayah, T. (2014). Corporate governance mechanisms and Jordanian companies' financial performance. *Asian Social Science*, 10(22), 247. <https://doi.org/10.5539/ass.v10n22p247>
- Alanazi, A. S. (2021). *The impact of ownership structure on firms' performance capital markets authority*. Retrieved from <https://cma.org.sa/Pages/default.aspx>
- Alexiou, C., Mohamed, A., & Nellis, J. (2021). The impact of institutional investors on firms' performance in the context of financialization. *International Journal of Finance & Economics*, 26(1), 290–309. <https://doi.org/10.1002/ijfe.1790>
- Alhassan, I., & Mamuda, A. U. (2020). Ownership structure and financial performance of quoted financial firms in Nigeria. *International Journal of Accounting Research*, 5(4), 116–124. <https://doi.org/10.12816/0059063>
- Alkurdi, A., Hamad, A., Thneibat, H., & Elmarzouky, M. (2021). Ownership structure's effect on financial performance: An empirical analysis of Jordanian listed firms. *Cogent Business & Management*, 8(1), 1939930. <https://doi.org/10.1080/23311975.2021.1939930>
- Allahham, M., Sharabati, A., Al-Sager, M., Sabra, S., Awartani, L., & Khraim, A. (2024). Supply chain risks in the age of big data and artificial intelligence: The role of risk alert tools and managerial apprehensions. *Uncertain Supply Chain Management*, 12(1), 399–406. <https://doi.org/10.5267/j.uscm.2023.9.012>

- Amoako-Gyampah, K., Boakye, K. G., Adaku, E., & Famiyeh, S. (2019). Supplier relationship management and firm performance in developing economies: A moderated mediation analysis of flexibility capability and ownership structure. *International Journal of Production Economics*, 208, 160-170. <https://doi.org/10.1016/j.ijpe.2018.11.021>
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29-51. [https://doi.org/10.1016/0304-4076\(94\)01642-d](https://doi.org/10.1016/0304-4076(94)01642-d)
- Arnold, J. M., Mattoo, A., & Narciso, G. (2008). Services inputs and firm productivity in Sub-Saharan Africa: Evidence from firm-level data. *Journal of African Economies*, 17(4), 578-599. <https://doi.org/10.1093/jae/ejm042>
- Arora, A., & Sharma, C. (2016). Corporate governance and firm performance in developing countries: Evidence from India. *Corporate Governance (Bingley)*, 16(2), 420-436. <https://doi.org/10.1108/CG-01-2016-0018>
- Badwan, N., Al-Zoubi, L., & Al-Khazaleh, S. (2023). Financial risk management in the supply chain using business intelligence and big data. *International Journal of Management and Business Research*, 7(1), 1-27.
- Badwan, N., & Awad, A. W. (2023). The influence of corona pandemic on stock returns of companies listed on the Palestine stock exchange. *Review of Accounting and Finance*, 22(4), 466-488.
- Banerjee, A., Dolado, J., & Mestre, R. (1998). Error-correction mechanism tests for cointegration in a single-equation framework. *Journal of Time Series Analysis*, 19(3), 267-283. <https://doi.org/10.1111/1467-9892.00091>
- Beck, T., Demirgüç-Kunt, A. S. L. I., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? *The Journal of Finance*, 60(1), 137-177. <https://doi.org/10.1111/j.1540-6261.2005.00727.x>
- Beltrán, A. (2020). Informal sector competition and firm productivity. *Applied Economics Letters*, 27(15), 1243-1246. <https://doi.org/10.1080/13504851.2019.1676383>
- Benfratello, L., & Sembenelli, A. (2006). Foreign ownership and productivity: Is the direction of causality so obvious? *International Journal of Industrial Organization*, 24(4), 733-751. <https://doi.org/10.1016/j.ijindorg.2005.07.012>
- Blair, M. M., & Stout, L. A. (2017). A team production theory of corporate law. In (pp. 169-250). Gower: Corporate Governance.
- Boubakri, N., Cosset, J.-C., & Saffar, W. (2013). The role of state and foreign owners in corporate risk-taking: Evidence from privatization. *Journal of Financial Economics*, 108(3), 641-658. <https://doi.org/10.1016/j.jfineco.2012.12.007>
- Brickley, J. A., Lease, R. C., & Smith, C. W. (1988). Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20(C), 267-291. [https://doi.org/10.1016/0304-405x\(88\)90047-5](https://doi.org/10.1016/0304-405x(88)90047-5)
- Buluma, F. C. (2022). *Corporate governance, idiosyncratic risk, economic factors, and value of non-financial companies listed at the nairobi securities exchange*. Doctoral Dissertation, University of Nairobi.
- Charfeddine, L., & Abdelaziz, E. (2011). Institutional ownership and firm performance: Evidence from France. *The IUP Journal of Behavioral Finance*, 7(4), 35-46.
- Chen, D., Li, S., Xiao, J. Z., & Zou, H. (2014). The effect of government quality on corporate cash holdings. *Journal of Corporate Finance*, 27, 384-400. <https://doi.org/10.1016/j.jcorpfin.2014.05.008>
- Cho, D. S., & Kim, J. (2007). Outside directors, ownership structure and firm profitability in Korea. *Corporate Governance: An International Review*, 15(2), 239-250. <https://doi.org/10.1111/j.1467-8683.2007.00557.x>
- Dakhlallah, M. M., Rashid, N., Abdullah, W. A. W., & Al Shehab, H. J. (2020). Audit committee and Tobin's Q as a measure of firm performance among Jordanian companies. *Jour of Adv Research in Dynamical & Control Systems*, 12(1), 28-41. <https://doi.org/10.5373/jardcs/v12i1/20201005>
- Dakhlallah, M. M., Rashid, N., Abdullah, W. A. W., & Dakhlallah, A. M. (2021). Ownership structure and firm performance: Evidence from Jordan. *The Journal of Contemporary Issues in Business and Government*, 27(2), 79-90. <https://doi.org/10.47750/cibg.2021.27.02.011>
- Dakhlallah, M. M., Rashid, N. M., Abdullah, W. A. W., & Dakhlallah, A. M. (2019a). The effect of ownership structure on firm performance among jordanian public shareholders companies: Board independence as a moderating variable. *International Journal of Academic Research in Progressive Education and Development*, 8(3), 13-31. <https://doi.org/10.6007/ijarped/v8-i3/6212>

- Dakhlallah, M. M., Rashid, N. M. M., Abdullah, W. A. W., & Dakhlallah, A. M. (2019b). The moderating effect of the ceo duality towards the influence of the ownership structure on the firm performance among Jordanian public shareholders companies. *International Journal of Academic Research in Progressive Education and Development*, 8(3), 32–49. <https://doi.org/10.6007/ijarped/v8-i3/6213>
- Drobetz, W., Ehlert, S., & Schröder, H. (2021). Institutional ownership and firm performance in the global shipping industry. *Transportation Research Part E: Logistics and Transportation Review*, 146, 102152. <https://doi.org/10.1016/j.tre.2020.102152>
- Ducassy, I., & Guyot, A. (2017). Complex ownership structures, corporate governance and firm performance: The French context. *Research in International Business and Finance*, 39, 291-306. <https://doi.org/10.1016/j.ribaf.2016.07.019>
- Duggal, R., & Millar, J. A. (1999). Institutional ownership and firm performance: The case of bidder returns. *Journal of Corporate Finance*, 5(2), 103-117. [https://doi.org/10.1016/s0929-1199\(98\)00018-2](https://doi.org/10.1016/s0929-1199(98)00018-2)
- Dunning, J. H. (1977). *Trade, location of economic activity and the MNE: A search for an eclectic approach the international allocation of economic activity*. London: Palgrave Macmillan.
- Eriqat, I. O., & Al-Khazaleh. (2023). The impact of corporate-and country-level governance mechanisms on the firm's disclosure quality: Evidence from MENA countries. *Global Business & Finance Review*, 28(7), 122-137. <https://doi.org/10.17549/gbfr.2023.28.7.122>
- Fauzi, F., & Locke, S. (2012). Board structure, ownership structure and firm performance: A study of New Zealand listed firms. *Asian Academy of Management Journal of Accounting and Finance*, 8(2), 43–67.
- Faza, M., Badwan, N., Hamdan, M., & Al-Khazaleh, S. (2023). The effect of accounting disclosure on investment decision-making—a case study sample of investors in companies listed on Palestine stock exchange.
- Gao, L., Han, J., Kim, J.-B., & Pan, Z. (2024). Overlapping institutional ownership along the supply chain and earnings management of supplier firms. *Journal of Corporate Finance*, 84, 102520. <https://doi.org/10.1016/j.jcorpfin.2023.102520>
- Goergen, M., & Mira, S. (2023). Measuring the ownership and control of UK listed firms: Some methodological challenges. *The British Accounting Review*, 55(6), 101272. <https://doi.org/10.1016/j.bar.2023.101272>
- Griffith, R. (1999). Using the ARD establishment level data to look at foreign ownership and productivity in the United Kingdom. *The Economic Journal*, 109(456), 416-442. <https://doi.org/10.1111/1468-0297.00443>
- Halkos, G. E., & Tzeremes, N. G. (2010). The effect of foreign ownership on SMEs performance: An efficiency analysis perspective. *Journal of Productivity Analysis*, 34(2), 167–180. <https://doi.org/10.1007/s11123-010-0174-2>
- Hennart, J. F. (2012). Emerging market multinationals and the theory of the multinational enterprise. *Global Strategy Journal*, 2(3), 168-187. <https://doi.org/10.1111/j.2042-5805.2012.01038.x>
- Hill, J. (2021). UK listing review. *HM Treasury*.
- Huang, C.-H., & Yang, C.-H. (2016). Ownership, trade, and productivity in Vietnam's manufacturing firms. *Asia-Pacific Journal of Accounting & Economics*, 23(3), 356-371. <https://doi.org/10.1080/16081625.2016.1188449>
- Iwasaki, I., Ma, X., & Mizobata, S. (2022). Ownership structure and firm performance in emerging markets: A comparative meta-analysis of East European EU member states, Russia and China. *Economic Systems*, 46(2), 100945. <https://doi.org/10.1016/j.ecosys.2022.100945>
- Javaid, O. (2022). An Islamic vision and approach for entrepreneurship: Developing through a multi-stage comparative analysis of systems, ideologies and code of ethics. *International Journal of Ethics and Systems*, 38(1), 125-146. <https://doi.org/10.1108/ijoes-03-2021-0066>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jiang, B.-B., Laurenceson, J., & Tang, K. K. (2008). Share reform and the performance of China's listed companies. *China Economic Review*, 19(3), 489-501. <https://doi.org/10.1016/j.chieco.2008.02.001>
- Jin, R., & Hu, H. W. (2024). Liability of ownership origin, corporate philanthropy, and desire for control in chinese family firms. *Entrepreneurship Theory and Practice*. <https://doi.org/10.1177/10422587231226111>

- Jwair, A. M., Zoghلامي, F., & Al-Khazaleh, S. M. (2024). Using the ARDL approach, measure the impact of global oil price fluctuations on foreign reserves. *Cuadernos de Economía*, 47(133), 153-165.
- Khamis, R., Hamdan, A. M., & Elali, W. (2015). The relationship between ownership structure dimensions and corporate performance: Evidence from Bahrain. *Australasian Accounting, Business and Finance Journal*, 9(4), 38-56. <https://doi.org/10.14453/aabfj.v9i4.4>
- Kirimi, P., Kariuki, S., & Ocharo, K. (2022). Ownership structure and financial performance: Evidence from Kenyan commercial banks. *PLoS One*, 17(5), e0268301. <https://doi.org/10.1371/journal.pone.0268301>
- Knack, S., & Xu, L. C. (2017). Unbundling institutions for external finance: Worldwide firm-level evidence. *Journal of Corporate Finance*, 44, 215-232. <https://doi.org/10.1016/j.jcorpfin.2017.02.003>
- Kumar, N., & Singh, J. P. (2013). Effect of board size and promoter ownership on firm value: Some empirical findings from India. *Corporate Governance: The International Journal of Business in Society*, 13(1), 88-98. <https://doi.org/10.1108/14720701311302431>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1999). The quality of government. *Journal of Law, Economics, and Organization*, 15(1), 222-279.
- Lai, S., Liang, H., Liu, Z., Pu, X., & Zhang, J. (2022). Ownership concentration among entrepreneurial firms: The growth-control trade-off. *International Review of Economics & Finance*, 78, 122-140. <https://doi.org/10.1016/j.iref.2021.11.005>
- Lassoued, N., Sassi, H., & Attia, M. B. R. (2016). The impact of state and foreign ownership on banking risk: Evidence from the MENA countries. *Research in International Business and Finance*, 36, 167-178. <https://doi.org/10.1016/j.ribaf.2015.09.014>
- Liao, J., & Young, M. (2012). The impact of residual government ownership in privatized firms: New evidence from China. *Emerging Markets Review*, 13(3), 338-351. <https://doi.org/10.1016/j.ememar.2012.02.004>
- Lin, Y. R., & Fu, X. M. (2017). Does institutional ownership influence firm performance? Evidence from China. *International Review of Economics & Finance*, 49, 17-57. <https://doi.org/10.1016/j.iref.2017.01.021>
- Lindemanis, M., Loze, A., & Pajuste, A. (2022). The effect of domestic to foreign ownership change on firm performance in Europe. *International Review of Financial Analysis*, 81, 101341. <https://doi.org/10.1016/j.irfa.2019.04.004>
- Liu, C., & He, J. (2024). Does common institutional ownership improve the similarity of behavior between firms? Evidence from China. *Pacific-Basin Finance Journal*, 83, 102225. <https://doi.org/10.1016/j.pacfin.2023.102225>
- Liu, X., Boubaker, S., Liao, J., & Yao, S. (2024). The rise of common state ownership and corporate environmental performance. *The British Accounting Review*, 101368. <https://doi.org/10.1016/j.bar.2024.101368>
- Loay, S. J., Jamal, A.-S., & Mah'd, O. A. I. (2018). Ownership structure impact on Jordanian banks' financial performance. *Asian Journal of Accounting and Governance*, 9(4), 1-10. <https://doi.org/10.17576/ajag-2018-09-01>
- Luong, H., Moshirian, F., Nguyen, L., Tian, X., & Zhang, B. (2017). How do foreign institutional investors enhance firm innovation? *Journal of Financial and Quantitative Analysis*, 52(4), 1449-1490.
- Mai, A., Bilbard, L., & Som, A. (2009). Conducting business in Vietnam: A brief for international managers. *Global Business and Organizational Excellence*, 28(3), 55-78. <https://doi.org/10.1002/joe.20259>
- Makhlouf, M. H., Binti Laili, N. H., & Basah, M. Y. A. (2014). Board of director characteristics and firms performance among Jordanian firms, proposing conceptual framework. *International Journal of Technical Research*, 2(4), 18-23.
- Mang'anyi, E. E. (2011). Ownership Structure and corporate governance and its effects on performance: A case of selected banks in Kenya. *International Journal of Business Administration*, 2(3), 2-18. <https://doi.org/10.5430/ijba.v2n3p2>
- McCann, B. T., & Vroom, G. (2009). Ownership structure, profit maximization, and competitive behaviour. In (pp. 10510). New York: Academy of Management Briarcliff Manor.
- Mohammed, A. M. (2018). The impact of ownership structure on firm performance: Evidence from Jordan. *Academy of Accounting and Financial Studies Journal*, 22(5), 1-9.
- Moon, H. R., & Perron, B. (2004). Testing for a unit root in panels with dynamic factors. *Journal of Econometrics*, 122(1), 81-126. <https://doi.org/10.1016/j.jeconom.2003.10.020>

- Oudat, M. S., Ali, B. J., Hezabr, A., & Qeshta, M. (2021). Ownership structure and commercial banks performance: An empirical study from emerging markets. *Revista Geintec-Gestao Inovacao E Tecnologias*, 11(2), 1654-1665. <https://doi.org/10.47059/revistageintec.v11i2.1788>
- Ozdemir, O. (2020). Board diversity and firm performance in the US tourism sector: The effect of institutional ownership. *International Journal of Hospitality Management*, 91, 102693. <https://doi.org/10.1016/j.ijhm.2020.102693>
- Paunov, C., & Rollo, V. (2016). Has the internet fostered inclusive innovation in the developing world? *World Development*, 78, 587-609. <https://doi.org/10.1016/j.worlddev.2015.10.029>
- Pedroni, P. (1999). Critical values for cointegration tests in heterogeneous panels with multiple regressors. *Oxford Bulletin of Economics and Statistics*, 61(S1), 653-670. <https://doi.org/10.1111/1468-0084.0610s1653>
- Pedroni, P. (2001). Purchasing power parity tests in cointegrated panels. *Review of Economics and Statistics*, 83(4), 727-731. <https://doi.org/10.1162/003465301753237803>
- Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric Theory*, 20(3), 597-625. <https://doi.org/10.1017/s0266466604203073>
- Pesaran, M. H. (2004). *General diagnostic tests for cross-section dependence in panels*. Cambridge Working Papers in Economics, No. 0435, Faculty of Economics, University of Cambridge.
- Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22(2), 265-312.
- Roodman, D. (2006). *How to do xtabond2: An introduction to 'difference and 'system*. GMM in STATA', Center for Global Development Working Paper No. 103.
- Saleh, A. S., Halili, E., Zeitun, R., & Salim, R. (2017). Global financial crisis, ownership structure and firm financial performance: An examination of listed firms in Australia. *Studies in Economics and Finance*, 34(4), 447-465.
- Shahbaz, M., Khan, S., & Tahir, M. I. (2013). The dynamic links between energy consumption, economic growth, financial development and trade in China: Fresh evidence from multivariate framework analysis. *Energy Economics*, 40, 8-21. <https://doi.org/10.1016/j.eneco.2013.06.006>
- Shen, N., Au, K., & Yi, L. (2018). Diversification strategy, ownership structure, and financial crisis: Performance of Chinese private firms. *Asia-Pacific Journal of Financial Studies*, 47(1), 54-80. <https://doi.org/10.1111/ajfs.12203>
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, 52(2), 737-783.
- Song, J., Wei, Y. S., & Wang, R. (2015). Market orientation and innovation performance: The moderating roles of firm ownership structures. *International Journal of Research in Marketing*, 32(3), 319-331. <https://doi.org/10.1016/j.ijresmar.2015.03.005>
- Soufeljil, M., Sghaier, A., Kheireddine, H., & Mighri, Z. (2016). Ownership structure and corporate performance: The case of listed Tunisian firms. *Journal of Business & Financial Affairs*, 5(4), 1-8. <https://doi.org/10.4172/2167-0234.1000222>
- Tahir, S. H., & Sabir, H. M. (2014). Impact of family ownership on market value of a firm: A comparative analysis of family and non-family companies listed at Karachi stock exchange (Pakistan). *International Journal of Management and Sustainability*, 3(12), 673-683.
- Ting, I. W. K., Kweh, Q. L., Lean, H. H., & Ng, J. H. (2016). Ownership structure and firm performance: The role of R&D. *Institutions and Economics*, 1-21.
- Tobin, J. (1982). Money and finance in the macroeconomic process. *Journal of Money, Credit and Banking*, 14(2), 171-204.
- Ullah, B., Wei, Z., & Xie, F. (2014). ISO certification, financial constraints, and firm performance in Latin American and Caribbean countries. *Global Finance Journal*, 25(3), 203-228. <https://doi.org/10.1016/j.gfj.2014.10.003>
- Ullah, W., Ali, S., & Mehmood, S. (2017). Impact of excess control, ownership structure and corporate governance on firm performance of diversified group firms in Pakistan. *Business & Economic Review*, 9(2), 49-72. <https://doi.org/10.22547/ber/9.2.3>
- Vu, M.-C., Phan, T. T., & Le, N. T. (2018). Relationship between board ownership structure and firm financial performance in transitional economy: The case of Vietnam. *Research in International Business and Finance*, 45, 512-528. <https://doi.org/10.1016/j.ribaf.2017.09.002>

- Wang, J., & Wang, X. (2015). Benefits of foreign ownership: Evidence from foreign direct investment in China. *Journal of International Economics*, 97(2), 325-338. <https://doi.org/10.2139/ssrn.2581295>
- Wang, K. T., & Shailer, G. (2017). Family ownership and financial performance relations in emerging markets. *International Review of Economics & Finance*, 51, 82-98. <https://doi.org/10.1016/j.iref.2017.05.014>
- Webster, A., Okafor, G., & Barrow, C. (2022). Foreign ownership and firm performance in Sub-Saharan Africa. *Transnational Corporations Review*, 14(4), 418-437. <https://doi.org/10.1080/19186444.2022.2078630>
- Wijethilake, C., Ekanayake, A., & Perera, S. (2015). Board involvement in corporate performance: Evidence from a developing country. *Journal of Accounting in Emerging Economies*, 5(3), 250-268. <https://doi.org/10.1108/jaee-12-2012-0050>
- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, 126(1), 25-51.
- World Bank Group. (2014). *The world bank group A to Z 2015*: World Bank Publications.
- Zeitun, R. (2009). The non-linear effects of ownership structure on corporate performance: Evidence from emerging market. *Corporate Ownership and Control*, 7(2), 104. <https://doi.org/10.22495/cocv7i2p8>
- Zraiq, M. A. A., & Fadzil, F. H. B. (2018). The impact of ownership structure on firm performance: Evidence from Jordan. *International Journal of Accounting, Finance and Risk Management*, 3(1), 1-4.

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