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THE IMPACT OF SOVEREIGN WEALTH FUNDS (PUBLIC INVESTMENT FUND) ON THE PERFORMANCE OF LISTED COMPANIES IN THE SAUDI STOCK EXCHANGE MARKET AN EMPIRICAL STUDY (2016–2024)

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ABSTRACT

This study examines the effect of the Saudi Public Investment Fund, as a sovereign wealth fund, on the financial performance and capital structure of non-financial companies listed on the Saudi Stock Exchange from 2016 to 2024. Following its restructuring under Saudi Vision 2030, the fund has become a strategic institutional investor with significant domestic equity holdings. Despite its growing role, empirical evidence on its firm-level impact remains limited. Using panel data regression techniques and controlling firm-specific characteristics, the study tests the implications of signalling theory and pecking order theory for fund ownership. The findings reveal that fund ownership significantly enhances firm financial performance, measured by return on assets, indicating that institutional government investment strengthens market confidence, corporate governance, and operational efficiency. Conversely, fund ownership does not significantly influence corporate leverage, suggesting that capital structure decisions are primarily determined by firm-specific financial factors. Notably, high leverage diminishes the positive effect of the fund ownership on performance, highlighting the importance of prudent debt management. These results underscore the fund's role as a value-enhancing investor and provide policy guidance on transparency, governance, and alignment of sovereign investment with corporate performance, supporting the objectives of Saudi Vision 2030.

KEYWORDS: Sovereign wealth funds- Saudi vision 2030- Financial performance- Financial leverage- Capital structure- - Basel III- Panel Regression Models- - Corporate Governance- Public Investment Fund.

1 INTRODUCTION AND RESEARCH FRAMEWORK

1.1 Introduction

In recent years, sovereign wealth funds (SWFs) have become important institutional investors in global financial markets, especially in developing and resource-rich countries. SWFs are created by countries to invest surplus revenue from natural resources like oil and gas in order to generate financial returns and to promote macroeconomic stability and intergenerational equity. As time has gone on, SWFs have shifted from being conservative reserve managers to being engaged and proactive investors, allowing them to become players in the financial markets and the corporate governance landscape.

In Saudi Arabia, the Public Investment Fund has become a key component of the country's economic restructuring, especially after it underwent its institutional restructuring in 2015 as a part of Saudi Vision 2030. Since then, the Fund has increased its national and international investments, including purchasing equity in a number of public companies in key industries. This increased activity poses a number of questions, including what the effects of this type of government institutional owner on the financial performance and capital structure decisions of companies.

It is especially important for policymakers, investors, and corporate managers to understand the impact of sovereign wealth fund ownership on corporate behaviour in developing economies, particularly when the involvement of government in economic activity is widespread. This research paper seeks to explain this issue by assessing the level of Public Investment Fund ownership and its effect on the financial performance and leverage of the Saudi companies listed on the stock exchange for the years 2016 to 2024.

1.2 Research Problem

In Saudi Arabia, the last several years have witnessed profound economic and structural changes occurring in the country as part of the high-level Vision 2030 Reforms. These changes have aimed to diversify the country's income streams, broaden the role of the private sector, and augment public investment as a cornerstone of sustainable growth. Within this context, the Public Investment Fund has been instrumental in these changes by increasing its ownership of key listed companies and investing in the critical economic sectors.

Despite the nascent and developing role of the Public Investment Fund in the Saudi Arabia capital markets, there is very little documented empirical research that can help explain in detail the extent to which government institutional ownership has a positive impact on a company's financial performance and/or influences their capital structure. More specifically, there is little evidence and studies in the literature to explain the extent to which PIF ownership improves a company's profitability as a result of the governance and signalling effects or reduces the level of debt that a company utilizes.

Thus, the research problem concerning this study is framed and articulated below:

What is the influence of the ownership of the Public Investment Fund on the financial performance and capital structure of companies found on the Saudi stock Exchange, during the years 2016–2024?

1.3 Significance of the Study

The significance of the study is twofold: academic and practical. It is on the specialisation of sovereign wealth funds that this study provides some level of empirical contribution within the Saudi context, whose literature is relatively scarce, compared to more developed economies. A larger percentage of studies have concentrated on the macroeconomic dimension and the sovereign wealth fund foreign market investments and thus, have a limited understanding of the impact on domestic firm level outcomes.

On the other hand, the study also offers practical implications to policymakers regarding the role of government institutional investment in enhancing business performance. Furthermore, it also informs owners, investors, and managers of companies on how the structuring of ownership and government financing activities interrelate in an emerging market with a high degree of governmental involvement.

1.4 Study Objectives

The study's main objective is to determine how Public Investment Fund's ownership affects the financial performance and capital structure of Saudi listed companies between the years of 2016 and 2024. More specifically, the study will:

- Interpret the impact of Public Investment Fund's ownership on firm financial performance.
- Identify how Public Investment Fund's investments impact a firm's capital structure and leverage.
- Analyse how financial leverage affects the relationship between sovereign wealth fund ownership and financial performance.
- Investigate certain firm-specific variables that affect the financial performance and capital structure of firms on the Saudi stock market.

1.5 Research Hypotheses

This study is contextualized by the signalling theory and capital structure theory, and the following hypotheses will be tested:

- H1: Public Investment Fund ownership is positively related to the financial performance of Saudi listed companies.
- H2: Public Investment Fund ownership is negatively related to the level of financial leverage of Saudi listed companies.

1.6. Limitations and Scope of the Study

There are certain limitations and scopes that must be stated regarding how the results of this paper will be interpreted. The first temporal scope encompasses the years 2016 to 2024, which denotes the post-restructuring phase of the Public Investment Fund and illustrates its expanded role as an investor under the Saudi Vision 2030.

The second scope is restricted to companies on the Saudi Stock Exchange (Tadawul).

The third scope is sectoral, which is the exclusion of financial intermediation, e.g., banks and insurance companies, on account of having different sets of regulations as well as structures of capital.

The last scope of analysis considers the financial metrics of individual companies while leaving out the potential influence of macroeconomic variables on corporate performance and financing decisions.

1.7 Population and Sample of the Study

The population of the study comprises all firms listed on the Saudi Stock Exchange for the years 2016–2024. The sample of the study comprises non-financial listed companies on which the Public Investment Fund has a direct ownership stake and for which full financial and ownership records are available throughout the duration of the study.

The exclusion of financial firms and the observation of incomplete data left a sample of 20 firms, providing a sufficient set of firm-year observations to conduct the panel data econometric analysis.

1.8 Data Collection Tools

The information collected for the study was solely limited to secondary data, which was gathered from a variety of sources. These include:

- Annual financial statements of listed companies on the Saudi Stock Exchange (Tadawul).
- Ownership structure and market data from Tadawul and Trading View.
- Annual reports from the Public Investment Fund.

Data was processed in Microsoft Excel, while econometric modelling and analyses were completed in the software EViews.

1.9 Research Methodology

The study employs a quantitative econometric methodology and descriptive statistical methodology, where panel data regression techniques are used to analyse the factor effect of Public Investment Fund ownership on financial performance and capital structure, enabling the analysis to account for firm-specific unobserved heterogeneity and time effects.

The adoption of robust standard errors is aimed towards the detection of heteroskedasticity and the overall enhancement of the quality of statistical inference. This methodology is a reflection of the methodology used in previous empirical studies in the field of corporate finance and the structure of ownership.

1.10 Structure of the Study

The remainder of the paper is organized as follows. the next section presents Theoretical Framework and Literature Review on sovereign wealth funds and their relationship with corporate performance. Section 3 presents the empirical analysis along with the description of the data, the specifications of the econometric model, and the regression outcomes. Section 4 presents Interpretation of the findings, evaluation of the research hypotheses, and formulation of policy implications and recommendations.

2 THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1 Overview of Sovereign Wealth Funds

Hitherto, the development of the global financial architecture rests on the evolution of the Sovereign Wealth Fund (SWF) in resource-rich and emerging economies. With the development of the SWFs, they have the potential to influence the pattern of investment, size, and geographical reach of other institutional investors, and alter the behaviours of corporations, financial market structures, and economic growth. As such, an analysis of the building blocks, development, historical categorization, and classifications of SWFs is indispensable to understanding the functions of SWFs at the firm level.

2.1.1 Concept of Sovereign Wealth Funds

Shortfalls in the economy, whether in the form of imbalances in natural resource revenues, fiscal surpluses, foreign reserves, or revenues obtained from privatization, can be constructed as financial surplus.

The SWFs thus can be seen as state-run investment funds created to attain medium to long-term economic and financial objectives by managing the public financial surplus. Unlike other public financial institutions, under the mandates of the government, SWFs can enter the markets with an explicit investment strategy and from a long-term perspective.

The International Monetary Fund (IMF) characterizes Sovereign Wealth Funds (SWFs) as, \"special-purpose investment funds or arrangements, owned by the general government, created for macroeconomic purposes, and holding, managing or administering the funds for other than the stated purposes\" (IMF 2008, p. 5). From this definition, one can group three of its definitions: macroeconomic purpose, government ownership, and asset management.

The OECD defines SWFs as government-owned funds and determines them as investment vehicles to achieve economic goals of a country through diversified investments, public revenue, and not private savings (OECD 2015). Academically, SWFs are construed as hybrid investors, owing to the fact that they possess the attributes of an institutional investor and simultaneously have state-driven strategic investment goals (Bortolotti et al. 2015).

What makes SWFs different from private institutional investors are the financial and policy instruments SWFs have. This raises a different set of questions regarding the impact of the corporate governance, performance, financial decisions and the mechanisms used to arrive at decisions.

2.1.2 Emergence and Development of Sovereign Wealth Funds

Sovereign Wealth Funds (SWF) first emerged in 1953 with the establishment of the Kuwait Investment Board (Megginson & Fotak, 2015). Originally, they were formed mainly for the efficient management of oil revenue and to minimize the adverse effects resulting from the volatility of the commodity market. This was the case for most resource-rich countries.

Sovereign wealth funds became more resourceful in the 21st century, as they began to hold and manage global investments worth over trillons of dollars. Their rapid growth can be explained by the global oil price boom of the 1970s, March 2000s, as well as periods of massive current account surpluses in emerging Asian countries. It was during this time that they became large-scale global investors (Sun & Hesse, 2009).

The 2008 financial crisis changed the perception of SWFs. During the financial crisis, some SWFs injected capital into the crisis-hit financial institutions in developed economies which showed the more positive role of SWFs in the global financial system (Kotter & Lel, 2011). Because of increased international scrutiny, many sovereign wealth funds introduced better governance and transparency, especially through the Santiago Principles of the International Working Group of Sovereign Wealth Funds (IWG, 2008).

2.1.3 Categories of Sovereign Wealth Funds

The literature suggests that sovereign wealth funds are categorized based on the goals of the fund, time horizon, and risk tolerance. The more common types are as follows.

Stabilization Funds

Stabilization funds neutral macroeconomic stability by smoothing volatility in government budgets as well as the commodity pricing cycles. The funds aim to compress public spending during economic downturns while provide macroeconomic stability (IMF, 2008).

Intergenerational Funds

Such savings funds aim to convert the revenues from exhaustible resources into diversified financial assets for the benefit of future generations. The funds are mainly focused on capital preservation while maximizing returns over long terms and are global investors (Balding, 2012).

- Development Funds

Sovereign wealth funds focusing on development possess the aim of boosting the domestic economy through financing projects pertaining to the development of infrastructure, industries, and other vital sectors. In the pursuit of national development goals, these funds tend to embrace higher levels of risk (Al-Hassan et al., 2013).

Reserve Investment Corporations

These entities aim to generate additional returns while making sure that foreign currency reserves are still realizable and sufficient, and an acceptable level of risk is maintained (OECD, 2015).

This classification signals the variety of sovereign wealth funds and the necessity of focusing on the objectives of individual funds when measuring the effects of these funds on corporate performance.

2.1.4 Characteristics of Sovereign Wealth Funds

Regardless of the differences in objectives and structures, there are specific features that sovereign wealth funds possess that are distinct from other institutional investors:

- Government Ownership

Sovereign wealth funds are state-owned in their entirety, albeit the influence of politics in investment decisions differs among nations.

- Long-Term Investment Horizon

The majority of sovereign wealth funds practice long-term investment, which allows them to withstand short-term fluctuations in the market and to focus on other illiquid investments such as infrastructure and private equity.

- Portfolio Diversification

Sovereign wealth funds usually have diversified investments in different classes of assets, sectors, and regions around the globe to manage their risks and improve the quality of returns.

- Strategic & Developmental Objectives

Sovereign wealth funds also consider other objectives, such as economic diversification, job creation, and technological progress, in addition to acquiring financial returns.

- Varied Governance and Transparency

The degree of accountability, transparency, and overall quality of governance affects how successful a sovereign wealth fund can be. Funds that operate under strong governance standards will have more favourable investment results and will have less opposition from host countries politically (Bortolotti et al., 2015).

2.2 Saudi Arabian Sovereign Wealth Funds

Given its vast resources and the importance of public investments in the economic development plans of the Kingdom, Saudi Arabia is among the most notable countries in the Middle East in terms of the evolution of sovereign wealth funds. The evolution of the country's sovereign wealth fund, the Public Investment Fund, has transformed from a development tool focused on the domestic economy to an international institutional investor, especially after the issuance of Saudi Vision 2030.

2.2.1 Establishment and Development of the Public Investment Fund

In 1971, the Public Investment Fund (PIF) was created as an investment fund owned by the government, with the primary goal of furthering the country's economic development. During its first years of operation, the Fund's activities were cantered on the financing of large nation-building activities and the provision of funds to government-controlled firms in strategically important areas such as energy, infrastructure, and the fundamental industries (PIF, 2024).

In 2015, an important institutional development took place when the Public Investment Fund came under the direct supervision of the Council of Economic and Development Affairs. This reorganization initiative constituted the first major change in the Fund's focus and did, among other things, equip the Fund with a greater degree of investment freedom and also offer a substantially new mandate to the Fund aligned to the Saudi Vision 2030. That shift aligned the Fund to an entirely new focus and investment strategy that was more active and diversified in scope, both domestically and internationally, as opposed to its previous, relatively more passive role in the investment arena.

The last almost 7 years, PIF has positively impacted the scope of activities it engages and the degree of sophistication of the activities, including the attainment of top global sovereign wealth funds configurations. The Fund has put itself in a position that supports Saudi Arabia's socio -economic diversification and long-term growth by providing it with the ability to undertake strategic investments, manage equity investments in public traded companies, and engage in mega-developments (PIF 2024, IMF 2021).

2.2.2 Public Investment Fund Diversified Sources of Financing

The Public Investment Fund (the Fund) has diversified financing options that enables it to make committed large-scale investments. Official documentation outlines four key diversified financing sources from the Fund.

- Government Capital Fusions

The Saudi government makes direct capital fusions that serve as primary financing, particularly during the periods of systematic growth.

- State Owned Assets Transfers

The transfer of the government-affiliated corporates and various assets to the Fund has been central for the expansion of the Fund's Asset base and for the improvement of the net worth of the Fund.

- Debt Financing

The Fund's reliance on domestic and international public and private bonds and loans to finance investments has increased, signalling the Fund's deepening up integration within the global capital markets.

- Income from Investments

The Fund's income from both domestic and international investments is retained to build the Fund's sustainability and growth.

The range of financing options available to the Fund provide the Fund with the flexibility to make strategic investments during economic downturns (OECD, 2015; PIF, 2024).

2.2.3 Summary of Performance of Public Investment Fund portfolio

In the Public Investment Fund's investment portfolio, the primary focus is on sustained value generation, while also facilitating the transformation of the economy. The portfolio is diversified across the spectrum of asset classes, sectors, and even geographies reflecting the dual objective of the Fund in maximising financial returns and achieving incremental strategic goals.

Within the economy, the Fund is instrumental in the support of listed firms and the creation of new economic activities in the sectors of technology, tourism, entertainment, and renewable energy. These investments are aimed at driving the growth of the private sector, improving the country's position economically, and decreasing the reliance on the oil revenue. The Public Investment Fund also invests in the global equity markets, infrastructure development, and other strategic sectors internationally (PIF, 2024), which also contributes to diversification of the portfolio as well as effective management of risks.

Studies have shown that the Fund's increased activity in listed firms is likely to have a positive impact on the market and on the performance of the firms. The results of these investments are determined by the region's governance, transparency, and the synergy of the financial and strategic goals (Bortolotti et al., 2015).

The evolution and performance of the Public Investment Fund's portfolio highlight the relevance of the sovereign wealth fund as an influential player domestically and internationally. Thus, it serves as an important example for studying the relationship between government institutional ownership and its effects on corporate performance and capital structure.

2.3 Review of Related Studies

This section discusses the most important empirical and theoretical studies on the relationship between sovereign wealth fund (SWF) investments and firm performance, value, and capital structure. This review includes studies conducted internationally and within the Arab world, and includes an analysis of the literature to identify and address the gap that the present study fills.

2.3.1 International Studies

The literature on sovereign wealth funds has gained traction in the last twenty years due to the rapid increase in the assets of sovereign wealth funds and the growing extent of their involvement with the world's equity markets. Earlier empirical studies predominantly analysed the effects of sovereign wealth fund investment announcements on the market and the firm value.

Fotak et al. (2008) analysed the effects of sovereign wealth fund (SWF) investments in publicly traded companies, and found that announcements of SWF investments result in positive abnormal returns in the short run, which is consistent with the signalling hypothesis. However, the authors highlight the problematic post-investment efficiency of SWF investments due to the findings of the negative, or in some cases weak, long-term operating performance of the companies.

Dewenter et al. (2010) focused on the valuation effects of SWF investments on a targeted firm. They state that there is a positive stock market reaction to the announcement of an equity stake by a SWF, and that there is a negative reaction to the announcement of a divestment. The authors add that the ownership effect of an SWF is non, or in other words, it is a function of the ownership threshold and the governance stake.

Kotter and Lel (2011) examined the performance of sovereign wealth funds and investment in large firms with poor performance, economically. The sovereign wealth fund (SWF) owner) is a summary of a ownership on the firm. The short-term impact was a positive market reaction, but there was little improvement in the long-term operating performance. This indicates that SWFs do not actively restructure targeted firms.

Bertoni and Lugo (2014) studied the effect of SWF investments on credit risk and showed that firms that receive SWF investments saw large declines in credit default swap (CDS) spreads. This indicated that firms improved their credit worthiness and supports the theory that creditors view sovereign wealth funds as an implicit backer.

Bortolotti et al. (2015) provided extensive explanations about the so-called '\ sovereign wealth fund discount'\ and showed that although SWF investment announcements are related to positive abnormal returns, the firms with SWF ownership have slower growth in their assets and sales over the long-run. The authors explain that this is partly the result of the political goals and the governance problems.

More recent studies have begun to look at ownership thresholds and the applicable institutional context. Rasheed et al. (2023) showed that SWF ownership under a certain threshold is positive, while excessive SWF ownership is likely to be detrimental to profitability. The authors also noted the disciplinary function of debt in the context of adverse political engagement.

2.3.2. Arab Studies

Studies in the Arab world about sovereign wealth funds have chiefly concentrated on their macroeconomic functions of balancing the budgets, the revenue from natural resources, and their contribution to economic development. The firm-level empirical literature is, in contrast to the international literature, quite limited.

Hussein and Khalaf (2017) concluded that SWFs are essential to fiscal sustainability and economic cycle smoothing for oil-dependent economies, focusing on the critical importance of governance and long-term investments.

In a comparative, econometric study of Algeria and Norway, Delmi et al. (2018) stated sovereign wealth funds positively affect economic activity, if only to the extent that the host country's institutional quality and governance structures allow.

From his study on the impact of sovereign wealth funds on Arab economies, Abdullah (2018) argued that the funds help store surplus oil revenues as financial assets and, thus, sustain the economies' financial stability and long-term development.

In a study of the SWFs, governance, and transparency, Tahrawi and Shaqour (2018) showed that greater adherence to governance frameworks positively impacts the financial stability that SWFs can offer.

While Habbak (2020) provided a mostly descriptive account of the financing of national development and economic diversification via the Saudi Vision 2030 of the Public Investment Fund, he did give some attention to the firm-level outcomes of the Public Investment Fund.

Recent Arab studies, including Wardah et al. (2022) and Hasnain (2022), explored sovereign wealth funds in relation to economic stability and sustainable development, emphasizing the role of digital transformation, transparency, and strategic asset allocation.

2.3.3 Previous Studies Analysis

The analysis of previous studies leads to some of the significant insights. To begin with, the global cross-country studies present mixed findings when it comes to the relationship between sovereign wealth fund ownership and firm performance. Although the immediate stock market reactions are, in most cases, positive, the longer-term operating performance and growth effects remain unclear and seem to be influenced by the extent of ownership, governance, and the surrounding environment.

Also, Arab authors have concentrated more on the macroeconomic and developmental aspects of sovereign wealth funds, leaving a significant gap in the analysis of microeconomic aspects, such as firm financial performance and capital structure. In particular, there is a dearth of empirical research that assesses the effect of sovereign wealth fund ownership on Saudi Arabian publicly traded companies.

Lastly, in particular, there are numerous studies that have addressed financial performance and capital structure separately, and very few have done this in the context of developing economies in a state of economic restructuring.

The analysis examines the effects of the Public Investment Fund's ownership on the financial performance and leverage of Saudi listed companies from 2016 to 2024. Specifically, the analysis reviews the periods after the restructuring of the Public Investment Fund and the effects of ownership and leverage on performance to contribute to the existing literature gaps and provide better insights on the Public Investment Fund as a Sovereign Wealth fund and its influence on developing capital markets.

3 EMPIRICAL ANALYSIS AND ECONOMETRIC APPLICATION

3.1 Sample Selection and Data Description

This research utilizes panel data from Saudi listed companies covering the years 2016 to 2024. This period marks an important stage in the evolution of the Saudi economy and the growth of sovereign wealth fund operations post the Saudi Vision 2030 initiative. The scope of the research encompasses all companies listed on the Saudi Stock Exchange (Tadawul) within the stipulated timeframe.

The sample was derived based on certain parameters. First, the company should have an equity holding by the Public Investment Fund for the duration of at least one year within the study timeframe. Second, due to the particular regulatory structure and the capital adequacy (Basel III) of the Saudi banking and insurance sectors, which may skew the metrics of leverage and performance, all financial entities including banks and insurance firms, were omitted from the sample. Third, companies were removed from consideration when certain financial data as well as data on ownership were absent. This was in an effort to safeguard the empirical analysis from unreliable data.

Upon concluding the abovementioned criteria, the last sample comprises a total of 20 non-financial listed companies, which result in 156 firm-year observations. For financial data, the author collected data from published annual reports, Tadawul disclosures, and the Trading View database. For ownership data, the author used data from the

official market disclosures and reports from the Public Investment Fund.

3.2 Model Specification

To assess the effect of Public Investment Fund ownership on the capital structure and financial performance of a firm, the author proposes two panel regression models.

The first model, which is on capital structure, has the variable of leverage as the dependent variable. Public Investment Fund investment, profitability, market-to-book, non-debt tax shields, asset tangibility, firm size, and other year and industry control variables explain firm i's (for) t leverage. There is an error term that accounts for the unexplained portion.

The second model is on the financial performance of the firm, which is measured by return on assets (ROA). In this case, Public Investment Fund investment, leverage, an interaction of Public Investment Fund investment and leverage, market-to-book, asset tangibility, firm size, as well as year and industry control variables explain firm i (for) t ROA, and there is also an error term.

The incorporation of the interaction term permits the analysis to examine if the impact of sovereign wealth fund ownership on firm performance is conditional on the firm's level of leverage. In this study, panel data methodologies are utilized to account for unobserved firm-specific heterogeneity and temporal effects.

3.3 Definition and Measurement of Variables

The variables used in the empirical analysis are classified into dependent variables, independent variables, an interaction variable, and control variables. Table 3.1 summarizes the definitions and measurement methods of all variables.

Table 3.1 Definition and Measurement of Variables

Variable Category	Variable	Symbol	Measurement
Financial Performance	Return on Assets	ROA	Earnings before interest and taxes divided by total assets
Capital Structure	Leverage	LEV	Total liabilities divided by total assets
Sovereign Wealth Fund Ownership	PIF Investment	PIFInvest	Ownership percentage multiplied by share price and number of outstanding shares
Interaction Variable	Ownership–Leverage Interaction	PIFInvest × LEV	Product of PIF investment value and leverage
Control Variable	Profitability	PROF	Net income divided by total assets
Control Variable	Market-to-Book Value	MTBV	Market value of equity divided by book value of equity
Control Variable	Non-Debt Tax Shield	NDTS	Depreciation divided by total assets
Control Variable	Asset Tangibility	TANG	Fixed assets divided by total assets
Control Variable	Firm Size	SIZE	Natural logarithm of total assets
Control Variable	Year Dummies	YearD	Dummy variables for years 2016–2024
Control Variable	Industry Dummies	IndustryD	Sector classification dummies

These variables are commonly used in the empirical corporate finance literature and allow for a comprehensive assessment of ownership, performance, and capital structure dynamics.

3.4 Descriptive Statistics

Table 3.2 presents the descriptive statistics for the variables used in the study. The table reports the mean, median, standard deviation, minimum, and maximum values for each variabl

Table 3.2 Descriptive Statistics (2016–2024)

Variable	N	Mean	Median	Std. Dev.	Min	Max
LEV	156	0.4437	0.4814	0.2129	0.0583	0.8454
ROA	156	0.0500	0.0453	0.0520	−0.0650	0.2694
PIF Ownership (%)	156	18.795	21.418	7.885	0.000	25.723
SIZE	156	23.127	22.403	1.589	21.135	27.028
MTBV	156	2.293	1.635	2.201	0.750	16.370
NDTS	156	0.486	0.508	0.335	0.000	1.138
TANG	156	0.543	0.608	0.242	0.003	0.924

The sampled firms quite moderate levels of leverage. From 44 percent, they report a leverage ratio of slightly above that. Return on assets, on the other hand, reveals a more inelastic profit stream with a wider disparity amongst firm collections in various fiscal year intervals. Public Investment Fund ownership ya also shows a large, yet typically passive, non-controlling stake, which remains in-line with the Fund with a long-term institutional investment style. Firm size, along with asset tangibility, suggests that the sampled firms are largely large, with a more considerable base of

tangible assets, which are likely to affect both their leverage and performance.

3.5 Correlation Matrix

This section presents the correlation matrix to examine the linear relationships among the main variables and to assess potential multicollinearity concerns prior to regression analysis. Table 3.3 reports Pearson correlation coefficients along with their corresponding t-statistics.

Table 3.3 Correlation Matrix

Variables	LEV	SIZE	PIF Ownership	PROF	MTBV	NDTS	TANG
LEV	1.000	0.566	0.168	−0.434	0.087	−0.405	0.152
SIZE		1.000	0.371	−0.073	0.113	−0.316	0.272
PIF Ownership			1.000	0.179	0.226	0.218	−0.016
PROF				1.000	0.381	0.292	0.004
MTBV					1.000	−0.173	−0.249
NDTS						1.000	0.290
TANG							1.000

The range of correlation coefficients being between −0.434 and 0.566 is still below the accepted cut-off of 0.80 signifying that multicollinearity is not an issue. The findings indicate that there is a weak positive correlation between the Public Investment Fund ownership and leverage and a positive correlation between ownership and profitability. Leverage, profitability and non-debt tax shields are correlated such that the more profitable a firm is, and the more non-debt tax shields a firm possesses, the less a firm will rely on debt financing.

3.6 Diagnostic Tests (Heteroskedasticity Tests)

To ensure the reliability of the regression estimates, diagnostic tests were conducted to detect the presence of heteroskedasticity. Both the Breusch–Pagan–Godfrey test and the White test were applied to the leverage and financial performance models.

The results show heteroskedasticity in the leverage model, as both tests at the 1 percent significance level reject the null hypothesis of homoskedasticity. For the ROA model, the Breusch–Pagan–Godfrey test shows no heteroskedasticity, and respect to the White test, there is mild heteroskedasticity. Hence, Huber–White robust standard errors (HC1) are applied in all regression estimations to provide consistent and dependable inference.

Table 3.4 Heteroskedasticity Test Results

Dependent Variable	Test	Obs*R-squared	Probability
Leverage (LEV)	Breusch–Pagan–Godfrey	39.84	0.0000
	White Test	96.55	0.0000
Return on Assets (ROA)	Breusch–Pagan–Godfrey	11.03	0.1374
	White Test	60.59	0.0033

3.7 Regression Results

This section presents and discusses the regression results for both the leverage and financial performance models. All models were estimated using panel data regression techniques with year and industry fixed effects and robust standard errors.

3.7.1 Results of the Leverage Model (LEV)

Table 3.5 reports the regression results for the leverage model.

Table 3.5 Regression Results: Leverage Model (LEV)

Variable	Coefficient	Robust Std. Error	t-Statistic	p-value
Constant	−0.983	0.186	−5.29	0.000
PIF Ownership	0.001	0.002	0.62	0.533
Profitability (PROF)	−1.634	0.262	−6.24	0.000
Market-to-Book Value (MTBV)	0.010	0.006	1.58	0.116
Non-Debt Tax Shield (NDTS)	−0.203	0.044	−4.65	0.000
Asset Tangibility (TANG)	−0.011	0.069	−0.16	0.870
Firm Size (SIZE)	0.062	0.008	7.57	0.000
Industry Dummies	Included			
Year Dummies	Included			
Model statistics: R-squared = 0.591 Adjusted R-squared = 0.572 F-statistic (robust) = 40.03, p < .001				

The findings show that while the Public Investment Fund possession seems to positively affect leverage the effect is statistically insignificant. This indicates sovereign wealth fund possession lacks an impact on a firm's debt decision. On the contrary, profitability and non-debt tax shields

impact leverage negatively and significantly strong which supports the pecking order theory. Firm size has a positive and significant impact on leverage which means large firms tend to be more dependent on debt financing.

3.7.2 Results of the Financial Performance Model (ROA)

Table 3.6 presents the regression results for the financial performance model

Table 3.6 Regression Results: Financial Performance Model (ROA)

Variable	Coefficient	Robust Std. Error	t-Statistic	p-value
Constant	−0.125	0.059	−2.14	0.034
PIF Ownership	0.003	0.001	3.34	0.001
Leverage (LEV)	−0.043	0.033	−1.30	0.197
PIF Ownership × LEV	−0.006	0.002	−3.47	0.001
Market-to-Book Value (MTBV)	0.010	0.002	5.56	0.000
Asset Tangibility (TANG)	0.033	0.016	2.06	0.041
Firm Size (SIZE)	0.006	0.003	2.20	0.030
Industry Dummies	Included			
Year Dummies	Included			
Model statistics: R-squared = 0.472 Adjusted R-squared = 0.447 F-statistic (robust) = 16.97, p < .001				

The findings indicate that the Public Investment Fund positively influences financial performance, consistent with the signalling hypothesis. On its own, leverage does not significantly influence profitability. However, the PIF ownership and leverage interaction term is negative and significant, suggesting that as leverage increases, the effect of sovereign wealth fund ownership on performance is less positive. This implies that high levels of debt may impair the positive governance and signalling effects of government institutional ownership.

4 DISCUSSION, RESULTS, AND RECOMMENDATIONS

4.1 Discussion of Research Hypotheses

This part analyses of the research hypotheses concerning the empirical results generated through econometric analysis. It attempts to connect the results of the econometric analysis with the relevant theory, in this case, signalling theory and the pecking order theory, and provide a benchmark with previous empirical work.

Hypothesis 1 There is a positive relationship between Public Investment Fund ownership and the financial performance of listed companies.

The empirical results of the financial performance model provide definitive evidence in support of the first hypothesis. Public Investment Fund ownership positively and significantly influences return on assets. This indicates that the Public Investment Fund positively influences the financial performance of the firm.

This is consonant with signalling theory, implying that the positive reputation and the market/resource control of the institutional investor positively influence the performance of the firm, and in this case, the Public Investment Fund positively influences the financial performance of the firm. With the Public Investment Fund being a long-term investor and having a considerable amount of money, it is likely to invest in the firm, which would increase market positive sentiment and consequently increase management discipline in a way that would increase overall firm profitability.

These results are consistent with what studies from all over the globe have shown. Moderate level investor ownership tends to yield positive impact on performance when coupled with sovereign wealth fund ownership (Dewenter et al., 2010; Bertoni & Lugo, 2014; Rasheed et al., 2023). The Jeddah Conference (2022) and SAMA (2017) addressed the positive impact and benefits of The Saudi Public Investment Fund on the global value chain.

In the Saudi context, the result reflects the post-2015 transformation of the Public Investment Fund into a more commercially oriented and professionally managed investor under Vision 2030. The Fund's involvement in listed companies may facilitate access to resources, strategic partnerships, and enhanced credibility in capital markets, which collectively improve operational efficiency and financial performance.

Accordingly, the first hypothesis is accepted.

Hypothesis 2 There is a negative relationship between Public Investment Fund ownership and corporate leverage.

The empiric results do not support the second hypothesis. The coefficient of Public Investment Fund ownership in the leverage model is positive but statistically insignificant, indicating that sovereign wealth fund ownership does not have a direct and meaningful impact on firms' capital structure decisions.

The presence of a Public Investment Fund does not reduce firms' reliance on debt financing, which is contrary to expectations derived from pecking order theory. The theory posits that government backed firms can rely on internal financing rather than external debt. However, the evidence from Saudi Arabia suggests that ownership structure does not matter because of how firms make leverage decisions.

The results suggest that profitability, and the presence of non-debt tax shields, negatively affect leverage, whereas firm size positively affects leverage. This suggests that internal cash flow, tax shields, scale of the firm, and cash flow from operations rather than the presence of a sovereign wealth fund.

The results support previous evidence that suggests the presence of sovereign wealth funds has an insignificant effect on leverage. This is especially true in emerging markets where there is a higher degree of financing stability (Kotter & Lel, 2011; Bortolotti et al., 2015). This suggests that the Public Investment Fund is more concerned with strategic oversight and long-term value creation as opposed to direct involvement in a firm's financing structure.

The second hypothesis is also, therefore, confirmed.

Interaction Effect between Ownership and Leverage

Another interesting result pertains to the interaction of terms of the Public Investment Fund (PIF) ownership and leverage in the financial performance model. The interaction term has a negative and statistically significant value, indicating that with increasing leverage, the positive impact of sovereign wealth fund (SWF) ownership on financial performance diminishes.

This means that the potential positive impacts of SWF ownership lose value due to the negative governance and signalling effects of high debt levels. Financial distress and high leverage potentially create a consequence of financial risk, constraint loss of managerial discretion and flexibility, and high-risk exposure. These all culminate in the potential dissimilarity with respect of the positive performance impacts of institutional ownership.

Overall, the hypothesis testing has showed that PIF ownership affects and enhances financial performance, although it has no bearing on the structures of the capital. This increasing concern for the SWF's impact in emerging capital markets warrants the recognition of the need to separate performance impact and financing impact in the SWF's role.

4.2 Main Findings of the Study

The study's findings, resulting from empirical analysis, can be summarized in the following points:

To begin with, the study has proven with empirical evidence that ownership of Public Investment Fund has a positive and significant effect on the financial performance of Saudi listed companies, measured in terms of the return on assets. This means that the Saudi Public Investment Fund, in its role as a sovereign institutional investor, is likely to enhance the profitability of the firm. Thus, the results validate the signalling hypothesis and suggest that the presence of government institutional ownership positively influences the overall confidence in the market, corporate governance, and operational efficiency.

Furthermore, the results of the study show that the Public Investment Fund ownership does not have a statistically significant effect on corporate leverage. This hints that capital structure in the firm is not, to a great extent, influenced by sovereign wealth fund ownership. Rather, it appears that in the case of corporate leverage and sovereign wealth fund ownership, the firm-specific financial variables, and not the ownership structure, are the major determinants.

Lastly, the study shows that profit, non-debt tax shields, and their relationship with leverage analysed through correlation, is negative, and significant. Hence, it means that more profitable firms with non-cash tax shields tend to be less dependent on debt financing. This explains the pecking order theory, which advocates prioritizing internal financing without going into debt externally.

Secondly, the study shows that the size of the firm has a positively significant effect on leverage, meaning, the bigger the firm, the more debt it is likely to acquire. This conclusion probably demonstrates that large firms can scale up their operations, lowering risks of bankruptcy, and acquiring more access to the credit financing markets.

Third, the results show that the interaction of Public Investment Fund ownership and leverage has a negative and significant effect on financial performance. This means that with sovereign wealth fund ownership firm performance is augmented, but too much dependence on debt financing is detrimental to this connection. It seems that institutional ownership is beneficial to performance up to a point of financial stress/dimensions, but beyond that, it is detrimental, thus the lack of institutional ownership does not cause debt.

Lastly, the variables such as firm size, tangibility of the assets and market to book ratio have effect on

financial performance explaining the role of the assets, scale, and growth opportunities in the Saudi corporations.

The findings suggest that the Public Investment Fund mainly operates as a value-enhancing institutional investor: augmenting financial performance without modifying firms' financing strategies. This emphasizes the role of the internal features of a firm, coupled with effective leverage, in achieving corporate success in developing capital markets.

4.3 Policy Implications and Recommendations

There is a clear set of policy implications and actionable insights directed to the sovereign wealth fund policymakers, the Public Investment Fund managers, corporate leaders, and market regulators.

First, the financial performance of the Public Investment Fund underscores the need to entrench the Fund's role as a long-term strategic investor. Thus, policy advocates, should promote the technical and commercially driven governance of the Public Investment Fund, to ensure the investments are value driven, and not politicized, or are not driven by short term considerations.

Second, because the Public Investment Fund ownership does not directly impact firms' leverage, public policymakers, and corporate leaders, should recognize that the firm-specific financial parameters predominantly determine the capital structure. Therefore, the firm should enhance profitability, and cash flow, and streamline operational processes rather than assuming that sovereign ownership will compensate for the absence of a rational financing framework.

Third, the Public Investment Fund should encourage the companies that it invests in to adopt strategies that limit their use of the debt, as the negative interaction of sovereign wealth fund ownership and leverage suggest that high levels of debt reduce the positive effects of institutional ownership on the performance of the firm. Regulators, too, should focus on the promotion of best practices pertaining to the use of leverage and the disclosure of financial information.

Fourth, greater transparency and disclosure standards are particularly needed when it comes to companies with sovereign wealth fund participation. For example, revealing the ownership chain, governance, and financing would strengthen the confidence of the investors and reduce the capital market information asymmetries.

Fifth, from a broad policy standpoint, the results strengthen the strategic aims of Saudi Vision 2030 by illustrating that sovereign wealth fund participation can improve firm performance without impacting the financial decision-making of the firm. This indicates that the Public Investment Fund can be pivotal in providing a dual function of promoting economic diversification and also exercising market discipline.

Finally, the developing, and growth sectors should be the focus of policy initiatives that promote the alignment of sovereign wealth fund and private sector actors. Such alignment should promote value creation while keeping the financial risk, and risk-taking, under control.

To conclude, the study suggests a balanced strategy that incorporates the positive aspects of sovereign wealth fund ownership and its potential to enhance corporate performance, along with the positive governance, management of leverage, and transparency to sustain favorable economic outcomes.

5 CONCLUSION

Between 2016 and 2024, this study investigated how the Public Investment Fund as a sovereign wealth fund and institutional investor impacts capital structure and financial performance of firms in Saudi Arabia. By using the signalling and pecking order theories, this study analyses a structurally evolving emerging economy using a firm-level empirical study and panel data econometric techniques.

The empirical evidence reveals that ownership of the Public Investment Fund is positively and significantly correlated to financial performance as indicated by the return on assets ratio. This confirms the Public Investment Fund is an institutional investor that adds to the firm's value, and it upholds the signalling hypothesis in that an institutional government investor is a positive signal of the firm's quality, governance, and future potential. This study concludes that a sovereign wealth fund's active participation in a firm enhances corporate governance, improves market confidence, and increases operational efficacy.

By contrast, the study did not find any statistically relevant direct association with regards to ownership of the Public Investment fund and the corporate leverage of the firms. This suggests that public listed companies in Saudi Arabia make capital structure decisions, particularly in the financing mix, which is more influenced by the financial attributes of the firm than the ownership. Factors like profitability, firm size, non-debt tax shields, and profitability are in fact relative to the position of the firm and the corporate finance literature.

There is an even more important detail with respect to the sovereign wealth fund and it's ownership with respect to the leverage. From the output of May notice that even though Public Investment ownership is a good thing in terms of the financial performance, the positive correlation begins to falter with regards to the leverage in the firm. This finding emphasizes the need for firms to manage their debt, and excessive debt level may create a situation where the benefits of governance and rational faith that institutional ownership may lead to.

This study adds to the literature on sovereign wealth funds the most recent firm level literature from Saudi Arabia, especially for the post restructuring phase for the Public Investment Fund, focusing on period of the Vision 2030. The study shows that sovereign wealth funds have a positive impact on firm performance without negatively impacting the firm's financing decisions, provided the investments are made with good governance, transparency and market discipline.

Although the study provides helpful contributions, I recognize the following study limitations. I examine non-financial listed companies, and I use annual firm-level data. Such data may miss short-term variations or macroeconomic effects. Future studies may analyse non-financial listed companies and include quarterly data, macroeconomic control variables, other performance proxies, and data from multiple countries and different sovereign wealth funds.

Ultimately, I show that the Public Investment Fund acts as a positive strategic institutional investor by increasing firm performance and maintaining the status quo with respect to capital structure decisions. These contributions assist policymakers, investors, and corporate managers, who are trying to strike a complex balance of state involvement, market-based, and fiscally efficient in developing capital markets.

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