

The Effect of Corporate Governance on the Performance of Jordanian Industrial Companies: An empirical study on Amman Stock Exchange

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Abstract

This study aimed to provide evidence of whether or not the corporate governance & performance indicators of the Jordanian industrial companies listed at Amman Stock Exchange (ASE) are affected by variables that were proposed and to provide the important indicators of the relationship of corporate governance & firms' performance that can be used by the Jordanian industrial firms to solve the agency problem. The study population consists of (96) Jordanian industrial firms' governance of the Jordanian firms listed at Amman Stock Exchange (ASE). (44) Firms were selected randomly to be used in the study. The study finds that there is a direct positive relationship between profitability -measured either by Earnings per share (EPS) or Return on assets (ROA)- and corporate governance, also a positive direct relationship between each of liquidity, dividend per share, and the size of the company with corporate governance, finally the study found a positive direct relationship between corporate governance and corporate performance.

Key Words: Corporate governance, industrial companies, Amman Stock Exchange, Jordan.

1. 1 Introduction

Corporate Governance is basically concerned with ways in which all parties interested in the well-being of the firm (the stakeholders) attempt to ensure that managers and other insiders are always taking appropriate measures or adopt mechanisms that safeguard the interests of the stakeholders. Such measures are necessitated because of the separation of ownership from management, an increasingly vital feature of the modern corporations.

A typical firm is characterized by numerous owners having no management role, and with managers with no equity interest in the firm. Shareholders, or owners' equity, are generally large in number, and an average shareholder controls a minute proportion of the shares of the firm. This gives rise to the tendency for such a shareholder to take no interest in the monitoring of managers, who, left to themselves, may pursue interests different from those of the owners of equity. The compatibility of corporate governance practices with global standards has also become an important part of corporate success. The practice of good corporate governance has therefore become a necessary prerequisite for any corporation to be managed effectively in the globalized market. The term "corporate governance" is relatively new terminology used in both public and academic debates, although the issues it addresses have been around for much longer. In the last two decades, however, corporate governance issues have become important not only in the academic literature, but also in public policy debates. During this period, corporate governance has been identified with takeovers, financial restructuring, and institutional investors' activism (Ross, 1973) Shleifer and Vishny define corporate governance by stating that it deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment.

Corporate-governance mechanisms assure investors in corporations that they will receive adequate returns on their investments (Shleifer and Vishny, 1997). If these mechanisms did not exist or did not function properly, outside investors would not lend to firms or buy their equity securities. As thus, businesses would be forced to rely entirely on their own internally generated cash flows and accumulated financial resources to finance ongoing operations as well as profitable investment opportunities. Therefore the overall economic performance likely would suffer because many good business opportunities would be missed and financial distress at individual firms would spread quickly to other firms, employees, and consumers. Few studies examined corporate governance in emerging markets.

Researchers have studied the implications of the concentrated corporate ownership which is common in many emerging and developing markets, and conclude that the principal agency problem in large corporations around the world represented by the restricting expropriation of minority shareholders by the controlling shareholders.

This study is interested in finding the factors that affect the Jordanian industrial Firms' performance indicators through corporate governance, by studying specific factors. The objective of this study is to provide a theoretical background in corporate governance and corporate performance. Also to examine whether or not the corporate governance and performance indicators of the Jordanian Industrial companies listed at Amman Stock Exchange (ASE) are affected by factors such as Earnings per share (EPS), Size (S), Liquidity (LIQ), Business risk (BR), Dividends per share (DPS), Return on assets (ROA), and Leverage (LV).

1.2- Problem Statement

Corporate governance effect on firms' performance is a very vital and important issue since the last financial distresses over the world. The main idea of this study is to examine whether or not the factors (independent variables) taken into consideration at this study can determine the firms' performance indicators through corporate governance, those independent variables are Earnings per share (EPS), Size (S), Liquidity (LIQ), Business risk (BR), Dividends per share (DPS), Return on assets (ROA), and Leverage (LV).

The study is trying to answer the following questions:

- 1) What are the factors which might affect the Governance of Jordanian industrial firms'?
- 2) What is the effect of corporate governance on performance indicators?
- 3) What is the effect of corporate governance on the firm value?
- 4) What are the factors that which might affect the Jordanian industrial firms' performance?

1.3- Significance of the Study

The importance of this study stems from the following points:

1. This study provides evidence of whether or not the corporate governance and performance indicators of the Jordanian industrial companies listed at Amman Stock Exchange (ASE) are affected by variables that were proposed.
2. Provides the important indicators of the relationship of corporate governance and firms' performance that can be used by the Jordanian industrial firms to solve the agency problem.

2.1 Theoretical Background

2.1.1-Corporate Governance

Corporate governance plays a major role in macroeconomic stability; provide the appropriate environment for economic growth as well as society welfare, therefore international institutions give major attention and concerns to this issue at the level of macro and micro aspects, because of the importance of corporate governance at both the country and the corporate levels. Corporate Governance is "a set of relationships between a company's management, its board, its shareholders, and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and shareholders and should facilitate effective monitoring, thereby encouraging firms to use resources more efficiently." (OECD Principles of Corporate Governance, 1999).

Corporate governance deals with the ways in which suppliers of finance corporations assures themselves of getting a return on their investment and is about promoting corporate fairness, transparency and accountability. And establishes how the various participants shareholders and other stakeholders; management; the board of directors interact in determining the direction and performance of corporations. Good governance holds management accountable to boards and boards accountable to the owners and other stakeholders. In the case of banks, significant stakeholders include depositors and the banking supervisor such as the Central Banks, Anonymous. (2003). Internal corporate governance factors relate to the effectiveness of the interaction among a company's management, board, shareholders and other stakeholders. Good corporate governance is not an end in itself, but instead facilitates a company's capacity to define and achieve its purposes. The board must agree on the company's values (what it stands for), and the strategy to achieve its purpose. It must account to shareholders and be responsible for relations with its other stakeholders, Denis, D. and J. McConnell (2002).

External governance factors also play a role in supporting good corporate governance. The external environment includes both the take over mechanisms and the laws and regulations that enforce the rights of shareholders and other stakeholders, such as creditors, and a good external environment also includes appropriate oversight by government or other regulatory bodies like Central Banks and the Deferent Stock Exchange Markets. The capital market infrastructure-depth and breadth-supports the ability of shareholders to hold management accountable; if a corporation is under-performing, investors may significantly discount the value of its shares, and in severe cases the corporation may be taken over and reorganized to produce acceptable returns for its owners. Accounting standards prescribe the presentation of financial information- in terms of timeliness and accuracy-that investors use to hold management and the board accountable, Novikova (2004).

2.2 Literature Review

2.2.1-Previous Arabic studies:

- **Al-Mobaydeen (2009)** conducted a study entitled:

"A proposed Model for Improving Corporate Governance Effectiveness and its Effect on Internal Auditors Independency at Jordanian Commercial Banks"

The study aimed at providing a proposed model for enhancing the effectiveness of institutional governance and its effect on Jordanian commercial bank internal auditors' independency. The study sample consisted of all internal auditors at Jordanian commercial banks, which are (13) banks, working on them (223) internal auditors, and because the study population is not big the researcher took all of the study population as a study sample.

In order to achieve the study goals and objectives the researcher developed a questionnaire for collecting data from the study sample by examining its validity and reliability. The empirical results include the following; (a) there is no effect for governance (Protecting Stakeholders Rights, Transparency and Disclosure) at Jordanian commercial banks internal auditors' independency; (b) the governance (Equity Deal, Owners, and board directors' responsibility) has no effect; (c) there are no significant differences in the effect of governance at Jordanian commercial banks internal auditors' independency due to the following demographic variables (sex, Age, Educational Qualification, Job Experience); (d) there are no significant differences in the effect of governance at Jordanian commercial banks internal auditor's independency due to scientific qualification.

- **Al-Sharef (2008)** conducted a study entitled:

"Quality of Earnings and its relationship with corporate governance".

The study investigates the relation between quality of Earnings and various aspect of corporate governance. Through the use of actual- based model, a sample of 315 firms-year observations for 45 Jordanian Industrial Public Shareholding companies listed at Amman Stock Exchange was generated to achieve number of goals. The aspects of corporate governance were board of directors and the audit committee. The board of directors characterized by board Shareholding, board size, and board independence, while the audit committee is characterized by audit committee independence, audit committee experience, and audit committee activity.

The results were generally consistent with the literature: there is a negative relation between Earnings quality and board Shareholding, while a positive relation between quality and audit committee independence. No significant relation existed between Earnings quality and other characteristics of corporate governance.

- **Al-Shurfa'a (2008)** conducted a study entitled:

"The impact of corporate governance on the effectiveness of internal auditing in the Jordanian Industrial Public Shareholding companies".

The study examines the effect of corporate governance on the effectiveness of internal auditing in the Jordanian Industrial Public Shareholding companies. The sample of the study consists of (56) internal auditors were selected representing the different sub-sector within the industrial sectors. Data were collected through questionnaire.

Several conclusions were obtained at the perception of internal auditors of the application level of corporate governance in industrial companies is relatively high, and the perception of the internal auditors concerning the effectiveness of internal auditing in industrial companies is relatively high, and also there is a significant impact of some corporate governance dimensions (namely disclosure and transparency, preservation of all stockholders rights and board of managements' responsibilities) on the effectiveness of internal auditing while other dimensions are not affected (ensuring the basis for an effective corporate governance framework, equitable treatment of shareholders, and role of stakeholders in corporate governance) which is exempted from regression and proved to be unimportant in the internal auditing in the Jordanian industrial companies.

Moreover, the study shows differences which have significant statistical receptions towards (principles of corporate governance) and the (effectiveness of internal auditing) due to the dimension of the (size of the company).

- **Noor & Mater (2007)** conducted a study entitled:

"The commitment of the Jordanian public shareholding companies' corporate governance principles".

The study evaluates the commitment of the Jordanian public shareholding companies' corporate governance principles. The sample of the study was (20) shareholding companies in both the banking and industrial sectors. A questionnaire is used in this study. The results of the study concluded that the level of commitment of the companies contributing to the range between the strong and very weak. The level of commitment was in favor of the banking sector. The imbalances in the application of the rules show a lack of commitment by the boards in the rules of professional conduct. Also there is no involvement of the general rule, shareholders in strategic decision-making for the company. Furthermore, lack of commitment to corporate social responsibilities to the environment in which they operate. Finally, some departments and companies use illegal means.

2.2.2 Previous Foreign Studies:

- **Al-Habaybah (2009)** conducted a study entitled:

"Factors influencing the extent of mandatory compliance with IAS disclosure requirements by manufacturing companies listed at Amman Stock Exchange".

This study empirically investigates the extent of mandatory compliance with International Accounting Standards (ISAs) by manufacturing companies listed at Amman Stock exchange in 2006, also explaining the relationship between some of corporate specific characteristics (size, age, leverage and profitability); and some of corporate governance attributes audit committee independence, type of audit firm, ownership structure/concentration on the level of the compliance. An index of compliance was devised to quantify the level of the compliance; this was applied to financial statement of 50 manufacturing companies listed at Amman Stock Exchange for the year 2006. Multiple regression analysis was employed to explore the relationship between the level of compliance and the particular attributes of these companies, the average level of the compliance for all companies was 76.6% of the items in the index, and no company within the examined time was fully complied with all requirements. The study also reveals that there is a significant positive relationship between (size, leverage, profitability, ownership structure, Type of audit firm); and the level of mandatory compliance with IASs, while its results didn't support any relationship between the age of the company and the independent of audit committee with extent of the compliance.

- **Rogers (2006)** conducted a study entitled:

"Corporate governance and financial performance of selected commercial bank in Uganda".

The study explores the relationship between the core principles of corporate governance and financial performance in commercial banks of Uganda. Finding indicates that Corporate Governance predicts 34.5 % of the variance in the general financial performance of Commercial banks in Uganda. However the significant contributors on financial performance include openness and reliability. Openness and Reliability are measures of trust. On the other hand credit risk as a measure of disclosure has a negative relationship with financial performance. It was obvious that trust has a significant impact on financial performance; given that transparency and disclosure boosts the trustworthiness of commercial banks. It's recommended that banks both local and international should enforce full disclosure practices and transparency practices thereby enhancing trust in order to survive in the competitive financial landscape.

- **Chiang (2005)** conducted a study entitled:

"An Empirical Study of Corporate Governance and Corporate Performance".

This study explores the relationship among indicators of corporate governance, including transparency and operating performance measures, and whether or not the indicators could be predictors of operating performance. This study supplemented Standard & Poor criteria with information gathered from all public materials in order to obtain more comprehensive transparency information. The results indicated that corporate transparency had a significant positive relationship with operating performance and it was one of the most important indicators for evaluating corporate performance. This study concluded that companies with good corporate governance also had a significant positive relationship with operating performance.

As such, a company might devote resources to improving corporate structure in order to improve performance, and outsiders could rely on the information provided by the company to make their decision. In addition, laws and regulations requiring transparency in the ownership structure might be modified in order to achieve more transparency. The study finds that board size, board ownership, institution ownership, information disclosure, and board and management structure and process had significant relationships with operating performance.

- **Klein et.al** (2005) conducted a study entitled:

"Corporate Governance, Family Ownership and Firm Value: the Canadian evidence".

This study investigates the relationship between firm value as measured by Tobin's Q, and newly released indices of effective corporate governance (reports on business) for a sample of 263 Canadian firms. The ROB index has a maximum value of 100 and was obtained by summing four sub indices; a) board composition. b) Shareholding policies. c) Shareholder rights policies. d) Disclosure policies. The study used four control variables, which were size, advantage, growth, profit variability. The results indicated that corporate governance does matter in Canada, and that size was consistently negatively related to performance, as was advantage, growth and performance were positively related. However, they found no evidence that a total governance index affected firm was performance, because they found no evidence that board independence had any positive effects on performance, and it was negatively related for family owned firms.

- **Bocean and Barbu** (2005) conducted a study entitled: "[Corporate Governance and Firm Performance](#)".

The purpose of this paper was to develop the understanding of corporate governance and its effects on corporate performance and economic performance. In doing so, it addressed some of the underlying factors that promote efficient corporate governance, and examined some of the economic implications associated with various corporate governance systems. The study provides a framework for understanding how corporate governance can affect corporate performance. It was found that corporate governance matters for economic performance, insider ownership matters the most, outside ownership concentration destroys market value, direct ownership being superior to indirect. Three main approaches to firm level performance were found in social science research: research based on market prices, accounting ratios and total factor profitability. Finally, Measuring performance by Tobin's Q and operationalizing it as market to book is consistent with agency theory and the study found that Large outside owners destroy market value, while inside owners create it unless the stakes are unusually big, and that direct ownership is more beneficial than indirect.

- **Brown and Caylor** (2004) conducted a study entitled: "[Corporate Governance and Firm Performance](#)".

The study examines whether firms with weaker corporate governance perform more poorly than firms with stronger corporate governance was found firms with weaker corporate governance to perform more poorly. Also, examined whether the firms have weaker corporate governance are less profitable than firms with stronger corporate governance. Found that firms with weaker corporate governance to be less profitable. And examined if firms with weaker corporate governance are riskier and pay out fewer dividends, than firms with stronger corporate governance, it was found firms with weaker corporate governance to be riskier and have lower dividend payouts and lower dividend yields than do firms with stronger corporate governance. Finally, they examined which of the four corporate governance factors considered by Institutional Shareholder Services (ISS) is the driving factor of their results. The four factors they examined are board composition, compensation, takeover defenses, and audit. They identified that the Board composition is the most important factor and that the least important factor is takeover defenses.

3.0 Research Methodology

3.1-Data Collection:

The data were collected from the Jordanian industrial shareholding companies' guide and financial reports; upon it the researcher stated the following criteria:

1. Firms' stocks should be listed at ASE during the period of the study 2000-2007.
2. The annual reports of the firm, must be available for the period from 2000-2007.
3. The firm has no mergers between the companies during the study period.

Screening for data consistency on the basis of the above mentioned criteria, led to the selection of a sample of (44) Jordanian industrial firms' governance of the Jordanian industrial firms.

3.2-Research Variables:

The study consists of independent variables (Earning per share, Size, Liquidity, Business risk, Dividends, Return on assets, and Leverage) also a mediator variable (Corporate Governance) and the dependent variable (Corporate performance).

1. Independent Variables:

In this section, the various firm specific attributes - suggested by agency theories and previous studies – and the proxies that are used to capture such attributes will be listed.

1. Earnings per share: An earnings measure calculated by subtracting the dividends paid to holders of preferred stock from the net income for a period and dividing that result by the average number of common shares outstanding during that period. EPS is the amount of reported income, on a per-share basis, that a firm has available to pay dividends to common stockholders or to reinvest in it.

- Size: There is considerable evidence that the size of the firm plays an important role in corporate governance & corporate performance, and that there is a negative significant relationship, when it's used as a control variable, to measure the effect of corporate governance on firm value. The logarithm of total assets (Log TA) is used as a proxy for firm size.

-Liquidity: Liquidity ratio may have an important impact on firm's performance. Firms with greater liquid assets (in which it can cover all current liabilities through its current assets) may use these assets to finance their investments. That will enhance the performance of the firm. According to previous studies, they found that there is a positive relation between liquidity and ownership that will be used as a corporate governance proxy in this study.

So, to measure the previous mentioned relationship, this study uses the ratio of Current Assets (CA) to Current Liabilities (CL), as a proxy for the liquidity of the firm's assets, using this formula:

$$\text{Liquidity}_{it} = \text{Current Assets}_{it} / \text{Current Liabilities}_{it}$$

-Business Risk: It's the risk of the projections of return of the company of not using leverage (DEBT), Firms that depend mainly on equity and no debt in their operations financing, will be more exposed to the risk of insolvency and then distress, all of these will lead to a bad firm performance and weak corporate governance practices.

This study uses the standard deviation of ROA as a measure of estimating probability of firm distress (which is called business risk proxy)

$$\text{Business Risk} = \sigma \text{ROA}_i$$

- 1) Dividends: A firm that depends on a stable dividend as a dividend policy faces less asymmetric information in accessing the equity market, and this in return represents a signal of better firm health which will lead to improving the firm's value. Dividend per Share (DPS) is used to measure the effect of Dividends on corporate performance.
- 2) Return on assets: Percentage shows how profitable a company's assets are in generating revenue, it is equal to a fiscal year's earnings divided by its total assets, expressed as a percentage.
- 3) Leverage: It's the extent to which a firm uses debt financing, it has three important implications, (1) By raising funds through debt, stock holder ownership is not diluted, (2) Creditors look to the equity, to provide a margin of safety, because if stockholder provided a small proportion of total financing, then risks are borne mainly by its creditors, (3) If the firm earns more on investments financed with borrowed funds than it pays in interest, the return on the owner's capital is magnified, or "leveraged".

According to trade-off theory of capital structure, which posits that having a higher leverage (using more debt), will increase the firm value because of the tax deductibility of interest. This study uses Total Debt (TD) to Total Assets (TA) as a proxy of leverage and it is calculated using this formula:

$$\text{Leverage}_{it} = \text{Total Debt}_{it} / \text{Total Assets}_{it}$$

2. Mediator Variable

Corporate Governance:

It is calculated using the ownership of 5% or above from the total ownership for the period from 2000 till 2007, where the dependent variable in the first step (direct relationships) and the mediator variable in the second step (indirect relationships).

“Historically, institutional investors dissatisfied with management or stock performance are known to pursue the “exit” mechanism, i.e. selling the stock holdings. However the “exit” mechanism is becoming costlier as their portfolios have become so big and dumping large holdings may lead to steep declines in stock prices.

Further, in view of the limited number of stocks that can effectively absorb the sizeable nature of their transactions, institutions feel compelled to control managerial behavior rather than simply to unload their holdings and invest elsewhere” Bathala and Rao (1995) also another argument “a positive relationship between corporate governance practices and firm value” (Drobotz et.al 2004)

3. Dependent Variables:

Corporate performance: Represent a group of ratios that relates the firm’s stock price to its earning and book value per share. The importance of the firm’s stock marketability that gives management an indication of what investor think of the company’s past performance and future prospects. Also the increase in firm’s shares marketability will increase the firms' value.

This study will use Market price to book value ratio (MTB), Price to earning (P/E) and Market price as proxies of corporate performance, which were calculated for each year using the following equations:

$$MTB_{it} = \text{Market Price Per Share}_{it} / \text{Book Value Per Share}_{it}$$

And

$$P/E_{it} = \text{Market Price Per Share}_{it} / \text{Earning Per Share}_{it}$$

3.3 Hypothesis of the Study:

The following are the hypothesis of the study based on the questions of the study:

Ho: there is no significant relationship between the independent variables and corporate performance (measured by price, MTB, and P/E) of the listed industrial companies, using Corporate governance as a mediator variable.

Sub –Hypothesis:

Ho1: there is no significant relationship between EPS and corporate performance.

Ho2: there is no significant relationship between SIZE and corporate performance.

Ho3: there is no significant relationship between Liquidity and corporate performance.

Ho4: there is no significant relationship between Business risk and corporate performance.

Ho5: there is no significant relationship between DPS and corporate performance.

Ho6: there is no significant relationship between ROA and corporate performance.

Ho7: there is no significant relationship between Leverage and corporate performance.

3.4 Operational Definitions:

-Corporate Performance:

It is the improvement which is done in the corporate that is reflected in the year closing price, market to book value ratio, and price to earning ratio.

-Corporate Governance:

Average ownership of (5%) or above of the total ownership during the year 2000-2007.

-Prices:

It is the closing price of the firms’ shares at the end of the year.

-Marketability:

It is the improvement in performance which is reflected in the market prices increasing.

-Size:

It is the LOG of total assets of the firm.

-Liquidity:

Assets which could be converted into cash easily and without loss in value, i.e. amount of cash, marketable securities, or any other short term assets. It will be measured by current assets over current liabilities.

-Business Risk:

It is the risk of not using debt in the capital structure of the firm measured by the standard deviation of the ROA.

-Dividends:

It is the firm’s dividends payment for a period measured by DPS.

-Earnings per share:

It is a measurement for the financial performance of the firm.

-Return on assets:

A measurement used to show the ability of the company to utilize their assets in an efficient way that can be reflected in having high return.

-Leverage:

Financial leverage means the extent to what the firm uses of debt financing.

3.5 Research Models

In this section we will use regression analysis to determine the overall efficiency scores derived from the pooled sample consisted of (44) Jordanian industrial firms selected randomly from the study population which contains (96) Jordanians industrial firms' of the Jordanian governance firms listed at Amman Stock Exchange (ASE). The study consists of seven independent variables (Earning per share, Size, Liquidity, Business risk, Dividends, Return on assets, and Leverage) and dependent variables (Market price to book value, Price to earnings ratio, and Market price) and mediator variable (Corporate governance), using the following equations:

$$CG_t = \alpha_0 + \alpha_1 DPS_t + \alpha_2 EPS_t + \alpha_3 LIQ_t + \alpha_4 LogTA_t + \alpha_5 ROA_t + \alpha_6 BR_t + \alpha_7 TD / TA_t + \varepsilon_t \dots\dots\dots (1)$$

Where:

- CG: Corporate Governance
- DPS: Dividend Per Share
- EPS: Earning Per Share
- LIQ: Liquidity
- Log TA: Size
- ROA: Return on Assets
- BR: Business Risk
- TD/TA: Leverage as total debt to total assets
- α : Coefficient
- ε_t :Residual

The result of this equation (1) then will be compensated in the following equations :

$$MP = \beta_0 + \beta_1 NCG_t + \varepsilon_t \dots\dots\dots (2)$$

Where:

- MP: Market Price
- NCG: Fitted value for corporate governance driven from equation (1)
- β_0, β_1 : Coefficients
- ε_t : Residual

$$MTB = \delta_0 + \delta_1 NCG_t + \varepsilon_t \dots\dots\dots (3)$$

Where:

- MTB: Market price to book value ratio
- NCG: fitted value for corporate governance driven from equation (1)
- δ_1, δ_2 : Coefficients
- ε_t : Residual

$$EPS = \mu_0 + \mu_1 NCG_t + \varepsilon_t \dots \dots \dots (4)$$

Where:

EPS: Price to earning per share

NCG: Fitted value for corporate governance driven from the equation (1)

μ_0, μ_1 : Coefficients

ε_t : Residual

And before estimation of the equations, it is a must to make the following test to insure getting the efficient results:

- 1) The Unit Root Test: since variables are mostly non – stationary and because the OLS approach gives spurious results when data is a non-stationary which requires testing the variables whether they are stationary or not. The stationary test would be measured through testing the stability of mean and variance through a period of time, in addition, the value of covariance between any closed values depends only on the lag period. In this field, both of Dickey and Fuller (DF) improved a test for the above mentioned conditions. But because the data is pooled; we can't use the DF test. So we will use the Levin, Lin and Chu (LLC) test to test stationary.
- 2) Choosing between fixed and random effects: the generally accepted way of choosing between fixed and random effects is running a Hausman test. Statistically, fixed effects are always a reasonable thing to do with panel data (they always give consistent results) but it may not be the most efficient model to run. Random effects will give you better P-values as they are a more efficient estimator, so you should run random effects if it is statistically justifiable to do so.

The Hausman test checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results. To test the significant of the model the researcher will apply the following tests T-test, F-test, DW- Test.

4.0 Analysis, Results and Interpretations

4.1-Descriptive Statistics

Table (4-1) shows the descriptive statistics of the main dependent and independent variables. As seen from the table below, on average: companies distribute dividends about 0.11 Jordanian Dinars, and the prices of the securities are around 2.64 Jordanian Dinar, while the return is near 0.45 Jordanian Dinar. The companies are having a good position in profitability with an earning per share average of 0.17 Jordanian Dinar, in addition 44 % of the firms' funds are provided by creditors. Means values were between (-0.07 - 18.3).

Table 4.1 : Descriptive Statistics

Variable	Mean	Std. Deviation	Rank
P/E	18.3	103.51	1
S	7.09	0.99	2
LIQ	3.32	2.77	3
PRICE	2.64	4.21	4
MTB	1.55	1.14	5
CG	0.6	0.2	6
BR	0.47	2.62	7
R	0.45	3.05	8
LV	0.44	1.72	9
EPS	0.17	0.31	10
DPS	0.11	0.19	11
ROA	-0.07	4.5	12

We can note that the variable "P/E" which is "price to earning" ranked first with a mean reached to (18.3) and standard deviation reached to (103.51). And the variable "S" which is "the logarithm of total asset or in other words refers to the Size" ranked second with mean reached (7.09) and standard deviation reached (0.99). Finally, the variable "ROA" which is "return on assets" with mean reached (-0.07) and standard deviation reached (4.5) came in the final rank.

4.2- Correlation Coefficient

This part will present the Pearson correlation matrix which indicates all variables included in the analysis as listed in the following table (4-2).

Table 4.2: Correlation Matrix of Variables

	BR	CG	DPS	EPS	LIQ	S	MTB	P/E	PRICE	ROA	LV
BR	1.00										
CG	0.02	1.00									
DPS	-0.09	-0.05	1.00								
EPS	-0.10	0.02	0.76	1.00							
LIQ	0.03	-0.09	0.12	0.04	1.00						
S	-0.06	0.05	0.18	0.20	-0.02	1.00					
MTB	0.01	0.19	0.26	0.31	-0.05	0.22	1.00				
P/E	-0.03	-0.01	-0.02	-0.01	0.19	0.00	-0.02	1.00			
PRICE	-0.05	0.10	0.59	0.61	0.05	0.22	0.47	0.00	1.00		
ROA	-0.42	0.06	0.03	0.04	0.02	0.01	0.08	0.01	0.02	1.00	
LV	0.48	0.07	-0.06	-0.09	-0.05	-0.05	0.06	-0.04	0.04	0.04	1.00

In table (4-2) it was noted, that all variables do not have a high correlation with other independent variables; except the correlation between DPS, EPS and Price, in which the correlation coefficients between these variables is higher than (0.5). This result shows that multicollinearity problem doesn't exist in the model, because no large correlation existed between independent variables.

4.3- Unit Root Test Results

From the discussion in the proceeding chapter, if the variables are non-stationary then the results from OLS will be spurious results; because of that we will run Levin, Lin and Chu unit root test as shown in table (4-3).

Table 4.3 : Levin, Lin & Chu Unit Root Test

Variable	Level			First difference		
	t	Critical	Stationary	t	Critical	stationary
BR	-8.39	0.000	Yes	159.44	1.000	No
CG	-31.67	0.000	Yes	-18.27	0.000	Yes
DPS	-3.12	0.001	Yes	-7.10	0.000	Yes
EPS	-0.96	0.169	No	-13.25	0.000	Yes
LIQ	-10.67	0.000	Yes	-46.92	0.000	Yes
Log TA	-4.94	0.000	Yes	-8.88	0.000	Yes
MTB	-5.94	0.000	Yes	2635.74	1.000	No
P/E	-3.60	0.000	Yes	-12.72	0.000	Yes
PRICE	-5.31	0.000	Yes	-12.89	0.000	Yes
ROA	2.16	0.984	No	-6.62	0.000	Yes
TD/TA	-15.66	0.000	Yes	-12.34	0.000	Yes

Results in table (4-3) indicate that all variables are stationary at the level (without taking the differences ⁽¹⁾) unless Earning per Share (EPS) and Return on Asset (ROA) stationary when taking the first difference. Through these results we can judge that when using the variables without taking the differences in the estimation of the model; then the results will be not spurious.

4.4- Relationship between Corporate Governance and Independent Variables

In this section the researcher examines the relationship between CG and corporate performance indicators through the equation no. (1), which includes independent variables and corporate governance as a dependent variable.

Table 4.4 : Estimation Output
Cross-section fixed (dummy variables)

	Coefficient	Std. Error	t-Statistic	Prob.
DPS	0.037	0.017	2.158	0.0321
EPS	0.020	0.009	2.137	0.0337
LIQ	0.003	0.001	4.652	0.0000
Log TA	0.037	0.017	2.178	0.0305
ROA	0.018	0.003	6.752	0.0500
BR	0.0278	0.002	1.236	0.0218
TD/TA	0.002	0.001	2.103	0.0366
U(-1)	0.288	0.151	1.90	0.0578
C	0.325	0.120	2.700	0.0075
R-squared				
		0.98	Mean dependent var	1.44
Adjusted R-squared		0.97	S.D. dependent var	1.74
S.E. of regression		0.096	Sum squared resid	1.97
F-statistic		216.8	Durbin-Watson stat	1.98
Prob (F-statistic)		0.00		

* significance at the 0.05 level

This part will represent testing the sub-hypothesis of the direct relationship between the independent variable and corporate Governance.

- Parameters: analysis and result shows a positive relationship between corporate governance and all the independent variable (EPS, Log TA, LIQ, BR, DPS, ROA, TD/TA).
- Significant: A test (T-Statistic) that the value of t greater than the value of calculated for each variable. As indicated in the value of P-value that the probability of accepting null hypothesis the variables insignificant is zero for all variables, and thus accept the alternative hypothesis which impose a statistically significant relationship between the independent and dependent variable.
- Explanatory Power: notes from the test R^2 , which measures the percentage of the explanation of the independent variable of the dependant variable, which reached a value of 98% and adjusted R^2 97% which take the number of independent variables into account.
- Significant for all model: notes from the F-statistic test which shows the influence of independent variables as a group on the dependent variable – which reached a value 216.9 (larger than the tabulated value) and the value of P-value indicated that the probability of accepting null hypothesis that all the variables insignificant is zero, and thus reject the null hypothesis and accept the alternative hypothesis that the model as a whole is significant.
- It should be noted that the optimum value for Durbin-Watson (DW) which refers to no serial correlation is (2); and since the estimation output reveals that the DW reaches a value of (1.98), this mean that we reject having a serial correlation.

4.5- Relationship between Market Price and Corporate Governance

In this section the researcher estimates the equation no. (2) That examines the relationship between the independent variable (corporate governances) and market price as a dependent variable as in table (4-5).

From table (4-5), the analysis result showed a positive correlation between market price and corporate governance as mediator variable. Since the (P-value) of the fitted value of corporate governance is (.01) less than (.05), the null hypothesis is rejected, i.e. there is significant positive relationship between the corporate governance and price. The R^2 test shows, a percentage of the explanation of the independent variable from the dependant variable, reached to 41% and adjusted R^2 31%.

**Table 4.5: Estimation Output
Cross-section fixed (dummy variables)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NCG	1.82	0.67	2.69	0.01
C	1.57	0.44	3.59	0.00
U(-1)	0.45	0.23	1.97	0.05
R-squared	0.41	Mean dependent var		3.48
Adjusted R-squared	0.31	S.D. dependent var		2.61
S.E. of regression	2.17	Akaike info criterion		1061.10
Sum squared resid	4.02	Schwarz criterion		2.04
Log likelihood	0.00	F-statistic		3.48
Durbin-Watson stat	0.41	Prob(F-statistic)		2.61

* Significance at the 0.05 level

4.6- Relationship between Market Price to Book Value Ratio and Corporate Governance

From table (4-6) below, the significance of the model (P-value) is (zero) which is less than (.05), the null hypothesis (Ho) is rejected, the variable (corporate governance) can explain the variation of the dependent variable, significance of the model (P-value) is (zero) which is less than (.05), the null hypothesis (Ho) is rejected, the variable (corporate governance) can explain the variation of the dependent variable

**Table 4.6: Estimation Output
Cross-section fixed (dummy variables)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NCG	0.42	0.11	3.73	0.00
C	1.38	0.07	18.80	0.00
U(-1)	0.55	0.10	5.73	0.00
R-squared	0.87	Mean dependent var		3.14
Adjusted R-squared	0.85	S.D. dependent var		2.20
S.E. of regression	0.86	Sum squared resid		167.25
F-statistic	38.01	Durbin-Watson stat		2.06
Prob(F-statistic)	0.00			

* significance at the 0.05 level

The table (4-6) shows that the (P-value) of the fitted value of corporate governance is zero which is less than (.05), the null hypothesis is rejected, i.e. there is significant positive relationship between the corporate governance and market price to book value ratio.

4.7- Relationship between Price to Earning per Share and Corporate Governance

From the table (4-7) below, the significance of the model (P-value) is (zero) which is less than (.05), the null hypothesis (Ho) is rejected; the variable (corporate governance) explains the variation of the dependent variable (corporate performance). The table (4-7) shows that the (P-value) of the fitted value of corporate governance is (.04) less than (.05), the null hypothesis is rejected, i.e. there is significant positive relationship between the corporate governance and price to earning per share.

**Table 4.7: Estimation Output
Cross-section fixed (dummy variables)**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NCG	9.97	4.91	2.03	0.04
C	15.61	3.25	4.80	0.00
U(-1)	-0.03	0.08	-0.38	0.70
R-squared	0.62	Mean dependent var		111.91
Adjusted R-squared	0.56	S.D. dependent var		161.05
S.E. of regression	107.09	Sum squared resid		2557372.00
F-statistic	9.48	Durbin-Watson stat		2.07
Prob(F-statistic)	0.00			

* significant at the 0.05 level

4.8- Testing hypothesis:

Ho: There is no significant relationship between the independent variables and corporate performance (measured by price, MTB, and P/E) of the listed industrial companies, using corporate governance as a mediator variable.

This Hypothesis is rejected because of the following:

* From table (5-5), since the (P-value) of the fitted value of corporate governance is (.01) less than (.05), the null hypothesis is rejected, i.e. there is significant positive relationship between the corporate governance and market price.

* From the table (5-6) shows that the (P-value) of the fitted value of corporate governance is (zero) which is less than (.05), the null hypothesis is rejected, i.e. there is significant positive relationship between the corporate governance and market price to book value ratio.

* From the table (5-7), the significance of the model (P-value) is (zero) which is less than (.05), the null hypothesis is rejected; the variable (corporate governance) explains the variation of the dependent variable (corporate performance).

Sub –Hypothesis:

Ho1: there is no significant relationship between EPS and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between EPS and corporate performance.

Ho2: there is no significant relationship between size and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between size and corporate performance.

Ho3: there is no significant relationship between liquidity and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between liquidity and corporate performance.

Ho4: there is no significant relationship between business risk and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between business risk and corporate performance.

Ho5: there is no significant relationship between DPS and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between DPS and corporate performance.

Ho6: there is no significant relationship between ROA and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between ROA and corporate performance.

Ho7: there is no significant relationship between leverage and corporate performance.

Since the (P value) is less than (.05); the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, there is a significant relationship between leverage and corporate performance.

4.9-Conclusions and Recommendations

-Conclusion:

This study intends to explore the relationship between the independent variables (factors) with corporate governance and dependent variables in order to find whether the factors (variables) taken under consideration in this study which are Earnings per Share (EPS), Size (S), Liquidity (LIQ), Business Risk (BR), Dividends per Share (DPS), Return on Assets (ROA), and Leverage (LV), can determine the firms' performance indicators through corporate governance, for a sample of Jordanian industrial companies. To reach our goal, we did the study in two steps. First, we studied the direct effect of our factors on corporate governance. Second, we studied the effect of corporate governance (fitted value) and corporate performance.

1- Profitability:

The study finds that there is a direct positive relationship between profitability -measured either by (EPS) or (ROA)- and corporate governance.

This result consists with (Gompers et.al. 2003). This means, more profitable Jordanian firms are more transparent and have a weak corporate governance practices, but higher corporate performance through corporate governance.

2- Liquidity:

The study finds a positive direct relationship between liquidity and corporate governance, as the liquidity of Jordanian industrial firms increases, it will result in a good corporate governance practices. This result is consisted with Jensen et.al 1992

3- Dividend per share

The study explores a positive direct relationship between and dividend per share and corporate governance. This result is consisted with Brown and Caylor (2004).

4- Size

The study finds that there is a positive relationship between the size of the company (measured by Log TA) and the corporate governance of the Jordanian industrial companies. This result is consisted with Sweiti, Ibrahim (2009).

5- Corporate Governance

The study finds a positive direct relationship between corporate governance and corporate performance. When the company has a good corporate governance practices it will be reflected in enhancing the firm value and its performance of the company.

This result is consistent with different studies (Drobtetz et.al. 2004, Bai et.al 2004, Chiang 2005 ...etc)

6-Corporate Performance

The study finds that there is a positive relationship between corporate governance and corporate performance (measured by Price to Earnings per share , Market Price to Book Value ratios and the market price), This result is consisted with Brown, S. & Caylor, D. (2004) also Al-Lebdawi & Johar (2006).

7- The study provides evidence that corporate governance of the Jordanian industrial firms does matter and is positively related to firm value.

- Recommendations

- 1- Jordanian industrial firms should take into consideration, the main factors: EPS, liquidity, size, dividend per share that was found significant in determining corporate governance and corporate performance.
- 2- The Jordanian companies have to focus on improving their corporate governance practices, which will lead to enhance their firm's value by the following steps :
- 3- Excessive efforts should be exerted by Jordanian firm in cooperation with Jordanian Securities Commission (JSC) and other regulatory bodies to adopt standard classification of items in the financial statements by assigning each element a uniform code to be used always in entering, processing data.
- 4- Providing shareholders with periodic reports on changes affecting the shareholders in the company, and held regular meetings with members of the Board of Directors ensuring that their role should be done to share in the responsibility.
- 5- Publication of manual rules of corporate governance and contributing to the public in order to benefit from the application of rules by the management and employees and the various activities of the company.
- 6- Conduct further studies and taking into consideration other sectors and variables wasn't been taken by this study.

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