The Moderating Impact of Major Shareholding of Equity on Operational Performance Efficiency and Firm Value Relationship: The Evidence of the Manufacturing Listed Firms at ASE

MOHAMMED IBRAHIM SULTAN OBEIDAT[1], MOHAMMAD ABDULLAH AlMOMANI[1], TAREQ MOHAMMED ALMOMANI[2], NADEEN (MOHAMMED ADNAN) M.Y) DARKEL[3]
[1]Accounting Department, School of Business, Jadara University, Irbid, JORDAN
[2]Custom Science Department, School of Business, Jadara University, Irbid, JORDAN
[3]Business Administration Department, School of Business, Jadara University, Irbid, JORDAN

Abstract: - The study objects for determining whether a firm value is affected by the operational efficiency of performance, and to determine whether major shareholding moderates the effect relationship of operational efficiency on firm value. Secondary data covering the period starting from 2011 and ending with 2020, attributed to 28 out of 32 listed manufacturing firms at the Amman Stock Exchange, had been collected and used in the analysis. Five indicators of operational efficiency, as an independent, are taken into consideration in the study, including inventory turnover, receivables turnover, total assets turnover, cash flows from operations, and working capital, whereas Tobin's Q, is used as an indicator for firm value, as the dependent variable. Major shareholding is represented by those shareholders that are having 5 percent or more of the entire number of shares outstanding and is used as a moderator, while firm size, which is measured using the natural logarithms of total assets, is used as a control variable. Using the multiple and the hierarchal regression methods in data analysis and hypotheses testing, the study shows that operational efficiency of performance has a significant impact on firm value, and it plays a clear role and major shareholding plays a significant moderating role on the effective relationship of operational efficiency on firm value. More investigation of the effects of operational efficiency of additional aspects of performance, on firm value, is strongly recommended.

Key-Words: - Operational Efficiency, Firm Value, Major Shareholding, Inventory Turnover, Receivables Turnover, Assets Turnover

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1 Introduction

Shareholders are normally interested in the dividends of their shares, but they are also interested in the capital gains of shares, that are resulting from the increase in share market prices. Firm value is assumed to reflect firm performance, where share prices of highly profitable firms, increase from period to period, and as a result, shareholders achieve another form of profits, or what is called, capital gains, in addition to their interest in dividends.

Investors are not careless when they need to invest their funds, so they attempt to invest their funds where it is expected to generate a higher rate of return. Many factors can affect firm prices or firm value, including firm profitability, leverage, and growth opportunity, [23], where these factors depend on the level of the firm operational efficiency of performance. The current attempts identify whether the operating efficiency of performance has an impact on firm market value since share prices are important indicators used by shareholders in investment decisions. Several indicators of operational efficiency of performance are discussed and investigated in the current study including, inventory turnover, receivables turnover, total assets turnover, operating cash flows, and net working capital, whereas firm market value is the single dependent variable, and measured using Tobin's Q. In addition, the study investigates whether major shareholders, who are those having 5 percent or more of the entire number of shares outstanding, play a moderating role in the expected impact of operational efficiency of performance on firm market value. Firm size is used in the investigations of these issues, as a control variable.

Evaluating firm value and the determination of the different factors that may affect firm value is an important issue and is considered the keystone in taking investment decisions by investors. Firm value is related to past, present, and expected future performance, so firm value reflects the level of firm performance. Investors normally invest their money

with expectations of receiving reasonable returns, and they attempt to reduce their opportunity cost by getting a higher rate of return. An investor is not ready to pay more for shares than these shares are worth, while an investor wants to invest in an increasing firm value to achieve a higher rate of return. Therefore, incorrect evaluation of a firm value, or inadequate information for expecting the future firm value, will lead to a loss or less return than expected. Operational efficiency plays an increasing role in evaluating the firm value and in evaluating firm performance, [4]. In relation to the increasing role of operational efficiency of performance in evaluating firm value, [18], [19], found a significant positive relationship between earnings per share (EPS) and the stock price of Public Bank in Malaysia. The current study focuses on several reasonable measures of operational efficiency including, inventory turnover, receivables turnover, total assets turnover, and cash flows from operations.

An increase in firm value is a real increase in shareholders' wealth, so shareholders give enough attention to firm value and the share market value. Shareholders normally prefer good management that can focus on all activities that may lead to an increase in firm value, and on the decisions resulting in higher firm value. Operational efficiency is important for achieving good performance, and it is beneficial to firms' management and shareholders. As a result, the problem of the study is to determine whether the operational efficiency of performance can be reflected in the value of firms. In general, whenever there is good management of the operating activities, an increase in firm value will be more probable. The operational efficiency of performance means that good management is required to be exercised over the most important operating aspects of firms, including, inventory, receivables, assets, and cash flows from the operating activities. Each business organization struggles for increasing its market value. Along the most recent few years ago, some of these firms, witnessed a continuous decline in their value, while some still suffering from this decline. Shareholders also attempt to avoid losses, and they attempt to avoid investing in firms of declining value. Because of that, the current study comes to investigate whether the operational efficiency of performance has an impact on firm value. Moreover, determining what activities, strategies, and policies are more probable to lead to higher firm value is important. The ownership structure of business organizations is an important issue to be investigated because in most corporate firms, there are shareholders having a low number of shares, but few others have 5 percent or more of the entire number of shares outstanding. Those having 5 percent or more of the entire number of shares outstanding are called major shareholders. Major shareholders are expected to affect the operating decisions and sometimes, the operating day-to-day operations, since they own more than other shareholders, in the assets and the capital of corporate firms. Therefore, the problem of the study can be summarized using the following two questions. First, does the operational efficiency of firm performance affect the value of the listed manufacturing firms at the Amman Stock Exchange (ASE). Second, do major shareholders in the listed manufacturing firms at ASE, play a moderating role in the expected impact of operational efficiency of performance on the value of the listed shareholding firms at ASE. In other words, the study comes to investigate whether inventory, receivables, total assets, working capital, and cash flows from operating activities contribute to determining firm value and whether there is a moderating role for major shareholding on this issue.

The study seems important because operational efficiency of performance has many reflections on business aspects. Normally, share prices reflect the level of performance, especially, the operating aspect of performance, in a deep efficient stock exchange. Therefore, the study is an attempt to identify where managements of firms are required to focus regarding its operating aspect of performance, in order to achieve a higher firm value. The importance of the study increases because a higher firm value leads to a higher wealth for shareholders. Because higher firm value leads to a higher wealth of shareholders and other owners' equity, shareholders are strongly interested in firm value, and the operating aspect of performance. Therefore, the findings of the study are beneficial for shareholders, it highlights the important aspects of operational performance, that investors are required to take into account whenever they need to take investing decisions. Firms witnessing an increasing value, are more attractive for investments to invest with because investors direct their investments toward businesses that are more expected to increase their wealth. The study is also of high importance because it focuses on inventory, where inventory is the most important current asset in a manufacturing firm. It also concentrates on another important aspects such

as receivables, total assets, working capital, and operating cash flows.

The key objective of the study is to determine whether the market value of the listed manufacturing firm at ASE, is affected by the operational efficiency of performance. In more detail, it objects to determining whether inventory turnover, receivables turnover, total assets turnover, cash flows from operations, and net working capital, have a significant impact on firm market value. In addition, determining the available methods of increasing firm value is considered an important objective, that stands behind the change in firm market value. The study also aims for determining whether major shareholding in ownership structure moderates the impact of operational performance on firm value. Accumulating more literature regarding the relationship between the operational efficiency of performance and firm value, and the moderating role of major shareholding is among the purposes of the current study.

The current study is different from prior related research in several aspects. First, no study took the same operational factors, as the current study, where it takes inventory turnover, receivables turnover, total assets turnover, cash flows from operations, and net working capital. Second, the current study has investigated the moderating effects of major shareholding, where no prior research investigated this moderating effect. The structure of variables, and the way the different types of variables are linked together, also differs from the preceding related studies.

In addition to the current section, the rest is organized as follows. Section 2, shows the literature regarding operational efficiency and firm market value, in addition to the related prior research. Section 3, presents the hypotheses development, while the methodology that had followed in the study, is presented in section 4. Section 5 includes the discussion and analysis, and the findings are offered in section 6.

2 Literature Review

The term "efficiency" is related to the term "Effectiveness", but both terms are different, and each means a different thing than the other. Efficiency means doing things right, whereas, effectiveness means doing the right thing, [13]. Based on the definitions of both terms, a firm is considered effective when it identifies the appropriate strategies and goals, while it is efficient when the firm can achieve its objectives with minimal cost. Operational efficiency is defined as the ability to produce and deliver products and services at an effective cost, and with maintaining quality, [13]. Operational efficiency is also defined as "the proficiency of a corporation to reduce the unwelcome issues and maximizing resource capabilities to deliver products and services with good quality, [10]. As a result, the operational efficiency of a business organization is the capability of a business to produce products at an efficient cost and use the least possible rare resources. Using firm assets in an efficient form leads to higher profitability, so higher profitability reflects better performance.

Operational efficiencies are required at different administrative levels of business organizations and should be taken into consideration internally and externally. It includes the usage of inputs or resources in producing outputs, in addition to the optimal product mix that can maximize the firm profits. Pricing decisions of products and the change in product price as a response to changes inside and outside the firm are included or related to operational efficiency. Moreover, operational efficiency is related to research and development because the development of products or services is needed to maintain operating efficiency. Competition is also related to operational efficiency, and how competitors develop their products and change the prices of their products is also classified within the wide subject of operational efficiency.

Operational efficiency can be using different financial indicators, such as total assets turnover, fixed assets turnover, or equity turnover, [16]. To include the different aspects of operational efficiency, it is preferred to use more than one measure, whether the measure is financial or non-financial. Several indicators can be used, in addition to those mentioned above in measuring operational efficiency, such as inventory turnover, especially because manufacturing and merchandising firms invest high capital in inventory. In addition, receivables turnover can also be used in measuring firm credit policy and the collection of receivables, where most sales occur on credit, so receivables turnover is an important measure. Moreover, net working capital and the cash flows from operations are other measures than can be used in operational efficiency measurement.

The relative operational efficiency at the operating level can be described as the ratio of actual throughput to the ideal throughput, where ideal throughput is the best-observed throughput.

The best-observed throughput can be determined from the records of performance in the past, [13].

The discussion of the impact of operational efficiency on firm value, and investigating the moderating role of major shareholding on this effect relationship, necessitates reminding the main ideas of contingency theory. The agency theory can be considered among the oldest related theory to the literature of accounting, management, and economics. It discusses the problems resulting from the separation between ownership and management. It focuses on the problems and solutions that arise from contracting between principals and agents, and the delegation of tasks by principals to owners. Agency theory is widely used in accounting to solve the conflict of interests problem that appears normally between shareholders and managers. Shareholders are referred to the applications of agency theory as the principals, whereas agents are used to referring to managers. Under contracting arrangements between shareholders and managers, a type of conflict of interest emerges. Where managers may be seen as interested in profit increase, and shareholders are interested in the wealth of their investments. Therefore, external assessments, such as auditors and governance, are needed to solve such conflicts between shareholders and managers. Sometimes the management of some firms may create committees to increase the required trust between shareholders and managers, [11]. Therefore, and as a part of agency theory application in the context of the study, major shareholders behave differently, major shareholders are interested in their wealth and firm value, and they are expected to exercise a type of pressure on management to take attention to firm operational performance to be more efficient.

Signaling Theory deserves to be discussed in brief stating how the management communicates its success or failure to shareholders. When management sets good information as a part of the firm of bad information. Understanding signaling theory is the key issue for financial management. A signal is normally explained or interpreted as a signal made by the management to investors, and it may take several forms but it is made to imply something in the hope of shareholders' push towards changing their assessment. Firms sometimes use disclosure to announce information regarding their financial performance by providing positive signals to shareholders and other stakeholders to create outsiders' trust in the firm. Actually, signals are provided to reveal evidence that insiders have information better than the outsiders hold regarding the firm performance and future prospects. Sometimes managements intend to affect the firm value through the signals issued to add good and additional information, [6], [7].

Despite too much rare studies investigating the impact of operational efficiency in its complete aspects, several studies are found related to the purpose of the current study. In terms of firm value, [23], investigated the impact of several operational factors on firm value. Specifically, the authors of the study investigated the impact of return on equity, return on assets, debt-to-asset ratio, and net profit margin, in addition to other operational indicators on firm value. The secondary data that is covering the period of 2019-2021, of 33 firms out of 42 consumer goods sub-sector manufacturing listed firms at the Indonesia Stock Exchange, had been collected and used in analysis and hypotheses testing. Using the ordinary least square method, the results of the study revealed that return on equity, return on total assets, asset growth, and market to book value of equity, each of which has a positive significant impact on firm value, whereas debt to equity ration has a negative impact on firm value. Other factors taken into consideration in the study, has no impact on firm value,

[12], examined the impact of leverage and operational efficiency of listed Indian firms on the market value added of these firms. Specifically, the authors considered the degree of financial leverage, degree of operating leverage, asset turnover, and the market value added. Secondary data covering the period 2013-2019 is collected and used in the analysis and hypotheses testing. Using the regression method of statistical analysis, the results revealed that there is a significant relationship between market value added and both financial leverage and asset turnover. Moreover, the study demonstrated the existence of an insignificant relationship between operating leverage and market value added.

The aim of [21], was to determine the impact of debt-to-equity ratio, net profit margin, and firm size, on share prices, taking a return on assets, as a mediating variable. The authors of the study collected secondary data that is covering the period of 2014-2016 and attributed to 136 listed firms on the Indonesia Stock Exchange. Using Warp PLS statistical test in hypotheses testing, the result showed that debt to equity ratio has a significant negative impact on return on assets, and a significant positive impact on share prices. In addition, the result revealed that net profit margin has a significant positive impact on return on assets and share prices. Moreover, the result demonstrated

firm size significantly and positively affects return on assets, but it has no significant impact on share prices. The study revealed that return on assets has a significant positive effect on share price, and it has no mediating role on size and share price relationship, while it is a mediating variable in debt to equity ratio and share price relationship.

The purpose, [14], was to determine whether the operational efficiency of firms affects firm market value. Using 11,648 pair trade returns along the period 2000-2007, the results showed that pair trade returns and operational risks vary by business line and event type, where this relation implies that operational systems improve firm performance, and firms are required to manage their operational systems to reduce firm value losses.

[20], carried out a study for the purpose of determining the most important factors affecting the firm Value. The authors of the study examined definite factors including institutional ownership, firm size, profitability, leverage, and investment opportunity. The attributed data to a sample that consisted of 84 listed manufacturing firms at the Indonesia Stock Exchange, covering the period 2012-2017, was collected and used in the analysis. Using the regression method, the results showed that firm size, return on total assets, and market-to-book value, have a positive significant impact on firm value, whereas debt to total assets has a negative significant impact on the value of firms.

The purpose of [4], was to determine the impact of operational efficiency on firm value. To achieve this important objective, secondary data covering the period 2005-2015, of 15 Indian banks and 15 IT Indian firms, had collected and used in the analysis. Panel data analysis had been employed, where operational efficiency is proxied by six financial ratios. Using the regression method in data analysis, and hypotheses testing, the results showed that fixed assets turnover, and return on capital, each of which has a negative relationship with a firm evaluation regarding the banking system, whereas only fixed assets turnover has this negative relationship with firm value.

[5], carried out a study to determine whether there is a relationship between the efficiency of the U.S. real state firms and shareholders' value. Data covering the period 1995-2017 of a sample consisting of 358 U.S real state firms, is used in the analysis. Employing the correlation and regression statistical methods, the study demonstrated that there is a strong positive relationship between the value of U.S real state firms and lagged operational efficiency measures.

[4], investigated the impact of operating efficiency on the firm valuation of two industries in India. Secondary data from 30 Indian firms covering the period 2015-2015 had been collected and used in the analysis and hypotheses testing. Six financial ratios were considered as a proxy for operating efficiency. The authors of the study employed panel data analysis in exploring the relationship between operating efficiency as an independent variable, and firm value as a dependent variable. The study showed that the firm operating efficiency has a significant impact on firm value.

[17], examined the effect of firm efficiency on the relationship between capital structure and firm value. The purpose of the study was to investigate whether firm efficiency influences the capital structure and firm value relationship, based on a sample consisting of thirty nonfinancial listed firms at the Nairobi Stock Exchange. The secondary data of the firms included in the sample covering the period from 2008 to 2013, had collected and used in the analysis. The ratios of retained earnings to total capital, debt to total capital, and equity to total capital were used as measures of capital structure. Operating efficiency, cost efficiency, and profit efficiency were used as measures of firm efficiency, whereas firm value is measured using firm inputs and outputs. The panel data analysis was employed based on the fixed effects model. The results demonstrated that cost efficiency, operational efficiency, and profit efficiency, each of which, has a negative significant effect on the capital structure and firm value relationship. In addition, the results showed that capital structure has a positive significant influence on firm value.

[15], investigated the impact of operational performance on the firm value of manufacturing listed firms at ASI, in Jordan. The secondary data covering the period 2006-2015 of 40 listed firms, is collected and used in the analysis. A sample, of 40 listed industrial firms is used in the analysis and hypotheses testing. Employing the regression method in the analysis of data, the study revealed that operational performance has a significant impact on firm value.

The aim of [1], was to investigate the relationship between the ratios of financial efficiency and share prices of insurance-listed firms at Bursa Istanbul. Quarterly data covering the period from 2005 through 2012, of the entire 7 insurance listed firms at bursa Istanbul, was collected and used in hypotheses testing. Using the regression method in hypotheses testing, the results

showed that a significant relationship exists between financial ratios and share prices.

[2], [3], examined the effect of operating efficiency on firm valuation. Secondary data covering the period that extends from 2005 to 2012, of a sample consisting of 90 firms spread over six industrial sectors of India, had been collected and used in the analysis and hypotheses testing. The authors examined the effect of six important financial ratios on firm value. Using the panel data analysis, the results showed that gross profit, return on capital, asset turnover, and sales, have a significant impact on firm value at the inter-industry level, whereas, in the collective sample, the entire six financial ratios have a significant impact on firm value. The results also showed that the role of the banking industry is positive in value creation, and value creation depends on present performance.

[8], investigated the relationship between the change in operational efficiency and the change in future performance. To achieve the purpose of the study, the authors gathered data covering the period 2008-2012, of a sample consisting of 244 firms, among the entire listed 500 firms in the Bombay Stock Exchange. Using the Pearson correlation method in data analysis and hypotheses testing, the study showed that the change in operation efficiency plays a role in the changes in future performance.

[22], carried out a study to determine the effect relationship of each ownership concentration, investment opportunities, operational efficiency, and firm value. The authors collected and analyzed the attributed data, covering the period 2013-2019, to 28 listed conventional banks on Indonesian Stock Exchange. The cost-efficiency ratio is used as a measure of operational efficiency, whereas Tobin's Q, is used as a measure of firm value. The study revealed that operational efficiency mediates the significant influence of ownership concentration and investment opportunities, on firm value.

3 Hypotheses Development

Based on the consideration of the literature, and the limited prior research regarding operational efficiency and its relation with firm value, the following two hypotheses are developed, and listed in their null form.

Ho1. The operational performance efficiency of the listed manufacturing firms at the Amman Stock Exchange has no significant impact on the firm market value of these firms.

Ho2: Major shareholding does not moderate the assumed impact of operational performance efficiency of the listed manufacturing firms at the Amman Stock Exchange, on the firm market value of these firms.

4 Methodology

The population of the study includes the entire listed manufacturing firms at ASE. In total, there were 32 listed manufacturing firms at ASE by the end of 2020, of these, 4 firms were eliminated because no complete data along 2011-2020, was available. As a result, the data from 28 firms had collected and used in the analysis and hypotheses testing.

Firm value is the dependent variable, where Tobin's Q is used as a measure of firm value. Tobin's Q is the relationship of a firm market value to its total assets. The independent variable is the operational efficiency of performance, where five measures are used in measuring operational efficiency of performance, including inventory turnover, receivables turnover, total assets turnover, cash flows from operations, and working capital. Inventory turnover is the relation between the cost of goods sold and to average inventory. Receivables turnover is a ratio between credit sales and the average account receivables. On occasion, the average accounts receivable can be determined by finding the sum of beginning and ending accounts receivable and dividing this sum by 2. Total assets turnover is the relationship between total sales and average total assets, where average total assets equal the total of beginning and ending total assets divided by 2. The net cash flows from operations had been taken directly from the statement of cash flows, while net working capital; is the difference between total current assets and total current liabilities.

The major shareholding is a moderator variable and is used to determine whether it moderates the expected impact of operational efficiency on firm value. Major shareholding is the ratio of those having 5 percent or more of the entire number of shares outstanding. Firm size is used in this study as a unique control variable. The natural logarithms of total assets are used as an indicator for firm size, as a control variable.

Descriptive statistics such as the mean, standard deviation, least value, and highest value, are used in data analysis and description, whereas the multiple and hierarchal regression methods are used in hypotheses testing. Therefore, two models are used as follows.

Model A

$$FV = a + bINT + cRTV + dATV + eOCF + fFWC + gFSZ + E \quad (1)$$

Model B

$$FV = a + bINT + cRVT + dATV + eOCF + fFWC + gMJS + h(INT \times MJS) + i(RVT \times MJS) + j(ATV \times MJS) + k(OCF \times MJS) + l(FWC \times MJS) + E \quad (2)$$

Where:

a, b, …h. Logarithms refer to the value of FM when the value of the corresponding variable equals zero.

FV: Firm Market Value and computed by multiplying the ordinary share market price by the number of ordinary shares outstanding.

INT: Inventory turnover.

RVT. Receivables Turnover

ATV: Total assets turnover.

OCF. Cash flows from operations

FWC. Net working capital

FSZ. Firm size

MJS: Major Shareholding

E. Residuals

Both hypotheses are tested based on a 95 percent level of confidence, or a 5 percent (1 – 0.95) coefficient of significance. Descriptive statistics are used in data analysis such as the mean, and the standard deviation. Other descriptive statistics are used such as the least and the highest values. The multiple and hierarchal regression methods are used in hypotheses testing where the multiple regression is used in testing the first hypothesis, and the hieratical regression method is used in testing the second hypothesis that includes the moderating variable. F-value, in addition to the coefficient of significance, was used as a decision base rule. Using the coefficient of significance as a decision base for the acceptance or rejection of the null hypotheses, the null hypothesis is accepted when the computed coefficient of significance is higher than the corresponding one, which equals 5 percent. On the opposite, a null hypothesis is rejected in a case where the computed coefficient of significance is less than the corresponding predetermined, which equals 5 percent.

5 Results and Discussion

5.1 Variables Description

The variables of the study are categorized into four categories, dependent, independent, moderating, and control variables. In this section, in details description of each variable had introduced.

Table (1) shows the mean, standard deviation, and the least and the highest value of each variable. Tobin's Q is used as an indicator of firm value. Considering Table (1) shows that the highest value of Tobin's Q is 3.576639, and the least one is 0.081694. The table also shows that Tobin's Q has a mean of 0.70875933, with a 0.540794111 standard deviation. The related statistics of Tobin's Q seem normal, and nothing exceptional or abnormal deserves comment.

With regard to the descriptive statistics of receivables turnover, the mean is 4.82385710, with a 6.386197907 standard deviation. The standard deviation of inventory turnover seems high, and this is because different industries are classified under the manufacturing sector of Jordan, where high inventory is required to be maintained in some industries, and less inventory is considered adequate to be kept on hand. The highest value of inventory turnover is 43.240841, whereas the least inventory turnover is 0.091676. Considering receivables turnover, the mean is 8.35527665, and the standard deviation is 2.020744518E1. The highest receivables turnover value is 209.334174, while the least equals 0.151020. The standard deviation of receivables turnover seems high because of the different credit policies, the firms adopt, and because of the different sales volumes of different firms. The entire descriptive statistics of total assets turnover are normal and have no exceptions. The mean, standard deviation, highest, and least values are, 0.50192584, 0.035112133, 0.351046, and 0.351046, respectively. The working capital is found as proportional to total assets to be consistent with the nature of other values. Considering the descriptive statistics it equals, 0.24684684, 0.240795612, 0.818729, and 0.818729, of the mean, standard deviation, highest value, and least value, respectively. Nothing exceptional in the descriptive statistics of working capital, that needs comment, except that the least value is minus value, which means that current assets are less than current liabilities, where firms of minus net working capital have a liquidity problem in the short range. The last independent variable is the net cash flows from operating activities. Cash flows from operations are also found as proportional to total assets to be consistent

with other variables. Nevertheless, to be negative cash flows from operating activities, is the normal situation, because cash inflows from operations may be less than cash outflows in some accounting periods. The mean, standard deviation, highest value, and least value of net cash flows from operating activities, are proportional to total assets are 0.06853246, 0.095431954, 0.599134, and -.188643, respectively.

Major shareholding is the moderating variable in the study, where major shareholders include those shareholders, who have 5 percent of the entire number of shares outstanding. Note that some firms are 100 percent, while others are zero. When the major shareholding ratio is zero this means that there are no shareholders who have 5 percent of the entire outstanding shares or more, and when it is 100 percent, this means that all shareholders have 5 percent or more, of the entire outstanding shares. Nevertheless, the mean, standard deviation, highest value, and least value are 56.12255714, 2.827723297E1, 100, and zero, respectively.

Firm size is inserted as a control variable, where it is represented using the natural logarithms of total assets. Based on the descriptives available in the table, it is apparent that, except few firms, most of the remaining firms use a low amount of total assets. The descriptive statistics of firm size are, 7.49797143, 0.561882600, 9.088000, and 6.351000, for the mean, standard deviation, highest, and least value, respectively.

Table 1. Descriptive Statistics

	Mean	**Standard Deviation**	**Minimum Value**	**Maximum Value**
Tobin's Q	0.70875933	0.540794111	0.081694	3.576639
Inventory Turnover	4.82385710	6.386197907	0.091676	43.240841
Receivables Turnover	8.35527665	2.020744518E1	0.151020	209.334174
Total Assets Turnover	0.50192584	0.035112133	0.351046	0.709245
Working Capital	0.24684684	0.240795612	-.365596	0.818729
Operating Cash Flows	0.06853246	0.095431954	-0.188643	0.599134
Major Ownership	56.12255714	2.827723297E1	.000000	100.000000
Firm Size	7.49797143	0.561882600	6.351000	9.088000

Several tests were employed to insure that the data is appropriate for analysis and hypotheses testing. The normal distribution, multicollinearity, and Durbin-Watson tests are employed in this context. Table (2) shows the results of these tests. The result refers to data usefulness and validity. The Tolerance and Variance Inflation factor (VIF) employed, and its results are summarized and revealed as appearing in the table. The VIF for all variables is less than 10, where which means that there are no overlapping variables, [6]. In addition, the Durbin-Watson test is also used and its results reveal that the D-W coefficient is 1.58, where this value is considered optimal since the Durbin-Watson test value is optimal it is 1.5 and 2.5.

Therefore, the value refers to the absence of autocorrelation, [9].

Table 2. Data Normality and Multicollinearity Tests

Variables	Multicollinearity		Autocorrelation
	Tolerance	VIF	Durbin-Watson
Inventory Turnover	0.864	1.158	1.63
Receivables Turnover	0.969	1.032	
Total Assets Turnover	0.872	1.147	
Working Capital	0.812	1.232	
Operating Cash Flows	0.855	1.169	
Firm Size	0.856	1.168	
Major Shareholding	0.812	1.232	

5.2 Correlations

The Pearson correlation coefficient of each independent variable with other independent variables had been computed. Table (3) shows the correlation coefficients among the independent variables, where based on the coefficients of correlation, no strong correlation is found among independent variables. On the opposite, the correlation among the independent variables is considered low, and among some independent variables, the coefficient is too much low. The results of the Pearson coefficient of correlation refer that the independent variables and their values are valid to be used in the analysis, and useful for the investigation of its effect on Tobin's Q, as the single dependent variable in the study.

Table 3. Pearson Coefficients of Correlation among Independent Variables

	Inventory Turnover Ratio	**Receivables Turnover Ratio**	**Total Assets Turnover**	**Working Capital**	**Operating Cash Flows**
Inventory Turnover	1	0.077	0.086	-0.324	0.034
Receivables Turnover		1	0.001	-0.155	0.046
Total Assets Turnover			1	0.093	-0.279
Working Capital				1	0.168
Operating Cash Flows					1

5.3 Normality

The data had tested to examine whether it is subject to normal distribution. To examine the data Normality, two tests are used including, Kolmogorov-Smirnov and Shapiro-Wilk. Table (4) shows the coefficients of normality, and degrees of freedom, in addition to the coefficient of significance regarding data normality using the coefficient of Kolmogorov-Smirnov and Shapiro-Wilk. Based on the coefficients of normality for underline tests of both Kolmogorov-Smirnov and Shapiro-Wilk, and based on the significance of normality, the data is normally distributed, where only the data of working capital variable under Kolmogorov-Smirnov seems slightly normal, despite it is normally distributed under Shapiro-Wilk test.

Table 4. Data Normal Distribution Coefficients

	Kolmogorov-Smirnov[a]			**Shapiro-Wilk**		
	Statistics	**DF.**	**Sig.**	**Statistics**	**DF.**	**Sig.**
Tobin's Q	0.128	275	0.000	0.849	275	0.000
Inventory Turnover	0.265	275	0.000	0.603	275	0.000
Receivables Turnover	0.353	275	0.000	0.269	275	0.000
Total Assets Turnover	0.092	275	0.000	0.849	275	0.000
Working Capital	0.050	275	0.093	0.989	275	0.038
Operating Cash Flows	0.076	275	0.001	0.947	275	0.000

5.4 Hypotheses Testing

The study is based on two hypotheses, one is regarding the impact of operational efficiency on firm value, with no moderator, while the second is regarding the moderating impact of major shareholding on the effective relationship of operational efficiency on firm value.

5.4. 1 First Hypothesis Testing

The first hypothesis is developed to enable examining whether operational efficiency has a significant impact on firm value. Operational efficiency is measured using five independent variables including, inventory turnover, receivables turnover, total assets turnover, working capital, and operating cash flows. Firm value, the dependent variable is measured using Tobin's Q. The first hypothesis is appearing as follows.

Ho1. The operational efficiency of the performance of the listed manufacturing firms at the Amman Stock Exchange has no significant impact on the market value of these firms.

The first hypothesis is tested employing multiple regression, using firm size as a control variable. The results of the test are appearing in Table (5). The table shows that the coefficient of correlation (R), equals 0.559, where this means that there is a moderate correlation between the five independent variables and the firm size in one hand, and firm value in the other hand. The table also reveals that the coefficient of determination (R^2) equals 0.313, where this means that the five elements of operational efficiency explain 31.3 percent of the change taking place in firm value.

The table also shows that the computed f-vale equals 20.323, and the related coefficient of significance equals zero. The null hypothesis is accepted when the computed f-value is less than the tabulated, or when the computed coefficient of significance is higher than the predetermined one, which equals 5 percent. On the opposite, the null hypothesis is rejected when the computed t-value is higher that the corresponding tabulated one, or when the computed coefficient of significance is less than the predetermined one, which equals 5 percent. Considering the information available in the table, the computed coefficient of significance equals zero. Because the computed t-value is higher than the tabulated, and because the computed coefficient of significance is less than 0.05, the decision is to reject the null hypothesis and accept its alternative. This finding means that the operational efficiency of performance significantly affects firm value, and it explains a somewhat large portion of the change occurring to firm value.

Table 5. The coefficients of the First Hypothesis Test

	R	R^2	Adj. R^2	DF.	F. Value	Sig. Value
Operational Efficiency	0.559	0.313	0.297	274	20.323	0.000
		B. Value	Beta	t-value	Sig	
Inventory Turnover		0.009	0.105	1.921	0.056	
Receivables Turnover		0.002	0.071	1.367	0.173	
Total Assets Turnover		2.53	0.164	3.011	0.003	
Working Capital		0.927	0.414	7.287	0.000	
Operating Cash Flows		1.461	0.255	4.652	0.000	

Considering the measures used for operational performance in the analysis, and in testing the first hypotheses, the results approve that more efficient use of inventory, a better policy of receivables, and the collection of receivables are reflected at higher firm value. In addition, efficient working capital and efficient use of total assets improve profitability, and in the end, lead to an increase in firm value. Enough cash flows from operations reflect policies of sales, and credit sales, in addition to the collection of receivables, and the adoption and application of these policies improve performance and lead to higher firm value.

When the coefficients of the model are solved, the model appears as follows:

$$FV = -2.773 + 0.009INT + 0.002RTV + 2.53ATV + 1.461OCF + 0.927FWC + 0.243FSZ + 0.541 \quad (3)$$

5.4.2 Second Hypothesis Testing

The second hypothesis of the study is regarding the impact of operational on firm value, sing major shareholding as a moderator on this relationship. Major shareholding is the ratio of the shares owned by major shareholders to the entire number of ordinary shares outstanding, where those who have 5 percent of the entire number of ordinary shares outstanding are classified as major shareholders. The hypothesis is listed again, in its null form as follows.

Ho2: Major shareholding does not moderate the assumed impact of operational performance efficiency of the listed manufacturing firms at the Amman Stock Exchange, on the firm market value of these firms.

The regression method is employed in testing whether major shareholding moderates the effect relationship of operational efficiency of performance on firm value. Table (6) shows the coefficients related to the second hypothesis test. Considering the table shows that the coefficient of determination (R^2) now equals 0.434. Where R^2 in the direct effect of operational efficiency on firm value was 0.313, it is increased to 0.434, where this means that major shareholding as a moderator, has an interaction effect, on the relationship between operational efficiency and firm value. When the major holding is taken into consideration, R^2 increased by 0.121. Considering the adjusted R^2, it was 0.297, but when major shareholding is taken into consideration as a moderator, the Adjusted R^2 increased to 0.410, and it became higher than the adjusted R^2 without a moderator by 0.113.

The computed t-value of the direct impact of operational efficiency of performance was 20.323, but when major shareholding is taken into consideration as a moderator, the f-value declined to 18.319, with a 2.004 decline. The coefficient of significance continued at zero with and without a moderator. As a result of the major shareholding moderating variable, the adjusted R^2 increased from 0.313 to 0.434. This means that while the operational efficiency as an independent factor was explaining only 0.313 of the change in firm value, without the moderator, it now explains 0.41, of that change in firm value. This means that the major shareholding-moderating variable plays a significant role in moderating the effect relationship of operation efficiency on firm value. Therefore, the null hypothesis is rejected, and its alternative one is accepted. This result means that there is a moderating impact of major shareholding on the impact relationship of operational efficiency on firm value. The existence of a combined effect of the operational factors supplies the logic. When there is good management of inventory, and an efficient way of managing receivables and the collection of receivables, in addition, to the cash, flows from operations, the result will appear on profitability, and on firm value, since share prices reflect the performance, especially, the operational performance. Moreover, investment in the total assets of the firm is assumed to lead to more products, higher capacity, and better market value for the firm, as a whole. Managing working capital in a way leads to the absence of maintaining too much high liquid assets, and at the same time, no shortage is also assumed to be reflected at the end on the market value of the firm.

Table 6. The Coefficients of the Second Hypothesis Test

Independent variable	Variables	First model		Second model	
		Sig	F	Sig	F
Operational Efficiency	Direct effects	0.000	20.323		
	Interaction effects	-		0.000	18.319
	R^2	0.313		0.434	
	Adj.R^2	0.297		0.410	
	ΔR^2	0.121			
	ΔAdj. R^2	0.113			
	Δ F	-2.004			
	Sig.	0.000			

	B Value	Beta	T. Value	Sig.
Inventory Turnover	-0.015	-0.181	--0.854	0.394
Receivables Turnover	0.013	0.498	0.884	0.377
Total Assets Turnover	0.291	0.019	0.123	0.902
Working Capital	- 0.308	-0.170	-1.288	0.199
Operating Cash Flows	0.114	0.020	0.154	0.878
Major Shareholding	-.011	-0.583	-0.653	0.514
(Major Shareholding * Inventory Turnover)	0.000	0.302	1.345	0.180
(Major Shareholding * Receivables Turnover)	0.000	-0.471	-0.828	0.408
(Major Shareholding * Total Assets Turnover)	0.022	0.597	0.123	0.902
(Major Shareholding * Working Capital)	0.023	0.653	4.595	0.000
(Major Shareholding * Operating Cash Flows)	0.018	0.212	1.575	0.116

When the coefficients of model B, which involves the interaction effect are solved, it appears as follows.

$$FV = 0.204 - 0/015INT + 0.013RVT + 0.291ATV + 0.114OCF - 0.380FWC - 0.011MJS + 0.000(INT \times MJS) + 0.000(RVT \times MJS) + 0.022(ATV \times MJS) + 0.018(OCF \times MJS) + 0.023(FWC \times MJS) + 1.154 \quad (4)$$

The existence of a significant moderating role of major efficiency can be justified by the existence of a strong incentive for major shareholders to intervene in the operational policies of firms. Major shareholders have high investments in the assets of firms, and they are more interested in operational performance than small shareholders since they generate more benefits from efficient operational performance. Actually, major shareholders have more interest in the net assets of firms than other shareholders, and they receive more benefits when firms achieve higher profits, where which is considered a strong incentive for major shareholders to take actions to enhance operational performance. In more detail, major shareholders may take care of inventory management, and they may exercise an effect to enforce better inventory and receivables policies, to insure better performance and higher profits. Cost reduction is one of the goals that may shareholders struggle to achieve this reduction in cost. Therefore, major shareholders are ready to let management take action in the direction of cost reduction, through the exercise of better cost control, maintaining the appropriate level of inventory so that it maintains continuous operations, and avoiding keeping extra inventory. Major shareholders can also encourage the adoption of good sales and receivables policy, where they encourage all procedures that may lead for higher sales volume, and a policy of receivables that do not restrict sales, and at the same time, will not lead to high bad debt expense.

6 Conclusions and Findings

The study aims for determining the impact of operational efficiency of performance on firm value, and the moderating role of major shareholding on the effective relationship between operational performance on firm value. The required secondary data had been selected from the

ASE website, and the hypotheses had been tested using the regression method.

The hypotheses testing demonstrated that the operational efficiency of performance, consisting of indicators including, inventory turnover, receivables turnover, total assets turnover, net working capital, and cash flows from operating activities, has a significant impact on firm value. This finding is explained by the impact of efficient operational performance on share market price, and the efficient operation of performance is reflected in share price. In addition, the results showed that major shareholding in the ownership structure of listed manufacturing firms at ASE plays a significant moderating role in the impact relationship of operational efficiency of performance on firm value. More studies of operational efficiency of performance are recommended to be employed, and more operational aspects are recommended to be taken in this context since operational efficiency of performance explains a high proportion of change in firm value.

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