The Impact Of Asset Management Efficiency

Ratios on Earnings per Share

Case Study of Industrial Companies Listed

on the Amman Stock Exchange from 2005 to 2019)

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Abstract

This study aims to analyze the effect of the represented asset management efficiency (total asset turnover (TAT), fixed asset turnover (FAT), and working capital turnover (WCT)) on the earnings per share (EPS) of industrial companies listed on the Amman Stock Exchange (IASE) as the data were obtained from the Amman Stock Exchange (ASE) from 2005 to 2019, where the unit root test was analyzed for the time series of the study variables. Results revealed that all the variables stabilize at the first differences 1 (1), several diagnostic tests, such as variance instability, Ramsay stability, and serial correlation tests were also performed, all of which confirmed the fit and validity of the model used. Results showed the positive and strong impact of the asset turnover rate on EPS, the positive and strong impact of the fixed asset turnover rate on the return on profitability, and the positive impact of the (WCT) on EPS. Therefore, asset management efficiency positively affects the EPS. Moreover, this result indicates the efficiency of industrial companies in managing assets during the study period.

Keywords: Asset management, activity ratio, financial ratio, earning per share, ARDL model

1. Introduction

In this era, investing in stocks has become one of the desirable options for investors, given that the process of making investment decisions is crucial because the investor pays attention to the high return resulting from investing in a particular stock. Therefore, the process of obtaining a high return on a share is affected by special internal factors in the organization or company, given that managing assets in industrial companies is one of the main factors that lead to high efficiency and activity of the industrial company. Many financial ratios indicate the efficiency in managing assets, such as the total asset turnover (TAT), fixed asset turnover (FAT), and working capital turnover (WCT) rates.

This study indicates that asset management efficiency can affect EPS in industrial companies.

Thus, the research question in this article has been formulated as follows: What is the effect of the management efficiency level on the EPS of (IASE)?

By reviewing previous studies and the literary side of the study variables, the study hypotheses can be formulated as follows:

Hypothesis 1: A statistically significant positive relationship at the level of (α 0.05) exists between the total assets turnover rate (TAT) and the EPS.

Hypothesis 2: A statistically significant positive relationship at the level of (α 0.05) exists between the fixed assets turnover (FAT) rate and the EPS.

Hypothesis 3: A statistically significant positive relationship at the level of (α 0.05) between the working capital turnover rate (WCT) and the EPS.

To test the hypotheses, the study used ARDL analysis. The independent variables are the total FAT, the FAT, the WCT rates, and the dependent variable is EPS. This study obtained the data from the annual reports of (IASE).

The article proposes to analyze the relationship between asset management efficiency ratios (TAT, FAT, and WCT rates) on EPS using the ARDL model.

Moreover, this study aims to provide results and recommendations to help investment decision-makers in industrial companies in Jordan.

Thus, this study sheds light on asset management efficiency in industrial companies in Jordan. Accordingly, its practical importance comes in analyzing the impact of asset management efficiency ratios on EPS, which is the goal that management seeks in business organizations, as well as its importance for investors in making investment decisions in companies, based on asset management efficiency ratios.

Results must also be obtained to help company investors in deciding whether to stay in the company for a long period, depending on the efficiency ratios of the management in managing assets and the impact on the EPS, which is of interest to all investors.

This study analyzes the relationship between asset management efficiency ratios (TAT, FAT, and WCT rates) on EPS using the ARDL model.

The remainder of this paper is structured as follows. Section 1 introduces the study. Section 2 presents previous studies and the theoretical side. Section 3 discusses the theoretical relationship between the study variables. Section 4 provides the evolution of study variables during the study period. Section 5 entails the methodology. Section 6 exhibits the empirical analysis. Section 7 concludes the study. Section 8 unveils the recommendations. Section 9 provides the references. Section 10 presents the appendixes.

2. Previous Studies and the Theoretical Side

2.1 Previous Studies

Many studies have unveiled the relationship between financial ratios and EPS Study of Muhamma & Ali. (Muhammad, S., Ali, G., 2018) The study aimed to clarify the impact of the basic ratio analysis and the strength of its predictions of stock returns for 115 companies listed on the Karachi Stock Exchange in Pakistan from 2007 to 2017. The study took the financial ratios of profitability, liquidity, financial leverage, and market ratios in their impact on the stock return. Using a fixed-effect model analysis and the correlation between variables the results of the analysis showed that the relationship between financial ratios and EPS was positive, and the relationship was positive and strong between return on assets, return on equity, price to profit ratio, and EPS. However, the effect of the liquidity ratios and the financial leverage ratio was not significant on the EPS. The study highly emphasized the necessity of relying on fundamental analysis, especially return on assets and return on equity, for investors to make investment decisions in predicting EPS, in addition to the need to consider the technical analysis alongside fundamental analysis to predict stock returns.

Study of Musallam (Musallam, S, R., 2018) The study aimed to reveal the relationship between the financial ratios and EPS for 26 listed Qatari companies from 2009 to 2015. The study relied on an analysis using a model Weighted Least Squares (WLS), where the analysis showed that the market ratio to book value, return on assets, return on equity, profit ratio, dividend ratio, and net profit ratio have no significant relationship with stock returns in the market. The most important recommendations of the study were that the analysis of financial ratios can be taken into account when by investors and government policymakers in making investment decisions.

Study of Purnamasari (Purnamasari, D., 2015) The study aimed to clarify the impact of changes in the return on assets, return on equity, and the added economic value of stock price changes and their impact on the return on the stock. The statistical analysis revealed that return on assets, return on equity, and economic added value impact stock price changes and stocks return. The study recommended the need to consider the return on assets, property rights, and the added economic value because they affect stock prices and stock returns.

Study of Tamuntuan (Tamuntuan, U., 2015) The study aimed to clarify the impact of EPS, return on assets, and return on equity on the share price of food and beverage companies listed on the Indonesia Stock Exchange from 2010 to 2014 by using the purposive sampling method. By using the multiple linear regression analysis, they showed that only EPS significantly affects the share price. Thus, investors should consider the EPS as an indicator for the food and beverage companies listed on the Indonesia Stock Exchange when making investment decisions.

Study of Abdul Rivai, & Suharto (Abdul-Rivai, C, L., Suharto., 2020) The study examined and determined the effect of the debt-to-equity ratio and return on assets on the EPS in various manufacturing companies affiliated with the industrial sub-sector of companies listed on the Indonesian Stock Exchange for the period 2016–2018. The study

sample comprises 45 companies. Their study relied on the use of path analysis techniques. The results of the study showed that t debt-equity ratio significantly impacts the EPS. The analysis also shows an effect of the return on assets on the EPS. One of the most important recommendations of the study was that, in making stock purchase decisions in the capital market, investors should pay more attention to the debt-to-equity ratio and the return on assets, because they have a significant impact on EPS.

Study of Taani & Banykhaled (Taani, K., Banykhaled, M., 2011) The study examined the impact of accounting information on EPS, where 40 companies listed on(ASE) were selected. The study used multiple regression, where the independent variables (profitability ratio, liquidity ratio, return on equity, market ratio, company size, cash flow ratio from operating to sales) and used leverage ratio over EPS as a dependent variable where the analysis showed that the percentage of cash flow from operating to sales and the percentage of financial leverage impacts the return on the stock. The study suggested conducting more studies by looking at other variables that affect the returns on shares.

Study of Anwaar (Anwaar, Maryam., 2016) The study conducted an Impact of Firms' Performance on Stock Returns (Evidence) test on Listed Companies of FTSE-100 Index London, UK. The study was based on a multi-regression analysis of the study variables, where the results showed that the return on assets and the profit margin ratio positively affect the return on the stock, whereas the return on equity and the quick liquidity ratio had a small effect. The study suggested further this subject by including more companies and increasing the period to obtain better results.

Study of Emamgholipour, et al (Emamgholipour, M ., Pouraghajan, A ., Yadollahzadeh, N, A ., Haghparast, T, M ., Shirsavar, A, A., 2013) The study discussed the Effects of Performance Evaluation Market Ratios on the Stock Return: Evidence from the Tehran Stock Exchange, where 80 companies listed on the Tehran Stock Exchange from 2006 to 2010 were taken. In the study, the variables of the ratio of market value to book value and price to earnings ratio were used. The results of the analysis indicated that by using multiple regression, The EPS of the previous year positively affects the EPS of the current year, but the earnings share of the next year has a limited positive impact. The analysis also showed that the price-to-earnings ratio and the market value to book value ratio negatively impact the share of profits in the next year. Fundamentally, the impact of the market price is one of the most important recommendations to take into account, which negatively affects the return on the stock in the current and future years.

Some studies also unveiled the relationship between current assets, stock performance, and asset management efficiency. For example, the study by Efeeloo, et al (Efeeloo, N., Ajoku, O, C ., James, K, C ., 2020) The study aimed to clarify the impact of current assets on the performance of shares of oil and gas companies listed in Nigeria. The specific objectives were to determine the impact of the measures of current assets on stock performance. Five oil and gas companies were selected in the study samples and were analyzed using correlation and regression statistics. The analysis showed that accounts receivable and inventories significantly affected the share price of the listed companies. However, the impact of cash was insignificant, and the dues of oil and gas companies in Nigeria did not positively impact stock prices. The study also revealed that asset management efficiency positively affects the EPS. The study concluded that oil and gas companies should re-establish evaluating its credit policy to reduce the level of receivables. Study of Nasution. (Nasution, A, R ., 2020) The study aimed to determine the impact of inventory turnover on profitability in automobile companies listed on the Indonesia Stock Exchange, where profitability was measured through return on assets. The study used simple linear regression analysis. The study showed that inventory turnover does not positively affect the return on assets and that the management cannot consider asset turnover as a good criterion when deciding to determine the return on assets.

Features of the current study:

Many studies focused on analyzing the relationship between profitability and EPS, and some studies focused on analyzing market ratios and the ratio of liquidity to EPS. Meanwhile, the current study focuses on analyzing the relationship between management efficiency ratios in asset management and EPS. Many previous studies were based on the use of multiple regression, whereas this study uses a modern analysis method by using a long- and short-term ARDL model and by conducting many statistical tests that were not performed by previous studies to obtain the best results. The study sample represents (IASE) from 2005 to 2019. In addition, to the researcher's knowledge, this study is considered one of the rare studies focuses that n the ratios of asset management efficiency in industrial companies.

2.2 The Theoretical Side

Asset management ratios are the most prominent ratio in financial ratio analysis. It measures the effectiveness of the company is using and controlling its management assets and use of assets. It also shows an analysis of how a company can manage assets and obtain profit quickly, which is also called the turnover ratio because it refers to the asset that has been converted or converted into sales. In addition, the company can measure its assets easily because this ratio

consists of assets and sales Turnover rates refer to management efficiency in achieving sales or how efficiently or intensively the company uses its assets to generate sales (Kovalchuk and Verhun (Kovalchuk, T ., Verhun, A ., 2019). ; Westerfield w and Jordan, B (Westerfield,w ., Jordan, B ., 2019).

First - Independent variables.

These ratios indicate the turnover of fixed assets and the efficiency with which the company uses its assets to generate income (Kovalchuk and Verhun (Kovalchuk, T ., Verhun, A ., 2019).

Where Amman Stock Exchange explains how to calculate the study variables for industrial companies as follows.

A.   Asset Turnover Ratio (TAT) = Net Sales/Total Assets

The TAT ratio measures the ability of a company to use its assets to generate sales. It considers all assets, including properties, plant and equipment, capital working in the process, investments, long-term investment, inventories, trade debtors, advances, deposits and prepayments, investment in market securities, short-term loans, cash, and cash equivalents, and so on. In these criteria, a high ratio means the company is achieving more profit (Hossan,   & Habib (Hossan, F ., Habib, M . A ., 2010) This ratio measures the efficiency of the company's management in investing and using its resources in assets to generate sales. If it increases, it indicates the management's efficiency in using its assets to generate sales, which means how much each dinar invested in assets generates net sales? and the increase in the ratio means the numerator has increased, the operational capacity of the assets is higher, but if the percentage is low resort to increasing the operating capacity or buying new assets for the facility. turnover significantly affects profitability (Nurlael, et al (Nurlaela , S ., Mursito , B ., Kustiyah, Eny., Istiqomah , I ., Hartono , S ., 2019)

B.   Fixed Asset Turnover Ratio (FAT) = Net Sales/Fixed Assets

This ratio measures the efficiency of the company's management in investing and using its resources of fixed assets to generate sales. If it increases, it indicates the management's efficiency in using its assets to generate sales, which also means how much each dinar is invested in fixed assets generates net sales? The increase in the ratio means the numerator has increased and the operational capacity of the fixed assets is higher, but if the percentage is low, it increases the operating capacity or buying new fixed assets for the facility.

The company's mismanagement may be in the management of fixed assets when the fixed assets do not lead to an increase in sales (Hossan & Habib (Hossan, F ., Habib, M . A ., 2010)

The above ratios are used as indicators of the company's efficiency in generating sales from assets, especially in industrial companies.

C.   Working Capital Turnover Ratio(WCT) = Net Sales/Working Capital

Working capital, which is current assets minus current liabilities, through it, the company's efficiency in using its working capital to support certain levels of sales is measured, and it shows the relationship between the funds used to finance the company's operations and the revenues it achieves from these operations. The increase in working capital indicates that the company manages its assets as well as its short-term liabilities. Active to support sales conversely, a low ratio indicates companies are investing heavily in inventory. Moreover, the high percentage indicates that the company operates flexibly, has specific needs for additional financing, and the various cash flows are regular, which increases the flexibility of capital spending on expansion and inventory increase, which is also a competitive advantage compared with the rest of the operating companies. In the same field, however, if the ratio significantly increases and exceeds 80%, then it is a negative indicator that the company does not have enough capital to support its sales, which warns that the company may become financially insolvent in the near term.

Second - dependent variable: Earnings per share = net profit attributable to the shareholders of the company/number of shares

Indicates the realized profits for the common stock EPS is one of the important indicators of the real value of a share because it shows how much of the company's profits each shareholder owns after taxes to judge the financial position of the company no general rule exists for good or bad EPS, but the higher the EPS value, the better the performance indicator. (,Abdu l Rahman   & Abu Al-Rub (Abdul- Rahman,   L ., Abu   - Al-Rub , M ., 2018).

3. Theoretical Relationship between the Study Variables

Many studies confirmed the relationship between the different financial ratios and the EPS. They found that the return on assets and the return on equity has a positive relationship with EPS as in the studies of Abdul   Rivai, &   Suharto (Abdul   -Rivai, C, L., Suharto.,, 2020) ; Anwaar (Anwaar, Maryam ., 2016); Purnamasari (Purnamasari, D., 2015); Tamuntuan (Tamuntuan, U., 2015). Other studies also found a positive effect of financial leverage and operating cash

flow ratio on sales on EPS (Taani & Banykhaled (Taani, K., Banykhaled, M ., 2011) ; Musallm (Musallam, S, R., 2018). found a strong positive relationship between EPS and profitability ratios. In terms of the relationship between efficiency and asset management, (Efeeloo, et al (Efeeloo, N., Ajoku, O, C ., James, K, C., 2020) indicated that current asset management is important to maximize the market value of shareholders and reduce risks by creating a relationship between liquidity, risk, and profitability. /The study also unveiled that asset management efficiency positively affects EPS. In addition study by (Le, H., et al,   (Le, H., Vu, K., Le, T., Du, N. & Tran, M.D, 2018) revealed the positive role of working capital on profitability in companies.

This study investigated the impact of effective inventory management on the profitability of manufacturing firms. The study revealed that a significant and positive correlation exists between the efficient management of raw materials stocks and the profitability of manufacturing companies. It also confirms their great predictability in predicting the return on shares in the market, and they can also predict the future also the study reference to the use of (Petcharabul and Romprasert (Petcharabul, P ., Romprasert, 2014) Panel data for listed technology industries In the Stock Exchange of Thailand from 1997 to 2011, covering 15 years on the basis of a reference where the study used the ratio of inventory turnover ratio of the efficiency ratios of management in asset management in the impact on the stock return where the analysis showed that a relationship exists between inventory management and EPS, but it is weak, indicating a strong and effective relationship between asset management and the profitability of cement manufacturers and that the optimal management of current assets has an important role in influencing the profitability of companies (Musallm (Musallam, S, R, 2018).

4. Evolution of Study Variables during the Study Period

Chart (1) provides details of the evolution of the variables used a clear fluctuation exists in the evolution of asset management efficiency ratios as independent variables. A clear fluctuation can be seen in the percentage of EPS as a dependent variable during the study period where the highest percentages of the variables were in 2008, during the study period, except for the WCT rate.

Chart 1. Evolution of study variables during the study period
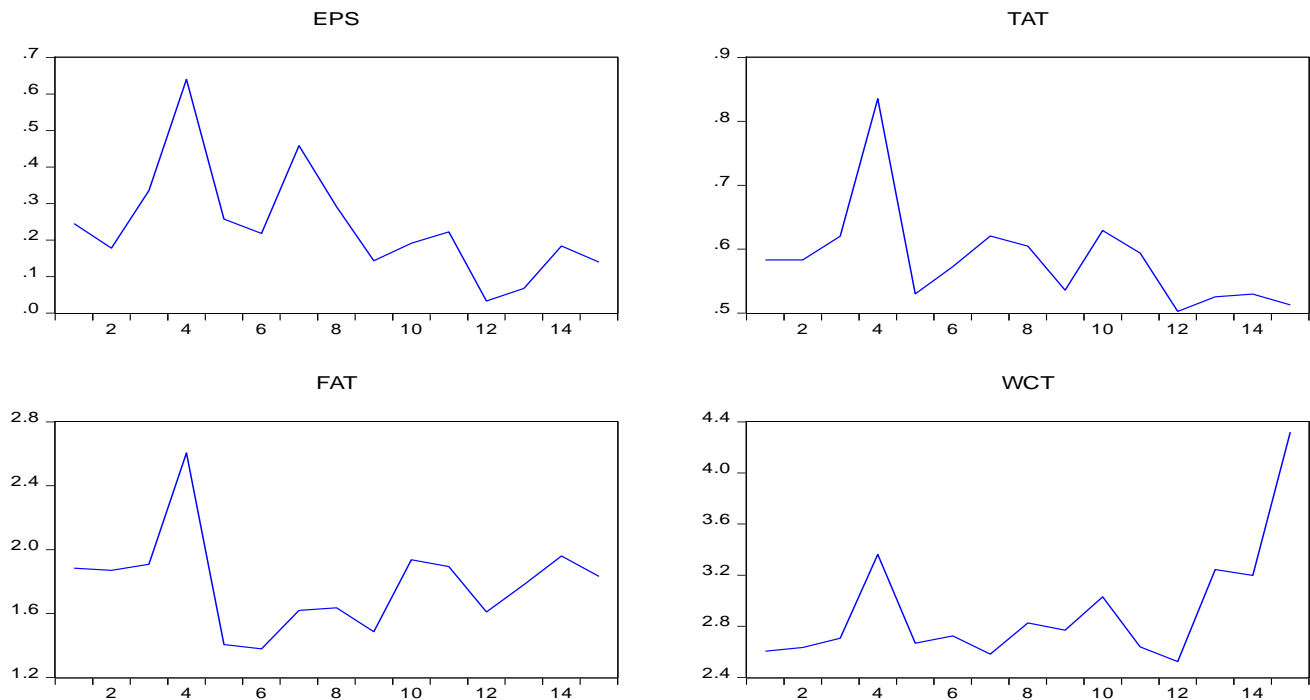
Source: Based on the study data in Appendix no (1) using the program E-views

Table (1) provides details of the variables used. The highest percentage of EPS was 63%, 83% for TAT, and 2.6 for FAT in 2008 during the study period, whereas the WCT ratio was higher in 2019, which amounted to 4.3. The average return per share was 24%, the asset turnover ratio was 58%, and the fixed asset turnover ratio was 1.7, whereas 2.92 for the working capital ratio during the study period.

Table (1) provides the WCT rate, which was one of the highest standard deviation ratios (the highest dispersion ratios) amounting to 46%, then the fixed asset turnover rate, then the EPS, and the least standard deviation was the fixed asset turnover rate, which amounted to 8% during the study period. As indicated by the Skewness coefficient, all variables are skewed toward the right side.

Table 1. Descriptive analysis of all study variables

-	EPS	TAT	FAT	WCT
Mean	0.240220	0.585261	1.786921	2.922219
Median	0.217833	0.583191	1.831936	2.725617
Maximum	0.639866	0.835230	2.604657	4.319896
Minimum	0.033268	0.502675	1.378802	2.523122
Std. Dev.	0.151597	0.080966	0.298953	0.467530
Skewness	1.245996	1.974303	1.093455	1.917866
Kurtosis	4.464666	7.164848	4.872980	6.312583
Jarque-Bera	5.222043	20.58590	5.181641	16.05378
Probability	0.073459	0.000034	0.074959	0.000327
Sum	3.603301	8.778912	26.80381	43.83329
Sum Sq. Dev.	0.321742	0.091778	1.251220	3.060176
Observations	15	15	15	15

Source: Based on the study data in Appendix no (1) using the program E-views

5. Methodology and Model of the Study

A. Methodology

This study adopted descriptive and analytical methods for the completion of the research. The study data were obtained through(ASE) website, and the study sample will be taken, which includes all (IASE) during the study period 2005–2019, and the statistic will be analyzed through the following:

1. The stability of the variables through PP - Fisher Chi-square Unit root

2. ARDL model for the study variables

3. Optimal slowdown periods

4. Diagnostic tests

A. Heteroskedasticity test

B. Residuals Sample

5. Serial Correlation LM Test

6. Ramsey reset test

7. Hypothesis testing

B. Model

Independent variables   Dependent variables
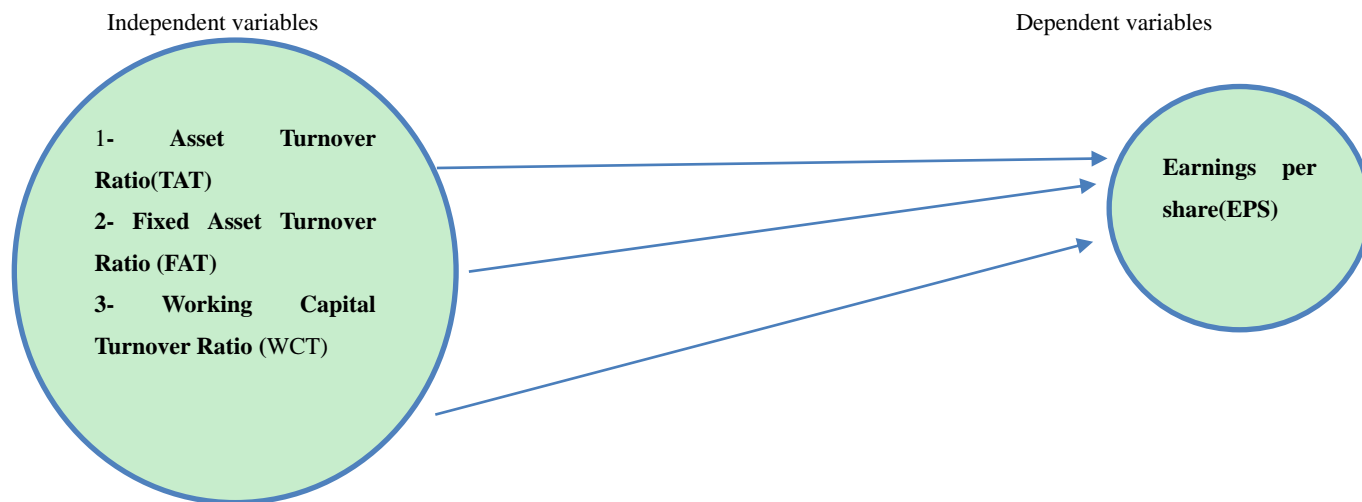
Source: Prepared researcher

6. Empirical Analysis

6.1 Unit Root Test

The unit root test was carried out to perform the ARDL analysis, whose conditions are that all variables are stable to the same degree. The results of the Dickey-Fuller unit root test are summarized as shown in Table 2.

Table 2. Unit Root Test for study variables

Variable	Level	First difference	Degree of stability
EPS	−0.460487 **(0.8679)**	−6.158454 **(0.0004)**	I(1)
TAT	−0.991159 (0.7160)	−9.511630 (0.0000)	I(1)
FAT	−2.673759 (0.1045)	−4.100098 (0.0104)	I(1)
WCT	−0.896860 (0.7576)	−4.141607 (0.0087)	I(1)

Source: Based on the study data in Appendix no (1) using the program E-views

Based on the results of the unit root test in Table (2), all variables were stable at the first difference

Therefore, an ARDL model will be made for all variables.

6.2 Result of the ARDL Model

Table(3)   reveals that the R-square was 99%, meaning that the independent variables represented roughly 99% of the variables in the dependent variable.

The result revealed that EPS (-1) had a weak positive effect on EPS, whereas the TAT had a positive and significant effect on EPS so a percentage increase in TAT leads to a 3 % increase in EPS. The analysis shows FAT had a strong positive effect on EPS, given that a percentage increase in FAT (-2) leads to a 0.46% increase in EPS.

Moreover, WCT has a strong positive effect on EPS, given that a 1% increase in WCT (−1) leads to a 0.13% increase in EPS.

The result also showed that, generally, the model was statistically acceptable given that the F-statistic was equal to (101) and its corresponding p-value was 0.009792, which indicates that the model is significant at the 5% level. In

addition, the statistic Durbin Watson equal on (3.26) indicates that the variables were free of autocorrelation because they fall within Region 2.

Table 3. Results of the ARDL model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EPS(-1)	0.419678	0.134173	3.127888	0.0888
TAT	3.093724	0.463750	6.671103	0.0217
FAT(-2)	0.462895	0.097989	4.723942	0.0420
WCT(-1)	0.138563	0.032223	4.300184	0.0501
C	0.527039	0.244845	2.152536	0.1642
R-squared	0.998034	Mean dependent var	0.244667	
Adjusted R-squared	0.988203	S.D. dependent var	0.162672	
S.E. of regression	0.017668	Akaike info criterion	−5.413583	
Sum squared resid	0.000624	Schwarz criterion	−4.935549	
Log likelihood	46.18829	Hannan-Quinn criter.	−5.511840	
F-statistic	101.5220	Durbin-Watson stat		
Prob(F-statistic)	0.009792	3.263876		

Source: Based on the study data in Appendix no (1) using the program E-views

6.3 Optimal Slowdown Periods

Chart (2) shows the top 20 models. It reveals the best model selected by the ARDL model analysis as (2, 2, 2, and 1), which is shown in Table (4). This was to further demonstrate the validity and reliability of the selected model.

Chart 2: Optimal slowdown periods
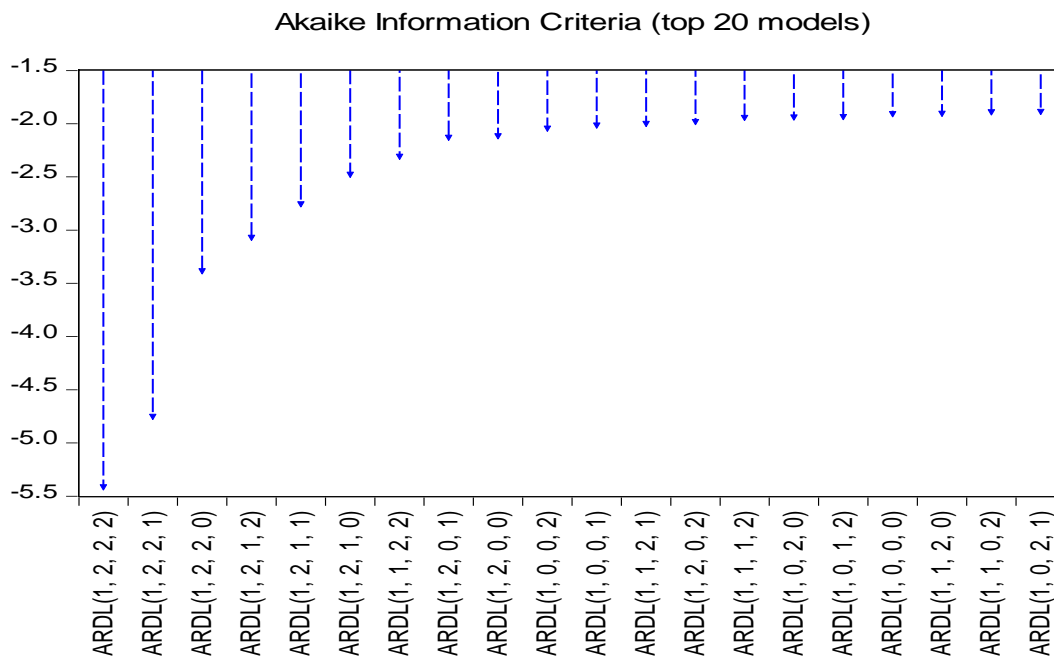
Source: Based on the study data in Appendix no (1) using the program E-views

6.4 Diagnostic Tests

A. Heteroskedasticity Test.

Table (4) shows the results of the variance instability test for the estimated model. If it shows that the probability value for each of prob F-statistic and prob Chi-Square is not significant, then the variance to the limits of the error for the estimated model is stable.

Table 4. Heteroskedasticity Test

Heteroskedasticity Test: Breusch–Pagan–Godfrey			
F-statistic	0.469268	Prob. F(10, 2)	0.8305
Obs*R-squared	9.115161	Prob. Chi-Square(10)	0.5212
Scaled explained SS	0.346744	Prob. Chi-Square(10)	1.0000

Source: Based on the study data in Appendix no (1) using the program E-views

B. Residuals sample

To ensure that the data is used normally, this test is performed From Figure (3), the value of Jarque-Bera of 2.86 and its corresponding p-value of 20% confirm That the data is distributed normally.

Chart 3. Residual Sample
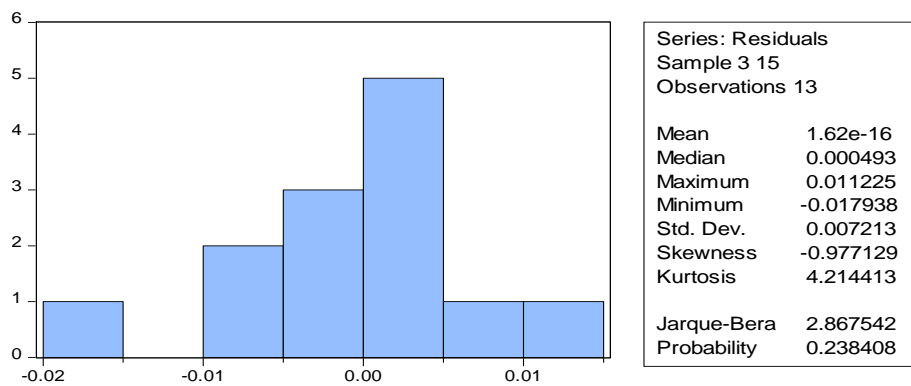
Source: Based on the study data in Appendix no (1) using the program E-views

6.5 Serial Correlation LM Test

Table (5) shows the test of the serial correlation between the residuals, if the value of (F) calculated is not significant at the 5% level, thus accepting the null hypothesis, then the model does not face the problem of the serial correlation between the residuals.

Table 5. Serial Correlation LM Test

Breusch–Godfrey Serial Correlation LM Test:			
F-statistic	2.886677	Prob. F(1,1)	0.3387
Obs*R-squared	9.655240	Prob. Chi-Square(1)	0.0019

Source: Based on the study data in Appendix no (1) using the program E-views.

6.6 Ramsey Reset Test

From the result of the Ramsey reset test in Table 6, the t-statistic of 0.77 and its corresponding p-value of 0.58 indicate that the model is correctly defined, hence the null hypothesis that the model follows the linear specification at the 5% level is not rejected, given that the p-value is > 5%.

Table 6. Ramsey reset test

	Value	df	Probability
t-statistic	0.772482	1	0.5813
F-statistic	0.596729	(1, 1)	0.5813

Source: Based on the study data in Appendix no (1) using the program E-views

6.7 Hypothesis Testing

The First hypothesis: A statistically significant positive relationship at the level of (α 0.05) exists between the TAT and the EPS.

Table (7) shows that the TAT probability value of 0.0217 (2.17%) falls within the acceptable level of 5%, accepting the hypothesis which provides: a statistically significant positive relationship at the level of (α 0.05) exists between the TAT and the EPS, rejecting the null hypothesis.

Table 7. Result of the TAT and the EPS

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EPS (-1)	0.419678	0.134173	3.127888	0.0888
TAT	3.093724	0.463750	6.671103	0.0217

Source: Based on the study data in the table (3) using the program E-views

The second hypothesis: A statistically significant positive relationship at the level of (α 0.05) exists between the FAT and the earning per share.

Table (8) shows that the FAT probability value of (4.20) falls within the acceptable level of 5%, supporting the hypothesis, which provides: a statistically significant positive relationship at the level of (α 0.05) exists between the FAT and the EPS, rejecting the null hypothesis.

Table 8. Results of FAT and the EPS

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EPS(-1)	0.419678	0.134173	3.127888	0.0888
FAT(-2)	0.462895	0.097989	4.723942	0.0420

Source: Based on the study data in the table (3) using the program E-views.

The third hypothesis: a statistically significant positive relationship at the level of (α 0.05) exists between the WCT and the EPS.

Table (9) shows that the WCT probability falls within the acceptable level of 5%, supporting the hypothesis: a statistically significant positive relationship at the level of (α 0.05) exists between the WCT and the EPS, rejecting the null hypothesis.

Table 9. Results of WCT and the EPS

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
EPS(-1)	0.419678	0.134173	3.127888	0.0888
WCT(-1)	0.138563	0.032223	4.300184	0.0501

Source: Based on the study data in the table (3) using the program E-views

Table 10. Results Summary

Variable	Expected signal	Actual signal	Notice
ATA	positive	positive	agrees with the theory
AFA	positive	positive	agrees with the theory
WCT	positive	positive	agrees with the theory

Source: Based on the study data in the table (3) using the program E-views

7. Conclusions

The following conclusions were drawn from the results of the above analysis:

The results show that the TAT has a strong positive impact on the EPS in (IASE). This demonstrates that the management in the Jordanian industrial companies is efficient in managing assets, given that every dinar invested in the assets of industrial companies generates revenues that are directly reflected on the increase in profits and then the increase in the EPS. This result makes investors trust the efficiency of the management in managing the assets of industrial companies in Jordan because it leads to higher profits and then the EPS on the share. In addition, the FAT has a significant positive impact on the EPS of (IASE), because every dinar invested in fixed assets generates revenues that are reflected in the EPS, which also supports the study of Efeeloo, et al (Efeeloo, N., Ajoku, O, C ., James, K, C ., 2020) . which shows that a positive relationship exists between the efficiency of asset management and EPS.

The WCT recorded a positive impact on the EPS for (IASE). This means that every dinar of the working capital for industrial companies generates revenues that are directly reflected on the profits, which increases the EPS for industrial companies. This result was consistent with a study by (Le, H., et al (Le, H., Vu, K., Le, T., Du, N. & Tran, M.D, 2018), which showed the positive relationship between WCT and profitability.

This study was conducted to ascertain the effect of asset management efficiency in industrial companies, which is expressed by the TAT, FAT, and WCT rates on the EPS of (IASE) from 2005 to 2019. The ARDL model was used, and many diagnostic tests were performed, and all pointed toward the same result that asset management significantly and positively affected the EPS in industrial companies in Jordan during the study period.

8. Recommendations

This study makes the following recommendations:

Industrial companies in Jordan must maintain their current strategy of asset management efficiency, which works well for them and helps them increase EPS, thus achieving the ultimate goal of management—maximizing the wealth of owners' Industrial companies in Jordan must maintain the efficiency of fixed asset management and increase investment in fixed assets to increase revenues, which are directly reflected in profits and thus increase the EPS. Moreover, industrial companies in Jordan must maintain fixed asset management efficiency and increase investment in fixed assets to increase revenues that are directly reflected in profits, thus increasing the EPS, Industrial companies must continue to maintain positive working capital to ensure a positive impact on the EPS of industrial companies in Jordan.

Moreover, industrial companies must train employees on asset management to increase asset management efficiency, which is reflected in increasing revenues and then increasing profits and EPS for industrial companies, which achieves the objectives of financial management in maximizing the wealth of owners.

Contribution/Originality

This study is one of few studies that have investigated the effects of asset management efficiency ratios on EPS in industrial companies using the autoregressive distributed lag (ARDL) model analysis

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Appendix

Appendix no (1) Data for the study variables

Year	TAT	FAT	WCT	EPS
2005	0.58	1.88	2.60	0.24
2006	0.58	1.87	2.63	0.18
2007	0.62	1.91	2.71	0.34
2008	0.84	2.60	3.36	0.64
2009	0.53	1.41	2.67	0.26
2010	0.57	1.38	2.73	0.22
2011	0.62	1.62	2.58	0.46
2012	0.60	1.64	2.83	0.29
2013	0.54	1.49	2.77	0.14
2014	0.63	1.94	3.03	0.19
2015	0.59	1.89	2.64	0.22
2016	0.50	1.61	2.52	0.03
2017	0.53	1.78	3.24	0.07
2018	0.53	1.96	3.20	0.18
2019	0.51	1.83	4.32	0.14