RELATIVE AND INCREMENTAL VALUE RELEVANCE OF TRADITIONAL AND REAL PERFORMANCE MEASURES: EVIDENCE FROM PALESTINE MANUFACTURING LISTED COMPANIES

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ARTICLE INFO	ABSTRACT
	Purpose: This study seeks to test both incremental and relative value relevance of the Economic Value-Added (EVA) as a real performance indicator and (EPS) as a traditional performance indicator in the context of the Palestine Exchange (PEX) listed manufacturing companies. **Theoretical framework:** Previous research provided mixed evidence about the superiority of EVA over the traditional performance measures in predicting market value; some studies supported the superiority of EVA (Zimmerman, 1997; Shishanya et al., 2020), while others denied that superiority (Biddle et al., 1997; Agnatia & Amalia, 2018). Testing the value relevance of EVA compared to EPS was rarely conducted in Palestine. **Design/methodology/approach:** Seventy company-year observations were gathered from 10 of 13 manufacturing PEX-listed companies over seven years (2015-2021); the study employed regression and correlation analysis. **Findings:** The study found a significant relationship between EPS and stock returns while concluding an insignificant relationship between EVA and stock returns. The study also found that EPS beats EVA. However, the findings showed that EVA adds incremental information content to EPS's interpretation of stock returns. **Research, Practical & Social implications:** The study outcomes help and direct the investors and analysts, in assessing the company's performance and predicting stock returns; it also helps policymakers and regulators in directing and updating reporting requirements. **Originality/value:** This study adds to the literature on the value relevance of real and traditional performance indices in Palestine. Further research is recommended on other sectors and the whole market. Doi: https://doi.org/10.26668/businessreview/2023.v8i6.1932

RELEVÂNCIA DE VALOR RELATIVO E INCREMENTAL DAS MEDIDAS DE DESEMPENHO TRADICIONAIS E REAIS: EVIDÊNCIA DE EMPRESAS LISTADAS DE FABRICAÇÃO PALESTINA

RESUMO

Objetivo: Este estudo tem como objetivo testar a relevância do valor incremental e relativo do valor agregado econômico (EVA) como um indicador de desempenho real e (EPS) como um indicador de desempenho tradicional no contexto das empresas manufatureiras listadas na Bolsa da Palestina (PEX).

Referencial teórico: Pesquisas anteriores forneceram evidências mistas sobre a superioridade do EVA sobre as medidas de desempenho tradicionais na previsão do valor de mercado; alguns estudos apoiaram a superioridade do EVA (Zimmerman, 1997; Shishanya et al., 2020), enquanto outros negaram essa superioridade (Biddle et al., 1997; Agnatia & Amalia, 2018). Testar a relevância do valor do EVA em comparação com o EPS raramente era realizado na Palestina.

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Desenho/metodologia/abordagem: Setenta observações da empresa por ano foram coletadas de 10 das 13 empresas de manufatura listadas no PEX por sete anos (2015-2021); o estudo empregou análise de regressão e correlação.

Resultados: O estudo encontrou uma associação significativa entre LPA e retornos de ações, enquanto concluiu uma associação insignificante entre EVA e retornos de ações. O estudo também descobriu que o EPS supera o EVA. No entanto, os resultados mostraram que o EVA adiciona conteúdo de informação incremental ao fornecido pelo EPS na explicação dos retornos das ações

Pesquisa, implicações práticas e sociais: Os resultados deste estudo ajudam e direcionam os investidores e analistas na avaliação do desempenho da empresa e na previsão do retorno das ações; também ajuda os formuladores de políticas e reguladores a direcionar e atualizar os requisitos de relatórios

Originalidade/valor: Este estudo contribui para a literatura sobre a relevância do valor das medidas de desempenho reais e tradicionais na Palestina. Mais pesquisas são recomendadas em outros setores e em todo o mercado

Palavras-chave: EVA; PEX; Retorno de Ações; Relevância de Valor; EPS; Palestina.

VALOR RELATIVO E INCREMENTAL RELEVANCIA DE LAS MEDIDAS DE RENDIMIENTO TRADICIONALES Y REALES: EVIDENCIA DE LAS EMPRESAS FABRICANTES DE PALESTINA QUE COTIZAN EN LA COTIZACIÓN

RESUMEN

Propósito: Este estudio tiene como objetivo probar la relevancia del valor incremental y relativo del Valor Económico Agregado (EVA) como un indicador de rendimiento real y (EPS) como un indicador de rendimiento tradicional en el contexto de las empresas manufactureras que cotizan en la Bolsa de Palestina (PEX).

Marco teórico: la investigación anterior proporcionó evidencia mixta sobre la superioridad de EVA sobre las medidas de rendimiento tradicionales para predecir el valor de mercado; algunos estudios respaldaron la superioridad de EVA (Zimmerman, 1997; Shishanya et al., 2020), mientras que otros negaron esa superioridad (Biddle et al., 1997; Agnatia & Amalia, 2018). La prueba de la relevancia del valor de EVA en comparación con EPS rara vez se llevó a cabo en Palestina.

Diseño/metodología/enfoque: se recopilaron setenta observaciones de empresa-año de 10 de 13 empresas manufactureras que cotizan en PEX durante siete años (2015-2021); el estudio empleó análisis de regresión y correlación.

Conclusiones: El estudio encontró una asociación significativa entre el EPS y la rentabilidad de las acciones, mientras que concluyó una asociación insignificante entre el EVA y la rentabilidad de las acciones. El estudio también encontró que EPS supera a EVA. Sin embargo, los resultados mostraron que EVA agrega contenido de información incremental al proporcionado por EPS para explicar los rendimientos de las acciones.

Investigación, implicaciones prácticas y sociales: los resultados de este estudio ayudan y dirigen a los inversores y analistas a evaluar el rendimiento de la empresa y predecir los rendimientos de las acciones; también ayuda a los legisladores y reguladores a dirigir y actualizar los requisitos de presentación de informes.

Originalidad/valor: Este estudio se suma a la literatura sobre la relevancia del valor de las medidas de desempeño reales y tradicionales en Palestina. Se recomienda más investigación en otros sectores y en todo el mercado.

Palabras clave: EVA; PEX; Rentabilidad de las Acciones; Relevancia del Valor; EPS; Palestina.

INTRODUCTION

Several consulting firms advanced economic performance indicators, such as economic value added (EVA), to measure the real achievements of entities (Kumar & Sharma, 2011). EVA as a real performance indicator was invented and promoted by Stern-Stewart New York consultancy firm in 1991.

EVA proponents assert that it is a potent indicator of a firm's financial performance and that it is a tool for business that, when appropriately utilized, promises to boost performance

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and increase returns to shareholders (Morad & Balu, 2009). EVA became one of the most effective performance measures employed by businesses and advisers. Many studies showed a positive and significant correlation between EVA and the value of the firm (Stewart, 1991; Zimmerman, 1997; Bao & Bao, 1998; Lehn & Makhija, 1997; Lee & Kim, 2009; Irala, 2007; Worthington, & West, 2004; Kaur & Narang, 2008).

Stewart (1991) asserted that EVA is the preferable modern indicator of value and explains changes in shareholders' wealth almost fifty percent better than standard accounting indicators. EVA is distinct from conventional financial performance indicators in that it determines what earnings remain after a firm's cost of capital, which should be considered when calculating real income.

Accounting rates of return are frequently challenged because they cannot quantify economic viability (Fisher & McGowan, 1983). The primary disadvantage of these rates of return in takeovers, for example, is the substantial misrepresentations that the accounting treatment option may induce into traditional profitability numbers (Chatterjee & Meeks, 1996). Furthermore, income smoothing affects the information communicated to investors about the firms' performance and may affect stock returns. Welc (2014) investigated the relationship between earnings smoothness and relative stock prices of companies listed on the Warsaw Stock Exchange, concluding that smooth historical earnings are rewarded with valuation premiums while changeable earnings are penalized with valuation discounts, whereas Kasim and Nurdin (2022) concluded that there is no significant difference between the return of income smoothing companies and the return of changeable earnings ones.

The variation between standard results measurements (accounting profit) and real performance measures (EVA) is that the former does not take into account all of the costs of financing (both debts and equity) used by the company to develop its activity. More specifically, the conventional method ignores the cost of capital. EVA was advanced as a new value achievement indicator to scale the real achievement of entities and to change the emphasis from conventional earnings to value-based measures. Conventional performance indicators, according to some researchers, are not reliable interpreters of entity value and thus should not be employed to indicate corporate performance, whereas value-oriented indicators recognize that capital invested has a cost and thus consider a finance charge for the use of capital used in business (O'Hanlon & Peasnell, 1998).

Despite the above, several studies in the United States found that EVA is not a reliable indicator of entity value. Some studies found a weak or insignificant relationship between EVA

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and return or EVA and firm worth. (Olsen, 1996; Peterson & Peterson, 1996; DeVilliers & Auret, 1997; Kramer and Pushner, 1997; Chen & Dodd, 1997; Sparling & Tuvey, 2003). Furthermore, Biddle et al. (1997) stated that accounting earnings lead EVA in interpreting stock returns. Similar conclusions were stated by Chen and Dodd (2001). However, there are other external factors that can influence stock returns, such as fluctuations in exchange rates. Delgado, Delgado, and Saucedo (2018) concluded that currency rate volatility significantly and negatively impacted stock market returns. However, Al-Smadi et al. (2023) discovered that the exchange rate did not affect stock market returns in Jordan.

The justification of this study stems from the rareness of testing the value relevance of real performance indicators and conventional ones in Palestine. This study tests and compares the mentioned indicators in the context of the Palestine Exchange (PEX).

Our study contributes to enhancing better investment decisions in the context of Palestine by providing evidence on the better value-relevant indicators that should be considered in investors' analysis and decisions. The study also benefits consultants and financial investment companies in advising their clients to rely on the most relevant indicators. PEX and financial policymakers may rely on the findings to enhance and develop regulations focusing on value-relevant reporting requirements.

In its theoretical contribution, this study adds to the existing literature on value relevance; it fills the gap of this subject in the context of Palestine; this comes in light that the value relevance of real performance indicators compared to conventional ones was barely examined in Palestine. The study provides empirical evidence from the Palestine Exchange (PEX) about the dominance of EVA versus the conventional accounting earning measure EPS in relation to stock returns.

The objective of this study is to test the relative and incremental value relevance of EVA as a real performance indicator and (EPS) as a traditional performance indicator in the context of Palestine Exchange (PEX) listed manufacturing companies. The study tests the association between EVA and stock returns, as well as EPS and stock returns. It also examines the dominance of EVA over EPS in explaining stock returns and, finally, tests the incremental information content of EVA over that provided by EPS.

LITERATURE REVIEW

Many studies have examined Stewart's (1991) assertion that EVA is a more reliable performance indicator for predicting a company's market value. Despite the indication provided by EVA supporters, the outcomes of various practical studies do not boost the assumption that

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EVA is more eminent than other traditional accounting performance indicators (Biddle et al., 1997; Kramer & Pushner, 1997; Chen & Dodd, 1997, 2001).

We divide prior research on EVA and its relation with firm worth into two clusters. The first cluster represents prior studies that supported the dominance of EVA in foreseeing the market value; the second one denied the premise that EVA is more strongly related to stock returns or the firm's market value.

Studies Supported the Superiority of EVA in Predicting the Market Value

These studies concluded a significant relation between EVA and stock returns or market value.

Stern et al. (1994) found that accounting indicators like earnings, dividends, ROE, or cash flow are not the main indicators of corporate achievements. However, EVA is strongly connected to a firm's market value. O'Byrne (1996) examined industrial firms and discovered that EVA predicts more than double as much of the market/capital ratio variation as net profit, leading him to conclude that EVA variations interpret much more of the movements in market value fluctuations.

According to the study by Zimmerman (1997), EVA had a greater prediction capability of shareholder value (stock returns) than other conventional indicators, which promotes increased efficiency. Lehn & Makhija (1997) investigated the association between six commonly used performance measures and stock returns. The findings stated that EVA and market value added are powerful achievement indicators. Furthermore, the association of EVA with stock returns was stronger than that of ROE and ROA.

Irala (2007) studied 1,000 companies over six years to see if EVA had more predictive power than traditional accounting metrics. His findings confirmed the assumption that EVA is a preferred interpreter of firm value over other accounting indicators. Amyulianthy & Ritonga (2016) investigated the impact of EVA and EPS on the stock returns of listed Indonesian corporations. The findings revealed that EVA and EPS substantially influence stock returns. Babatunde & Evuebie (2017) looked at the influence of EVA on Nigerian stock returns. The study found that EVA raises stock returns in Nigeria. Alsoboa (2017) tested the effect of EVA and ROA on the created shareholders' value of Jordanian public industrial enterprises. The findings revealed that EVA outperformed ROA in predicting and evaluating the created shareholders' value decisively and positively.

Al-Awawdeh & Al-Sakini (2018) investigated the effect of EVA and standard conventional indicators on the Stockholders' Value of commercial banks in Jordan. The study stated that EVA and traditional accounting indicators are critical for valuing shares and optimizing shareholder value.

Studies Denied the Superiority of EVA in Predicting the Market Value

These studies denied that EVA is more strongly related to stock returns or the firm's market worth. These research findings failed to prove that EVA ranks higher than standard indicators in interpreting company market value. They found no association between EVA and stock return or firm value.

Biddle et al. (1997) found that earnings were more closely related to market returns than residual income or EVA; the study concluded that earnings generally beat EVA. In their study, Kramer & Pushner (1997) examined 1,000 companies between 1982 and 1992 and discovered that the average EVA was negative while market value and net profit were often positive. The argument that EVA is the finest indicator of a company's success in enhancing stockholder wealth is not supported by rich evidence.

Clinton & Chen (1998) discovered that residual cash flow (RCF) is a more robust performance indicator than EVA. At the same time, Chen & Dodd (2001) concluded that the market might place more value on audited accounting earnings than on unaudited EVA. The study results did not enhance the argument that EVA is the optimum metric for assessment.

Ismail (2006) used panel data regression to study a sample of UK businesses. The data did not reinforce the Stewart theory because net operating profit after tax and net profit beat EVA and residual income. The study indicated that other elements such as personnel, consumer contentment, and research and development creativities should be addressed in addition to financial indicators to predict stock return changes.

Patel & Patel (2012) examined the effects of EVA on the stock price of Indian private sector banks and determined that none of the banks' EVA affects the stock price.

Kumar & Sharma (2011) found that earnings and cash flow measurements beat EVA in interpreting the market value of Indian corporations, according to the study, while the incremental information content test demonstrates that EVA contributes just marginally to information content beyond established performance indicators.

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In their study, Agnatia & Amalia (2018) tested the impact of EVA and profitability ratios on the stock prices of Indonesian coal mining companies. The findings revealed that ROA and ROI considerably positively affect the stock price. However, EVA has no effect.

Shishanya et al. (2020) investigated the influence of EVA adoption on the stock performance of 89 US firms that had used EVA as a compensation system. The findings revealed minor progress in the firms' achievement that had adopted EVA within five years of its implementation.

This study aims to deliver realistic proof from PEX on the relative and additional value relevance of EVA over the traditional accounting performance measure EPS. To achieve this, and in light of the literature review, the following hypotheses were developed:

H01: There is no significant association between EVA and stock returns of the manufacturing companies listed on the Palestine Exchange (PEX).

H02: There is no significant association between EPS and stock returns of the manufacturing companies listed on PEX.

H03: The relative information content of EVA is not superior to EPS in explaining stock returns for the manufacturing companies listed on PEX.

H04: EVA does not have incremental information content over that provided by EPS in explaining corporate stock returns for the manufacturing companies listed on PEX.

METHODOLOGY

This study follows the quantitative approach by exploiting the published secondary data of the listed manufacturing corporations on the PEX. This paper captures the EPS from published annual reports. Moreover, the Economic Value Added (EVA) is calculated similarly to some previous studies (Behera, 2020).

Variables Definitions

The study examines the relationship between stock return, EVA, and EPS. To accomplish this, the following variables are used:

Dependent variable

Stock return (r) is used as the dependent variable; it is measured through the following formula:

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$$r_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where:

r_{it} is the stock returns for entity *i* in year *t*.
P_{it} is the stock price for entity *i* in year *t*.
P_{it-1} is the stock price for entity *i* in year *t-1*. (the previous year)

Independent variables

The independent variables are as follows:

EVA (the Economic Value Added) is the first independent variable; it assesses the firm's performance after subtracting the cost of invested capital. For this study, EVA is measured by the following formula (Behera, 2020):

$$\text{EVA} = \text{NOPAT} - (\text{WACC} \times \text{TCE}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where

NOPAT is the net operating profit after tax.
WACC is the weighted average cost of capital
TCE is the total capital employed (equity and debt capital)

Since WACC can be decomposed as follows:

$$\text{WACC} = \text{I}d \times \text{W}d + \text{r}e \times \text{W}e \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

Where

Id is the interest on debt capital after tax.
re is the required rate of return on equity
Wd is the weightage of debt capital (debt capital/ TCE)
We is the weightage of equity capital (book value of equity (BVE)/TCE)

We can derive another EVA calculation formula from equation (2) as follows:

EVA = NOPAT− (Id × Wd + re × We) ×TCE)
EVA = NOPAT− (Id × Wd ×TCE) - (re × We × TCE)
EVA = NOPAT− (Id × debt capital/ TCE ×TCE) - (re × BVE/TCE × TCE)
EVA = NOPAT− (Id × debt capital) - (re × BVE)

Since (Id × debt capital) equals interest expenses, then:

NOPAT− (Id × debt capital) = PAIT (profit after interest and tax- Net Income)

Therefore:

EVA = PAIT - (re × BVE) …………………................................…………… (4)

This study uses equation (4) to compute EVA; EVA per share is calculated and deflated by P_{it-1} to neutralize any size effects on results.

The required rate of return (re) is estimated using the CAPM model. The model intercept and coefficients are derived by regressing the daily returns of each firm with market returns measured by the manufacturing market index for seven years (2015-2021); the calculations are built on all market index business days through the following regression model:

$$r_{it} = a_{0+} b_i r_m + e_{it}$$ …………………................................…….……. (5)

Where:

r_{it} is the stock returns for entity i in date t.
a_0 is the intercept.
b_i is the coefficient for entity i.
e_{it} is an error term.

EPS (earnings per share) is the second independent variable selected since it is the most used conventional accounting earnings-based performance metric. It is also mandatorily disclosed for all listed companies. For this study, EPS is used deflated by P_{it-1}.

Data

The initial data consisted of 13 companies which represent all the manufacturing companies listed on PEX; the sample was checked against the following conditions:

- Share prices are obtainable through the study period (2015-2021)
- The company did not enter into a consolidation course, or PEX did not suspend the share price due to financial distress reasons.

Three incompatible firms were excluded, ten companies were selected, and 70 company-year observations made up the final data.

The Study Model

This study examines the association between EVA and stock returns (H01) and the association between EPS and stock returns (H02). To test these two hypotheses, the following two regression models were developed:

$$r_{it} = a_{0+} \, b \, EVA_{it}/P_{it-1} + e_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(6) \quad \text{(for H01 testing)}$$
$$r_{it} = a_{0+} \, b \, EPS_{it}/P_{it-1} + e_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7) \quad \text{(for H02 testing)}$$

Where:

r_{it} is the stock returns for the company *i* in year *t*.
a_0 is the intercept.
b is the response coefficient.
EPS*it* is earnings per share for the company *i* in year *t*.
EVA*it* is EVA per share for the company *i* in year *t*.
e_{it} is an error term.
P_{it-1} is the stock price for the company *i* in year *t-1* (the previous year)

To test H03 and decide on the relative information content and the superiority of EVA over EPS in interpreting corporate stock returns, a comparison of the regression results of equations (6) and (7) is conducted using adjusted R square values.

To test H04 regarding the incremental information content of EVA, two separate multiple regression models are developed (equations 8 and 9), one with the two independent variables (EPS and EVA) and another one after the exclusion of EVA, the change in R square and adjusted R square is evaluated to test H04.

$$r_{it} = a_{0+} \, b_1 \, EPS_{it}/P_{it-1} + b_2 \, EVA_{it}/P_{it-1} + e_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (8)$$
$$r_{it} = a_{0+} \, b \, EPS_{it}/P_{it-1} + e_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (9)$$

RESULTS AND DISCUSSION

Basic Statistics

Table 1 summarizes the descriptive indicators for Ri (the dependent variable) and the two explanatory variables, EVA and EPS, throughout the study (2015-2021). The table shows that the means of all variables are positive; the positive mean of EVA suggests that, generally, most enterprises included in the study can make an extra profit over the cost of capital.

Table 1. Summary of descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Stock Return (Ri)	70	-0.22500	1.72730	0.0914471	0.27803852
EPS / Pt-1	70	-0.14490	0.65940	0.1104400	0.11076765
EVA/ Pt-1	70	-.84390	2.61770	.2142500	.59540821

Source: Prepared by the author (2023).

The correlations between the dependent and independent variables are demonstrated pair-wise in Table 2. It is shown that EPS is substantially favorably associated with stock returns. However, EVA correlation with stock returns is weak and negative, indicating no significant association; the correlation between EPS and EVA is likewise modest.

Table 2. Pair-wise correlation between the study variables

Variable	Stock Return (Ri)	EPS / Pt-1	EVA/ Pt-1
Stock Return (Ri)	1.000		
EPS / Pt-1	0.693	1.000	
EVA/ Pt-1	-0.135	0.299	1.000

Source: Prepared by the author (2023).

EVA-Returns Test

H01 is tested by conducting regression between EVA and stock returns; statistics results are summarized in Table 3 below:

Table 3. H01 testing results

Statistic	Value	Conclusion
F (The whole model)	1.268	Insignificant association
a (Intercept constant)	-0.094 *	Significant constant
B (Coefficient)	-0.202	Insignificant coefficient
R (Correlation)	0.135	Weak correlation
Adjusted R^2	0.004	EVA explains 0.004% only of the variations in stock returns
Durbin-Watson	2.062	Residuals (Errors) are not autocorrelated since the value is between 1.5 and 2.5.

Source: Prepared by the author (2023).

Based on the preceding, the study accepts H01. We conclude that EVA has no association with stock returns, correlation coefficient R (0.135) shows a frail correlation between EVA and stock returns, and adjusted R square shows a fractional interpretive rule of the independent variable (EVA) in interpreting stock returns variations (0.004%). The autocorrelation test demonstrates that residuals are not associated with one another.

This finding aligns with prior research, which found EVA inferior to traditional performance measurements. (Biddle et al., 1997; Kramer & Pushner, 1997; Chen & Dodd, 1997; Sparling & Tuvey, 2003)

A per-year analysis of the above is also conducted; Table 4 below summarizes the per-year statistics results.

Table 4. H01 statistics results every year

Year	R	Adjusted R^2	Durbin-Watson	F	a	b
2015	0.543	0.207	2.326	3.348	-0.017	0.525
2016	0.351	0.014	1.845	1.124	0.060	0.265
2017	0.366	0.026	2.585	1.237	0.090	-0.370
2018 *	0.839	0.667	2.108	19.011*	-0.113 *	1.656 *
2019	0.124	-0.108	2.323	0.125	0.018	0.463
2020	0.049	0.122	2.240	0.019	0.003	0.076
2021	0.027	-0.124	2.423	0.006	0.362	0.078

* Significant at 0.05
Source: Prepared by the author (2023).

The table shows that EVA has no association with stock returns through all the above years except for 2018, which shows a significant association. EVA also shows a weak correlation with stock returns through the years 2016, 2017, 2019, 2020, and 2021; while it shows a moderate correlation through 2015 and a high one through 2018, the interpretive power of EVA in explaining variation in stock returns is weak through all the years except for 2018. The residuals are not autocorrelated through all years, as the Durbin-Watson statistic indicates.

EPS-Returns Test

To test H02, the study conducts regression analysis between EPS and stock returns, Table 5 below summarizes the resulting regression statistics.

Table 5. H02 results testing

Statistic	Value	Conclusion
F (The whole model)	62.7 *	Significant association
a (Intercept constant)	-0.101 *	Significant constant
B (Coefficient)	1.739 *	Significant coefficient
R (Correlation)	0.693	The variables are highly correlated
Adjusted R^2	0.472	EPS explains 47.2% of the variations in stock returns
Durbin-Watson	2.053	Residuals (Errors) are not autocorrelated since the value is between 1.5 and 2.5.

Source: Prepared by the author (2023).

In light of the preceding, the analysis indicates that EPS does have a strong relationship with stock returns, therefore rejecting H02. The table also shows that EPS and stock returns are highly correlated (R=0.693) and that EPS provides a significant interpretation of changes in stock returns (Adjusted R^2= 0.47). According to the results of the autocorrelation test, the residuals are unrelated.

A per-year analysis of the above is also conducted; Table 6 below summarizes the statistical results by year.

Table 6. H01 statistics results every year

Year	R	Adjusted R^2	Durbin-Watson	F	a	b
2015	0.535	0.197	2.423	3.21	-0.41	0.604
2016	0.424	0.077	1.863	1.749	-0.011	0.715
2017	0.532	0.194	2.017	3.164	-0.161	2.275
2018 *	0.840	0.669	2.006	19.157 *	-0.121 *	1.663 *
2019	0.131	-0.106	2.317	0.139	0.014	0.490
2020	0.137	-0.104	2.179	0.152	-0.014	0.255
2021 *	0.873	0.732	1.856	25.536 *	-0.057	0.443

* Significant at 0.05
Source: Prepared by the author (2023).

The results show an evident variation between years results; it is noted that the association is significant only through the years 2018 and 2021, while it is insignificant through the other years. The correlation between EPS and returns also records different scores across the years; that correlation is high (r is above 0.50) through 2015, 2017, 2018, and 2021 respectively, while it is weak through the other years. The residuals are not autocorrelated through all years, as the Durbin Watson statistic indicates.

Examining EVA's Dominance Over EPS in Interpreting Stock Returns

To test whether the relative information content of EVA is superior to EPS (H03), a comparison between the two associations is conducted in Table 7 below:

Table 7. EVA and EPS association with stock returns

Statistic	EVA Model	EPS Model	Results
F P-value	1.268 (0.264)	62.7 * (0.000)	The relative information content of EPS is superior to EVA in interpreting corporate stock returns.
R	0.135	0.693	EPS is highly correlated with stock returns, while EVA is weakly correlated
R^2	0.018	0.480	EPS has high revelatory power in explaining stock returns variations, while EVA has weak revelatory power.

Source: Prepared by the author (2023).

Based on the above statistical results, this study does not endorse the supremacy of EVA over EPS in relation to stock returns; thus, the study accepts H03 and concludes that EVA's relative information value is not preferred to EPS in interpreting corporate stock returns for the manufacturing PEX-listed firms. The study also found evidence that EPS has more relative information value than EVA.

Testing the Incremental Information Content of EVA

To decide on the incremental information content of EVA, the study uses two regression models, the first model contains both independent variables EPS and EVA (Model A), and the second model contains only EPS (Model B), Table 8 displays the comparison of the two models:

Table 8. Assessing the incremental information content of EVA

Statistic	Model A	Model B	Results
F P-value	52.029 * (000)	62.700 * (000)	Both models are significant
B (EPS) P-value	2.020 * (000)	1.739 * (000)	Both EPS coefficients are significant in the two models
B (EVA) P-value	-0.562 * (000)	Does not exist	EVA coefficient is significant
R	0.780	0.693	When adding EVA, R increases by 0.087.
R^2	0.608	0.480	When adding EVA, the Adjusted increases by 0.128.

Source: Prepared by the author (2023).

The above results show that both Models A and B are significant. EPS and EVA coefficients are both significant in Model A and can be included in the model; the EPS coefficient is also significant in Model B. EVA has a negative association, whereas EPS is positively associated with stock returns. However, an increase in R^2 of 0.128 is observed when adding EVA to the model, and an increase of 0.087 in R is also observed. Thus, the study can conclude that the additional information value of EVA is significant. Therefore, the study rejects H04 and concludes that EVA adds incremental information value to that provided by EPS in interpreting corporate stock returns for the listed manufacturing companies on Palestine Exchange (PEX).

When testing the additional information value of EVA for each year of the study period, A per-year analysis also is conducted; table 9 below summarizes the results:

Table 9. Per-year incremental information content of EVA

Year	Model A		Model B		Change in R^2
	F	R^2	F	R^2	
2015	1.47	0.295	3.21	0.286	0.009
2016	0.79	0.184	1.75	0.179	0.005
2017	2.96	0.458	3.16	0.283	0.175
2018	8.38 *	0.705	19.16*	0.705	-
2019	0.28	0.073	0.14	0.017	0.056
2020	0.52	0.129	0.15	0.019	0.11
2021	18.06 *	0.838	25.54*	0.761	0.077

* Significant at 0.05
Source: Prepared by the author (2023).

The above per-year analysis reveals an additional information value of EVA through all the years of the study except for 2018; the results indicate that the years in which the additional information content of EVA is most evident were 2017, 2020, and 2021 respectively. However, the additional information content of EVA was weak in 2015 and 2016.

CONCLUSION

EVA has gained increasing attention in the literature on performance evaluation and information content over the last decades. Stern-Stewart (1991) pointed out that EVA is dominant over other indicators in explaining market value. Some studies have disfavored earnings performance indicators since they do not combine the cost of capital. However, prior research findings are diverse and disputed; some studies suggest the supremacy of EVA in terms of market value, while other studies suggest that traditional measures outperform EVA. This study provides empirical evidence from Palestine Exchange (PEX) about the relative and incremental value relevance of EVA and EPS; the study also investigates the dominance of EVA compared to EPS in interpreting the stock returns. The data consists of 70 company-year observations from 10 manufacturing corporations listed on PEX through the period (2015-2021); the study employed regression models and correlation analysis to examine the association of EVA and EPS with stock returns.

The empirical results concluded insignificant relative value relevance of EVA in explaining stock returns; the results found a weak association between EVA and stock returns, and the adjusted R square shows a fractional explanatory power of EVA in interpreting stock return variations. However, we found evidence of a significant association between EPS and stock returns with a high correlation between the two variables; the per-year analysis of this association reveals apparent variations between the years' results. Our results do not bolster the dominance of EVA over EPS in relation to stock returns; however, we found evidence that the relative value relevance of EPS outperforms EVA. This result is congruous with prior studies that rejected the dominance of EVA over conventional performance indicators.

As for the incremental added value of EVA, and in fact of the result of the supremacy of EPS over EVA, the results conclude that EVA adds incremental information to that reflected by EPS in predicting corporate stock returns for the PEX-listed manufacturing firm.

Our study examined the PEX-listed manufacturing firms to examine EVA and EPS information value. However, the limited number of manufacturing sector companies in PEX could be considered a limitation for this study; results may be enhanced when applied to a larger

market. Further research is recommended on other sectors and the whole (PEX) market, especially since EVA relevance was rarely examined before in Palestine. This opens a new avenue for researchers.

The study outcome shows that the entire model containing EVA and EPS captures 61 percent of the variations in the stock returns; this leads future research to add other factors that may drive stock returns other than those examined in this study.

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