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ANALYSIS OF THE CONTRIBUTION OF IFRS TO IMPROVING THE RELEVANCE OF FINANCIAL PERFORMANCE MEASURES: A COMPARATIVE STUDY WITH MOROCCAN ACCOUNTING STANDARDS

Abstract

The implementation of the international accounting framework has led to a new philosophy of estimating and valuing the financial performance of companies. In this respect, the accounting indicators derived from financial statements constitute the classic measures of performance evaluation, such as ROE, ROA, BPA, and Payout. However, their usefulness is contested in the face of market-based indicators like TSR, MVA, PBR, and dividend yield. This paper aims to assess the effect of adopting IFRS on the relevance of financial performance measures through a comparative approach with Moroccan GAAP. At the empirical level, the use of multiple regressions on panel data remains strongly solicited to test the informational relevance of these indicators. In number, there are 115 observations collected from IFRS-adopting companies and 418 observations from non-adopting companies over the period 2013–2022. The study revealed a significant impact of the adoption of IFRS on the informational relevance of accounting indicators (adjusted R2(IFRS) = 71.12% against adjusted R2(Moroccan GAAP) = 55.03%). However, this study found a less significant effect of IFRS on the degree of relevance of stock market performance indicators (adjusted R2 (IFRS) = 50.36% versus adjusted R2(Moroccan GAAP) = 63.84 %). The study also showed a significant effect of IFRS on the complementarity between accounting and stock market performance indicators to explain the total shareholder return (adjusted R2(IFRS) = 69.02% against adjusted R2(Moroccan GAAP) = 58.01%).

Keywords

international standards, accounting measures, stock market measures, Moroccan GAAP, information content, African context

JEL Classification

G14, M40, M41

INTRODUCTION

The development of financial markets in the context of globalization presents not only opportunities for development but also constraints encouraging companies to make efforts to face these new challenges. From this finding, the internationalization of companies has created the need for an instrument that provides a wide range of credible and internationally recognized financial information through a structured representation of the financial state, cash flows, and financial performance.

To restore investor confidence, the International Accounting Standards Board (IASB) made the application of international financial reporting standards (IFRS) mandatory as of January 1, 2005, for listed companies preparing consolidated financial statements. The main objec-



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tive pursued by the IASB is to provide an international regulatory framework for the publication of high-quality financial information (Barth et al., 2017). This standardization framework has led to a major change in the assessment of financial performance following the application of the fair value principle. With the new accounting framework, financial information has been oriented, particularly towards the information needs of shareholders, without neglecting other stakeholders in the firm.

To be understandable and credible, numerical information on financial performance should be communicated using generally accepted conventions, applying a common measurement system (Danjou, 2012). As soon as we want to compare the financial performance of various companies, to rationalize investment choices. These conventions must not only be generally accepted but also harmonized, otherwise the recipient of the information will have to be able to understand a multitude of specific languages spoken by the various companies that may receive the capital to invest or lend. Ideally, they should refer to recognized international standards.

Measuring financial performance is a crucial issue for the company and its stakeholders. Furthermore, the effectiveness of the management system depends on an appropriate selection of measures that can be used as a basis in the process of assessing value creation. The purpose of this study is to compare the informational relevance of financial performance measures according to international accounting standards and Moroccan accounting standards.

1. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The concept of financial reporting quality is the cornerstone of the international accounting framework. This is how Michailesco (2009) argues that this notion can be understood through the ability of the accounting framework chosen to produce financial information that is relevant to the expectations of users. In addition, financial statements, which are prepared by accounting standards, form the basis for assessing the financial state and performance of companies. Since IFRS may differ from local standards in the evaluation of accounting figures, it is expected that the adoption of IFRS will affect the financial performance. The latter is an essential dimension within any organization whose existence depends on efficiency. The fundamental idea that is at the origin of different financial performance evaluation models is to compare the return on invested capital to the cost of the different sources of financing used or even the cost of capital (Issor, 2017). The measurement of financial performance requires the precise definition of two categories of indicators, namely, accounting indicators and stock market indicators. These are two different perspectives, one purely accounting, and the other market-oriented (Barneto &

Gregorio, 2011). Similarly, the Commission for Stock Exchange Operations (which became the Financial Markets Authority in 2003) adopted the same classification, specifying that accounting performance measures refer to Economic Value Added (EVA), Cash-Flow Return on Investment (CFROI), and the different rates of return (ROE, ROI, ROA). On the other hand, stock market performance indicators include the Total shareholder return (TSR), Market Value Added (MVA), Market to Book ratio (M/B), and dividend yield. According to Jakub et al. (2015), accounting measures are easy to calculate and constitute a classic source of information for driving performance. However, they have many gaps and criticisms in the face of stock market performance indicators. Forner and Sanabria, (2010) estimate that market-based indicators take into account other determinants such as human behavior (behavioral finance theory), organizational and functional aspects of markets (Madahavan, 2000), and macroeconomic aspects (interest rate policy, etc.).

At first glance, the results of previous research remain mixed and do not seem to be unanimous. In this regard, the first stream of research attests that the adoption of IFRS increases and improves the relevance of financial performance measures. From this finding, Barth et al. (2017), Hassan (2019), and Laouane et Torra (2022) have confirmed that

the measures used to assess financial performance have changed after the adoption of IFRS. Similarly, Taiwo and Adejare (2014) have identified a strong and significant link between the implementation of the international framework and the increase in financial performance. This relationship is mainly attributable to the impact of the application of the fair value principle. However, the superiority of IFRS over local accounting standards is invalidated by the hypothesis that the relevance of accounting figures does not only depend on the accounting framework used but also on the institutional factors of the countries in which financial information is developed and interpreted (Garanina & Kormiltseva, 2013).

Research papers dealing with the relevance of financial performance measures are abundant and antagonistic. As a result, Escaffre and Sefsaf (2010) examined the additional information content following the adoption of IFRS in 2005 in several European countries. They analyzed the relevance of equity and net income in explaining the market value. The results suggested that the impact of the adoption of IFRS on the information content of accounting figures varies from one country to another. In addition, the quality of accounting information (net income and equity) has improved in the French, Spanish, and Italian markets after the switch to IFRS, but it has deteriorated in the British and German markets. By adopting a more targeted approach, Turki et al. (2020) tested the information content of stock market performance indicators for French companies, using three stock market ratios such as the Marris ratio, Tobin's Q, and the PER ratio. The results showed that there was no direct impact of the application of IFRS on stock market performance and that the impact of IFRS was indirect through the decline in the cost of capital.

In Korea, Kwon (2018) studied the information content of accounting performance indicators of listed companies using panel data for a sample composed of companies of different sizes (large, medium, and small), the study revealed that the information content of net income, operating income, and operating cash flow has changed significantly after the adoption of IFRS. In the same context of the study, Do Hoon Ki et al. (2019) adopted a comparative approach to examine the effect of

the adoption of IFRS on value relevance in the two Korean stock markets (KSE and KOSDAQ), the study revealed opposing results. In fact, the value relevance of KSE-listed companies decreased, while the value relevance of KOSDAQ-listed companies increased after the adoption of IFRS.

The study by Alnodel (2018) looked at the impact of IFRS on the information content of accounting figures for insurance companies listed on the stock market in Saudi Arabia. The study was based on the Ohlson (1995) model and the Easton Hari (1991) valuation model, and the researcher collected data from 21 insurance companies covering the period from 2007 to 2014. The results confirmed that the application of IFRS significantly reduced the explanatory power of equity, which becomes less relevant, while it found a positive and significant impact of IFRS on the information content of net income.

In an African context, Ahmadi and Bouri (2018) assessed the impact of the adoption of IFRS on the information content of accounting data from Tunisian banks and financial institutions between 2010 and 2015, using a sample of 24 banks and financial institutions. The study was able to show a statistically significant association between accounting indicators (net income and equity) and a company's value materialized by the stock price. With the same objective of comparison, Amaefule et al. (2018) assessed the impact of the adoption of IFRS on the accounting performance indicators of companies in Nigeria, using earnings per share (EPS) and return on assets (ROA). The results concluded that the adoption of IFRS had a negative and non-significant effect on the EPS ratio. However, the study revealed a significant impact on the ROA ratio. In Latin America, Garza Sánchez et al. (2017) analyzed the effect of the transition from local GAAP to IFRS standards over a period from 2000 to 2014, using a sample of 923 companies. They used a panel data methodology, and the results confirmed that the International Financial Reporting Standards (IFRS) have improved the information content of accounting measures of financial performance.

It appears that the results presented are not unanimous as to the superiority of the relevance of the financial performance measures disclosed in IFRS

compared to the different local standards, which have been the subject of previous studies. From this finding, it would be judicious to test the relevance of IFRS against Moroccan accounting standards. This hypothesis finds its legitimacy in a literature that is both rich and controversial. In light of the conceptual framework of the IASB, the publication of financial information developed in IFRS is supposed to better reflect the economic reality of the firm and seems more relevant to investors. Thus, and assuming the hypothesis of financial market efficiency, this study attempts to assess the impact of IFRS on the informational relevance of financial performance indicators in the context of an emerging country such as Morocco, which is characterized by a small number of companies adopting the new international accounting standards. Based on the previous reasoning, the hypotheses of this study are formulated as follows:

H01: The transition to IFRS improves the information content of accounting performance indicators compared to Moroccan GAAP.

H02: The introduction of IFRS increases the information content of stock market performance indicators compared to Moroccan GAAP.

H03: Accounting and stock market performance measures could have a complementary and statistically significant explanatory impact on IFRS compared to Moroccan GAAP.

2. METHODS

2.1. Sample selection

This study covers all companies listed on the Moroccan stock exchange over the period 2013–2022. In 2022, the total number of listed companies was 76 across all sectors, with financial information extracted from the Moroccan Stock exchange and the financial market authorities

(FMA). To ensure that the conclusions are consistent. The sample excludes companies operating in the financial, credit, and insurance sectors, which are not considered because of the specific nature of the accounting standards applicable to them. In the case of Morocco, the adoption of IFRS is not compulsory for all firms listed on the Casablanca stock exchange. This is because the transition has been gradual and, above all, independent from one company to another. Thus, to ascertain whether the international benchmark has been adopted, it is necessary to use the summary statements provided by these companies. During the period under review, the number of companies reporting and publishing their consolidated financial statements by IFRS varied from year to year. Table 1 summarizes the main characteristics of the sample.

2.2. Measurement variables

The literature review presented suggests two categories of indicators that can be used to understand financial performance. On the one hand, accounting indicators such as ROE, ROA, BPA, and Payout. On the other hand, stock market indicators such as MBR, MVA, and Dividend yield. Table 2 shows the measures adopted to explain shareholder returns and their calculation formulas.

2.3. Research models

The informational relevance of financial performance indicators is assessed by validating the association between disclosed accounting and stock market information and stock returns (Francis & Schipper, 1999). To test the association between total shareholder return (endogenous variable) and accounting and stock market indicators (independent variables), various models, including those of Ohlson (1995), Feltham and Ohlson (1995), and Collins et al. (1997), were implemented. The methodology used in this study consists of regressing

Table 1. Number of observations

Years	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total number of listed firms	76	76	77	75	75	75	76	76	76	76
Exclusion of banks and insurance	19	19	18	18	20	18	18	18	18	18
Users of Moroccan GAAP	43	43	44	43	40	41	41	41	41	41
Users of IFRS	14	14	14	14	15	16	17	17	17	17

Table 2. Measurement of variables

Dependent Variable	Acronym	Calculation formulas	Source
Total Shareholder Return	TSR	$\frac{(P1 - P0) + D1}{P0}$	Stock exchange
Independent Variables			
Return on equity	ROE	$\frac{\text{Net Profit after tax}}{\text{Shareholders Equity}}$	Published financial statements
Return on assets	ROA	$\frac{\text{Operating Result}}{\text{Total Assets}}$	Published financial statements
Earnings per share	EPS	$\frac{\text{Net Profit after tax}}{\text{Number of Shares}}$	Published financial statements Stock Exchange
Payout	Payout	$\frac{\text{Total Dividends}}{\text{Net Profit}}$	Published financial statements
Market Value Added	MVA	$\text{Market Value of Shares} - \text{Book Value of Shareholders' Equity}$	Published financial statements Stock Exchange
Price to book ratio	PBR	$\frac{\text{Market Capitalization}}{\text{Book Value of Equity}}$	Published financial statements Stock Exchange
Dividend Yield	Div- Yield	$\frac{\text{Annual Dividends per Share}}{\text{Price per Share}}$	Stock exchange

a company performance index on one or more explanatory variables deemed relevant. At the empirical level, Crepon and Jacquement (2010) and Greene (2011) consider that the panel data method is supposed to be more robust insofar as it makes it possible to deal with individual and temporal effects. Three econometric models will be presented to test the impact of IFRS on the relevance of financial performance measures. The first model is based on accounting performance indicators. The second model is based on stock market performance indicators. The last econometric model highlights the complementarity of accounting and stock market indicators in explaining total shareholder return. The econometric models can be defined as follows:

$$R_{i,t} = \alpha_{0,t} + \alpha_1 \frac{ROE}{P_{i,t-1}} + \alpha_2 \frac{ROA}{P_{i,t-1}} + \alpha_3 \frac{EPS}{P_{i,t-1}} + \alpha_4 \frac{PAYOUT}{P_{i,t-1}} + \varepsilon_i, \quad (1)$$

$$R_{i,t} = B_0 + B_1 \frac{MVA}{P_{i,t-1}} + B_2 \frac{MBR}{P_{i,t-1}} + B_3 \frac{Div Yield}{P_{i,t-1}} + \varepsilon_i, \quad (2)$$

$$R_{i,t} = a_{0,t} + \alpha_1 \frac{ROE}{P_{i,t-1}} + \alpha_2 \frac{ROA}{P_{i,t-1}} + \alpha_3 \frac{EPS}{P_{i,t-1}} + \alpha_4 \frac{PAYOUT}{P_{i,t-1}} + a_5 \frac{MVA}{P_{i,t-1}} + \alpha_6 \frac{MBR}{P_{i,t-1}} + a_7 \frac{Div Yield}{P_{i,t-1}} + \varepsilon_i. \quad (3)$$

3. RESULTS

3.1. Descriptive statistics

The descriptive statistics concern all the indicators reflecting financial performance according to the accounting framework adopted. Table 3 shows the results of 155 observations collected from companies adopting IFRS.

Table 3 shows the distribution law of the statistical series, using the Jarque-Bera test, the variables selected follow a normal distribution ($p > 5\%$). For the endogenous variable (TSR), the mean of this variable is not far from the median and the dispersion value, the values displayed are respectively (5.086119), (3.998000), and (4.831729), which shows that this indicator is homogeneous for the IFRS case. In addition, the averages of the account-

Table 3. Descriptive statistics according to IFRS

Variables	TSR	ROE	EPS	PAYOUT	ROA	DIV_YIELD	PBR	MVA
Mean	5.086119	13.94300	13.20176	89.23252	5.491571	11.51962	2.214190	22.29919
Median	3.998000	9.660000	7.185000	62.45000	3.335000	7.250000	1.715000	20.21000
Maximum	58.63000	55.50000	91.00000	117.6600	27.30000	42.00000	8.400000	190.0040
Minimum	-133.0000	0.120000	-68.99000	1.010000	-1.110000	0.330000	0.020000	1.360000
Std. Dev.	4.831729	4.849502	6.551902	14.13906	5.199995	2.450311	1.016944	6.799391
Skewness	-1.228310	1.449905	0.577031	0.882651	1.895490	7.029923	1.449450	14.31543
Kurtosis	7.475940	5.072932	6.467244	3.562287	6.685120	50.45429	5.898812	206.6225
Jarque-Bera	0.872220	1.302125	1.025477	1.955441	2.328965	6.250147	0.058692	1.856982
Probability	0.064211	0.085223	0.074252	0.132422	0.222433	0.325787	0.065470	0.100322
Sum	1068.085	2928.030	2772.370	8238.830	1153.230	2419.120	441.8800	4682.830
Sum Sq. Dev.	186065.2	29345.91	125984.3	121783.1	5651.349	738671.9	462.0993	3630584.
Observations	155	155	155	155	155	155	155	155

ing variables (ROE, EPS, PAYOUT, and ROA) are not very far from their median values. On its side, the standard deviation displays in most cases a low dispersion. Based on this finding, the performance in terms of accounting performance is homogeneous within the international accounting framework throughout the study period (2013–2022). Regarding the stock market indicators communicated in IFRS, the variables studied also display a relatively low standard deviation for each variable taken individually. As a result, the stock market performance achievements are clustered around their average values. On the other hand, Table 4 details the position and dispersion characteristics for the variables generated this time in Moroccan accounting standards.

Table 4 shows the descriptive results of 418 observations collected from Moroccan companies that are not IFRS adopters. The dispersion of the total shareholder return (endogenous variable) shows a large dispersion (74.92717), which shows that there is a significant heterogeneity for this variable. Moreover, the standard deviation of the account-

ing variables generally shows a low dispersion. However, it remains higher than that recorded for the IFRS case. Such a finding let us say that the IFRS are more homogeneous than the Moroccan GAAP. Similarly, stock market indicators show a large dispersion around their averages, such as PBR and MVA, the values displayed are respectively (50.07758) and (39.10909). As a result, these two indicators are less homogeneous in Moroccan accounting standards.

3.2. Analysis of correlations

The relevance of the econometric model is conditioned by the independence of the explanatory variables. In this sense, the presence of correlations between the variables of the study could estimate the regression coefficients as unstable, hence the need to avoid multicollinearity of the variables as much as possible. The presence of a potential collinearity between the variables of the study can be detected if one of the variables shows collinearity close to 1. In other words, if the collinearity test between two variables shows a value that ap-

Table 4. Descriptive statistics according to Moroccan GAAP

Variables	TSR	ROE	EPS	PAYOUT	ROA	DIV_YIELD	PBR	MVA
Mean	5.313133	14.06533	14.58853	76.5143	6.482667	3.298267	2.115600	20.29213
Median	10.50000	10.98000	9.060000	50.67000	4.430000	3.250000	2.290000	19.32000
Maximum	107.0380	55.50000	203.4000	102.000	19.02000	6.660000	8.960000	58.02000
Minimum	-88.66900	0.120000	-57.11000	1.010000	-1.110000	0.930000	0.270000	6.930000
Std. Dev.	74.92717	18.07252	27.07021	16.30525	45.03625	9.44062	50.07758	39.10909
Skewness	0.177928	1.259184	2.248206	8.475709	0.991954	8.475348	0.935180	8.452673
Kurtosis	2.948652	4.841213	3.168077	2.89774	3.219693	0.89375	3.132828	0.63930
Jarque-Bera	0.918046	0.413252	2.0716	1.35544	3.45050	5.23554	0.98716	1.604820
Probability	0.141086	0.190000	0.090000	0.070000	0.081979	0.065742	0.174113	0.070580
Sum	398.4850	1054.900	1919.140	13013.57	486.2000	247.1200	218.6700	3423.160
Observations	418	418	418	418	418	418	418	418

Table 5. Correlation matrix under IFRS

	TSR	ROA	ROE	EPS	PAYOUT	PBR	DIV-YIELD	MVA
TSR	1							
ROA	0.431566	1						
ROE	0.592488	0.603913	1					
EPS	0.473909	0.217161	0.367298	1				
PAYOUT	0.319969	0.423579	0.677064	0.555142	1			
PBR	0.265458	0.513697	0.447561	0.433365	0.556987	1		
DIV-YIELD	0.458657	0.479821	0.563278	0.398714	0.417856	0.603597	1	
MVA	0.389564	0.226987	0.618436	0.242415	0.496587	0.218974	0.593614	1

Table 6. Correlation matrix under Moroccan GAAP

	TSR	ROA	ROE	EPS	PAYOUT	PBR	DIV-YIELD	MVA
TSR	1							
ROA	0.561586	1						
ROE	0.322457	0.135789	1					
EPS	0.576589	0.635894	0.414172	1				
PAYOUT	0.228479	0.595931	0.523687	0.435871	1			
PBR	0.174583	0.513697	0.608714	0.433365	0.399258	1		
DIV-YIELD	0.623587	0.479821	0.213684	0.273697	0.642587	0.353567	1	
MVA	0.489672	0.636214	0.543251	0.447568	0.493675	0.519746	0.297539	1

proaches 1, one must remove one. Reading the collinearity test for the data relating to the indicators of the two panels (Tables 5 and 6), the results show an absence of collinearity between the variables of the study according to Moroccan accounting standards and according to IFRS. Indeed, the values displayed by the test in question do not exceed 0.80 for each variable taken individually.

3.3. Regression analysis

3.3.1. HAUSMAN specification test

All data processing is performed using the EViews 9 software. This software was chosen among others according to the scoring and rating that it is awarded by practitioners in the field. As these are panel data, there are two types of estimators for estimating the coefficients of the models described below. In this sense, the estimation of the models based on panel data can be done with either

a fixed effects model or a random effects model. The choice between these two types of estimators is based on the results of the Hausman test. The results of the Hausman specification test are presented in Table 7.

Based on the results of the Hausman test, the most optimal estimator to use is the fixed effects estimator for all IFRS models. In fact, the results display p-values less than 5% (they are respectively (0.0431), (0.0068), and (0.0318)). For the case of Moroccan GAAP, the most appropriate estimator for model (1) is the random effects estimator, as the p-value of the test exceeds the 5% threshold. Whereas model (2) and model (3) must be processed using the fixed effects estimator.

3.3.2. Evaluation of the selected models

The robustness of the selected estimates lies in the fact that they validate the global significance test

Table 7. Results of the Hausman test

Group of indicators	Models	Chi-Sq. Statistics	Chi-Sq.d.f	Prob.
IFRS	Model 1	11.14	4	0.0431
	Model 2	15.68	3	0.0068
	Model 3	17.48	7	0.0318
Moroccan GAAP	Model 1	24.31	4	0.1302
	Model 2	17.04	3	0.0208
	Model 3	19.12	7	0.0401

Table 8. Robustness tests

Tests		IFRS			Moroccan GAAP		
		Model 1	Model 2	Model 3	Model 1	Model2	Model 3
Normality of errors (Jarque-Bera)	Stat.	2.4511	4.6938	0.9428	2.2417	22.2627	5.1263
	Prob.	0.2931	0.0956	0.1127	0.0456	0.4537	0.6132
Autocorrelation of errors (Breusch-Pagan)	Stat.	1.9324	2.7805	0.1317	1.3124	0.1013	2.1065
	Prob.	0.1645	0.2367	0.7177	0.0914	0.7505	0.1467
Heteroscedasticity (Breusch-Pagan-Godfrey)	Stat.	1.0311	0.5673	4.2275	0.6285	1.0509	1.6249
	Prob.	0.3099	0.4539	0.8965	0.1889	0.8409	0.3446
Fisher Test p-values	Stat.	0.4357	0.5482	1.0325	0.9314	1.0509	0.6249
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

of the coefficients, the normality test of the errors, the auto-correlation test of the errors, and the heteroskedasticity test. Table 8 summarizes the essential tests of the robustness of the models.

The global significance test of the coefficients obtained is performed through the Fisher test, the latter displays p-values that are far below 5%, for all models. Subsequently, the Jarque-Bera test was then applied to test the normality of the errors. At the reading of the results, all p-values are greater than 5%. Therefore, the errors are normally distributed. Still, in the logic of evaluating the models, the Breusch-Pagan test is called to test the autocorrelation of the errors. The results of the test provide good models, as all p-values obtained are greater than the 5% threshold. Finally, the analysis of the constant of the variance of the errors of the models is carried out through the test of heteroscedasticity, by applying the Breusch-Pagan-Godfrey test. The results indicate that the variance of the errors is not heteroscedastic. Because, all p-values of the Breusch-Pagan-Godfrey test, applied to the models, are greater than 5%.

3.3.3. Econometric regression results

To appreciate the impact of the adoption of IFRS on the relevance of financial performance measures, the use of econometric models is strongly recommended to test this link. Table 9 summarizes the results of a set of estimates performed on two study samples. In terms of the quality of the specification, all the determination coefficients exceed the 50% threshold, which indicates good models. In addition, the Fischer statistic indicates that the three regression models are significant at the conventional 1% thresholds. These results show that the aforementioned models effectively describe the relationship between shareholder profitability and the ex-

planatory variables considered. Empirically, in this study, the estimation of the first model is based on performance accounting indicators. In terms of the test of the intensity of association between the total shareholder return and the accounting values of performance according to the accounting standards applied, the results obtained confirm that the model is satisfactory because it explains more than 70% of the stock return for the IFRS sample (adjusted $R^2 = 71.12\%$). However, Moroccan accounting standards explain less of the stock market return (adjusted $R^2 = 55.03\%$). In addition, earnings per share (EPS), return on equity (ROE), and return on assets (ROA) are determinants of shareholder return at the IFRS sample level, they significantly contribute to the explanation of stock return. In fact, the coefficients of these variables are very significant ($p < 1\%$). While the payout variable does not seem to provide any additional information value ($p > 5\%$). For the Moroccan GAAP sample, only return on assets (ROA) and earnings per share (EPS) impact shareholder return. However, payout and financial return do not have any explanatory power of stock market return ($p > 5\%$). Therefore, and based on the determination coefficient as a measure of the relevance of the association between the explanatory variables retained and the shareholder return, and on the significance of the regression coefficients. It seems that IFRS improves the informational relevance of performance accounting indicators by better explaining the total shareholder return. Thus, the first hypothesis is confirmed.

In terms of the effect of the adoption of IFRS on the intensity of the association between the total shareholder return as an independent variable and stock market indicators as explanatory variables. The results showed that IFRS only affects the MVA ratio, which contributes to explaining total shareholder return. While the other two variables (PBR and

Table 9. Main results

Explanatory Variables	IFRS			Moroccan GAAP		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
C	4.002682*** (0.298625)	3.942112*** (0.398568)	4.446872*** (0.356232)	5.048924*** (0.186572)	3.241556*** (0.252534)	3.099853*** (0.457482)
ROA	1.694633*** (0.216590)		1.056090*** (0.188420)	2.648520*** (0.064485)		2.156402 (0.1197)
ROE	1.500870*** (0.115498)		0.114632 (0.253233)	1.256681 (0.35421)		1.288466 (0.243634)
EPS	2.321022*** (0.102124)		0.542249*** (0.085854)	2.135624** (0.099542)		1.446856** (0.115248)
PAYOUT	0.200246 (0.424802)		0.148522 (0.145360)	0.352625 (0.148562)		0.452110 (0.286599)
PBR		0.684571 (0.070144)	1.245154 (0.198582)		2.089585 (0.122854)	1.232481 (0.164452)
DIV YIELD		0.654582 (0.224802)	0.685622*** (0.014224)		1.248862** (0.048563)	1.141547** (0.032564)
MVA		2.243858*** (0.022465)	1.542893** (0.099854)		2.325651*** (0.011251)	0.165852 (0.253140)
Adjusted R-squared	0.7112	0.5036	0.6902	0.5503	0.6384	0.5801
Prob (F-statistic)	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
Nb. of obs.	155	155	155	418	418	418

Note: * coefficient significant at 10%; ** coefficient significant at 5%; *** significant at 1%; (.): Standard deviations.

Dividend yield) are not significant ($p > 5\%$). At the Moroccan GAAP level, the variables MVA and dividend yield explain shareholder return better, their values are significant. However, the PBR variable does not seem to provide a significant informational content to explain stock market return according to the two accounting standards ($p > 5\%$). Moreover, the model based on stock market indicators is satisfactory, as it explains more than 50% of the stock's return for the two selected samples. Indeed, the determination coefficient for the IFRS sample is (adjusted $R^2 = 50.36\%$), and for the Moroccan GAAP is (adjusted $R^2 = 63.84\%$) without any collinearity problem. Based on the results obtained from this second model, it seems that IFRS are less relevant than Moroccan accounting standards for disclosing better quality information that better reflects the shareholder's return. The second hypothesis is rejected.

Furthermore, in terms of the analysis of the last model, which aims to appreciate the complementarity of accounting and stock market indicators to explain the total shareholder, return. The results obtained at the IFRS sample level allow identifying an interesting complementarity between accounting and stock market indicators to explain the financial performance. In addition, the variables: ROA, EPS, dividend yield and MVA effectively contribute to

the explanation of shareholder return ($p < 5\%$). As for the variables – ROE, PAYOUT and PBR – they are not significant, and have no explanatory capacity for shareholder returns. As for the Moroccan accounting standards, the results demonstrate a decrease in the number of variables that contribute to the explanation of shareholder performance. Thus, only three variables (EPS, MVA and dividend yield) which display a significant threshold ($p < 5\%$). On the other hand, the coefficient of determination is less important in Moroccan accounting standards (adjusted $R^2 = 58.01\%$) compared to IFRS (adjusted $R^2 = 69.02\%$). As a result, the new international standards (IFRS) seem to be more relevant than the Moroccan standards for disclosing better quality information that best reflects the shareholder's performance, by revealing an interesting complementarity between accounting and stock market performance indicators. The estimation results are presented in Table 9 according to the accounting framework chosen. Thus, the last hypothesis is supported.

4. DISCUSSION

The results suggest a significant effect of the adoption of IFRS on the relevance of accounting performance measures. In fact, this result is not sur-

prising. This can be attributed to the main objective of these standards. IFRS aims to improve the quality of published financial information. This improvement affects accounting performance measures which are based on the accounting figures produced and not on the information disseminated on the market. This result corroborates with those of Barth et al. (2008), Daske et al. (2013), Pelucio-Grecco et al. (2014), Liu et Sun (2015), Edeigba and Amenkhienan (2017), Abdullah et al. (2018), Lopez et al. (2020), Nurunnabi et al. (2020), Almaqtari et al. (2021), Hussein and Nounou (2021), Bandara and Falta (2021), and Laouane and Torra (2022), thus highlighting a positive and statistically significant association between the total shareholder return and the accounting performance indicators. The authors also showed that IFRS significantly influence the ability of accounting performance indicators to inform users about the information disseminated on the financial market, and on the other hand, to appreciate to what extent they are incorporated in the stock market return of the company.

On the other hand, the results obtained from the second model aimed at evaluating the effect of IFRS on the relevance of stock market performance measures, predict that IFRS does not affect the relevance of stock market performance measures in the same way as accounting performance measures. In this sense, IFRS seems to be less relevant than Moroccan accounting standards for disclosing better quality information that best reflects the total shareholder return. This finding is at least paradoxical because stock market performance indicators, by taking into account the cost of capital and risk, seem to measure the performance of companies more finely. This result is in line with those of Outa et al. (2017) who

specified that the implementation of IFRS could be less effective in developing economies than in developed economies. They found that the informational relevance of financial performance indicators in East Africa is relatively lower than that of developed markets. Moreover, Sefsaf (2011) and Lenormand and Touchais (2009) showed that the superiority of IFRS is invalidated by the hypothesis that the national framework is probably the most adapted to the local context. As a result, the authors specified that the quality of financial statements does not only depend on the accounting framework used but also on the institutional factors of the countries in which financial information is developed and interpreted, a result also confirmed by Garanina and Kormiltseva (2013). In the end, Laouane and Torra (2021) confirmed the conclusions drawn, by specifying that IFRS positively affect the relevance of accounting performance indicators. Moreover, the researchers found a less significant effect of IFRS on the relevance of stock market performance measures.

In terms of the analysis of the last model, the results show a significant effect of the adoption of IFRS on the complementarity between accounting and stock market indicators to explain the total shareholder return. These results are consistent with those of Saadi (2007) and Ahmad (2006), specifying that financial performance is a polysemous or multifaceted concept that can have several meanings depending on its author or evaluator. Indeed, to assess the quality of their decisions, managers can use metrics with varying degrees of precision and complexity. Moreover, Josée et al. (2005) believe that the use of a wide range of measures is essential to assess financial performance, because no one apprehends the financial performance in the same way.

CONCLUSION

The objective of this study is to compare, according to international accounting standards or Moroccan accounting standards, the informational relevance of accounting indicators and stock market indicators reflecting the financial performance during the period 2013–2022.

The choice of indicators for measuring financial performance is always problematic. Consequently, the existing literature review attests to the plurality of indicators used by researchers to evaluate a company's financial performance. As a result, it is possible to distinguish between accounting indicators such as ROA, ROE, EPS, and Payout. In addition, market-based indicators, include TSR, PBR, MVA, and

yield dividend. The results show a clear improvement in accounting performance indicators following the adoption of IFRS. These new standards appear to be more relevant than Moroccan standards for disclosing accounting information that provides information to investors. Furthermore, the impact of IFRS on the relevance of stock market measures remains relatively low compared with Moroccan accounting standards. Finally, the study found a positive effect of IFRS on the complementarity between accounting and stock market indicators in explaining shareholder return.

These mixed results can be explained in different ways. Accounting indicators are more unidimensional than financial indicators. In this respect, it is not surprising that the correlation between total shareholder return and accounting indicators is greater. This is due to the process of producing accounting figures, which depends on the internal efficiency of the company, unlike stock market indicators, whose causes of variation are sometimes inexplicable.

The relevance of accounting indicators compared with stock market indicators is obvious. Nevertheless, accounting indicators can be improved, in particular by taking better account of intangible investments in the financial statements. In fact, the significant investments that companies may make in their production structure, staff training, creativity, and innovation are all dimensions that should be reflected in the company's financial performance.

The limitations of this study are methodological. A cross-sectional study of the relevance of financial performance indicators for companies in different sectors does not allow us to consider the specific characteristics of each sector of activity in terms of the degree of mastery of the new international benchmark. The way is open, among other things, to case studies to better define this issue. A complementary research method of this kind would make it possible to take into account the effect of sectoral disparities, which would be rich in lessons to be learned.

AUTHOR CONTRIBUTIONS

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