

Exploratory Study on the Impact of the Transition to IAS/IFRS on Moroccan Groups

—Case of Performance Indicators

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Abstract

Since the entry into force of IAS/IFRS in 2005, the issue of the impact of IAS/IFRS on economic and financial performance has been a complex debate in EU member countries. Indeed, several studies have been carried out in this context, such as Spain (Callao et al., 2007), France (Boukari & Richard, 2007), Canada (Blanchette et al., 2011) ... With the exception of the research carried out by Ahsina et al. in 2014, the analysis of the impact of the adoption of IFRS on companies listed on the Casablanca stock exchange has so far remained non-existent in the case of Morocco. As a result, our article aims to study and analyse the impact of the first “IFRS 1” transition on the 16 listed groups on the Moroccan financial market. The results show that there is no significant difference between the financial statements prepared in accordance with Moroccan standards and those prepared in IFRS. The results of our research show that the transition from Moroccan accounting standards (CGNC) to international accounting standards (IAS/IFRS) does not have significant consequences during the first transition period.

Keywords

IAS/IFRS Transition, Moroccan Standards, Impact, Accounting and Financial Indicators

1. Introduction

The objective of our article is to examine the impact of the first adoption of IFRS on financial reporting, while limiting our study on the accounting and financial indicators that attract users, particularly current and/or potential investors.

Since the introduction of the new standards in Europe and around the world, the subject of the transition to IFRS has been a very rich debate on all the actors

involved in the process: preparers and users of financial reporting.

Methodologically, our research is based on a literature review (theoretical and practical work) dealing with the effects of IFRS standards in Morocco. Indeed, our work is part of a continuous program of research carried out in the field of accounting; hence its usefulness and specificity are characterized by the analysis of the effect of the first transition of IAS/IFRS on performance indicators.

This kind of work will allow us to make a brief knowledge and analysis of the research carried out on IFRS standards in relation to the Moroccan context, from which the literature review will focus on two points: descriptive research and exploratory studies.

Therefore, our article aims to respond the following problem:

For the groups listed on the Moroccan financial markets, what is the impact of the transition to IFRS (1st transition) on the main accounting and financial indicators?

This research is presented as follows: we will present in the first section the research work on IFRS standards in Morocco in theoretical and practical terms, then we will try to study the financial statements presented simultaneously in IFRS and Moroccan standards by presenting the research methodology, the results of the research through the verification of the following hypotheses:

- Hypothese 1: the central trend parameters, the asymmetry coefficient and the concentration coefficient in IFRS are equal with Moroccan accounting standards;
- Hypothese 2: the assumption of normality (J-B test) of the accounting and financial indicators in IFRS standards is equal to the accounting and financial indicators presented in Moroccan standards;
- Hypothese 3: the variance and expectation (equality test) of the accounting and financial indicators presented in IFRS are equal to the variance of the accounting and financial indicators presented in Moroccan standards;
- Hypothese 4: the median (Wilcoxon-Mann-Whitney test) of the accounting and financial indicators presented in IFRS is equal to the accounting and financial indicators presented in Moroccan standards;
- Hypothese 5: using the least squares regression method; the accounting and financial indicators in IFRS can be fully explained by the accounting and financial indicators in Moroccan standards.

Finally, we will present the limits and the perspectives of the future.

Literature review on the expected impact on the transition to IFRS for the Kingdom of Morocco

Since the entry into force of IAS/IFRS accounting standards in Europe, Moroccan companies within the scope of consolidation of foreign groups have been required to prepare their consolidated financial statements in international accounting standards.

This shift from legal accounting to economic accounting has led to a debate on the selection, classification, treatment, adoption and change of accounting policies that have an impact on users of financial information.

Indeed, several studies have been carried out on the effect of the adoption of international accounting standards on financial reporting from a macroeconomic and micro-economic perspective (Ahsina et al., 2014).

Our modest work is part of a series of research studies dealing with the micro-economic effects of the first application of IFRS standards in the Moroccan context.

There is a great deal of literature on the adoption of IAS/IFRS standards in Morocco.

In the first place, we will find the work done by Elhamma in 2012 which carried out a detailed analysis on the main convergences and discrepancies of the financial statements (the statement of financial position, the income statement and the cash flow statement) simultaneously presented in Moroccan and international accounting standards. The results show that the differences are:

- in the balance sheet following the reclassification of current assets and liabilities to IAS 1 instead of current assets and liabilities;
- in the income statement through the presentation of income and expense accounts by function under IFRS;
- in the cash flow statement which is not provided for in Moroccan accounting standards.

In the same context (Haoudi, 2015) studied in a descriptive manner the context, the objective, the stakes of the adoption of IFRS standards in Morocco as well as the main differences between IAS/IFRS and CGNC based on a conceptual framework that favours investors, following the adoption of the pre-eminence of economic reality over legal form and fair value instead of heritage and historical cost.

As regards empirical studies dealing with the effects of switching to international accounting standards in Morocco, the types of work carried out can be classified into three categories:

- the choice of passage, or adoption of IFRS standards in Morocco, we will find Ahsina, 2012 which analyzed the explanatory factors that impact the application of IFRS standards in the Moroccan context. The authors (Ahsina, Alaoui, & Ellatife, 2012) studied through the use of logistic regression, the choices of switching to IAS/IFRS accounting standards in the Moroccan context. Thus, the researchers (Ahsina, Alaoui, & Ellatife, 2013) examined the choice of transition to IAS/IFRS ...
- the superiority of value relevance over the content of IFRS standards and local standards, we will find (Ahsina & Taouab, 2017) which examined the superiority of IFRS standards compared to Moroccan standards by using a model based on the price of shares and another model based on stock market performance on a sample of 9 Moroccan non-financial and non-consolidating groups listed on the Casablanca. The authors (Haoudi & Aasri, 2017) studied the relationship that may exist between the accounting standards used and the manipulation of accounting results, assuming that IFRS can reduce the

discretionary behavior of executives and limit the practice of profit and loss management.

- the impact of the implementation of IFRS, we will find (Sadqi & Rifki, 2017) that have examined the impact of three international accounting standards (IAS 18 for revenue, IAS 11 for construction contracts, and IFRS 15 for revenue from contracts with customers), and authors (Lotfi & Bensaida, 2018) which focus their study on the analysis of IAS/IFRS standards on Moroccan financial institutions; by studying on the one hand the contribution of IFRS 9 on the banking sector (constitution of provisions on doubtful and sound loans), and on the other hand, by examining, on the basis of an empirical study, the impact of the new standard on the provisions recorded on a financial institution's healthy outstanding loans (65,126 files over a five-year period).

2. Research Methodology

The objective of this study is to provide empirical evidence of the impact of the transition to IFRSs on the accounting and financial indicators of Moroccan groups. The comparison of the main accounting indicators and financial ratios calculated in accordance with IAS/IFRS with those obtained in Moroccan accounting standards requires that the financial statements be prepared, taking into account the two rules for the same period. Indeed, the transitional provisions of IFRS 1 make this comparison possible during the first year of the transition to IFRS. In particular, the complete financial statements are available in accordance with IFRS and the Moroccan accounting framework for at least one year before the transition year. Additional prior financial statements are also available when the transition date is determined by the group at an earlier date.

Accounting and financial data were collected from audited financial statements prepared in accordance with IFRS and Moroccan national standards, for the same year or period and using ratios calculated using figures from the two sets of financial statements. Next, we performed the comparison and empirical analysis of the differences on the main accounting indicators and financial ratios. Subsequently, tests of the equality of means, medians and differences between each set of accounting indicators and financial ratios were carried out to determine whether the distributions differ according to IFRS and Moroccan standards. The least-squares regression was also used to analyse the relationship between accounting indicators and IFRS/Moroccan standards financial ratios.

2.1. Financial Statement Data

In Morocco, the adoption of international accounting standards by Moroccan groups takes place in two stages.

The first adoption of international accounting standards began in 2005, following European Regulation CE No 1606/2002 of 19 July 2002, which consists of companies listed on European stock exchanges presenting their consolidated fi-

nancial statements in accordance with IFRS. This obligation involves Moroccan groups that are subsidiaries of European companies to produce their financial statements in accordance with IFRS (for example, Maroc Telecom and Vivendi group, Holcim Maroc group and Holcim LTD Switzerland ...).

The second stage is characterized by the issuance of Opinion No. 05 in 2005 by the National Accounting Council, which invites the listed companies (excluding institutions or financial institutions) on the Moroccan financial markets, to present their financial statements in national accounting standards or in IFRS from 2006 onwards.

The sample used in this analysis consists of all Moroccan groups authorised by the Moroccan Capital Market Authority (AMMC), to file their consolidated financial statements, according to national standards and IFRS from fiscal year 2005 until fiscal year 2017.

During this period, we found at the official website of the Casablanca Stock Exchange and the Moroccan Capital Markets Authority, 39 Moroccan groups (see **Table 1**, List of groups that prepared their consolidated financial statements under IFRS) having presented and issued their audited consolidated financial statements under IFRS. However, 23 Moroccan groups were excluded from our sample for the following criteria:

- 13 groups are financial institutions, from which their specific activities will influence the analysis of our study¹;
- 9 groups did not prepare their consolidated financial statements in national standards when IFRS was adopted;
- 1 group (ENNAKL Automobiles) presented their IFRS consolidated financial statements in Tunisian Dinar foreign currency instead of the Moroccan national currency Dirhams.

Share prices and other selected information were collected in addition to the financial statements. Share prices were obtained on the website of the Casablanca Stock Exchange (share price and market capitalisation) and in the annual reports of the groups when they were available. Other information includes the industry classification of each corporation and the reporting currency used in the financial statements.

Based on accounting figures and stock prices collected, some ratios were calculated according to IFRS and Moroccan standards.

The final sample used for this analysis consists of 16 consolidated financial statements for the year preceding the year of transition to IFRS.

2.2. Research Assumptions

Referring to the research carried out by (Blanchette, 2011) for the analysis of the

¹The difference between the financial information of financial institutions and other activities is characterized by: a sectoral chart of accounts (Accounting plan of banking institutions) includes an architecture of accounts specific to the sector, an activity that is regulatory and under the supervision of Bank Al-Maghrib; the presentation and preparation of financial statements are different.

Table 1. List of groups that prepared their consolidated financial statements under IFRS.

Groups	Sector
AFMA GROUP	Insurance
AFRIQUIA GAZ	Oil and Gas
ATLANTA	Insurance
ATTIJARIWafa BANK	Banks
AUTO HALL	Distributors
BEAucoup	Banks
BMCE	Banks
BMCI	Banks
HOM	Banks
DANONE POWER PLANT	Agri-Food and Production
CIH BANK	Banks
COSUMAR	Agri-Food and Production
DOUJA PROMOTION	Participation and development of real estate
ENNAKL AUTOMOBILES	Distributors
ITISSALAT AL-MAGHRIB	Telecommunications
LAFARGEHOLCIM MOROCCO	Building and Building Materials
LESIEUR CRISTAL	Agri-Food and Production
MAGHREB OXYGENE	Chemistry
MGMA	Mines
MUTANDIS	Agri-Food and Production
RESIDENCES DAR SAADA S.A	Participation and development of real estate
RISMA	Leisure and Hotels
SAHAMASSURANCE	Insurance
SAMIR	Oil and Gas
SONASID	Building and Building Materials
TIMAR SA	Transportation
TOTAL MOROCCO	Oil and Gas
ARADEI CAPITAL	Real estate and hotel companies
ZALAR HOLDING	Agri-food
ATLAS CEMENT	Construction materials
CRÉDIT AGRICOLE DU MAROC	Banks
CFG BANK	Banks
OCP	Mines
MUTANDIS SCA	Holding Company
CDG CAPITAL	Banks
AL MADA (EX SNI)	Private equity companies
SGMB	Banks
ONA	Private equity companies
ADM	Construction, maintenance and operation of motorways

Source: developed by us.

impact of the transition to IAS/IFRS on Canadian accounting and financial indicators, our article aims to analyze and test the following assumptions:

- Assumption 1: the central trend parameters, the asymmetry coefficient and the concentration coefficient in IFRS are equal with Moroccan accounting standards;
- Assumption 2: the assumption of normality (J-B test) of the accounting and financial indicators in IFRS standards is equal to the accounting and financial indicators presented in Moroccan standards;
- Assumption 3: The variance and expectation (equality test) of the accounting and financial indicators presented in IFRS are equal to the variance of the accounting and financial indicators presented in Moroccan standards;
- Assumption 4: The median (Wilcoxon-Mann-Whitney test) of the accounting and financial indicators presented in IFRS is equal to the accounting and financial indicators presented in Moroccan standards;
- Assumption 5: Using the least squares regression method; the accounting and financial indicators in IFRS can be fully explained by the accounting and financial indicators in Moroccan standards.

The basic regression model is as follows:

$$IFRS_{it} = \alpha + \beta GAAP_{it} + \Sigma$$

IFRS is the IFRS ratio for group *i* at the time *t* α is interception.

GAAP are the ratio in Moroccan standards for group *i* at the time *t*.

β is the coefficient of the variable “GAAP: Moroccan standards”.

Σ is the error term.

i refers to the number of company groups in the sample.

t refers to the transition date of the financial statements of the balance sheet groups.

3. Outcome and Analysis

During this part, we will try to analyse and study, through statistical tests, the impact of the transition to IFRS standards on the main accounting and financial indicators.

Comparison of Means, Medians and Variances

Following the descriptive study of, **Table 2(a)** about the descriptive statistics of the main indicators explains the descriptive statistical results of the impact of international accounting standards on the main accounting and financial indicators.

We noted that the impact of the bi-variate statistical results differs from one indicator to another ranging from -15.90% to 195.02% of coefficient of variation (average to standard deviation) between IFRS and CGNC. Indeed, **Table 2** (see the table of standard deviation and Skewness Kurtosis) groups together the central trend and dispersion statistics for the main accounts, namely:

- **Economic and financial profitability**

Table 2. Descriptive statistics of the main indicators.

(a) Accounting and financial indicators in IFRS and Moroccan standards

	N	Average	Median	Minimum	Maximum	Standard deviation	Skewness	Kurtosis
ROECGNC	16	0.140000	0.130000	0.01000	0.35000	0.09556847	0.727	0.048
ROEIFRS	16	0.2612500	0.1250000	0.02000	20.11000	0.50027826	3.806	14.892
ROICCGNC	16	0.0906250	0.0650000	0.01000	0.23000	0.06961501	0.858	-0.443
ROICIFRS	16	0.1481250	0.0600000	-0.02000	0.68000	0.20265632	2.018	3.402
ROCECGNC	16	0.1137500	0.0650000	0.02000	0.33000	0.10085468	1.227	0.180
ROCEIFRS	16	0.1081250	0.0700000	0.00000	0.30000	0.09627868	0.999	-0.161
TPROFITABILITECGNC	16	0.1400000	0.1350000	0.00000	0.32000	0.10589303	0.200	-1.284
TPROFITABILITEIFRS	16	0.1400000	0.1200000	0.00000	0.32000	0.10282672	0.389	-0.938
TMARGEBRUTCNC	16	0.3931250	0.4000000	0.03000	0.81000	0.20158435	0.118	-0.235
TMARGEBRUTIFRS	16	0.4068750	0.3750000	0.04000	0.82000	0.21792105	0.327	-0.660
TRESULTATOPRETAION NELCOURANTCGNC	16	0.2081250	0.2150000	0.02000	0.43000	0.12292105	-0.018	-0.938
TRESULTATOPERATION NELCOURANTIFRS	16	0.2075000	0.2000000	0.01000	0.44000	0.12449900	0.125	-0.658
TRESULTATOPERATION NELCGNC	16	0.1898806	0.1902100	0.01499	0.43762	0.13530592	0.208	-1.254
TRESULTATOPERATION NELIFRS	16	0.1883288	0.1931300	0.00673	0.43813	0.13496363	0.239	-1.088
RATIOENDETTEMENTCGNC	16	0.5984562	0.3536000	-0.35840	3.18780	0.89630588	1.890	4.107
RATIOENDETTEMENTIFRS	16	2.8774750	0.5780000	-0.35700	36.83500	9.09427436	3.943	15.668
EBITDACGNC	16	2,456,402,369.6288	911,950,000.0000	180,000,000.00	13,464,000,000.00	3,879,912,345.33016	2.342	4.703
EBITDAIFRS	16	2259,473,344.9362	801,250,500.0000	142,619,000.00	11,402,000,000.00	3,537,289,388.45647	2.259	4.051
RATIOMARRISCGNC	13	3.0568462	1.9601000	1.07980	11.13960	2.66045294	2.633	7.953
RATIOMARRISIFRS	12	3.2216000	2.3239500	1.19780	11.13960	2.70860046	2.587	7.612
EVACGNC	16	-42,068,009.9660188	2.3974000	-882,330,783.57000	492,412,115.04000	264,501,606.16470525	-1.839	8.128
EVAIFRS	16	121,142,903.461874	-67,051,917.24000	-1,335,842,120.4100	4,402,873,760.20000	1,246,296,929.63466670	2.883	10.470
PERCGNC	12	31.9589500	24.6428000	10.14330	81.02590	23.50984919	0.985	-0.019
PERIFRS	12	27.8880583	16.5545000	10.65120	84.31210	23.33279775	1.739	2.328

Source: developed by us.

(b) Normality test of accounting and financial indicators in IFRS and Moroccan standards.

Variables	n	S	K	J-B
ROECGNC	16	0.726938118	0.048414237	1.410733365
ROEIFRS	16	3.806457789	14.89244649	186.4942974
ROICCGNC	16	0.858331443	-0.442619322	2.095228885
ROICIFRS	16	2.018448678	3.402440548	18.58209463
ROCECGNC	16	1.226691795	0.17993117	4.034310845

Continued

ROECEIFRS	15	0.979880043	-0.28893145	2.452588113
TPROFITABILITECGNC	15	0.131482302	-1.253186979	1.024767492
TPROFITABILITEIFRS	15	0.373510875	-0.943668448	0.905344771
TMARGEBRUTCNC	16	0.118216239	-0.234543669	0.073940699
TMARGEBRUTIFRS	16	0.327200127	-0.659559811	0.575505891
TRESULTATOPRETAIONNELCOURANTCGNC	16	-0.018214944	-0.937930222	0.587360159
TRESULTATOPERATIONNELCOURANTIFRS	16	0.125080127	-0.65754052	0.329959792
TRESULTATOPERATIONNELCGNC	16	0.207841393	-1.253841604	1.163273965
TRESULTATOPERATIONNELIFRS	16	0.238876149	-1.087788684	0.941020985
RatioendettementCGNC	16	1.889728837	4.106709198	20.76624049
RatioendettementIFRS	16	3.943078112	15.66804982	205.1194969
EBITDACGNC	16	2.342023236	4.702526034	29.36936163
EBITDAIFRS	16	2.259435149	4.051419831	24.55612761
RATIOMARRISCGNC	13	2.632687419	7.9530474	49.27819819
RATIOMARRISIFRS	12	2.586596291	7.61194335	42.35180152
EVACGNC	16	-1.838916267	8.127506687	53.0552114
EVAIFRS	16	2.883252112	10.47047965	95.25567664
PERCGNC	12	0.985196505	-0.018968429	1.941404207
PERIFRS	12	1.739013312	2.328146503	8.758467672

*N: Number of observations *S, the asymmetry coefficient of the sample tested. *K, the kurtosis of the sample tested, J-B p-value of the Jarque-Berra test. Source: developed by us.

(c) Test of the equality of variances of the main accounting and financial indicators in IFRS and Moroccan standards.

<i>Variables</i>	Average	Variance	n	Degrees of freedom	F	P (F ≤ f) unilateral	Critical F value (unilateral)	Result
<i>ROECGNC</i>	0.14	0.009133333	16	15	0.036492705	3.40334E-08	0.416069075	Difference
<i>ROEIFRS</i>	0.26125	0.250278333	16	15				
<i>ROICCGNC</i>	0.090625	0.00484625	16	15	0.118000954	8.35853E-05	0.416069075	Difference
<i>ROICIFRS</i>	0.148125	0.041069583	16	15				
<i>ROCECGNC</i>	0.11375	0.010171667	16	15	1.125065838	0.415238292	2.463003105	No difference
<i>ROCEIFRS</i>	0.115333333	0.009040952	15	14				
<i>TPROFITABILITECGNC</i>	0.149333333	0.010520952	15	14	1.069720151	0.450718149	2.483725741	No difference
<i>TPROFITABILITEIFRS</i>	0.149333333	0.009835238	15	14				
<i>TMARGEBRUTCNC</i>	0.393125	0.04063625	16	15	0.855687651	0.38335929	0.416069075	No difference
<i>TMARGEBRUTIFRS</i>	0.406875	0.047489583	16	15				
<i>TRESULTATOPRETAIONNELCOURANTCGNC</i>	0.208125	0.015109583	16	15	0.974811828	0.480625047	0.416069075	No difference
<i>TRESULTATOPERATIONNELCOURANTIFRS</i>	0.2075	0.0155	16	15				

Continued

<i>TRESULTATOPERATIONNELCGNC</i>	0.189880625	0.018307692	16	15	1.005078765	0.49615104	2.403447071	No difference
<i>TRESULTATOPERATIONNELIFRS</i>	0.18832875	0.018215181	16	15				
<i>Ratioendettement CGNC</i>	0.59845625	0.803364227	16	15	0.009713514	2.3489E-12	0.416069075	Difference
<i>Ratioendettement IFRS</i>	2.877475	82.70582619	16	15				
<i>EBITDACGNC</i>	2456402370	1.50537E+19	16	15	1.203102546	0.362454971	2.403447071	No difference
<i>EBITDAIFRS</i>	2259473345	1.25124E+19	16	15				
<i>RATIOMARRISCGNC</i>	3.056846154	7.078009868	13	12	0.964764397	0.472842054	0.368008107	No difference
<i>RATIOMARRISIFRS</i>	3.2216	7.336516451	12	11				
<i>EVACGNC</i>	-42068009.97	6.99611E+16	16	15	0.045041576	1.48049E-07	0.416069075	Difference
<i>EVAIFRS</i>	121142903.5	1.55326E+18	16	15				
<i>PERCGNC</i>	31.95895	552.7130089	12	11	1.015233765	0.490223258	2.81793047	No difference
<i>PERIFRS</i>	27.88805833	544.419451	12	11				

Source: developed by us.

(d) Test of equality of hope of the main accounting and financial indicators in IFRS and Moroccan standards.

Variables	Average	Variance	N	Pearson correlation coefficient	Hypothetical difference in averages	Degrees of freedom	Stat t	P (T ≤ t) bilateral	Critical t value (bilateral)	Results
<i>ROECGNC</i>	0.14	0.009133333	16	-0.20413785	0	15	-0.91831743	0.37298362	2.13144955	No difference
<i>ROEIFRS</i>	0.26125	0.250278333	16							
<i>ROICCGNC</i>	0.090625	0.00484625	16	0.34741119	0	15	-1.21030283	0.24489001	2.13144955	No difference
<i>ROICIFRS</i>	0.148125	0.041069583	16							
<i>ROCECGNC</i>	0.119333333	0.01036381	15	0.99141071	0	14	1.06542721	0.30471316	2.14478669	No difference
<i>ROCEIFRS</i>	0.115333333	0.009040952	15							
<i>TPROFITABILITECGNC</i>	0.149333333	0.010520952	15	0.95913889	0	14	-1.2342E-16	1	2.14478669	No difference
<i>TPROFITABILITEIFRS</i>	0.149333333	0.009835238	15							
<i>TMARGEBRUTCNC</i>	0.393125	0.04063625	16	0.93597944	0	15	-0.71654522	0.48466265	2.13144955	No difference
<i>TMARGEBRUTIFRS</i>	0.406875	0.047489583	16							
<i>TRESULTATOPRETAION NELCOURANTCGNC</i>	0.208125	0.015109583	16	0.98375888	0	15	0.11185001	0.91242535	2.13144955	No difference
<i>TRESULTATOPERATION NELCOURANTIFRS</i>	0.2075	0.0155	16							
<i>TRESULTATOPERATION NELCGNC</i>	0.189880625	0.018307692	16	0.98992622	0	15	0.32357095	0.75073021	2.13144955	No difference
<i>TRESULTATOPERATION NELIFRS</i>	0.18832875	0.018215181	16							
<i>Ratioendettement CGNC</i>	0.59845625	0.803364227	16	0.09783626	0	15	-1.00722908	0.32979736	2.13144955	No difference
<i>Ratioendettement IFRS</i>	2.877475	82.70582619	16							
<i>EBITDACGNC</i>	2456402370	1.50537E+19	16	0.99439321	0	15	1.5123521	0.1512252	2.13144955	No difference
<i>EBITDAIFRS</i>	2259473345	1.25124E+19	16							
<i>RATIOMARRISCGNC</i>	3.032041667	7.712739768	12	0.1673478	0	11	-0.18549428	0.85621748	2.20098516	No difference

Continued

<i>RATIOMARRISIFRS</i>	3.2216	7.336516451	12							
<i>EVACGNC</i>	-42068009.97	6.99611E+16	16	0.28120972	0	15	-0.54444923	0.5941344	2.13144955	No difference
<i>EVAIFRS</i>	121,142,903.5	1.55326E+18	16							
<i>PERCGNC</i>	31.95895	552.7130089	12	0.58712239	0	11	0.66256905	0.5212473	2.20098516	No difference
<i>PERIFRS</i>	27.88805833	544.419451	12							

Source: developed by us.

(e) Wilcoxon-Mann-Whitney test of the main accounting and financial indicators in IFRS and Moroccan standards.

Variables	z	Sig. asymptotic (bilateral)	Result
ROE	-1.079	0.280485597	No difference
ROIC	-1.029	0.303315303	No difference
ROCE	-1.427	0.153520304	No difference
TPROFITABILITE	-0.207	0.836246535	No difference
TMARGEBRUT	-0.535	0.592612825	No difference
TRESULTATOPRETAIONNELCOURANT	-0.503	0.615266126	No difference
TRESULTATOPERATIONNEL	-0.31	0.756368863	No difference
Ratio endettement	-0.517	0.605094946	No difference
EBITDA	-2.689	0.007169734	Difference
RATIOMARRIS	-0.356	0.722107653	No difference
EVA	-1.086	0.277530251	No difference
PER	-0.549	0.582919547	No difference

Source: developed by us.

(f) Linear regression model of the main accounting and financial indicators in IFRS and Moroccan standards.

Variables	Constant	a	Stat t (a)	sig (a)	Adjusted R2	Stat F (ANOVA)	sig (ANOVA)	Durbin Watson
ROE	0.41086	-1.06861	-0.78024	0.44824	-0.02678	0.60878	0.44800	1.99289
ROIC	0.05647	1.01135	1.38624	0.18736	0.05789	1.92166	0.18700	2.23470
ROECE	0.00076	0.94388	24.72392	0.00000	0.97601	611.27243	0.00000	2.22596
TPROFITABILITE	0.00891	0.93639	13.62675	0.00000	0.92488	185.68843	0.00000	1.55631
TMARGEBRUT	0.00910	1.01183	9.94764	0.00000	0.86720	98.95561	0.00000	1.48133
TRESULTATOPERATIONNEL COURANT	0.00013	0.99639	20.50691	0.00000	0.96548	420.53348	0.00000	0.91657
TRESULTATOPERATIONNEL	0.00084	0.98742	26.16086	0.00000	0.97852	684.39075	0.00000	1.36096
Ratio endettement	2.28340	0.99269	0.36783	0.71850	-0.06117	0.13530	0.71800	2.13661
EBITDA	32544533.60459	0.90658	35.18516	0.00000	0.98802	1237.99563	0.00000	2.62453
RATIOMARRIS	2.72672	0.16322	0.53677	0.60316	-0.06919	0.28812	0.60300	1.94853
EVA	176884000.08850	1.32502	1.09644	0.29139	0.01330	1.20217	0.29100	2.61861
PER	9.26555	0.58270	2.29357	0.04474	0.27918	5.26048	0.04500	1.50635

Source: developed by us.

The indicators of the economic and financial profitability of our study sample vary from one indicator to another for:

- the ROE of 0.01% to 0.35% in CGNC compared to IFRS between 0.02% and 2.11%, of an average of 0.14% in CGNC compared to IFRS, is 0.26%, which corresponds to a coefficient of variation of 1.46% in CGNC compared to 0.52% in IFRS.
- the ROIC from 0.01% to 0.23% CGNC compared to IFRS between -0.02% and 0.68%, of an average of 0.09% CGNC compared to IFRS which is 0.15%, which corresponds to a coefficient of variation of 1.30% in CGNC standards compared to 0.73% in IFRS.
- the ROCE of 0.02% to 0.33% CGNC compared to IFRS which is between 0.00% to 0.30%, of an average of 0.1137% CGNC compared to IFRS is 0.1081%, which corresponds to a coefficient of variation of 1.13% in CGNC standards compared to 1.12% in IFRS standards.

- **Profitability**

Moreover, the profitability ratio notably the indicator relating to net debt, we found that this ratio shows a result ranging from -0.3584 to 3.1878 in Moroccan standards compared to IFRS standards, which range from -0.357 to 36.835, with an average of 0.60 in CGNC compared to 2.88 in IFRS, which corresponds to a coefficient of variation of 0.66 in local standards and 0.32 in international accounting standards.

- **Value creation**

With respect to value creation ratios, we noted:

- the EBITDA ratio shows a result ranging from 180,000,000.00 to 13,464,000,000.00 in Moroccan standards compared to international accounting standards ranging from 142,619,000.00 to 11,402,000.00 with an average of 2,456,402,369.63 in CGNC versus IFRS 2,259,473,344.94, which corresponds to a coefficient of variation of 0.633 in local accounting standards and 0.638 in IFRS.
- the EVA ratio is between -882,330,783.57 to 492,412,115.04 in local accounting standards compared to international accounting standards which are between -1,335,842,120.41 to 4,402,873,760.20 with an overall average of -42,068,009.97 in CGNC compared to 121,142,903.46 in IFRS, which corresponds to a coefficient of variation of -0.16 in national accounting standards and 0.10 in international accounting standards.
- the ratio of Marris to National Accounting Standards is between 1.07980 and 11.13960 compared to International Accounting Standards between 1.19780 and 11.13960, with an overall average of 3.0568462 in CGNC and 3.2216000 in IFRS, which corresponds to a coefficient of variation of 1.1489 in local standards and 1.1893 in IFRS accounting standards.
- the PER ratio is between 10.14330 and 81.02590 in local standards compared to IFRS accounting standards which is between 10.65120 and 84.31210, with an overall average of 31.9589 in CGNC standards compared

to 27.8880 in international accounting standards, This corresponds to a coefficient of variation of 1.3593 in Moroccan accounting standards and 1.19523 in IFRS accounting standards.

After having carried out an analysis on the central trend parameters (mean and variance), the asymmetry coefficient and the concentration coefficient (**Table 2(a)**, the descriptive statistics of the main indicators explains), we then try to carry out a test of normality statistics of Jarque-Bera on the main accounting and financial indicators in Moroccan and international standards.

According to the table above (**Table 2(b)** of the normality test of accounting and financial indicators in IFRS and Moroccan standards), we noticed through the coefficient of asymmetry that 43.75% of the variables tested are distributed in a normal way (symmetrical), as for the Kurtosis coefficient, we noticed that 56.25% of the variables tested are distributed in a crushed way (playkurtotic).

From the point of view of the statistics of Jarque-Berra, we can accept the hypothesis of normality of some accounting and financial indicators (46.87% of the variables of which 60% of the said variables are in Moroccan standards), during the period of our study and under a policy of accepting the hypothesis if the J-B test is less than 05, that is, there are no significant deviations from the average.

Indeed, this can be explained by the accounting practices adopted, the methods and the financial approaches used when determining the indicators, particularly at the level of the profit and loss account which is of interest to users of financial information such as shareholders (dividends and investment policy).

The International Accounting Standards Equality Test on Key Accounting and Financial Indicators shows according to **Table 2(c)** about the test of the equality of variances of the main accounting and financial indicators in IFRS and Moroccan standards that our H0 assumption is rejected for the 4 indicators (ROE, ROIC, EVA and debt ratio).

This result is mainly due to:

- ROE and ROIC through the effect of IFRS on equity, net income, and the value of non-current assets (tangible and intangible assets);
- the EVA and the debt-to-equity ratio by increasing the economic capital in IFRS (Equity and net debt) as well as the long- and medium-term debt heading in the statement of financial position in IFRS.

Through **Table 2(d)** (about the test of equality of hope of the main accounting and financial indicators in IFRS and Moroccan standards) relating to the test of homogeneity or equality of hope of two populations "Moroccan and international accounting standards", we found with a critical probability of $\alpha = 0.05$ and the table of Fisher-Snedecor (F threshold), that the hypothesis H0 is rejected hence the $F_{obs} > F_{seuil}$ of the variables studied.

We can conclude that despite changes in accounting practices and the adoption of new options that have an impact on the economic value of firms, the first move to international accounting standards has no significant impact on the main accounting and financial indicators of the groups studied.

From **Table 2(e)** (about the Wilcoxon-Mann-Whitney test of the main accounting and financial indicators in IFRS and Moroccan standards) on the Wilcoxon-Mann-Whitney test applied to the main accounting and financial indicators in IFRS and Moroccan standards, we found that the impact of the first transition to International Accounting Standards has been impacted on only one operational performance indicator, namely EBITDA.

Indeed, this is explained by:

- the minimum impact of IFRS 15 on revenue recognition;
- restatement of turnover having the financial nature in the financial income or expense account (interest on a commercial discount or on a free credit transaction in financial income and not in operating income subject to the actual qualification of the transaction in financing);
- restatement under a finance lease (IAS 17), which translates into the income statement by cancelling rents and recording expenses outside EBITDA (financial charges and depreciation allowances);
- the choice of methods or options relating to the valuation of IAS 2 stock, hence the use of the FIFO method will generally tend to improve the operating margin;
- the choice of groups to classify as financial or operating income and the discounting of pension provisions in accordance with IAS 19.

In theory, financial ratios should be identical if there is no difference between IFRS and Moroccan standards. The adoption of IFRS affects the accounting figures and, consequently, the financial ratios associated with them. Least squares regressions were used to study the extent to which IFRS ratios can be explained by ratios in Moroccan standards and to examine the degree of correlation between variables. The least squares method provides the estimated coefficients.

$$IFRS_{it} = \alpha + \beta GAAP_{it} + \Sigma$$

IFRS is the IFRS ratio for group *i* at the time *t* α is interception.

GAAP are the ratio in Moroccan standards for group *i* at the time *t*.

β is the coefficient of the variable "GAAP: Moroccan standards".

Σ is the error term.

i refers to the number of company groups in the sample.

t refers to the transition date of the financial statements of the balance sheet groups.

According to **Table 2(f)** (about the linear regression model of the main accounting and financial indicators in IFRS and Moroccan standards), relative to the linear regression model applied to the main accounting and financial indicators, we found a strong correlation for almost all indicators and weak relationships for ROE and Marris ratios.

The majority of variables and coefficients β are significant at the confidence level of 5% (with an adjusted R^2 that are aligned to the right ranging from 0.867 to 0.988), on the other hand the coefficients β of the ROE ratio, debt and value

creation are not significant and the adjusted R^2 is practically zero.

Thus, we noticed at the level of global test of significance of the model or the test of $H_0: b_1 = 0$, against $H_1: b_1 \neq 0$ at the risk of 5% that H_0 is rejected for the case of debt ratio and Marris.

4. Conclusion

After identifying a sample of 16 Moroccan companies, having adopted IAS/IFRS, we conducted a univariate analysis of the “accounting and financial indicators” variables during the first year of application of IAS/IFRS. The results of this empirical study showed that the adoption of these standards for the first time had no significant impact on almost all variables compared to Moroccan standards. These achievements have guided us, to use regressions by least squares. Within the latter, we focused on examining the relationship between Moroccan standards and the first application of international accounting standards, from which we were able to conclude that the adoption of IAS/IFRS is strongly correlated with Moroccan accounting standards.

Our results differ from those of [Lantto and Sahlström \(2009\)](#) concerning in particular the effects of IFRS on accounting and financial ratios in the European context. Our study found no significant differences between the median of all ratios (excluding EBITDA) calculated for the first Moroccan adopters. In contrast, Lantto and Sahlström report significant differences for a liquidity ratio, two leverage ratios and four profitability ratios, including the market-based price-to-earnings ratio. However, Lantto and Sahlström also point out that IFRSs significantly change the magnitude of financial ratios, which is consistent with our conclusions on the greater volatility of IFRS ratios for early adopters in Morocco.

The increased volatility of IFRS ratios that we see among early adopters in Morocco is associated with the underlying accounting data. However, the exact source of this volatility remains unclear. Is it due to the differential adjustments that are required under IFRS but not under Moroccan standards (such as, for example, unrealized gains or losses on items measured at fair value under IFRS relative to historical cost under Moroccan standards)? Where is this due to adjustments or methods applied in standards based on IFRS principles that give more latitude and judgment to executives? Or is there another reason? This analysis cannot provide an unequivocal answer.

5. Limitations, Recommendations and Future Prospects

The objective of this research is to provide preliminary evidence on the impact of IFRS on accounting and financial indicators in Morocco. It should be noted, however, that this evidence is subject to a number of significant limitations due to the nature of the data and the timing. First, the sample used is of limited size; it consists of 32 financial statements collected from 16 Moroccan companies. Second, given that all companies in the sample are voluntary early preparers, the

results may be influenced by factors that apply to them as such, but may be less relevant to mandatory adopters. Thirdly, the presence of a sectoral effect is quite evident since 68.75% of the sampled enterprises operate in the industrial sector. This is remarkable given that the sample represents 100% of early adopters in Morocco for which financial statements were available on the AMMC website and the Casablanca Stock Exchange. It seems clear that incentives for early adoption of IFRSs are more important for mining companies. Recently, it is likely that the 2008 financial crisis had some influence on the data on which the analysis was based.

Although the preliminary tests show significant results, these results are incomplete and may not represent the overall impact that will affect Moroccan publicly traded companies in the future; particularly in times of economic growth, as opposed to a financial crisis. In this study, the sample is based on certified financial statements, the most reliable and accepted source of accounting information available.

Future research may consider extending the analysis to interim financial statements in order to increase the sample size; however, this would have an impact on the reliability of the results. It will also be possible to increase the sample size with data from mandatory adopters after the transition to IFRS in 2005 in Morocco.

We encourage analysts to take a conservative approach when considering financial ratios during the transition to IFRS in Morocco. Comparing ratios based on IFRS figures with those based on Moroccan standards is not entirely appropriate. Users of financial statements should distinguish between changes in performance affected by the transition to IFRSs and those caused by changes applied by managers. A possible solution may be to recalculate previous ratios using the retroactive IFRS information presented in the year of transition. However, this can be an expensive exercise that remains subject to limitations such as exemptions and exceptions allowed by IFRS 1. Analysts should be aware of the main characteristics of IFRS standards that differ from Moroccan standards.

We hope that our research work will be a source of information for future research in order to reduce the limitations encountered.

In fact, the model adopted in our work requires in-depth analysis, particularly for:

- study the impact of the initial transition to international accounting standards on strategic decisions and the internal organization of Moroccan groups;
- assess the impact of IFRS (pre and post-IFRS) over a wider time horizon (at least 5 years);
- limit the scope of the study on a specific activity (financial institutions) and/or expand the study on other neighbouring African countries (e.g., Tu-

nesia and Algeria).

Use mathematical modelling and more in-depth statistical testing to test and measure the relationship of IFRS standards on preparers and users of financial reporting (investors and Statutory Auditors) and the reaction of financial markets to the publication of results (performance and accounting indicators).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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