

The relationship between gains or losses from financial instruments and return on assets: An analytical study at sample of commercial banks in Algeria (2010-2017)
العلاقة بين أرباح وخسائر الأدوات المالية والعائد على الأصول: دراسة تحليلية لعينة من البنوك التجارية في الجزائر خلال الفترة (2010-2017)

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Received: 24/8/2020

Accepted: 26/10/2020

Published: 15/1/2021

Abstract:

This research aims to study and test the relationship between gains or losses from financial instruments under The Financial Accounting System (SCF) and return on assets (ROA). To achieve research objectives an applied study was conducted on a sample of nine (09) commercial banks in Algeria based on annual data (balance sheet, income statement) for the period (2010-2017). The analytical tool used is panel data regression and data processing using software Eviews 7.

The results showed a long-run relationship between gains or losses from financial instruments under The Financial Accounting System (SCF) and return on assets (ROA).

Keywords: financial instruments; financial Accounting System; return on assets; commercial banks.

Jel Classification Codes: C12 ; G 24 ; M41 ; M49.

ملخص:

استهدف البحث دراسة واختبار العلاقة بين أرباح أو خسائر الأدوات المالية وفق النظام المحاسبي المالي (SCF) والعائد على الأصول (ROA)، ولتحقيق ذلك الهدف تم إجراء دراسة تطبيقية لعينة من تسعة (09) بنوك تجارية في الجزائر بالاعتماد على البيانات السنوية (الميزانية وجدول حسابات النتائج) للفترة الممتدة من 2010 إلى 2017، وتم الاعتماد على أسلوب تحليل بيانات السلاسل الزمنية المقطعية (Panel DATA) وباستخدام البرنامج الإحصائي (Eviews).

أظهرت النتائج وجود علاقة طويلة الأجل بين أرباح أو خسائر الأدوات المالية وفق النظام المحاسبي المالي (SCF) والعائد على الأصول (ROA).
كلمات مفتاحية: الأدوات المالية، النظام المحاسبي المالي، عوائد الأصول، البنوك التجارية.
تصنيف JEL : M49 ،M41 ،G24 ،C12 .

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1.INTRODUCTION

Over the last 10 years, the accounting practice in Algeria was faced with the shift from the traditional concept of historical costs to the concept of fair value, through the financial accounting system (SCF) and International Accounting Standards (IAS/IFRS).

Before the advent of the world economic crisis 2008, It was commonly agreed this Fair value approach would become a method of measuring financial instruments, this approach is believed to be more relevant than historical cost approach, and to improve the transparency of financial information by companies. But soon thereafter, the world economic crisis 2008 had already emerged and critics cited the fair value approach as the main reason to amplify and widen the credit crunch. Banks, as well as other financial firms with significant amounts of financial instruments on their financial statements, criticized the fair value approach, which at the time resulted in severe losses for them.

The study looks for the following question:

- Is there a relationship between gains or losses from financial instruments under The Financial Accounting System (SCF) and return on assets (ROA)?

We will test the following hypothesis:

- There is a relationship between gains or losses from financial instruments under The Financial Accounting System (SCF) and return on assets (ROA).

This research will depend on descriptive methodological in the description of fair value and financial instruments under The Financial Accounting System (SCF).

Research objectives: The study aims to achieve the following objectives:

- To outline the use of fair value in The Financial Accounting System.
- To explain the limitation of fair value usage in the Algerian banking sector.
- To study the relationship between gains or losses from financial instruments under The Financial Accounting System (SCF) and return on assets (ROA) in the Algerian banking sector.

Research methodology: The study used the descriptive-analytical method, which relies on data collection, analysis, and linkage between their meanings to interpretation and down of the results. The analytical tool used is panel data regression and data processing using software Eviews 7.

2. LITERATURE REVIEW

More recently, several studies have examined the value relevance of recognized financial instruments at fair value and its relationship to returns. both (Kalin, 2008) and (Chang & Wayne , 2010) show that the fair value approach provides investors with useful Financial information for estimation purposes during the crisis period, with lower estimation weight placed by investors on the FVA estimated based on unobservable inputs. (Goh, Li, Ng, & Yong, 2015) find an improvement in the market price of FVA estimates as the market conditions improve for a sample of the USA banks over the period between (2008 2011).

Advocates of Fair Value Accounting argue that FVA reflects market conditions at the date of the evaluation and, thus, present the information in good time (Mary & Wayne , 2010) and (Laux & Leuz, 2009). Market-based FVA reflects the investor consensus at the date on the evaluation of the predicted future cash flow of the Assets or liabilities (Hitz, 2007). (Barth, 2006) argues that measuring assets and liabilities at the FVA is attractive as it meets many qualitative characteristics of useful financial statement information, such as timeliness, comparability, and relevance.

Critics of Fair Value Accounting argue that FVA may be subject to manipulation in inactive markets, whereas quoted market prices are not available. Fair value accounting may lead to more financial information asymmetry and therefore to more valuation errors, even without the intention of misleading managers. In this

regard, fair value accounting disapproves of its reliability, in particular through the use of valuation models (mark to model) that are affected by management views and estimates (Dechow, Weili, & Catherine , 2010).

In addition, market price changes may occur due to the influence of a large number of factors, if the changes in market price are related to assets to which Fair Value Accounting is applied. Banks and financial institutions are forced to write-down and reduce the book value of those assets. This also leads to capital drainage and forces banks to sell their assets on the market at lower prices (Šaban & Edin , 2011).

Both (Šodan, 2015) and (Mauro, Guido , & Elisa , 2017) argue that FVA may produce significant effects on the quality of earnings (EQ) for banks. It can be expected that financial instruments' prices are not available in illiquid markets, so FVA is estimated by applying valuation models. The application of the market model in estimating Fair Value allows managers the opportunity to manipulate values, thus could bring through lower EQ.

There is usually a lack of investigation about the relationship between gains or losses from financial instruments and return on assets in developing countries such as Algeria because the most of previous researches on this issue implemented in countries such as China, European Union, and the United States. But we will present the most important studies we have available:

(Abdullatif, 2009), He finds that the financial performance of the Jordanian banks is generally very significantly affected by valuing financial instruments at FVA. He also finds that there is a positive value of Earnings when implementing the fair values in measuring the financial instruments, compared to when income is acknowledged without adding holding gains and losses.

(Uwalomwa , Agba , & Jimoh , 2017), They found a significant relationship between adopted International Financial Reporting Standards (IFRS) and the earning yield in Nigerian banks. The study also found a significant relationship between adopted International Financial Reporting Standards (IFRS) and Earning per Share in Nigerian banks. The study concludes that the International Financial

Reporting Standards (IFRS) strengthened the decision-making skills of the stakeholders.

3. FINANCIAL INSTRUMENTS UNDER THE SCF

In this section, we present the Concept, classification, and measurement of Financial Instruments in the Algerian banking sector. The SCF adopted the same of the definition of a financial instrument as stated in (IAS 32 and IAS 39), “Any contract which gives rise to both a financial asset of one entity and a financial liability or an equity instrument of another entity“(Regulation 09-08, 2009, article **02**). In Algeria, accounting rules applied to banks and financial institutions are contained in special accounting rules for example (Regulation 09-04, 2009), (Regulation 09-05, 2009) and (Regulation 09-08, 2009), etc.

3.1. CLASSIFICATION OF FINANCIAL INSTRUMENTS UNDER THE SCF IN BANKS

Financial instruments are classified in different categories in banks and financial institutions, which are important for identification and measurement. The financial accounting system identifies financial assets in four main categories:

– **Financial assets held for trading:** These financial assets are used for short-term trading but are non-derived contracts. The trade is related to the acquisition of a financial asset or liability that has arisen in the short term to make a profit from it (Regulation 09-08, 2009, Article **10**).

In this category, the SCF also takes into account financial assets and liabilities which are, in the first place, included in financial assets held for the trading category and measured at fair value thru the fair value option.

– **Held-to-maturity investments :** These are financial assets with fixed or determinable payments that are decided and intended to be held by entities and banks until maturity, The SCF identifies three main characteristics of these financial instruments in banks and financial institutions (Regulation 09-08, 2009, Article **09**):

- They have the payments fixed or determinable
- They have a fixed maturity

- They have the intention and can maintain them until maturity.

These financial assets are effectively included in the category of held-to-maturity investments when banks and financial institutions intend to maintain them if they go until maturity and they do not sell them before. Furthermore, banks and financial institutions must be able to keep them until maturity. This capacity is ascertained if banks or financial institutions have financial sources for sustaining investments or if they have legal limitations that limit the support of financial assets until their maturity.

If banks or financial institutions decide to sell an amount of Held-to-maturity investments before the conclusion of its maturity, this investment has not to be considered in the category of Held-to-Maturity Investments. This financial asset that should be supported until they expire must be analyzed and taken into account during the initial recognition and at the close of each financial year.

- **Loans and Receivables:** as mentioned in Regulation 09-08 are non-derivative financial assets that have fixed or determinable payments and belong to an active market. These financial assets do not belong to the previous category of Held-to-maturity investments because there are no requirements for banks or financial institutions to maintain and hold loans and receivables until their maturity (Regulation 09-08, 2009, Article 11).
- **Financial assets are available to sale:** this category is described in Regulation 09-08 as non-derivative financial assets that are designated to sell and are not classified in the category of Loans and Receivables, category of held-to-maturity investments or financial assets held for trading. Banks or financial institutions do not have the intention to sell them but these financial instruments are recognized as available to the sale (Regulation 09-08, 2009).

The financial accounting system identifies financial liabilities in two main categories (Regulation 09-08, 2009, Article 21):

- **Financial liabilities held for trading:** these are defined in Regulation 09-08 as financial contracts necessary to obtain a profit through the

continuous increase and decrease of their value.

– **Other financial liabilities.**

3.2. MEASUREMENT OF FINANCIAL ASSETS AND LIABILITIES UNDER SCF

In the following table (Table 1), there is a short analysis of the financial assets and Liabilities under the SCF in banks and financial institutions:

Table 1: measurement of Financial Assets and Liabilities

Category of financial assets and Liabilities	Initial measurement	Subsequent measurement
Financial assets held for trading	Measured at fair value and Acknowledged in Balance Sheet.	Measured at fair value and Acknowledged in Income Statement, especially in the profit or loss section.
Held-to-maturity investments	Measured at fair value associated to transaction costs and Acknowledged in Balance Sheet.	Measured by effective interest rate criteria at amortized cost; – Acknowledged in Income Statement.
Loans and Receivables	Measured at fair value associated to transaction costs and Acknowledged in Balance Sheet.	Measured by effective interest rate criteria at amortized cost; Acknowledged in Income Statement.
Financial assets are available to sale	Measured at fair value associated to transaction costs and Acknowledged in Balance Sheet.	Measured at fair value and Acknowledged in Income Statement; – recognized in net assets, in case of variations of value.
Financial assets held for trading	Measured at fair value and Acknowledged in the Balance Sheet.	Measured at fair value and Acknowledged in the Income Statement, especially in the profit or loss section.
Other financial	Measured at amortized cost and Acknowledged	Measured at amortized cost and Acknowledged in the Income

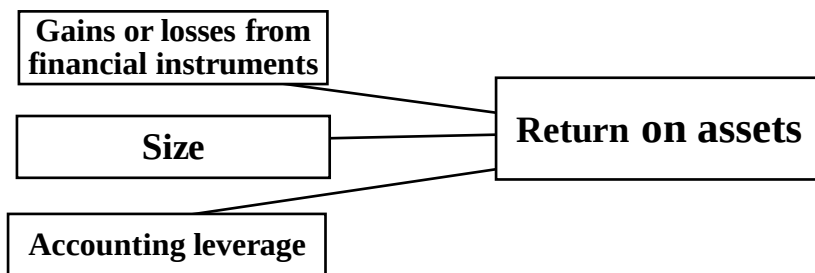
liabilities	in the Balance Sheet.	Statement.
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Source: Prepared by the researchers through regulation 09-08.

4. RESEARCH DESIGN

This section describes the empirical data sources, variables; It displays estimation procedures in testing the relationship between the application of gains or losses from financial instruments and return on assets. Research is based on the hypothesis that the relationship between gains or losses from financial instruments under the financial accounting system and return on assets. The conceptual framework for the Study is graphically presented in Figure 1.

Figure 1. Conceptual framework



Source: Prepared by the researchers.

As can be seen in the figure above, this paper examines the relationship between gains or losses from financial instruments under SCF and return on assets; Exposure to gains or losses from financial instruments are measured by the income approach.

In addition, Researchers emphasize how simple finding that two variables are correlated is rarely enough to assume that a change in one variable causes a change in another variable (Šodan, 2015, p. 1774). We use econometric techniques and include two of control variables (Size and leverage), that we would explicitly hold fixed when studying the relationship between gains or losses from financial instruments under SCF and return on assets.

4.1. DATA SOURCES

The data used in this study comprises the Algerian commercial. The study population excludes banks that do not have enough data to cover the study period, which was chosen as the years 2010-2017. This period is chosen because the financial instruments were required to be re-measured at fair value based on SCF since 2010 and later. Data sources include the financial statements of the nine banks that make up all of the study population according to the above criteria.

4.2. EMPIRICAL MODELS AND VARIABLES INVOLVED

After a thorough reading of the main studies mentioned in the literature review, we drew inspiration from the model developed by (Šodan, 2015) and (Mauro, Guido, & Elisa, 2017). In addition to, we used the traditional Johansen-Fisher panel Cointegration model proposed by (Johansen, 1988) and (Johansen and Juselius 1990). This allows us to establish the following model:

$$ROA = \beta_0 + \beta_1 ABSFVI + \beta_2 LNSIZE + \beta_3 LEV + \varepsilon \dots (1)$$

To determine the relationship between the profits or losses of financial instruments and the return on assets, four variables were selected (ROA, ABSFVI, LNSIZE, LEV).

- **The first variable is Return on assets (ROA):** refers to returns generated by a business that is available to all stakeholders/providers of funds, i.e., Shareholders, Bankers, Government, creditors and so. (Pramod, 2017, p. 24). Return on total assets can be computed by the formula (Muhammad, Arslan, & Adnan, 2014, p. 148):

$$ROA = \left(\frac{NP}{S} \times 100 \frac{S}{TA} \right) = \frac{NP}{TA} \times 100$$

Where: NP: Net Profit. S: Sales. TA: Total Assets.

- **The second variable is the Relative importance of Gains or losses from financial instruments (absFVI):** Gains or losses from financial instruments exposure is measured by the income statement approach (Leslie, Patrick, & James, 2006) and (Brian, Monika, & Urooj, 2011). The relative importance of Gains or losses from financial instruments through net income (absrelFVI) Is calculated as the ratio of the absolute value of FVI (absFVI) and the sum of the absolute value of FVI (absFVI) and the absolute value of the net income

without FVI for each bank (absHI) (Šodan, 2015, p. 1781).

- **The third variable is the size of the bank (LnSIZE).**
- **The last variable is Accounting leverage (LEV).**

5. EMPIRICAL RESULTS

5.1. TYPICAL PREFERENCE

Table 2 summarizes the results of Cointegration, Hausman, and Wald test:

Table 2: Summary Results of Cointegration, Hausman, and Wald test

Cointegration Test							
Test Summary		t- statistic		Prob	t- statistic		Prob
Panel V-Statistic		-1.424854		0.9229	-3.024401		0.9988
Panel RHO-Statistic		2.736942		0.9969	2.27784		0.9886
Panel PP-Statistic		-6.649191		0.0000	-10.4205		0.0000
Panel ADF-Statistic		-4.017828		0.0000	-6.814092		0.0000
Group RHO- Statistic		3.488999		0.9998			
Group PP- Statistic		-16.42671		0.0000			
Group ADF- Statistic		-7.616620		0.0000			
(H0) No Cointegration				(H1) It is Cointegration			
Wald test							
Test Summary				F- statistic	Chi-Square		Prob
Value (ROA)				7.246017	57.96814		0.000
(H0) Model Pooled Regression				(H1) model Fixed-effects			
Hausman Test							
Test Summary				Chi-Sq.	Chi-Sq. d.f		Prob
Cross-section random (ROA)				6.815813	3		0.0780
(H0) model Random effects				(H1) model Fixed effects			
	Coefficient	error	t- statistic	(Prob-t)	R squared	F statistic	Prob (F)
EBF Model							
C	0.064226	0.022468	2.85859	0.0056	0.086	2.1587	0.1009
ABSFVI	-0.042183	0.034174	-1.23436	0.2213			
LNSIZE	-0.002455	0.001097	-2.23727	0.0285			
LEV	0.000133	0.004532	0.029319	0.9767			

Source: Based on Eview.7 program outputs.

According to this table, the Cointegration test aims to accept at least one causal relationship between (ROA_t) and $(ABSFVI_t, LNSIZE_t, LEV_t)$, because the Statistically significant value is less than 5%: $Prob = (0.000) \leq 5\%$. Therefore we refuse H_0 (H_0 : No Cointegration) and accepted H_1 . In other words, there is a long-term relationship between gains or losses from financial instruments under SCF and return on assets in Algerian commercial banks during the period 2010-2017.

We also note from the same table that the statistical morale of the Wald Test is quite less than 5% P-value (0.000)<5%, while it is quite larger than 5% in Hausman Test: (P-value (0.078) >5%).

Therefore, we will accept the H0 this means that the Random Effect Model is the best in representing the relationship between gains or losses from financial instruments under SCF and ROA in Algerian commercial banks during the period 2010-2017. Thus, the standard form of the relationship is given as follows:

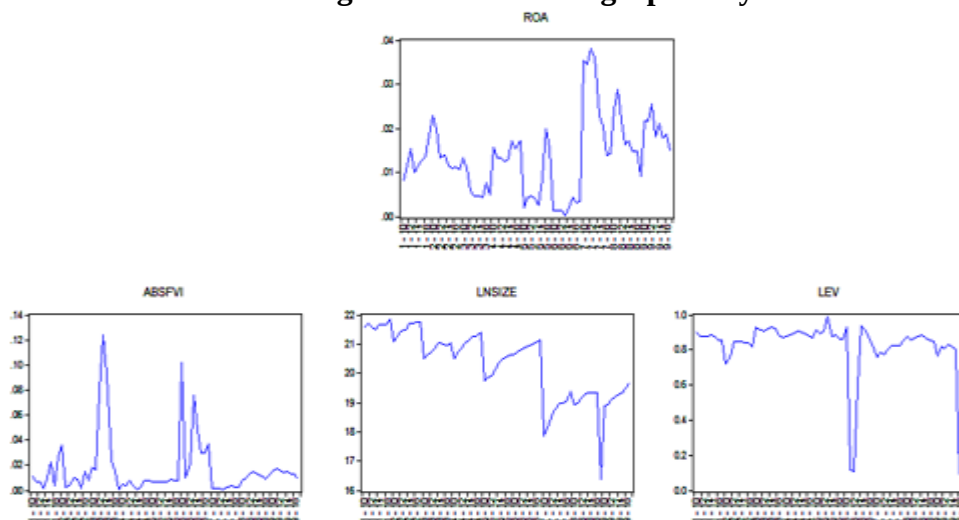
$$ROE_t = 0.0642 - 0.0422 \text{ ABSFVI}_t - 0.00245 \text{ LNSIZE}_t + 0.0001 \text{ LEV}_t$$

$$\text{Prob} \quad (0.0056) \quad (0.2213) \quad (0.0285) \quad (0.9767)$$

5.2. GRAPHICAL REPRESENTATION OF TIME SERIES

Trends of time-series trends during the study period in Figure 2:

Figure 2. Time series graphically



Source: Based on Eview.7 program outputs

Figure 2 shows the presence of large fluctuating movements of the dependent variable (ROA) indicating relative instability during the study period (2010-2017). In other words, the variable (LNSIZE) defined continuous decreases over the period (2010- 2017) to settle within the limits of the value (19) at the end of the

period. While the LEV variable defined a type of relative stability punctuated by sharp contractions in its values, which are quickly retrieved in short periods, while the variable ABSFVI defined a dispersion around the average value (01-02) With some sharp rises, which will soon decrease as well. By studying the graph of the variational changes in the study variables, it is difficult to determine whether there were long-term dynamic relationships between dependent and independent variables during the period (2010-2017).

5.3 RESULTS OF UNIT ROOT TEST

Table 3 summarizes the Results of Unit Root Test :

Table 3: the Results of Unit Root Test

In level					
	<i>PP</i>	<i>ADF</i>	<i>Pesaran</i>	<i>t-stat</i>	<i>Levin</i>
<i>ROE</i>	0.013	0.379	0.469	0.319	0.000
<i>ROA</i>	0.0267	0.52	0.531	0.146	0.000
<i>EPS</i>	0.001	0.172	0.367	0.051	0.000
<i>ABSFVI</i>	0.000	0.062	0.285	0.219	0.000
<i>Lnsiz</i>	0.838	0.983	0.887	0.992	0.000
<i>LEV</i>	0.0694	0.501	0.591	0.717	0.000
First differences					
	<i>PP</i>	<i>ADF</i>	<i>Pesaran</i>	<i>t-stat</i>	<i>Levin</i>
<i>ROE</i>	0.000	0.000	0.000	0.000	0.000
<i>ROA</i>	0.000	0.000	0.000	0.000	0.000
<i>EPS</i>	0.000	0.000	0.000	0.000	0.000
<i>ABSFVI</i>	0.000	0.000	0.000	0.000	0.000
<i>Lnsiz</i>	0.000	0.000	0.000	0.000	0.000
<i>LEV</i>	0.000	0.000	0.000	0.000	0.000

Source: Based on Eview.7 program outputs

Stability test according to Table (3) confirms the instability of the series LNSIZE_t, LEV_t) at the level since their morale is completely (ROA_t, ABSFVI_t, greater than 5% in most tests. The majority Prob> 5%, and the strings are stable

Completely after making the differences from the first degree, which means that they are integrated from the class I (1), that is:

.I (1)~ LNSIZE_t, LEV_t ROA_t, ABSFVI_t,

5.4 EMPIRICAL MODELS

Results of Regression Models are summarized in table 4:

Table 4: the Results of Regression Models

Long run CointEq1						
	C	ROA (-1)	ABSFVI (-1)	LNSIZE (-1)	LEV (-1)	
Coefficient	-0.012197	1.00000	0.116630	-0.00267	0.06226	
Std. Error	-	-	0.0821	0.00192	0.0142	
t- statistic	-	-	1.4208	-1.39354	4.38275	
Error Correction (Short run)						
	Coefficient	error	t- statistic	Prob (t)	R-squared	F- statistic
CointEq1	-0.147622	0.05577	-2.6469	0.0091	0.2164	1.0743
D(ROA(-1))	-0.08192	0.14679	-0.5881	0.5777		
D(ROA(-2))	0.042359	0.16383	0.25855	0.7964		
D(ABSFVI(-1))	-0.03295	0.0335	-0.98376	0.3269		
D(ABSFVI(-2))	0.0406	0.03159	1.2856	0.2007		
D(LNSIZE(-1))	-0.00248	0.00677	-0.36725	0.714		
D(LNSIZE(-2))	0.00344	0.00696	0.49433	0.6218		
D(LEV(-1))	0.005346	0.0044	1.2028	0.2311		
D(LEV(-2))	0.001968	0.00525	0.3752	0.7081		
C	-0.00078	0.001	-0.7671	0.4443		
Wald test						
Test Statistic	Value	Df	Prob	H0		
Chi-square C(4)=C(5)	2.124929	2	0.3456	C(4)=C(5)=0		
Chi-square C(6)=C(7)	0.29274	2	0.8638	C(6)=C(7)=0		
Chi-square C(8)=C(9)	1.68757	2	0.4301	C(8)=C(9)=0		

Source: Based on Eview.7 program outputs

Based on table 4, we can represent the results of the relationship between:

Long run:-

$$Et-1 = ROA_{t-1} + 0.1166 ABSFVI_{t-1} - 0.00267 LNSIZE_{t-1} + 0.0622 LEV_{t-1} - 0.0122$$

Short run:-

$$\Delta ROA_t = -0.1476 e_{t-1} - 0.0819 \Delta ROA_{t-1} + 0.0423 \Delta ROA_{t-2} - 0.0329 \Delta ABSFVI_{t-1} +$$

$$0.04 \Delta ABSFVI_{t-2} - 0.0025 \Delta LNSIZE_{t-1} + 0.003 \Delta LNSIZE_{t-2} + 0.005 \Delta LEV_{t-1} - 0.0019 \Delta LEV_{t-2} - 0.00078$$

From the above it is noted that the correction factor value is negative and significant at the level of 5%:

C (1) = - 0.1476 and P-value = 0.0091 > 5%, which confirms the long-term causal relationship that combines (ROA_t) with the factors ($ABSFVI_t$, $LNSIZE_t$, LEV_t), about to the ability of Algerian banks to grow at a faster rate to reach the desired state of harmony. The value of the correction factor allows remedying the imbalance between the long and short terms at a rate of 14.76% annually. In the long term the Algerian banks need to 6.775 years ($1 \div 0.1476 = 6.775$ years) to refer to the state of equilibrium, and from it will be the first correction of the model in October 2017 and the second correction of the end of August 2024, the logarithmic convergence velocity is estimated at:

$$\mu = \frac{\ln(1-TB)}{T} = \frac{LN(1-9(-0.1476))}{9} = 0.09391 = 9.391\%$$

This ratio means that every Algerian bank can reduce 9.391% a year from the gap that separates it from the long-term balance situation. Thus, (ROA_t) returns to its balance after being exposed to any external shock in accounting for financial instruments at a rate of 9.391% annually. The status of the balance to which each Algerian bank devolves, in the long run, is determined based on its capabilities; which supports the hypothesis of conditional accounting financial convergence and refutes the hypothesis of absolute accounting financial convergence with Algerian banks at the long run is the optimal accounting financial convergence mode.

$$\mu = \frac{\ln(2)}{\mu} = \frac{LN(2)}{0.0939} = 7.381$$

This means that accomplishing half the distance of the financial accounting convergence between Algerian banks requires about 7 and 15 years to achieve complete convergence. While the Wald Test from the same table shows that there is no short-term causal relationship between (ROA_t) and indicators ($ABSFVI_t$,

$LNSIZE_t$, LEV_t) since the statistical significance (Prob) for the estimation coefficients is completely greater than 5%: Prob = 0.3456, 0.8638, 0.43 > 5%, while Figure 3 shows how stable the dynamic relationship of the estimated residual strings of the statistical models (Residuals).

6. CONCLUSION

Based on a review of extant studies it can be concluded that there was a lack of research regarding the relationship between gains or losses from financial instruments under The fair value accounting (FVA) and Returns in Developing countries, so this study adds to the literature on FVA and (ROA) In these countries; through a case study of Algeria. To achieve research objectives an applied study was conducted on a sample of nine (09) commercial banks in Algeria based on annual data for the period (2010-2017).

It is expected that banks in Algeria will more often estimate the financial instruments by using valuation techniques (i.e. mark-to-model), due to lack of market data, This allows bank managers to manipulate the valuation of these instruments Hence returns are affected. In other words, we assume is a relationship between gains or losses from financial instruments under The SCF and return on assets (ROA) In the Algerian commercial banks.

The study found that there is a long-term relationship between gains or losses from financial instruments under SCF and return on assets in Algerian commercial banks during the period 2010-2017. Consequently, we believe that the valuation of financial instruments at fair value in developing countries may distort returns, which will mislead users of financial information, we also question the appropriateness of the international financial reporting standards (IFRS) for commercial banks in Algeria.

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8. Appendices

Appendix 1: Study variables

BEA								
Year	2010	2011	2012	2013	2014	2015	2016	2017
AbsFVI	0,0113	0,0070	0,0065	0,0015	0,0095	0,0225	0,0038	0,0264
Lnsize	21,5852	21,6928	21,5575	21,4706	21,6736	21,6799	21,6687	21,8618
LEV	0,9023	0,8788	0,8792	0,8740	0,8830	0,8765	0,8559	0,8542
ROA	0,0081	0,0115	0,0154	0,0099	0,0115	0,0128	0,0135	0,0184
BNA								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0362	0,0024	0,0033	0,0095	0,0089	0,0012	0,0149	0,0079
lnsize	21,0751	21,2777	21,4460	21,5049	21,6867	21,7236	21,7683	21,7609
LEV	0,7206	0,7621	0,8471	0,8475	0,8497	0,8429	0,8366	0,8201
ROA	0,0229	0,0200	0,0132	0,0138	0,0114	0,0109	0,0111	0,0106
BADR								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0178	0,0158	0,0789	0,1241	0,0939	0,0233	0,0148	0,0004
lnsize	20,5142	20,6413	20,7077	20,8379	21,0425	20,9907	20,9649	21,0218
LEV	0,9263	0,9170	0,9077	0,9183	0,9290	0,9252	0,8855	0,8700
ROA	0,0134	0,0110	0,0057	0,0046	0,0045	0,0043	0,0077	0,0050
CPA								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0049	0,0032	0,0075	0,0034	0,0000	0,0024	0,0078	0,0076
lnsize	20,5184	20,7136	20,8648	21,0325	21,1367	21,2409	21,2577	21,3769
LEV	0,8763	0,8874	0,8892	0,9068	0,8999	0,8904	0,8790	0,8716

The relationship between gains or losses from financial instruments and return on assets:
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ROA	0,0158	0,0134	0,0134	0,0123	0,0129	0,0172	0,0154	0,0171
BDL								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0073	0,0066	0,0070	0,0071	0,0073	0,0091	0,0074	0,0081
lnsize	19,7364	19,8863	19,9282	20,1565	20,3755	20,5103	20,5571	20,6204
LEV	0,9106	0,8944	0,9039	0,9867	0,8782	0,8864	0,8636	0,8603
ROA	0,0019	0,0044	0,0046	0,0039	0,0025	0,0086	0,0198	0,0153
CNEP								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,1017	0,0095	0,0212	0,0753	0,0474	0,0302	0,0302	0,0371
lnsize	20,6206	20,7244	20,8169	20,8819	20,9515	21,0120	21,0841	21,1423
LEV	0,9298	0,1137	0,1118	0,5917	0,9366	0,9102	0,8521	0,8194
ROA	0,0012	0,0013	0,0013	0,0002	0,0019	0,0042	0,0032	0,0034
GULF BANK								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0012	0,0016	0,0016	0,0003	0,0025	0,0034	0,0027	0,0031
lnsize	17,8640	18,1358	18,4717	18,7497	18,9906	18,9938	19,0593	19,3640
LEV	0,7557	0,7856	0,7760	0,8054	0,8220	0,8218	0,8264	0,8540
ROA	0,0354	0,0345	0,0380	0,0362	0,0227	0,0205	0,0139	0,0142
B N P PARIBAS								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0081	0,0097	0,0133	0,0154	0,0129	0,0118	0,0092	0,0118
lnsize	18,9325	18,9714	19,1490	19,2703	19,3540	19,3473	19,3326	19,3600
LEV	0,8736	0,8537	0,8671	0,8766	0,8825	0,8661	0,8555	0,8472
ROA	0,0242	0,0287	0,0220	0,0164	0,0171	0,0147	0,0147	0,0090
Societe Generale								
Year	2010	2011	2012	2013	2014	2015	2016	2017
absFVI	0,0155	0,0175	0,0159	0,0138	0,0149	0,0133	0,0131	0,0089
lnsize	18,8795	18,9338	19,1262	19,2209	19,3100	19,3319	19,5097	19,6829
LEV	0,7638	0,8145	0,8095	0,8358	0,8196	0,8027	0,0951	0,8292
ROA	0,0216	0,0261	0,0255	0,0181	0,0211	0,0178	0,0188	0,0149

**Source: Prepared by researchers based on financial statements of
banks.**