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DERIVATIVE USE BY ROMANIAN BANKS AFTER THE EU ADHESION: A FINANCIAL REPORTING PERSPECTIVE

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Abstract: *Romanian banks use derivatives to hedge against or speculate on the movement of economic variables such as foreign exchange rate or interest rate. To report these contracts, they apply the IFRS in both consolidated accounts (from 2007 onwards) and individual accounts (starting with 2012). This paper analyzes disclosures on derivatives for a 6-year period (2007- the year of the EU adhesion -2012) based on 132 financial statements available. The findings show that more than 72% of Romanian banks use derivatives, mostly for economic hedges and without much application of hedge accounting. Swaps are the most important contracts and foreign exchange risks the most protected against. On average, disclosures on derivatives follow the IFRS rules but provide little additional information beyond the minimum requirements which enables ambiguities and misinterpretations from users of the financial statements.*

Keywords: derivatives; financial statements; IFRS; hedge accounting.
JEL Classification: M41; G21.

INTRODUCTION

It is no longer headline news that the growth in the use of derivatives has been spectacular in the last decades. The upward trend recorded by both organised exchanges and OTC derivative markets seems to not have been affected even by the most recent financial crisis. Nowadays, the vast majority (94%) of the world's largest companies (ISDA, 2009) use derivatives to hedge against, or speculate on, the movement of various economic variables. The most important contract types preferred by these entities are foreign exchange derivatives and interest rate contracts. Unsurprisingly, financial institutions are the major users of such instruments, participating in the derivative markets as dealers, end users or both. This is also applicable to Romania, where derivatives are primarily used by commercial banks.

The aim of this study is to measure the extent of derivative use, the purposes of this use, the structure of derivatives by types and financial risks and the level of hedge accounting application, using exclusively data reported in the financial statements published by Romanian banks for the period 2007-2012. The research makes a contribution to the literature because it provides an insight on the financial reporting of derivatives used by Romanian banks, a subject for which there is a relative shortage of empirical evidence.

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The rest of paper is organized as follow: Section 1 reviews the financial reporting rules applicable by Romanian banks for the derivatives used alongside a brief description of the existing literature; Section 2 discusses the data set, sample and methodology used. Section 3 presents the empirical results and Section 4 presents the authors' conclusions.

3. FINANCIAL REPORTING STANDARDS FOR DERIVATIVES APPLICABLE BY ROMANIAN BANKS

The EU adhesion in 2007 came in with new reporting rules for the financial groups located in Romania: the application of the IFRS in their *consolidated* accounts. For two years, the international accounting standards were used only in the preparation of consolidated financial statements. In the next two years, 2009-2011, in addition to consolidated accounts, banks were obligated to prepare a second set of *individual* financial statements in accordance with the IFRS, for informative purpose only. During this period, the Romanian rules (compliant with the European directives) were applied as accounting basis and the IFRS as reporting basis. From the 1st of January 2012, banks have been using the IFRS mandatorily, for both purposes.

Regarding derivatives, Romanian banks apply IAS 39 „Financial instruments: recognition and measurement", IAS 32 „Financial instruments: presentation" and IFRS 7 „Financial instruments: disclosures". None applies IFRS 9 „Financial instruments" as it is yet to be endorsed by the EU. According to IAS 39, derivatives are classified as financial instruments at fair value through profit and loss, unless they are used in hedging activities, when hedge accounting applies. Therefore, trading derivatives are measured, both initially and subsequently, at fair value. The accounting treatment for hedging derivatives consists of recognizing the changes in their fair value through profit or loss (where they compensate the opposite changes in the fair value of hedged items – fair value hedge) or deferring them to other comprehensive income (cash flow hedges). Disclosures on derivatives follow the requirements from IFRS 7.

The present work comes to fill in a gap from the literature dealing with reporting of derivatives used by banks in Romania. The only researches available are the ones assessing the overall application of the IFRS in the banking system. They address the rules for financial instruments (and not explicitly derivatives) in the broader context of the transition to IFRS. Studies conducted by KPMG (KPMG, 2010 and 2011) make an inventory of the differences between national rules and the IFRS and identify the fair value accounting, the amortised cost or the impairment model applicable to financial instruments as the main sources of discrepancies. Ştefan and Muşat (2011) perform a critical analysis of the regulations issued by the National Bank of

Romania (NBR) to allow the transition to IFRS while Grecu (2011) focuses on the challenges imposed by this transition to managers and auditors. Răducănescu and Dima, 2011 review the impact of IFRS application on prudential regulations used by NBR.

Other studies (Gîrbină et al., 2011) analyze the perceptions of preparers from Romanian banks regarding the IFRS application. Their findings show that impairment methodology, fair value determination, hedge accounting and disclosure requirements of IFRS 7 are the most challenging rules when applying IFRS. A study addressing the disclosures on financial instruments by the Romanian banking system (Ştefănescu, 2012) argues that the accounting practices have improved over the years but the level of material harmonization of the individual financial reporting is still relatively moderate.

4. DATA SET, SAMPLE AND METHODOLOGY

The research is based on the information about the use of derivatives provided by all the banks operating in Romania between 2007 and 2012 through their annual financial statements. These documents were available on the banks' websites. *Consolidated or individual financial statements* were analyzed and all amounts used were *comparable* because they were prepared according to *the IFRS*. The list of banks operating in Romania was taken from the National Bank of Romania's annual reports for the period 2007-2012. The 6-year interval was selected as such to allow the analysis of the derivatives use from the moment in which Romania became an EU member state until present times (the most recent year for which annual financial statements were available was 2012).

Table 1 presents the banks using derivatives for each of the sampled years, according to the available financial statements.

Table 1 - Bank using derivatives in Romania by year

2007	2008	2009	2010	2011	2012
Alpha Bank	Alpha Bank	Alpha Bank	Alpha Bank	Alpha Bank	Alpha Bank
Banca Românească	Banca Românească	Banca Românească	Banca Românească	Banca Românească	Banca Românească
BancPost	BancPost	BancPost	BancPost	BancPost	BancPost
BCR	BCR	BCR	BCR	BCR	BCR
BRD	BRD	BRD	BRD	BRD	BRD
Citibank	Citibank	CEC Bank	CEC Bank	Carpatica	Carpatica
Emporiki Bank	Credit Europe Bank	Credit Europe Bank	Credit Europe Bank	CEC Bank	CEC Bank
Piraeus Bank	Intesa SanPaolo Bank	Emporiki Bank	EximBank	Credit Europe Bank	Credit Agricole Bank
Raiffeisen	OTP bank	Intesa SanPaolo Bank	Garanti Bank	Emporiki Bank	Credit Europe Bank
SanPaolo IMI	Piraeus Bank	Leumi Bank	Intesa SanPaolo	Garanti Bank	Garanti Bank

Bank Unicredit Volksbank	Raiffeisen Unicredit Volksbank	Marfin Bank OTP bank Piraeus Bank Raiffeisen Unicredit Volksbank	Bank Leumi Bank Marfin Bank OTP bank Piraeus Bank Raiffeisen RBS Bank Romania Unicredit Volksbank	Intesa SanPaolo Bank Leumi Bank Marfin Bank OTP bank Piraeus Bank Raiffeisen RBS Bank Romania Unicredit Volksbank	Intesa SanPaolo Bank Leumi Bank Marfin Bank OTP bank Piraeus Bank Raiffeisen Unicredit Volksbank

A total number of 132 financial statements were available. Overall, around 74% of financial statements were publicly posted on the banks' websites, with the lowest percentage in 2007-2008 (60%) and the highest in 2010-2011 (over 83%).

Using the *content analysis* of the financial statements and also a *quantitative analysis*, the paper aims at accomplishing the following objectives:

- exhibiting ***the extent of the derivatives use*** among banks operating in Romania;
- identifying ***the purpose of the derivatives use*** (hedging or trading);
- analyzing ***the structure of the derivatives*** by *type* and by *the financial risks* against which they are used for;
- displaying ***the balance sheet presentation*** of the derivatives used in terms of *assets* and *liabilities* and also in terms of the *weight of derivatives as compared to total fair value assets*;
- assessing ***the extent of the hedge accounting use*** by computing the weight of hedging derivatives as compared to total derivatives used.

5. RESULTS AND DISCUSSION

The ***extent of the derivatives use*** was primarily measured by dividing the number of banks reporting derivatives in their financial statements by the total number of banks for which financial statements were available. From the total number of 132 available financial statements, 96 of them reported information on derivatives use (*Table 2*).

Table 2 - Extent of derivatives use

Year	Users	Total no of banks*	%
2007	12	18	66,67
2008	13	18	72,22
2009	16	22	72,73

2010	18	25	72,00
2011	19	25	76,00
2012	18	24	75,00
Total no of financial statements	96	132	72,73

*for which information is available

Table 2 shows that, overall, almost 73% of the sampled banks used financial derivatives. The lowest percentage was reported in 2007 while the highest use was noticeable in 2011. The extent of derivatives use remained above 72% in the last 5 reporting years.

In terms of ***purposes for which derivatives were used***, the research identified 2 main purposes: *trading and hedging* (*Table 3*). The hedging activities were furthermore analyzed taking into account the IFRS rules: banks were grouped based on whether they applied hedge accounting or not, according to IAS 39. The findings showed that almost half of the banks used derivative for hedging purposes only but did not apply hedge accounting while a quarter of them used derivatives for trading activities only. *Table 3* reveals that hedge accounting has been used since 2008 by one single bank and only in 2011 this number increased at 4.

Table 3 - Purpose of derivatives use

	2007		**2008**		**2009**		**2010**		**2011**		**2012**	
	No	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**	**No**	**%**
Trading derivatives (only)	4	33	3	23	3	19	6	33	5	26	4	22
Economic hedging without hedge accounting (only)	*5*	*42*	*5*	*38*	*9*	*56*	*9*	*50*	*8*	*42*	*8*	*44*
Trading and economic hedging	3	25	4	31	3	19	2	11	2	11	2	11
Trading, economic hedging and hedge accounting	0	0	1	8	1	6	1	6	3	16	3	17
Economic hedging and hedge accounting	0	0	0	0	0	0	0	0	1	5	1	6
Total number of banks	12	100	13	100	16	100	18	100	19	100	18	100

The most used *type of derivatives* by banks operating in Romania (*Table 4*) is represented by *swaps* (currency swaps, interest rate swaps and cross currency interest rate swaps). The other types are forwards and options. This shows a relatively simple ***structure of derivatives***, without complex or exotic financial instruments. In addition, banks reported almost exclusively OTC derivatives. Another significant detail is that derivatives were included in the "other" section from *Table 4* not only when they represented some different type of contracts, but also when no information about the type was provided at all or when several instruments were presented together and it was impossible to separate them by type. Therefore, banks might have been using swaps to even a higher degree than the one reported in *Table 4*.

Table 4 - Derivatives use by type

Year	2007			2008			2009		
Type of derivatives	**No of users**	**Assets**	**Liabilities**	**No of users**	**Assets**	**Liabilities**	**No of users**	**Assets**	**Liabilities**
Swaps	7	22.76	24.02	9	15.54	55.68	12	43.13	87.27
Currency forwards	4	7.80	13.88	5	7.29	4.17	7	29.09	1.33
Options	3	13.03	7.81	3	11.01	4.65	5	17.14	4.14
Other derivatives	6	56.41	54.29	8	66.16	35.50	7	10.64	7.26
Total assets or liabilities ('000 RON)		635.774	1.077.228		1.650.176	3.923.881		659.548	2.777.410
Year	**2010**			**2011**			**2012**		
Type of derivatives	**No of users**	**Assets**	**Liabilities**	**No of users**	**Assets**	**Liabilities**	**No of users**	**Assets**	**Liabilities**
Swaps	15	48.04	91.98	15	47.07	90.52	14	70.97	91.93
Currency forwards	8	11.32	1.28	8	15.72	1.66	6	9.18	1.35
Options	6	31.67	4.72	4	25.85	4.96	5	8.15	2.29
Other derivatives	10	8.97	2.11	7	11.36	2.86	9	11.69	4.43
Total assets or liabilities ('000 RON)		459.808	3.035.180		558.187	2.891.261		790.411	2.827.442

The number of banks using swaps increased significantly from 2007 until 2010 (*Table 4*). But what is more significant is that the swaps' fair value has started to weigh more and more in total derivative-assets (from 15.54% in 2008 to almost 50% in 2009-2011 and above 70% in 2012) and especially in total derivative-liabilities (more than 90%). This tells the real story of the swaps' volumes used in the Romanian banking system.

The ***structure of derivative instruments*** was also analyzed according to *the financial risks* protected through their use (*Table 5*). The most used derivatives were on currency risk (mainly currency swaps, currency forwards and currency options). Virtually all banks (except in 2010) reported this type of derivatives while interest rate derivatives were used by only half of them. The other risks, such as credit risk or liquidity risk, were not taken into account by many banks when they decided to use derivatives as tools for implementing their risk management policies.

Table 5 - Derivatives by financial risks

Years	2007		2008		2009		2010		2011		2012	
Type of risk	Users	% of total	Users	% of total	Users	% of total	Users	% of total	Users	% of total	Users	% of total
Interest rate risk	5	41.66	6	46.16	8	50.00	10	55.55	11	57.89	11	61.11
Currency risk	12	100	13	100	16	100	17	94.44	19	100	18	100
Other risks	1	8.33	1	7.7	1	6.25	1	5.55	2	10.53	4	22.22

In terms of ***balance sheet presentation***, throughout the analyzed period, banks operating in Romania recorded negative fluctuations in derivatives' fair value (reported accordingly as *liabilities*) more frequently than positive fluctuations (reported as *assets*) (*Table 6*). The findings showed the biggest difference between assets and liabilities in 2010 when liabilities surpassed assets by 6.6 times. Overall, liabilities were 3.48 times greater than assets. In the first four years (2007-2010), the discrepancy between assets and liabilities accentuated more and more. But the trend reversed in the last two years (2011-2012), when the difference started to decrease significantly from one year to another.

Table 6 - Balance sheet presentation

	2007	2008	2009	2010	2011	2012	Total
Assets ('000 RON)	635.774	1.650.176	659.548	459.808	558.187	790.411	4.753.904
Liabilities ('000 RON)	1.077.228	3.923.881	2.777.410	3.035.180	2.891.261	2.827.442	16.532.402
Liabilities > Assets (times)	1.69	2.38	4.21	6.60	5.18	3.50	3.48

Because the weight of derivatives in total assets or liabilities of the Romanian banks is almost irrelevant (below 0.001%), *the weight of derivatives in total assets reported at fair value* (that include available for sale investments and other financial assets reported at fair value through profit or loss - FVTPL) was computed (*Table 7*). The findings show an important decrease in this weight from 2008 to 2009. Prior to 2009, the percentage of derivatives use was comparable to other assets at FVTPL. In the last 4 years, derivatives weighted around 2% of total assets reported at fair value.

It was already stated in *Table 3* that, in 2007, no bank operating in Romania designated derivatives as hedging instruments and applied ***hedge accounting***. Also, for several years (2008-2010), only 1 bank applied this special accounting treatment. Nonetheless, this bank was the most important player on the banking derivative market, according to the data presented in *Table 8* (and coincidence?, the largest Romanian bank by total net assets).

Table 7 - Weight of derivatives as compared to total fair value assets

Years / %	Derivative Assets	Available for Sale	Other Assets at FVTPL	Total
2007	12.65	64.19	23.16	100.00
2008	20.86	47.44	31.70	100.00
2009	3.34	71.44	25.22	100.00
2010	1.72	87.23	11.05	100.00
2011	1.99	87.18	10.83	100.00
2012	2.35	86.85	10.80	100.00

The increase in number of banks applying hedge accounting by 2011 (*Table 8*) did not really change the weight of hedging derivatives in total derivative-assets or liabilities (on average, above 6% of assets between 2010 and 2012 and above 60% of liabilities in the same period of time).

Table 8 - Weight of hedging derivatives as compared to total derivatives

Years	% of Assets	% of Liabilities
2007	0.00	0.00
2008	0.02	33.76
2009	0.00	66.12
2010	7.03	57.75
2011	5.55	64.07
2012	6.19	61.59

To summarize our findings, we performed a year-by-year analysis:

2007: only 2/3 of the reporting banks for which financial statements were available used derivatives. The purpose of the use was mainly for hedging activities, without the application of hedge accounting. It is the only year in which no bank uses hedge accounting. Earning short-term profits from the derivative use is the other goal, while ¼ of banks pursue them both. The other derivatives used (*Table 4*) represented more than half of all derivative-assets and liabilities, not because swaps were not the most used, but basically because little information was provided about the type of derivatives. The difference between derivative-assets and liabilities was at its lowest and derivatives ranked well above average percentage (7.15%) as compared to other assets reported at fair value.

2008: regarding the extent of the derivatives use, there was a slight improvement in the number of banks reporting derivatives (from 66.67% in 2007 to 72.22% in 2008). More banks used these contracts for a combined purpose: economic hedging and trading, and the 1st bank started to apply hedge accounting. Swaps were used by more banks, but the number of banks not providing additional information about the type of derivatives (included in "other derivatives") was still very high. All banks used currency derivatives and almost half of them interest rate derivatives. The difference between assets and liabilities (*Table 6*) increased. Fair value of derivatives reached its highest figure of all 6 years, also, the weight of derivatives when compared to other assets reported at fair value.

2009: the number of financial statements available increased, so the number of banks using derivatives, but only in numerical value. The percentage was almost equal to the 2008 one. For the 1st time, more than half of the banks used derivatives only for economic hedges (without hedge accounting). The same bank continued to apply hedge accounting. Swaps were, for the 1st time, the

most used type of contracts. Even though many banks still did not provide enough information about the type of derivatives used (other derivatives), their weight in total derivative-assets and liabilities significantly decreased. Derivative-liabilities surpassed assets even more than in previous years, but their numerical value decreased (especially for assets - with more than 60%). This huge decrease was also noticeable in the weight of derivatives as compared to total fair value assets. No hedging instrument had a positive fair value fluctuation in 2009. These results might have been influenced by the most recent financial crisis that was already affecting the Romanian banking system since the end of 2008.

2010: the percentage of banks reporting derivatives remained about the same as in the previous 2 years. In terms of purposes for the derivatives use, there was a slight increase toward speculative goals and no change in the application of hedge accounting. Derivative-assets recorded their lowest value for the 6-year period being surpassed by liabilities by 6.60 times.

2011: it was the year with the highest level of derivatives use (76%) among banks operating in Romania. It was also the year in which 3 other banks started to apply hedge accounting. Unsurprisingly, swap contracts maintained their 1st position in the ranking. The use of interest rate derivatives also increased.

2012: this year marked a 1% decrease in the number of banks using derivatives. There was no significant change in terms of purposes for the use of derivatives. Swaps increased their dominance over total derivative–assets. The number of banks using interest-rate derivatives remained constant although their percentage increased when compared to total number of banks. The positive fluctuations of fair value of derivative-assets increased from previous years and the difference to derivative-liabilities further decreased. No other new bank started to apply hedge accounting.

CONCLUSIONS

The main finding of this paper is that Romanian banks use derivative for economic hedging rather than for speculative purposes. Nonetheless, they hardly apply hedge accounting. Also, maybe due to the larger economic context, derivatives record negative fair value fluctuations more often than not. As far as disclosures are concerned, the paper argues that Romanian banks disclose information about derivatives according to the IFRS rules, meeting the minimum requirements. Nevertheless, the lack of additional information allows for ambiguities and misinterpretations. For example, some banks do not declare the purpose of derivative use. This cannot be always identified by simply assessing the balance sheet presentation (e.g. derivatives used in economic hedged without hedge accounting are reported as trading even though the bank might not have any intention

to speculate on them) so, additional presentation in the footnotes would be very helpful. Another example regards hedge accounting: many banks do not mention the reasons for not applying it. Such information would be particularly useful in establishing whether the option of hedge accounting is not used due to the bank not meeting the IAS 39 criteria or simply due to the bank choosing not to apply it. Moreover, some information is nothing but a word-by-word reproduction of the IFRS rules, without further explanation (e.g. fair value techniques or methods to assess hedges' efficacy). Also, certain presentations are not detailed by type of derivatives or 2 or more instruments are presented together without any possibility of separating them. Sometimes, derivatives are put together with other financial instruments reported at fair value.

Research limitations are determined mainly by the fact that this study neither analyzes the causalities nor identifies the factors that led to the aforementioned results. Future research is necessary to address these limitations.

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