

ACCOUNTING EFFECTS OF FINANCIAL INSTRUMENTS SUBSEQUENT MEASUREMENT IN INCOME STATEMENT OF CROATIAN BANKING SECTOR

RAČUNOVODSTVENI UČINCI NAKNADNOG MJERENJA FINANCIJSKIH INSTRUMENTATA U IZVJEŠTAJU O DOBITI HRVATSKOG BANKARSKOG SEKTORA

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Abstract: *In Croatian banking sector, financial instruments take the most significant portion of total assets of banks. Therefore, financial instrument recognition and subsequent measurement have a serious impact on profitability of banking sector in Croatia. This paper presents the effects of financial instruments subsequent measurement based on IAS 39 in income statement of the Croatian banking sector.*

Key words: *financial instruments, subsequent measurement, profitability, Croatian banking sector*

Sažetak: *U hrvatskom bankarskom sektoru, na financijske instrumente otpada najznačajniji udio ukupne aktive banaka. Zbog toga efekti priznavanja i naknadnog mjerenja financijskih instrumenata imaju značajan utjecaj na profitabilnost bankarskog sektora. Ovaj rad prikazuje učinke naknadnog mjerenja financijskih instrumenata temeljenog na MRS-u 39 iskazan u izvještaju o dobiti hrvatskog bankarskog sektora.*

Ključne riječi: *financijski instrumenti, naknadno mjerenje, profitabilnost, hrvatski bankarski sektor*



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1. Introduction

The banking sector is the most significant part of financial system in Croatia and banks are the most significant financial institution. Although financial markets are not developed enough, in last few years it is evident increasing volume of trading with financial instruments. The same situation is in other developing countries. The main goal of this paper is to indicate on accounting effects of subsequent measurement of financial instruments on the profitability of banks. Accordingly, the main hypothesis of this paper is that current accounting treatment of financial instruments can significantly affect bank's income and in situation of unreliable valuation of financial instruments the income of bank may be distorted. For the purpose of confirmation of this hypothesis, the authors will analyze the structure of Income Statement of Croatian banks.

2. Accounting treatment of financial instruments

Accounting treatment of financial instruments in the Republic of Croatia is regulated by IAS 32 *Financial Instruments: Presentation*, IAS 39 *Financial Instruments: Recognition and Measurement* and IFRS 7 *Financial Instruments: Disclosures* for all large companies (including banks and other financial institutions) and the companies whose securities are traded on regulated markets. For the purposes of this paper the emphasis is on IAS 39 [1].

Financial asset in the balance sheet is divided into long-term and short-term assets given that financial asset represents the investment of surplus funds for a certain period. Associated with core banking business, which include receiving cash deposits and granting credits and other loans from these funds, financial assets represent a significant portion of total assets of the bank. As a consequence, financial assets can have a significant impact on financial position and profitability of bank. According to IAS 39 financial assets is classified in one of the following categories [2]:

- Financial asset at fair value through profit or loss,
- Held-to-maturity investments,
- Loans and receivables, and
- Available-for-sale financial assets.

Those categories are used to determine how a particular financial asset is recognised and measured in the financial statements. An entity shall recognise a financial asset on its balance sheet when (and only when) the entity becomes a party to the contractual provisions of the instrument [2]. Accounting treatment of financial assets relates primarily to the initial and subsequent measurement. So, for the purpose of initial and subsequent measurement of financial assets, IAS 39 classifies financial assets in one of four mentioned categories. Classification of financial assets into one

of the above categories, directly determine the method of its accounting treatment and initial and subsequent measurement.

Initially, financial asset should be measured at fair value increased for transaction costs that are directly related to the acquisition of financial assets, except for financial assets at fair value through profit or loss. Financial asset at fair value through profit or loss is initially measured only at the fair value paid for its acquisition without the inclusion of transaction costs. A serious impact on banks profitability has a subsequent measurement of financial assets. After initial recognition and measurement, an entity shall measure financial asset at fair value through profit or loss and available-for-sale financial assets at their fair value, without any deduction for transaction costs it may incur on sale or other disposal. Loans and receivables and held-to-maturity investments shall be measured at amortised cost using the effective interest method. Also, investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured shall be measured at cost [2].

The effects of changes in fair value arising from the subsequent measurements of financial assets can be stated on the balance sheet or income statement of the bank. The changes in fair value of financial assets at fair value through profit or loss, are stated as revenue (if there is an increase in fair value) or as an expense (if there is a decrease in fair value). The changes in fair value of available-for-sale financial assets are recorded in equity on account of revaluation reserve (in case of increase and decrease in fair value). The effects of subsequent measurement of financial assets carried at amortized cost are recognized as revenue or expense [2].

3. The Impact of Financial Instruments Subsequent Measurement on Profitability of Croatian Banking Sector

3.1. The Structure of Croatian Banking Sector

Croatian banking sector consists of 34 banks, which are classified as large, medium sized and small banks. The classification of certain bank into one of three mentioned categories depends of bank's amount of assets. Therefore, a certain bank is considered as a large bank if the amount of bank's assets exceeds 5% of total assets of Croatian banking sector. The total number of banks at the end of 2010 has included 6 large banks, 3 medium sized banks and 25 small banks. The number of large banks and their ranking according to the amount of assets and portion of market share hasn't changed in recent five years. Large banks in Croatian banking sector at the end of 2010 take 82,2% of total assets of the whole banking sector, while the small banks take 8,7% and medium sized banks 9,1% of total assets of Croatian banking sector. [3]

3.2. The Structure of Financial Instruments in Croatian Banking Sector

The structure of financial instruments indicate that Croatian banking sector is still oriented on traditional banking activities, because the most significant part of financial assets is classified as loans and receivables and the majority of financial

liabilities are subsequently measured at amortized cost not at fair value. The following table presents the structure of financial instruments in Croatian banking sector from 2007 to 2010. [3]

| Financial Instrument Category | 2007 | | 2008 | | 2009 | | 2010 | |
|--|-------------|-------------------|-------------|-------------------|-------------|-------------------|-------------|-------------------|
| | Amount | % of Total Assets | Amount | % of Total Assets | Amount | % of Total Assets | Amount | % of Total Assets |
| Loans and Receivables | 216.269.462 | 63 | 246.604.770 | 67 | 252.428.334 | 67 | 267.347.493 | 68 |
| Financial Assets at Fair Value through Profit or Loss | 9.491.493 | 3 | 7.630.878 | 2 | 7.379.699 | 2 | 6.767.413 | 2 |
| Available for Sale Financial Assets | 11.326.410 | 3 | 12.480.256 | 3 | 14.000.468 | 4 | 14.853.660 | 4 |
| Held to Maturity Financial Assets | 12.285.478 | 4 | 14.861.234 | 4 | 13.379.086 | 4 | 13.722.027 | 4 |
| Financial Liabilities at Fair Value through Profit or Loss | 1.004.181 | 0 | 3.633.987 | 1 | 3.435.382 | 1 | 4.906.513 | 1 |
| Financial Liabilities at Amortised Cost | 289.122.177 | 84 | 303.392.223 | 82 | 310.293.889 | 82 | 319.648.189 | 82 |

Table 1. The Structure of Financial Instruments in Croatian Banking Sector from 2007 to 2010 [3]

The analysis of financial asset structure of the Croatian banking sector indicates that the significant part of total financial assets are classified as loans and receivables, while the rest three categories of financial assets (financial asset at fair value through profit and loss, financial asset held to maturity and financial asset available for sale) take approximately less than 10% of total assets in Croatian banking sector. This means that the major part of financial assets in Croatian banking sector is subsequently measured at amortised cost not at fair value. Due to that fact, Croatian banking sector is not significantly exposed to risk of fair value change, but is exposed to credit and currency risk.

3.3. *The Subsequent Measurement of Financial Instruments According to IAS 39 „Financial Instruments: Recognition and Measurement“*

The subsequent measurement of financial instruments at international level is defined through International Accounting Standard 39 „Financial Instruments: Recognition and Measurement“. These Standard is applied in Croatian banking sector as the relevant accounting standard for the recognition and measurement of financial

instruments. The subsequent measurement of financial instruments depend on the classification of certain financial instrument into one of four previously mentined financial instruments categories. Basically, there are two methods for financial instruments subsequent measurement. Financial instruments can be subsequently measured either at fair value or at amortised cost. Financial instruments subsequently measured at fair value can have a serious and significant impact on the financial position and profitabiliy of banking sector, since these instruments must be recorded at fair value in accounting records at the reporting date and therefore must be presented at fair value in financial statements. The changes in fair value between two reporting date can significantly vary so the effect of fair value change on financial statement between two reporting date can significantly differ. There are two basic problems with financial instruments subsequently measures at fair value:

1. The problem of fair value determination – fair value is usually current market price of the certain financial instrument at active market or in the absence of active market, fair value can be determined on the basis of market price of the same or similar instrument at inactive market and, if market for certain financial instrument doesn't exist, fair value should be determined using adequate valuation techniques and methods (e.g. discounted cash floe method, Black ans Scholes method, binomial method etc.) [4]
2. The problem of recording changes in fair value of financial instruments between two reporting date – IAS 39 defines two financial instrumens categories subsequently measured at fair value: financial instruments at fair value through profit or loss and financial assets available for sale. The changes in fair value of financial instruments classified as financial instruments at fair value through profit or loss are recognized as revenues or expenses and therefore included in profit or loss as other realized revenues or expenses. The changes in fair value of financial instruments classified as available for sale are recognized in other comprehensive income i.e. in capital.

On the other hand, financial instruments subsequently measured at amortized cost can have an impact on financial position and profitability of banking sector only if impairment loss incur.

So, every financial instrument has a certain effect on the profitability of a bank. The impact of subsequent measurement of a particular financial instrument category on the profitability of a bank or banking sector is presented in the following table:

| Financial Instrument Category | Initial Measurement | Subsequent Measurement | Effect of Subsequent Measurement on Bank Profitability |
|--|--|-------------------------------------|--|
| Financial assets held for trading Derivative financial assets | Fair value (without transaction costs) | Fair Value at the reporting date | Increase in fair value – unrealized gain recognized as revenue Decrease in fair value – unrealized loss recognized as expense |
| Held to maturity financial assets | Fair value (with transaction costs) | Amortized cost (using the effective | Interest revenue Impairment loss |

| | | | |
|--|--|--|--|
| | included) | interest method) | |
| Loans and receivables | Fair value (with transaction costs included) | Amortized cost (using the effective interest method) | Interest revenue Impairment loss |
| Available for sale financial assets | Fair value (with transaction costs included) | Fair value at the reporting date | No effect on profit before realization Possible impairment loss in rare circumstances |
| Financial liabilities held for trading Derivative financial liabilities | Fair value (without transaction costs) | Fair value at the reporting date | Increase in fair value – unrealized loss recognized as expense Decrease in fair value – unrealized gain recognized as revenue |
| Financial liabilities not at fair value | Fair value (with transaction costs included) | Amortized cost (using the effective interest method) | Interest expense |

Table 2. The complete impacts of subsequent measurement of financial instruments on profitability of banking sector [2]

3.4. The Analysis of the Impact of Financial Instrument Subsequent Measurement on Income Statement of Croatian Banking Sector

Profit and loss statement (income statement) of the whole Croatian banking sector shows that in the period from 2007 to 2010 Croatian banking sector continuously earns profit. There was a significant fall of profit in 2009 caused by impairment costs and provisions for identified losses. But in 2010 profit of Croatian banking sector continue to rise slightly. The profitability of Croatian banking sector is presented in the following table:[5]

| Profit and Loss Statement (in 000 kn) | 2007 | | 2008 | | 2009 | | 2010 | |
|---|------------|----------------------------|------------|----------------------------|------------|----------------------------|------------|----------------------------|
| | Amount | % of total interest income | Amount | % of total interest income | Amount | % of total interest income | Amount | % of total interest income |
| TOTAL INTEREST INCOME | 18.246.911 | 100 | 21.767.380 | 100 | 22.829.990 | 100 | 21.214.042 | 100 |
| TOTAL INTEREST COSTS | 9.690.827 | 53,11 | 11.809.210 | 54,25 | 13.278.734 | 58,16 | 10.250.332 | 48,32 |
| NET INTEREST INCOME | 8.556.084 | 46,89 | 9.958.169 | 45,75 | 9.551.256 | 41,84 | 10.963.711 | 51,68 |
| TOTAL REVENUES FROM CHARGES AND FEES | 4.207.616 | 23,06 | 4.342.825 | 19,95 | 4.302.185 | 18,84 | 4.433.231 | 20,9 |
| TOTAL COSTS OF CHARGES AND FEES | 1.368.209 | 7,5 | 1.361.959 | 6,26 | 1.319.645 | 5,78 | 1.224.897 | 5,77 |
| NET INCOME FROM CHARGES AND FEES | 2.839.406 | 15,56 | 2.980.867 | 13,69 | 2.982.539 | 13,06 | 3.208.334 | 15,12 |
| OTHER NON - INTERESTS REVENUES | 2.077.322 | 11,38 | 2.291.730 | 10,53 | 3.389.679 | 14,85 | 2.134.878 | 10,06 |
| OTHER NON - INTERESTS COSTS | 795.737 | 4,36 | 860.468 | 3,95 | 628.493 | 2,75 | 615.764 | 2,9 |
| NET OTHER NON INTEREST INCOME | 1.281.585 | 7,02 | 1.431.261 | 6,58 | 2.761.186 | 12,09 | 1.519.114 | 7,16 |
| NET NON INTEREST INCOME | 4.120.992 | 22,58 | 4.412.128 | 20,27 | 5.743.725 | 25,16 | 4.727.448 | 22,28 |
| ADMINISTRATIVE COSTS AND DEPRECIATION | 6.607.912 | 36,21 | 7.534.837 | 34,62 | 7.564.117 | 33,13 | 7.581.994 | 35,74 |
| NET INCOME BEFORE PROVISIONS FOR LOSSES | 6.069.163 | 33,26 | 6.835.460 | 31,4 | 7.730.864 | 33,86 | 8.109.165 | 38,23 |
| IMPAIRMENT COSTS AND PROVISIONS FOR IDENTIFIED LOSSES | 530.596 | 2,91 | 908.358 | 4,17 | 3.577.264 | 15,67 | 3.631.779 | 17,12 |
| COSTS OF PROVISIONS FOR UNIDENTIFIED LOSSES | 433.434 | 2,38 | 190.586 | 0,88 | -61.885 | -0,27 | -45.442 | -0,21 |
| TOTAL COSTS OF PROVISIONS FOR LOSSES | 964.031 | 5,28 | 1.098.943 | 5,05 | 3.515.379 | 15,4 | 3.586.338 | 16,91 |
| PROFIT (LOSS) BEFORE TAXATION | 5.105.133 | 27,98 | 5.736.517 | 26,35 | 4.215.485 | 18,46 | 4.522.827 | 21,32 |
| PROFIT TAX | 1.037.696 | 5,69 | 1.124.040 | 5,16 | 937.804 | 4,11 | 761.966 | 3,59 |
| PROFIT (LOSS) OF CURRENT YEAR | 4.067.437 | 22,29 | 4.612.477 | 21,19 | 3.277.681 | 14,36 | 3.760.861 | 17,73 |

Table 3. Income Statement of Croatian Banking Sector from 2007 to 2010 [5]

As it can be seen from the table, the most significant revenues in Croatian banking sector come from interest income what corresponds with the structure of assets. Since the approximately 65% of total assets of Croatian banking sector make loans to clients, it is logical that interest income constitutes the major part of profit in Croatian banking sector. Besides interest income, revenues from charges and fees are also important source of income as well as other noninterest revenues.

Noninterest revenues include revenues referring to all types of financial instruments except loans and receivables. These revenues include: gains or losses from investments in subsidiaries, associates and joint ventures, gains or losses from trading activities, gains or losses from activities with financial assets available for sale, gains or losses from financial assets measured at fair value through profit or loss, gains or losses from activities with financial assets held to maturity, gains or losses from hedging activities, gains or losses from foreign exchange differences and other similar revenues. The most significant noninterest revenues are gains or losses from trading activities (which refers to financial assets measured at fair value through profit or loss) and gains and losses from foreign exchange differences.

According to the structure of profit and loss account of Croatian banking sector, it is obvious that the majority of revenues come from loans to clients. So this financial asset category is the most important source of revenues in Croatian banking sector. Other financial asset categories also contribute to earnings, but they are not that important as loans. Revenues earned from financial asset held for trading, derivative financial asset and available for sale financial asset are categorized as other noninterest revenues.

On the other hand the most significant expenses in Croatian banking sector are interest expenses, administrative costs and, from 2009, impairment costs and provisions for identified losses. This also corresponds with structure of liabilities and capital of Croatian banking sector. Since the most dominant sources of financing in Croatian banking sector are deposits and loans, it is understandable that the main expenses come from interest on deposits and loans and from financial assets impairment as well as provisions for identified losses. Financial liabilities subsequently measured at fair value are negligible considering their portion in the structure of assets in Croatian banking sector, so they don't have significant impact on the profitability of Croatian banking sector. The figure 1. presents gains and losses arising from financial instruments in Croatian bankig sector from 2007 to 2010.

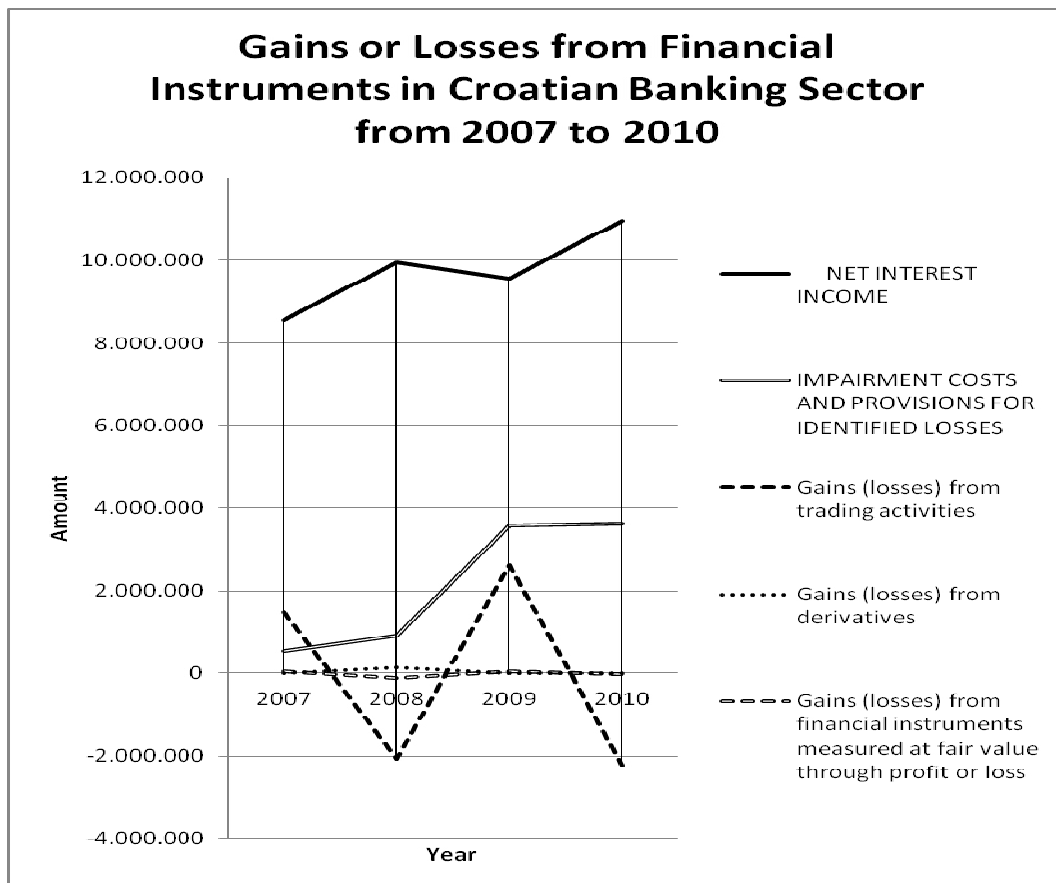


Figure 1. Gains and Losses from Financial Instruments in Croatian Banking Sector from 2007 to 2010 [5]

The most dominant financial instruments in Croatian banking sector are loans and receivables within financial assets and financial liabilities not at fair value within total financial liabilities. So, these two categories of financial instruments have the most important impact on bank profitability i. e. banking sector in Croatia. These two financial instruments categories influence on major gains and losses arising from financial instruments: net interest income and impairment cost. Gains and losses from other financial instruments don't have that significant impact on the profitability of banking sector in Croatia as gains and losses from loans and receivables.

4. Conclusion

Croatian banking sector is still oriented on traditional banking activities and the analysis of financial position and profitability of Croatian banking sector confirms that statement. In the structure of assets in Croatian banking sector the most dominant position are loans to clients, while in the structure of financing sources the most significant position are deposits. The analysis of Income Statement indicates that the main revenues in Croatian banking sector are interest revenues, while the most significant expenses are interest expenses, administrative costs as well as impairment costs and provisions for identified losses. This analysis corresponds to asset structure and confirms traditional orientation of Croatian banking sector. This traditional orientation of Croatian banking sector is the result of still underdeveloped financial

market in Croatia. Financial instruments regularly traded Zagreb Stock Exchange are mostly primary financial instruments such as stocks, bonds and treasury bills. The number of derivative financial instruments is relatively low compared to developed European financial markets and their appliance, either as hedging instrument or instrument for trading, is still not at the level of certain European financial markets. Due to those facts, Croatian banking sector is oriented primarily on traditional banking instruments such as loans, receivables and deposits.

Therefore, the main accounting effects in Croatian banking sector come from subsequent measurement of loans and receivables and financial liabilities subsequently measured at amortized cost using the effective interest method. Although, other categories of financial assets and financial liabilities are presence in Croatian banking sector, these financial instruments don't have significant impact on financial position and profitability of Croatian banking sector. Since Croatia is finishing negotiations about the accession to European Union, certain changes are made in the field of Croatian financial system. Croatian financial system is developing and it is expected that the financial system (and therefore banking sector) continues to develop when Croatia joins the EU.

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