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THE IMPACT OF FAIR VALUE ACCOUNTING ON THE CRISIS IN BANKING SECTOR OF EU AND USA

ABSTRACT

Authors who criticize fair value accounting (FVA) claim that the use of fair value accounting as a measurement attribute had essential impact on the origin, spreading and strengthening of actual global financial crisis. Similar outlook towards the possible impact of fair value accounting on the stability of global financial system and real economy was previously expressed by the European Central Bank (ECB), in its notes and assumptions. In the light of above mentioned criticism, of great number of researches and ongoing debates over the FVA issue, in the center of the world accounting and financial community currently are requirements for a deep reform and even withdrawal of FVA standards. In this work we analyze the correctness of such statements and the impact of fair value accounting on the EU and USA banks financial results before and during the crisis. We will try to answer the questions - Whether the use of fair value accounting contributed to originating and strengthening of the current financial crisis? Would the market have reacted differently if the banks hadn't shown financial losses during 2008? Should regulatory institutions still insist upon the use of fair value?

The analysis is based on the secondary data. Sources of secondary data for this topic are surveys, organizational records and data collected through qualitative research in literature.

Keywords: Fair value accounting, financial crisis, banks in EU and USA, FVA reform

1. FAIR VALUE ACCOUNTING AND FINANCIAL CRISIS FROM 2008

What is the main lesson of the current financial crisis? Whenever regulatory bodies and existing accounting standards and legal acts do not strictly demand from financial institutions to timely present and face their losses, the losses can sharply increase. If, on the contrary, the Banks are by clearly defined regulations forced to timely present losses, and write-down assets due to them, they are therefore instigated to promptly take corrective actions, limit high-risk loans, which eventually limits the severity of the crisis.

In its pure form, fair value accounting understands reporting assets and liabilities at fair values, and recognizing changes in fair values in the form of gains or losses in income statement. The use of fair value is justified by the fact that it represents market value, and as such provides the users of financial reports a more complete, relevant and trustworthy information for business decision-making.

The most FVA critics are based on claims that FVA contributes to excessive write-downs of assets during the crisis. One most often speaks about the fact that the use of FVA

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during the crisis increases volatility of bank profitability represented in financial reports, and with that pro-cycality and limitation of Banks credit activities, which in the end deepens and prolongs recession periods and negative impacts of the crisis [7, p.7-9 ; 19, p.3 ; 14, p.109-111].

In its monthly bulletin [8, p.76-78], back in 2004, the Central European Bank (ECB) stated 4 possible scenarios, which describe the possible ways how application of FVA can cause problems to banking and overall financial system – decrease in quality of Banks loan portfolio, sudden changes of interest rates, crisis in the real estate market, sudden changes of prices of securities. Although the analysis of ECB mentions different market disorders, the mechanism most often mentioned through which FVA can contribute to origin and spreading of financial crisis is the bond that exists between accounting and mechanisms of control of banks obligatory capital reserves.

Market price changes can occur due to influence of great number of factors. If the changes of market prices are related to assets to which FVA is applied, banks are forced to write-down and decrease the book-value of those assets. That further leads to capital draining and forcing the banks to sell their assets in the market at lower (fire sale) prices, in order to acquire additional capital. If, after that, other banks accept those new discounted market prices as a representative measure of value, FVA leads to new write-downs, problems with maintaining obligatory capital reserves, liquidity problems, and spreading of Crisis as well - for these lower (fair) prices in the market become relevant for other banks too. Downward liquidity spirals occur, financial markets froze up, which finally results in banks bankruptcies.

Activation of downward cycles and spreading of crisis can occur in situation when Banks management is focused on short-term goals - short-term profit. This problem was particularly pointed out by a great number of authors and analysts, because bonuses in banking sector are usually based on achieved annual profits. Along with the first signs of market disorder and fall in assets prices, the banking management mostly goes for selling relatively illiquid assets at lower prices, in order to precede their competition, and thus avoid higher losses and selling them at even lower prices. This further leads to spreading panic in financial sector, and later to unavoidable crises overflow into real economy flows [25, p. 4-6].

Above mentioned stresses that potential problems with application of pure FVA and its everyday use in financial reporting were seen long before the crisis. However, currently adopted accounting standards do not require use of pure FVA, and allow resigning from fair value in some cases.

2. FAIR VALUE ACCOUNTING CONCEPT

In practice, for preparing primary and secondary financial reports, two standard groups are most often used – EU International Financial Reporting Standards (IFRS) and Generally Accepted Accounting Principles of the USA (USA GAAP).

Companies quoted on US stock exchange are required by Security and Exchange Commission (SEC) to prepare and publish regular financial statements. These financial reports are prepared using US GAAP. The jurisdiction over reviewing and announcing GAAP was transferred from SEC to Financial Accounting Standards Board (FASB).

Companies quoted on the EU stock exchange prepare their financial reports by applying International Financial Reporting Standards (IFRS), prescribed by International Accounting Standard Board (IASB).

Both regulatory bodies, FASB and IASB, support the use of FVA.

GAAP concept of FVA - The definition and use of fair value in the USA³ was arranged by Statement of Financial accounting standard 157 (FAS 157 – Fair value Measurements), published by FASB in September 2006 – today known as Topic 820 [34]. Fair value is defined as a price that would be received to sell an asset, or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Standard defines hierarchy and order of information (inputs) entities must use to determine fair value of asset or liability.

The FAS 157 defines 3 Levels of information (inputs) which are used for determining fair value. [11, p. 22-32].

Level I – inputs are current, quoted prices at active markets, for identical assets and liabilities, that the reporting entity has the ability to access at the measurement date. If these prices come from regular (orderly) business transactions at active markets, they **must be used** for measuring fair value. FAS 157 clearly defines that orderly market transaction is not the same as “fire sale” or “forced liquidation” transaction. In case of fire sale or forced liquidation transactions, management should not use distorted prices in determining fair value. If Level I inputs are not available, one uses information of Level II.

Level II – inputs include all directly or indirectly available and observable market information not comprised by Level I. They include: market prices of similar assets and liabilities at active markets, market prices of same assets and liabilities from non-active markets (markets with small number of transactions, prices from previous periods, with low level of information released publicly), other information on assets/liabilities available in the market in regular intervals (interest rates, credit risk, default rates, prepayments spreads, income curves), as well as all other relevant information observable on the market [12, p. 1-2]. If an entity does not have these information at its disposal, the final option are Level III inputs.

Level III – inputs are unobservable inputs which are used if market inputs are not available to reporting entity, and they represent typical assumptions generated by company by using different prediction Models. These information represent an entity’s assumptions on value of assets/liabilities that can be acquired in the market. Prediction models must use the best possible information available in the existing circumstances, taking into account the current situation.

Since there are significant differences in information quality used to define fair value by above mentioned three Levels, FAS 157 also requires disclosure of following information: [11, p. 32-35].

1. For all assets comprised by FVA – data on which Level was used for defining fair value
2. For each balance sheet item estimated by using Level 3 information – data on initial and ending values; changes in fair value during calculating period; gains/losses shown in income statement; gains/losses recognized in equity; all reclassifications of assets or liabilities in or out from this group.

These disclosures are very important for tracking Banks financial position and results, because investors are given a deeper insight and additional information for decision making.

IASB concept of FVA – the principles for acknowledging and valuation of financial assets and liabilities are defined by International Accounting Standard 39 (IAS 39) – *Financial instruments: acknowledgement and measurement*. The use of fair value in IFRS is

³ FVA concept was not first introduced to GAAP with the publishing of SFAS-157. This concept is deeply integrated into the accounting system of USA. Many other, earlier published SFAS use this concept and provide guidance for reporting of assets and liabilities at Fair values. Some of the most important were – SFAS 107 – Disclosures about Fair value of Financial instruments; SFAS 115 – Accounting for certain Investments in Debt and Equity Securities; SFAS 119 – Disclosure about Derivate financial instruments and Fair value of Financial instruments; SFAS 133 – Accounting and reporting for derivate financial instruments and Hedging activities

not defined by this standard only, but is dispersed through a several other standards, which makes its use very complexed.⁴

As with US GAAP, the most reliable way to determine assets fair value according to IFRS is the use of quoted prices on active markets (Level I). If these prices are not available, fair value of a financial asset is determined by using Level II information (market prices of similar assets and liabilities in active markets, market prices from inactive markets and all other information on assets/liabilities available and verifiable in the market) , or by using appropriate assessment techniques - Models (level III). The entities are required to publish information on financial assets comprised by Level III inputs in their financial statements, changes of these values during a reporting period, and all reclassification from and into this group of assets.

IAS 39 allows an entity to make its own decisions which financial instruments will be balanced at fair values at initial classification. By initial classification, all financial assets are classified into one of the following five groups: Investment (securities) held till maturity, financial assets (securities) available for sale, held for trading assets (securities), securities valued at fair value through Income Statement, loans and receivables. After the initial classification of financial instruments in some of five above mentioned groups, additional reclassification was not possible up until the financial crisis.

Amendments of IAS 39 in October 2008, allowed reclassification of financial instruments from the “trading securities” group into group of available for sale securities (paragraph 50B) in rare circumstances, as well as reclassification of financial instruments from group of “trading” and “available for sale” securities into Loans (paragraph 50D) if an entity has intention and ability to hold that asset for the foreseeable future or until maturity [17, p. 4-6].

3. ACCOUNTING TREATMENT OF KEY ITEMS IN BANKS BALANCE SHEETS

Introduction and application of fair value concept had the biggest influence on financial statements and results of the banking sector. Since the financial instruments make a dominant fraction in Banks balance sheets, over 90% share with some banks, accounting treatment of these items represents a critical area for their business and success.

The accounting standards and rules for reporting financial instruments are based on mixed-attribute model [8, p. 76]. Treatment of each balance sheet item depends on type of an asset, and the way it will be used in regular business. *What is the share of total assets of Banks which was really balanced at fair values before the crisis? What possibilities are left to banks and other financial institutions to circumvent the use of FV for some assets during the crisis?*

3.1. ACCOUNTING TREATMENT OF KEY ASSETS IN BALANCE SHEET OF BANKS IN THE EU

Table 1 – provide data on averages of key financial assets of EU banks from 2005 to 2007 – before financial crisis. *How were individual assets treated?* The data are divided into two groups of banks, Large bank holdings (assets of over \$2 trillion) and Small bank groups (assets below \$1.5 trillion).

⁴ I.e. requests regarding financial instruments presentation and reporting are defined by *IAS 32 – Financial instruments-presentation*. Requests regarding disclosures of financial instruments information are defined by *IFRS 7 – Financial Instruments- disclosures* + *IFRS 9*

Table 1

Key Balance Sheets Assets of EU Banks from 2005 to 2007
(as a fraction of total assets for 2005-2007 period)

Large Bank Holdings		Small Bank Holdings	
Trading assets	36,89 %	Trading assets	14,95 %
Net trading assets	3,06 %	Net trading assets	1,36 %
Securities at Fair Value		Securities at Fair Value	
through Income Statements	5,49 %	through Income Statements	10,39 %
Available for sale securities	6,02 %	Available for sale securities	9,41 %
Loans and Leasing	42,57 %	Loans and Leasing	59,42 %
Financial instruments	94,03 %	Financial instruments	95,54 %
	100		
Total Assets	%	Total Assets	100 %

Notes – Amounts represent average participation of financial instruments in total assets for Banks for 2005-2007 period in the EU. The data are divided into two groups, and as source we used data on banks ranking by total assets since the end of 2007 [4]. The data for big banking groups are related to banks with total assets of over \$2 trillion, calculated on a sample base of five biggest banking groups in the EU as of late 2007: Royal Bank of Scotland, Deutsche Bank, Barclays PLC, HSBC Holdings plc, BNP Paribas Group. The sample for small banking groups is related to banks with assets less than \$1.5 trillion and comprises 10 banks: (DZ Bank AG, Dansk Bank, BBVA Group, Fortis Bank, Santander Bank Group, Societe Generale Group, Unicredit Bank Group, Lloyd TSB Bank, Credit Suisse Group and Dexia Bank Group).

Within each analyzed Bank group and year, observations are weighted by total assets. For all analyzed Banks, numbers were taken from the official annual reports and financial statements.

Securities such as state bills and bonds, bonds issued by other state institutions, shares, equities and financial derivatives can be classified in held for trading securities, available for sale securities and held to maturity securities. The classification of these assets is done by management of reporting entities.

1 - Held for trading securities- are purchased and kept to be sold in the near future. This position also includes derivatives (not in a qualifying hedge position). These securities are reported at their **fair value**. Any consequential change of fair value of these securities is recognized in Income Statement as profit/loss. According to data for EU banks, these assets make 36, 89% of total assets for Large Bank Holdings, and 14.95% of Small Bank Holdings total assets.

2 – Securities valued at fair value through Income Statement are reported at **fair values**. Any consequential change of fair value is calculated in income statement as profit/loss.

3 - Available for sale securities are balanced at **fair values**. Impairment losses and exchange losses are recognized in income statement, using effective interest method. Other changes of fair values of these securities are recognized in a separate component of shareholder's equity, ?unit disposal, when the accrued gain/loss is recognized in Income statement. IFRS do not make a difference between temporary and other-than-temporary values changes of securities, as with US GAAP.

4- Loans and leasing represent the most important asset class of the most banking groups, and in the most cases these assets comprise over 50% of banks' total assets. All loans are divided into two groups: held for trading and held for maturity (investment) loans.

- **Held for trading Loans** are reported at **the lowest price principle or fair value**. Losses on the basis of decrease of fair value of these loans are recognized in Income Statement. The share of held for trading loans in total loans and leasing is very small, and they are included in trading assets class in Table 1.

- **Held to maturity (Investment) loans** are reported on the principles of **historical costs accounting**. Loans and leasing are reported at amortized value, by using the method of effective interest rate. These amounts are basis for possible impairments and write-downs in case of problems with loan repayments. Loan impairment occurs in case that it is possible that a Creditor bank will fail to charge the full amount of loan receivable - if “probable and predictable” loan losses exist. Loan amounts are written-down and their book value is decreased to current value of expected cash flow in the future⁵. Moreover, **financial institutions are required to disclose estimate of fair value of Loans in their financial reports**.

*IFRS does not distinguish between investment in held-to-maturity securities and investment into loan agreements. Assets are classified as **held-to-maturity** if they have fixed or determinable payments, a fixed maturity, or a bank has an intention and possibility to hold them in its portfolio until maturity. Regardless of form of the investment, investment with fixed or clearly defined repayments are generally sorted into Loans group, if they are not traded in the market and the investor does not plan their sale in near future.*

According to Table 1, for the observed banking groups in the EU from 2005 to 2007, 43.8% of total assets are balanced at fair values (cash equivalents, held for trading securities, securities at fair value through Income Statement and available for sale securities). Fair value of additional 51% of financial assets (loans and leasing) is published in Notes to the financial reports.

3.2. ACCOUNTING TREATMENT OF KEY ASSETS IN BALANCE SHEETS OF THE US BANKS

US GAAP for financial instruments most significantly differs from IFRS in the following respects [29, p. 31-32] :

1 - GAAP distinguishes between investments that are in the form of debt securities and those that are investments in loans.

2 - Prior to IAS 39 amendments in October 2008, IFRS had more restrictive requirements than US GAAP about transferring certain financial assets.

3 - Under IFRS, the trigger for recognizing impairment differs from U.S. GAAP, resulting in the potential for differences in the timing of when an impairment charge is recorded.

4 - Measurement of impairment losses differs under IFRS for HTM securities, which are written down through income under both U.S. GAAP and IFRS. However, under U.S. GAAP, these securities are written down to fair value; under IFRS, they are written down only for incurred credit losses.

5 - IFRS has greater restrictions on the use of the option to elect fair value accounting.

Research of C.Laux and C.Leuz [5, p. 98-100], provides data on averages of key financial assets the US banks had at their disposal from 2004 to 2006 - before the crisis in US.

⁵ With US GAAP, if “probable and predictable” loan losses exist, loan amounts are impaired to their current fair value, and not to the value of expected cash flow in the future, as with IFRS.

How were these assets treated? According to this research, during 2004-2006 period, only **36% of total assets for Large Banks in US were balanced at fair value** (trading assets, available for sale securities, and REPO agreements). Fair values of additional 50% of assets (Held to maturity loans and securities, and leasing) are subject of disclosures in Notes to the financial reports. For small bank holdings in USA, this fraction is even smaller. For investment banks, the fraction of balance sheets assets reported at fair values tends to be higher as they have a large trading book portfolio.

Data acquired by SEC in the USA, regarding the same issue [29, p. 47-49], point out that the percentage of total financial assets balanced by fair value decreased after the beginning of crisis. According to the research of SEC, at the end of the first quarter of 2008, **only 13% of total assets** of the US banks were balanced at fair value. The same research showed that 45% of total write-downs refer to fair value, 25% of which were directly recognized in Income Statements. The rest 55% of write-downs do not refer to use of fair value accounting, and are mostly related to Loans impairments!

4. DID THE FVA HAVE AN IMPACT ON THE CRISIS ORIGIN?

The financial crisis that began in the fall of 2007 proved to be one of the longer lasting periods of financial disruption in decades [26, p. 283]. Fall of real estate prices, delays and problems in loans repayment by debtors, terminations of financing contracts and mortgage sales, various cases of mortgage frauds and manipulations, decrease of credit rating – caused breakdown of “mortgage bubble” and huge problems with mortgage loans and financial investments in mortgage securities.

Uncertainty occurred on how these assets should be valued, and the anxiety of investors about the reliability of information and the quality of mentioned assets as well as of quality of exposure based on them. During the first phase of the financial crisis the US press was filled with reports from policy makers that financial markets had frozen up [26, p. 284]. It all led to a sudden withdrawal of capital from the markets and bankruptcy of great number of banks in the US, where the crisis originated. [22, p. 281]

According to data of the American Corporation for deposit insurance (FDIC), [13] before the crisis, in the period from 2000 to 2007, a total of 32 banks went bankrupt. After the beginning of the crisis, during 2008, 25 banks went bankrupt, and the number soared to 140 in 2009. The same trend was continued in 2010, where until September 17 another 125 banks pronounced bankruptcy. That this has been the worst crisis since the Great Depression, was confirmed by data of bankruptcy by decades (Table 2), from which we can clearly see that the number of banks that have proclaimed bankruptcy in 3-year period of 2008-2010 has surpassed the number of bankrupt banks in the six years period after the Great Depression.

Table 2

Proclaimed bankruptcies by decades in the USA

Number	Period
2000-2010	: 322
1990-1999	: 925
1980-1989	: 2036
1970-1979	: 79
1960-1969	: 44
1950-1959	: 28
1940-1949	: 99
1934-1939	: 312

Source: FDIC/Failed Banks

But, the fall of real estate prices and sudden downturn in quality of banks loan portfolio led to draining of the market due to the reasons which are not connected in any way to accounting concept of financial reporting. *Would the market have reacted differently if the banks had not had shown financial losses?*

If the market reaction would have been the same, it would then be very difficult to claim that the FVA by itself caused the crisis. During 2006 sub prime mortgage lending and the securitization of those loans accelerated [26, p. 285]. The fact is that the Banks were heavily reliant on mortgage financial arrangements before the crisis [30]. But the amount of debt/receivable that can be collected from mortgage agreements depends on market collateral prices, and not on the book ones. Thus, after the first signals that point out to problems in real estate market, investors would become worried for business and value of shares and equity of banks with great mortgage exposure, even if the banks refused to write-down value of mortgage-based assets, and continued to report these assets at their historical costs. Always cautious investors would certainly become worried on first signs of crisis in real estate market. Investors would certainly react!

What is the influence of FVA on such sequence of events? Empirical evidence does not support critics that FVA is the main cause of the crisis – of enormous assets write-downs and loss admittance of banks due to market prices disorder, and then liquidity problems and spreading of crisis to the real sector.

Some data for the biggest investment banks in the US , show that at the beginning of the crisis, book values of the banks' assets were far higher than their market (fair) values, but even that was not enough to improve investors confidence and stability of global financial sector. For example, empirical data for Merrill Lynch show that accounting values of mortgage-based assets were 65% higher than their exit prices, achieved on the market [24].

A very important fact missed by many is that the biggest share of write-downs by banks is not related to use of FVA, but to Loans write-downs and losses [33]. And the loans are item in balance sheets which is reported by historical cost accounting principles. For example, Bear Sterns published high mortgage losses in early June 2007 in its two hedging funds, and in December 2007 for the first time in its history reported quarterly loss. In January 2008 Bank of America took over one of the biggest creditors and distributors of mortgage loans in America – Countrywide, in order to prevent it from going bankrupt [26, p. 288].

Also, the greatest financial giants before the crisis based their businesses on strategy – borrow short-term, lend long-term. The data in 2007 annual reports of American International Group (AIG) show the fact that \$75 Billion, or 14% of total liabilities were financed by short-term sources. This strategy, together with provisions and losses on additional reserves due to quality decrease in loan portfolio, are the main reasons for banks high losses and write-downs. *Thus, FVA did not have essential influence on origin of crisis, because it is not the basic cause of market disorder.*

5. DID FVA HAVE IMPACT ON SPREADING AND STRENGTHENING OF CRISIS?

In order to determine if FVA have influenced on spreading and strengthening of crisis, it is necessary to explain the impact of FVA on behavior of banks management and the structure of financial statements during the crisis.

The standpoint of American Banking Association (ABA) [1] is that FVA suits only to positions of trading financial assets. Their position is that reporting of loans and leasing at fair values, as well as available for sale and held to maturity securities, is not appropriate and can lead to wrong business decisions, especially in periods of crisis [2]. ***However, presented data for EU and USA indicate that the greatest fraction of Assets in the balance sheet of bank holdings were not reported at fair values. When banks do apply fair values, used rules of values estimation obviously deter from pure FVA. This is happening because the current standards allow banks to deter from fair value in some situations. How?***

1 - Position with largest share in Banks total assets, portfolio of investment (held to maturity) loans, is not comprised by FVA in the balance sheet, but is a subject to impairments by the rules of historical cost accounting.

Banks with large share loans and leasing in total assets, which is mostly the case (Table 1), can avoid effects of FVA, by classifying loans as held for investment. The empirical data for 31 banking group that bankrupted during 2007, or was capitalized by US government, show that loans made up around 75% of total assets, and that share of held for trading assets within that position was very low. The data for 10 small banking groups in the EU show that share of the loans position went as high as 70%. Likewise, held to maturity securities are not reported at fair value.

Share of mortgage loans for construction financing and residential premises purchase was above 47% of total assets, for most of the banks in the US that went bankrupt from 2008 to 2010 period. The main cause for such high share of investment mortgage loans is their high profitability for the banks, especially after 2000. The average growth of income for most of the banks that went bankrupt during the crisis was approximately 18% a year, from 2003 to 2006. Average annual growth of income for the banks with share of investment loans above 30% was 53% in the same period. When in the early 2008 the quality and collection efficiency of these loans started falling sharply, the pressure on banks started rising quickly. According to the latest data of FDIC, in the first quarter of 2010, the share of investment loans with delays of more than 90 days was 16.82%. With banks that went bankrupt in 2010, the share of loans with delays longer than 90 days and non-repayable loans in total loan portfolio was almost 40% [30]. It is important to repeat – this reporting position is not under direct influence of FVA

The banks are required to publish fair values for position of loans and leasing. One can not, however, claim that disclosure of fair values of these financial assets in Notes had an impact on sharpening and spreading of the crisis. Since the issue of mortgage loans and mortgage bubble was discussed long before the crisis, prudent investors were already worried for banking business and results, regardless of the fact that the fair value data were or were

not disclosed. **“For years, it has been clear that American growth was not sustainable. It was based on a real estate bubble, which sustained a consumption boom”** [22, p. 281]. Instead, publishing these data would suppress panic in the market. Moreover, it would disable banks to neglect current and potential problems, and these information would actually be early signals for undertaking corrective actions. All that would limit high risk credit activities and severity of disorder that the crisis brought to global financial system.

2 - With analyzed banks in the EU (Table 1), the position of trading securities has an average share up to 10%. With banks in the US this position is second largest by share in total assets. However, FVA in the US GAAP has only limited impact on this position – changes of fair value are recognized in financial statements only if entity management estimates that fair value changes of these securities are “other than temporary” (OTTI rule). Profit/loss due to fair value change is in only in that case recognized in Income statements. If on the contrary, an entity’s management estimates that value changes of these securities are only temporary, they are not recognized in income statement, but are shown as a separate component of shareholder’s equity. If a bank has an intention and ability to keep these securities long enough until the market and the prices recover, it can treat these losses as only temporary and thus avoid effects of FVA on success and reserves. However, the question is how long banks can justify temporality of such losses in the market, during the crisis and its spreading.

During 2008, as effects of financial crisis grew stronger, and its overleaping on real sector occurred, banks found it increasingly difficult to give arguments and prove that losses on securities were only temporary. This is precisely the period when political pressures on IASB and FASB started, in order to soften standards which impose the use of fair values.

These pressures resulted in IASB reacting, and softening the use of fair value, with intention to decrease the negative effects of crisis, on October 13th 2008. Pronounced amendments of IAS 39 understood possibility of reclassification of financial instruments, in special situations such as financial crisis for example, which was not allowed previously [15]. Paragraph 50B allowed reclassification of trading securities into group of held for sale securities and paragraph 50D reclassified instruments from trading and available for sale into group of loans, thus avoiding balancing them at fair values.

FASB also amended FAS 157 in May 2009. As of June 15, 2009, all other than temporary changes of fair value are divided into two groups: 1) Loan losses and 2) other losses. Only other than temporary changes and Loan losses are recognized in Income Statement.

3 – The remaining positions, directly under the impact of fair value accounting, are trading assets and securities at fair value in Income statement. All relevant regulatory factors, including ABA, agree that the treatment of these positions by fair value is a correct one. But, only the biggest bank holdings are entitled to occupy large amounts of these liquid assets, which they use for financing their investment activities. For example, JP Morgan and Citigroup in the US had a 19% and 16% share of trading securities in total assets. The share of trading assets in total assets of Royal Bank of Scotland and BNP Paribas is even 50%. Although recognized losses of these banks during 2008 regarding trading securities are not small, they are not the main cause of origin and spreading of crisis.

Moreover, for trading securities, both GAAP and IFRS do not require strict use of FVA. US GAAP and EU IFRS have several measures of protection against use of fair value, in case of distorted market prices, which limits impact and influence of accounting on crisis spreading.

First – FAS 157 explicitly impose that fire sale prices or liquidation prices should not be used when estimating fair value. If these prices are acquired on the market, banks are not required to define value of other assets positions in accordance with them. It is very hard in

practice to define which prices have come out from fire sales – but this rule gives banks the right to discard extreme prices appearing on the market.

Second – banks alone determine how to classify its securities (according to FAS 115 and IAS 39), and thus by defining the amount of trading securities, determine which share of assets will be under impact of FVA. Besides, under rare circumstances (such as crisis) defined by standards, a bank can reclassify securities. For example, Citigroup reclassified trading securities of \$60B in the last quarter of 2008, defining them held to maturity. By doing that, this group limited the impact of market prices decrease on business results and share equity. Notes to the financial reports reveal that during 2008, Royal bank of Scotland reclassified €59.729 mil from position of trading and available for sale securities into group of loans. Deutsche Bank in the same way reclassified €34.424 mil, and BNP Paribas €7.077 mil, during the same year.

Third, when markets become inactive, and quoted market prices are no longer at analysts' disposal, banks are not required to use data and distorted prices from non-liquid markets, and FAS 157 and IAS 39 explicitly allow banks to use models (unobservable Level III inputs) for estimation of fair values of financial instruments. Table 3 data confirms that Banks seized this option, allowed by accounting standards.

Table 3

Structure of assets at fair value by level of valuation

	<i>Investment Banks in US</i>		<i>Large Banks in US</i>		<i>Large Banks in EU</i>	
	<i>Dec-07</i>	<i>Dec-08</i>	<i>Dec-07</i>	<i>Dec-08</i>	<i>Dec-07</i>	<i>Dec-08</i>
<i>Level I</i>	25,20%	15,50%	29,30%	18,60%	36,60%	23,40%
<i>Level II</i>	64,60%	70,20%	59,60%	68,20%	59,80%	73,60%
<i>Level III</i>	10,20%	14,30%	11,10%	13,20%	3,60%	3,00%
FV/Total assets	48,00%	51,80%	32,00%	29,90%	57,46%	63,46%

Notes – data in the table are related to period from late 2007 to late 2008. For all analyzed Bank Groups, numbers and data are taken from their official annual financial reports and Notes to the financial statements.

Sample for big bank holdings in the US includes four banks data - JP Morgan, Bank of America, Citigroup and Wells Fargo. Sample for US investments Banks comprise - Goldman Sachs, Morgan Stanley and Merrill Lynch. Sample for banking groups in the EU comprises 3 banks - Royal Bank of Scotland, BNP Paribas and Deutsche Bank

Of total financial assets the biggest banks in US and EU reported at fair value in 2007, only 30.4% of financial assets on average were valued at fair values using Level I information. At the end of 2008, this percentage was decreased by 11.2% on average. This reduction of Level I inputs usage was compensated by increased share of fair values determined by using information of levels II and III. Share of financial assets whose fair value were determined using models (information of level III), increased from 9% to 13% on average!

What is even more important is the information that reclassifications were conducted in the very beginning of the crisis. In the EU, transfers into level III category, go up to 50% for the largest five banks: Royal Bank of Scotland, BNP Paribas, Deutsche Bank, HSBC Holdings plc and Barclays Bank. In the US, from the last quarter of 2007 to the last quarter of 2008, total assets transferred into category of level III go from 40 to 80 % of total financial

assets comprised by FVA. This percentage is highest with banks that suffered the strongest negative crises effects.

Table 3 data clearly point out that the current standards gave the banks enough possibilities and options to avoid negative effects of sudden decline of market prices, and to use Models (unobservable information) and their own estimations when determining fair values, even at the very beginning of the crisis. Share of assets whose fair values were determined directly by using information/quoted prices from the market (Level I) constantly decreased as of early 2007, after the first signals of the crisis.

An SEC research [29, p. 61-62]. shows that at the end of the first quarter of 2008, only 7% of fair values were determined by using quoted market prices, and on the other side 82% and 11% by using less reliable Level II and Level III information. Share of used Level III inputs grows during 2008. *Banks financial reports are significantly protected from effects of fair value changes.*

6. EMPIRICAL ANALYSIS OF FVA IMPACT ON EU AND USA BANKS

FVA issues have been in focus of financial community for the last 18 months, due to numerous debates and announced FVA reform. All this led to many researches on FVA impact on financial reporting and crises of EU and USA banking sector. Academic works on impacts of FVA are just appearing in science magazines. Researches show that the effects of fair value accounting on incomes and required capital reserves of the EU and USA banks were far less than often claimed. During the crisis, most banks used allowed maneuver space in applying FVA.

The fact that the banks greatly avoided use of fair value is confirmed by mentioned research of SEC from 2008. Moreover, US GAAP allows entities possibility to report some assets voluntarily at fair value (fair value option) through several standards (FAS 155, 156, 159) [29, p. 31-32]. These options refer only to hybrid financial derivatives and services. When an entity goes for reporting these assets positions at fair values, return to previous measurement attribute is no longer possible, by standards. The research has shown that only 4% of total assets with allowed "option" were reported at fair value. [29, p. 55].

Additional evidence on Banks refusal to recognize and report losses due to decrease of assets fair value, is the accounting treatment of goodwill position. Banks, by taking over and acquisitions of smaller banks, acquire the right of activation of purchased goodwill. This position can be written-down, in case when fair value of goodwill is lower than the book one. However, Banks did not impair the value of goodwill, although real business value of banks decreased steeply in the beginning of crisis. Our analysis for 4 major bank holdings in EU in the early 2008 shows that only Royal Bank of Scotland in 2008 had significant write-downs of goodwill, £30.062 mil, while in period of 2005-2007 there was no write-downs. With other largest bank groups (Deutsche Bank, Barclays PLC Bank and BNP Paribas bank) there was no significant write-down of goodwill from 2005 to 2008. Research performed by an independent investment company Disclosure Insight [6] shows that 50 major banks in the US before the crisis had a great number of acquisitions and takeovers of smaller banks, but 35 did not write-down the value of goodwill, although real business value of banks decreased steeply in the beginning of crisis.

Opposite to these researches, some authors (Kalin Kolev; Song, Tomas and Yi; Goh, Ng and Young.) [32; 23; 36] reached to opposite conclusions in their analysis, that FVA is the main cause of starting and spreading the crisis. They point out to the facts that reported and disclosed fair values of financial assets do not differ much from their book values – i.e. that write-downs of financial funds did exist and that they are the cause of crisis. Other researches

(Issak, Forbes, and ABA) emphasize negative FVA effects on financial system and crises effects, but they don't provide clear evidence which supports these stands.

Taking all into consideration, pro and con FVA, there is insufficient evidence to prove that FVA had a strong impact on EU and USA banking sector, and thus contributed to origin of financial crisis. How correct our conclusions are, will be shown by great number of researches on this topic, which are certainly necessary to bring a final conclusion and define steps for further development and reform of accounting standards. *What are the main features of ongoing reform of current FVA standards in the US and EU?*

7. FVA REFORM – BASIC ISSUE

In the light of mentioned critics, large numbers of works on this issue and ongoing debates, in focus of world accounting and financial community currently is announced reform of FVA standards. Basic issue of further reforms is should regulatory institutions decide for softening or sharpening of FVA standards. One should take into account a great number of trade-offs regulatory bodies will meet during the very changes.

“Softening” FVA standards, on one hand, would give entities management more space to avoid problems that fair value reporting can cause during crisis. But, on the other hand, it opens huge possibilities for manipulation and blurring financial reports, which would lead to decrease in reliability of financial statements. Transparency decrease of financial reports would condition even higher precaution of investors during the crisis, and therefore faster spreading of crisis, than a strictly defined use of FVA.

“Tightening” FVA standards and requests for their strict use during the crisis, for example in case of market disorder and price decrease, can contribute to faster spreading of crisis and sharpening of its negative effects. However, in such situations, it is necessary to compare these negative effects with positive effects from “timely “recognized losses, and corrective actions taken on the basis of them.

The application of FVA at the same time brings both positive and negative effects [7, p. 7-13] – it basically can speed the downturn of economy activities during the crisis, but on the other hand it can contribute to faster identification of losses during the crisis and timely corrective actions by regulatory institutions. If the banks are forced by standards to show losses, and write-down assets value due to fair values decrease, they are thus stimulated to take immediate corrective actions, and to limit high risk crediting, which eventually limits the severity of the crisis. This further means that demands for withdrawing current FVA standards that require are over exaggerated. If the final goal of such request is to prevent economy pro-cycality, probably it is better to use some of the instruments of monetary and fiscal policies – i.e. regulating the Banks obligatory reserves.

That this stand is correct, was confirmed by the latest decision of Basel Committee for Bank Supervision and adopting of **Basel III agreement** by representatives of 27 member states of this committee. Only several years after the adoption of Basel II agreement in 2004, when it was deemed that the formula for limiting high risk crediting of banks and higher stability of financial system was found, the world's greatest financial giants went bankrupt and world financial crisis occurred. The new Basel III agreement was adopted on September 12, 2010 and it foresees banks to put aside a €7 reserve on each €100 disbursed loans, instead of €2. The goal of these measures is to prevent breakdowns in markets in future. The penalties for banks whose reserves fell below 7% will be implemented through decrease in dividends and bonuses to management [20, p.46-47]. The deadline for adjusting to new rules is the beginning of 2019.

8. MAIN PURPOSE OF FVA REFORM – UNIQUE FVA STANDARD

What is the main purpose of current FVA standards reform? The goal is defining and publishing a unique, global Fair value accounting standard, which will represent sole source of rules and instructions of fair value accounting. It should: provide fair value definition, define all positions comprised by fair value, provide clear frames for fair value reporting, and precisely define requirements for disclosing fair values for some positions in financial reports [18, p.5]. Thus all vagueness in applying fair value that currently exists will be eliminated, due to the fact that use of fair value in IFRS and GAAP intertwines through a great number of standards, what makes its use very complex.

How important precise defining of FVA use in regular annual reporting and establishment of unique FVA standard is, shows complemented Memorandum of understanding of FASB and IASB on standards development (MoU). Mutual project of both regulatory bodies, FASB and IASB is directed toward increase of transparency and decrease of complexity of financial instruments balancing. Activities are divided into three phases: phase I – classification and valuation of financial instruments, phase II – methodology of financial instruments value impairment, phase III – financial derivatives reporting [9, p.4-5].

Basic principles on which cooperation of the two Boards is based are: increasing comparability of information and usefulness of information for investors; for trading financial instruments used timely information on fair values are very important and necessary; classification of financial instruments must be less complex than the current one; instruments and methods of establishing fair value must be less complex than the current ones; principles and rules of impairment must be the same for all financial instruments.

Declaring of a unique fair value standard will mean an end to a long-lasting debate between two sides – pro and con FVA. One of main advocates against wider use of FVA is American Bankers Association (ABA). Treatment of financial instruments is the key area for banking sector. This is why the way of revising standards by FASB and IASB is very important for ABA.

The main point of misunderstanding is the issue of accounting treatment of loans – reporting values in balance sheet and methods of impairment. While IASB, on one hand, is firmly standing on its current positions, FASB on the other hand presses IASB to wider use of fair value. The FASB intentions are that banks should report all Loans and long-term financial assets in assets, in balance sheet at fair values. But that is something that currently doesn't exist as request in US GAAP.

Published drafts of announced reform of current FVA standards (IAS 39 and FAS 157), in July 2010, clearly points that both FASB and IASB support further use of FVA. The impression is that FASB pushes IASB to wider use of fair value. Publishing of unique FVA standard is planned for first quarter of 2011.

9. CONCLUSION

Based on empirical data, as well as literature on this topic, there is insufficient evidence to prove that FVA had strong negative impact on EU and USA banking sector, and that it contributed to origin of financial crisis, and later on to greatest world crisis since the great depression of the 30-ies of the 20th century. Always cautious investors would certainly become worried on first signs of crisis in real estate market, as well as for businesses of Banks with high exposure to mortgage loans of poorer quality of portfolio, no matter whether official financial reports of banks contain data on fair value of assets. Investors would certainly react!

FVA did not have large influence on spreading and severity of the crisis effects. FVA generally had very small impact on structure of Banks financial reports, as well as on obligatory reserves and losses, except for small number of banks in the US and EU that had greater share of trading assets in balance sheets. Besides, current standards contain different measures of protection and give banks a significant freedom of choice that enables them to avoid balancing assets to deformed market prices. Researches show that banks greatly used this allowed flexibility during the crisis.

This further means that requests for withdrawing current FVA standards are also rash. More research on this issue is necessary in order to determine effects of FVA impact during the crisis and its expansion, and to establish further FVA reform, which is certainly necessary. Regardless of critics, contents of new amended FVA standards, planed for publishing in first quarter 2011, will confirm the stands and opinion of most authors – that FVA is not the main cause of origin and spreading of negative effects of the financial crisis.

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UTJECAJ RAČUNOVODSTVA FER VRIJEDNOSTI NA KRIZU U BANKARSKOM SEKTORU EU I SAD

SAŽETAK

Autori koji kritiziraju računovodstvo fer vrijednosti (Fair Value Accounting – FVA) ističu da je upotreba „fer vrijednosti” kao mjernog atributa utjecala na nastanak, širenje i jačanje efekata globalne financijske krize. Slične stavove o mogućem utjecaju računovodstva fer vrijednosti na stabilnost globalnog financijskog sustava i realnu ekonomiju, dosta ranije iznijela je i Europska centralna banka (ECB), iznoseći svoja zapažanja i pretpostavke. U svijetlu spomenutih kritika, velikog broja radova na temu FVA i debata koje su u tijeku, u centru pažnje svjetske računovodstvene i financijske javnosti trenutno su zahtjevi za dubokom reformom pa čak i povlačenjem FVA standarda. U ovome radu analiziramo točnost ovakvih tvrdnji kao i utjecaj “računovodstva fer vrijednosti” na poslovanje banaka u EU i SAD prije i tijekom krize. Pokušat ćemo dati odgovor na pitanja – da li je upotreba “fer vrijednosti” pridonijela nastanku i jačanju efekata financijske krize? Da li bi tržište reagiralo drugačije, da banke tijekom 2008. nisu prikazale financijske gubitke? Treba li i dalje inzistirati na široj upotrebi “fer vrijednosti”?

Analiza je zasnovana na sekundarnim podacima. Izvori sekundarnih podataka za ovu temu su istraživanja, evidencije organizacija i podaci prikupljeni putem kvalitativnih istraživanja u literaturi.

KLJUČNE RIJEČI: Računovodstvo fer vrijednosti, financijska kriza, banke u EU i SAD, reforma FVA.