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THE APPLICATION OF FAIR VALUE CONCEPT AS AN INSTRUMENT OF ACCOUNTING POLICIES - EMPIRICAL EVIDENCE FROM THE BANKING SECTOR OF SERBIA

ABSTRACT

We examine the flexibility of financial reporting standards that affect the scope of fair value application and the extent to which this flexibility allows banks to use Fair value accounting (FVA) as an accounting policy instrument to adjust financial reporting to management's short-term needs and objectives. The sample consists of all banks actively operating in Serbia from 2005 to 2020. The study was based on a longitudinal approach and comparative analysis. The analyses show that there are no significant deviations in the average share of financial assets measured at fair value by banks in the US, EU, and Serbia during the 2005-2020 period, and that banks in Serbia, similar to those in the US and EU, have applied FVA mechanisms to mitigate the negative effects of capital market disruptions on financial statements. However, the extent to which these mechanisms limited the negative effects of declines in the fair value of financial instruments on the profitability and financial position of Serbian banks cannot be directly determined, since banks in Serbia did not disclose all information required by International Financial Reporting Standards (IFRS), similar to most US and EU banks, which also ignored the disclosure requirements of regulatory authorities.

Key words: fair value accounting, accounting policy instruments, banks, bank profitability

JEL: M41, M48, G21

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INTRODUCTION

It is often argued that the currently applied mixed-attribute measurement model (Whittington, 2015)[5] in financial reporting reduces the comparability and quality of information that investors and other stakeholders use to make business decisions, since similar financial instruments are treated using different accounting concepts. It is also argued that this model allows entities to use fair value for accounting policy purposes and to adjust financial reporting to short-term management needs and objectives (Deegan, 2014). IFRS and US Generally Accepted Accounting Principles (US GAAP) contain four mechanisms that can be used to hedge the FVA effects on financial statements, allowing entities to engage in short-term-oriented manipulation of periodic results such as avoiding recognition of losses on financial statement positions to which FVA is applied (Chartered Financial Analyst Institute, 2013), through optional fair value application, reclassifying financial instruments, and applying assumptions (unobservable inputs) for fair value estimates.

The aim of this paper is to examine the essence of FVA mechanisms, as well as the scope and effects of their application in the financial reporting of banks in Serbia. The importance of this paper stems from its focus on the insufficiently examined effects of FVA hedging mechanisms on the banking sector of developing economies, specifically by focusing on the emerging financial market of Serbia. Serbia differs from developed countries in many aspects, such as the importance of financial assets and liabilities measured at fair value in total assets and liabilities, the presence of active markets for various financial instruments, financial statement users' familiarity with FVA, and the implementation of risk management methods based on fair value. However, Serbia has similar experience[6] in IFRS application. This research examines the effects of FVA implementation during periods of stability as well as during periods of crisis and disturbances in the Serbian financial market, so it may also be important in the context of defining future IFRS development and resolving ongoing FVA-based debates.

INSTITUTIONAL BACKGROUND AND RELATED RESEARCH

Previous studies indicate that banks in developed economies have largely exploited the flexibility of FVA for accounting policy purposes. By applying various FVA hedging mechanisms, they protected themselves from the negative effects of

5 Entities use Historical cost, Fair value, Value in use and fulfilment value and Current cost for assets and liabilities measurement, where in some cases there is a possibility of choosing between these attributes.

6 While the most banks in emerging countries adopted IFRS after the 2009. global financial crisis, Serbian banks are obligated to apply full IFRS from 2003 (similar as banks in developed countries), which implies that they provide a solid basis for examining the effects of FVA in emerging countries due to a long tradition in applying FVA.

declines in the fair value of financial instruments on their financial position and profitability indicators, especially during periods of turmoil and crises in the capital markets. The essence and effects of FVA mechanism application on the financial reporting of banks in developed economies are presented below.

Optional application of the fair value measurement model (FVO) - Although current IFRS and US GAAP require the mandatory application of fair value for continuous or non-recurring measurement (Magnan & Parbonetti, 2018), entities may independently decide how to measure certain types of assets and liabilities (Santoro, 2020). Entities can, but are not required to, choose fair value for the subsequent measurement of mineral resources (IFRS 6), certain financial instruments (IFRS 9), property, plant, and equipment (IAS 16), investments in subsidiaries, jointly controlled entities and associates (IAS 27 and IAS 28), and intangible assets if there is an active market for those intangible assets (IAS 38), as well as investment property (IAS 40).[7] Since the application of fair value for the subsequent measurement of the listed assets and liabilities is voluntary, choosing historical cost as the measurement basis completely eliminates the impact that changes in fair (market) values have on the balance sheet and income statement.

Previous research shows that the share of financial instruments in the total assets of US and EU banks is on average above 90%,[8] but a relatively low percentage of total assets of banks in the US (36%) (Laux & Luiz, 2010) and the EU (43.8%) (Грачанин & Калач, 2011) is measured at fair value. The share of assets measured at fair value was generally higher for the largest banking groups in the US (43.53%) and the EU (51.46%) than for small banks in the US and the EU (21.28% and 36.11%). The share of bank assets measured at fair value declined after 2008 and the onset of the global economic crisis (GEC) in both the EU and US (Securities and Exchange Commission, 2008).

Financial instruments reclassification - IFRS and US GAAP allow entities considerable flexibility in initially classifying their financial instruments, thereby determining which assets and liabilities will be directly affected by fair value measurement. Subsequent reclassification of financial instruments is permitted but subject to certain limitations and conditions,[9] which have been amended several times over the past 20 years.

7 US GAAP basic measurement principles and scope fair value application are largely consistent with IFRS, although there are some deviations.

8 This was confirmed by all important research of banks in the US and EU, over the last 20 years.

9 Whose purpose is to prevent the use of periodic results manipulation mechanisms, e.g. by presenting financial instruments value changes through income or expenses presented in entity's income statement for one reporting period, and then through equity presented in the balance sheet for the next.

Reclassification allows entities to bypass the effects of fair value changes in financial instruments on profitability and financial position (IASB, 2008). The benefits that banks gain from reclassifying financial assets from the Fair value through profit or loss (FVTPL) category are clear and correspond to the amount of losses from fair value declines that the bank would otherwise be required to recognize in its income statement. If banks reclassify FVTPL assets into the Fair value through other comprehensive income (FVTOCI) or Financial assets measured at amortized cost (AC) categories, they are not required to recognize losses in the income statement. Losses are instead included directly in equity (for FVTOCI) or remain hidden in the balance sheet (for AC) until the financial assets are sold. The benefits banks derive from the reclassification of FVTOCI assets relate to the previously accumulated unrealized losses from fair value declines, which are reported through equity. If banks reclassify FVTOCI assets to the AC category, unrealized losses remain "frozen" in equity after the date of reclassification, so banks are not required to recognize these losses in the income statement. Since unrealized losses from fair value declines in financial assets, are an integral part of banks' additional Tier 2 capital,[10] this practice helps maintain the amount of regulatory capital during periods of crisis. The main reason regulatory authorities permit financial instrument reclassifications is to limit the impact of short-term price fluctuations in financial instruments on banks' profitability, regulatory capital, and the stability of financial markets.

Empirical research[11] indicates that during periods of capital market disruption and recessions, many US and EU banks used financial instrument reclassification to protect profitability and regulatory capital levels, and thus shield themselves from regulatory intervention (Barth et al., 2017). Fiechter (2011) points out that after the start of the global economic crisis at the end of 2008, one third (76) of the 219 banks analyzed worldwide reclassified financial instruments totaling €632.5 billion (131% of the banks' equity value). The total gains from these reclassifications amounted to €22.9 billion (or, on average, €353.5 profit per bank), allowing banks to report gains and an average ROE of 1.3% (instead of reporting losses and an average ROE of -1.4%), while the effects of reclassifications on equity amounted to €16.6 billion. Research based on 30 European countries also confirmed that smaller banks (with low levels of regulatory capital) used the option to reclassify financial instruments to a greater extent than large (too important to fail - TITF) banks (Fiechter et al., 2017). By reclassifying financial assets, banks sought to mitigate the negative effects of fair value decreases on capital adequacy ratios and to keep these ratios above the prescribed level. Bischof et al. (2011) also found that 124 of 302 analyzed banks worldwide reclassified financial instruments after the start of the global economic crisis, thereby increasing net profits before tax (by 43.7% on average) and ROE (by

10 According to Basel III standards, banks total regulatory capital of consists of: core (Tier 1) capital, which includes core (equity) capital (Tier1 - CET1) and additional core capital (Non Equity Tier1) and supplementary (Tier2) capital.

11 These analyses did not encompass Serbian banking sector.

6.8% on average). This research indicates that the closer a banks' regulatory capital ratio is to its prescribed minimum, the more likely it is to reclassify its FVTPL and FVTOCI. However, this research also showed that reclassifications contributed to an increase in regulatory capital of more than 1% in only seven banks, and that 66% of banks that performed reclassifications did not disclose the complete information required by IFRS 7 regarding the impact of the reclassifications on profitability and equity.

Fair value hierarchy (valuation inputs) modifications - Accounting standards relevant before and after the GEC define the fair value hierarchy as three levels of information (inputs) for determining the fair value of assets and liabilities. IFRS and US GAAP, in addition to prioritizing quoted prices (Level I inputs) over other inputs, make a clear distinction between regular (ordinary) purchase and sale transactions and forced (liquidation) transactions, which occur at discounted prices. When markets become inactive and purchase and sale prices are no longer available, entities are not required to use distorted (discounted) prices from illiquid (inactive) markets. SFAS 157, IAS 39, and IFRS 9 explicitly allow entities to use models to estimate the fair value of financial instruments in such situations. This means entities base their estimates on Level II and III information. Such information represents assumptions (unobservable inputs), i.e. the entity's predictions about the values of assets/liabilities that can be realized in the market. The more imperfect the market (more unstable, illiquid, or inactive), the more relevant information about the values of financial assets and liabilities determined by applying appropriate inputs and valuation models will be compared to market prices. However, SFAS 157 and IFRS 13 provide management with options to adapt the selection of inputs to the entity's current business policies. Accounting standards, therefore, provide entities flexibility to avoid the negative effects of a sudden drop in market prices of financial assets by applying models based on their own estimates (assumptions) to determine the fair values of "illiquid" assets, allowing them to ignore the decline in the market value of financial assets and, therefore, not write down the value of these assets during periods of recession and crisis. In this way, entities can use FVA as an instrument for manipulating profitability (Bagna et al., 2014), or as a countercyclical instrument (Laghi et al., 2012) to protect themselves from the impact of sudden price changes and shocks on the capital market on periodic results.

Research indicates that after the initial signs of capital market disruptions at the beginning of 2008, the deviations between the book and market values of financial institutions' assets in the US and EU were smallest for Level I inputs, while these deviations increased as Level II and III information was used. The market value of Level III assets was lower than the book (balance sheet) value by an average of 30% (Song et al., 2010) to 35% (Kolev, 2009) in the US, and 11% (Bagna et al.,2014) in the EU. These deviations were more pronounced in large banks compared to small

banks (Bosch, 2012). Most US and EU banks changed their fair value hierarchy during the very beginning and first wave of the GEC (financial asset transfers to the Level III category ranged from 40% to 80% in the US, and up to 50% in the EU) (Грачанин & Калач, 2011), in order to avoid the negative effects of the decline in the market value of financial instruments on profitability and capital adequacy ratios (Hanley et al., 2018). Although Floyd (2011) revealed that there are some differences in the behavior patterns of individual banks regarding financial asset value write-downs due to market value decline, at the end of 2008, US and EU banks used Level III inputs to determine the fair value of, on average, 93% (Securities and Exchange Commission, 2008) and 76.6% (Грачанин & Калач, 2011) of total financial assets, respectively, since market prices no longer represented the real value of assets, mainly due to financial market inactivity (illiquidity), panic, and investor withdrawal from the market (Laux & Luiz, 2010). General conclusion of all the aforementioned studies is that the application of Level III inputs for measuring reclassified (illiquid) financial instruments, on the one hand, reduced the comparability of banks' financial statements, but on the other hand, mitigated the effects of the crisis on the banking sector and systemic risk (Mahieux, 2021). In addition, this research also indicates that during 2008, banks in the US (Laghi et al., 2012) and EU (Lambert et al., 2011) ignored information disclosure requirements of regulatory authorities and standards (IFRS 7 and SFAS 157[12]) regarding the fair value hierarchy and its changes.

DATA ANALYSIS AND RESYLTS DISCUSION

The aforementioned empirical research focused on examining the effects of FVA hedging mechanisms on the financial position and profitability of banks in developed economies. However, these studies did not include the banking sector of Serbia or other developing economies, even though there are significant differences – such as banks' balance sheet structures, levels of financial market development, trading volumes of derivative financial instruments, and financial reporting regulations –between the financial sectors of developed and developing countries, including Serbia. Taking all of the above into account, we examine below whether, and to what extent, Serbian banks have utilized the flexibility of FVA standards to limit the negative effects of changes in the market value of financial instruments on their profitability and financial position during both stable periods and times of crisis and disturbances in the financial market.

Applying a methodology similar to that used in research on banks in the USA and EU, we analyzed banks operating in Serbia from 2005 to 2020. The sample consists of all banks that were actively operating throughout the entire research period

12 US banks were required to disclose fair value hierarchy information two years earlier, i.e. starting from 2007.

(excluding banks founded or liquidated during that time).[13] The official website of the National Bank of Serbia (NBS) and the annual financial and other statements available on banks' official websites were the main sources of data. Desk research, deduction and induction methods, longitudinal research, and comparative analysis were used in the study.

Optional application of the fair value measurement model (FVO) in the banking sector of Serbia - Similar to research conducted for the US and EU, we analyzed empirical data on the key asset share in total assets held by banks in Serbia during the period before the onset of the global financial crisis, as well as changes in the structure of banks' key balance sheet items after the onset of the GEC in 2008. The analysis confirms that, as with US and EU banks, financial assets constituted the key asset item of banks in Serbia, with an average 94.06% share in the period from 2005 to 2020. During the three-year period before the start of the 2008 GEC, 38.03% of total Serbian bank assets was measured at fair value (of which 36.17% referred to liquid assets: cash, cash equivalents, deposits and securities that can be refinanced at the NBS),[14] while in the three-year period after the start of the GEC, the share of assets measured at fair value in total bank assets was 32.98% (of which 28.68% referred to liquid assets). The total asset share of all three securities categories, which averaged 2.70% before the start of the GEC, increased after 2008. Table 1 shows the structure of key bank assets in Serbia in the period from 2005 to 2020.

Table 1: Structure of key bank assets in Serbia in the period from 2005 to 2020

	2005-2007	2008-2010	2011-2020
		%	
Cash, cash equivalents and Deposits/securities that can be refinanced at NBS	36.17	28.68	18.42
Securities and Shares (participations)	2.70	4.30	13.80
Loans and other receivables	54.90	60.64	62.20
Total Financial assets	93.77	93.62	94.42
Total Non-financial assets	6.23	6.38	5.58

13 The analysis included 21 Serbian banks – Addiko bank, AIK bank, Alta bank, Api bank, Banca Intesa, Poštanska Stedionica bank, Credit Agricole bank, Direktna bank, Expobank, Erste bank, Eurobank, Halkbank, Komercijalna bank, Mobi bank, NLB bank, Opportunity bank, Procredit bank, Raiffeisen bank, Sberbank, Srpska bank and Unicredit bank. The analysis did not include Mirabank and Bank of China, which started operations in 2014 and 2016, respectively, as well as OTP bank, for which most of the financial statements for the analyzed period from 2011 to 2020 were not publicly available.

14 Banks were also required to disclose fair value of loans and other receivables and securities held to maturity.

	2020.	2019.	2018.	2017.	2016.	2015.	2014.	2013.	2012.	2011.
	%									
Cash and cash equivalents	18.56	15.86	15.90	14.05	15.80	18.68	17.74	21.38	21.01	25.22
FVTPL	1.56	1.69	1.29	1.42	0.72	0.58	0.54	0.41	0.55	1.17
FVTOCI	11.30	11.10	10.95	11.46	11.86	9.63	8.14	7.10	5.54	2.64
AC	2.37	1.90	2.46	3.19	5.35	7.38	5.73	2.52	2.36	3.31
Shares (participations)	0.32	0.34	0.17	0.13	0.07	0.15	0.13	0.15	0.16	0.20
Loans and other receivables	61.85	65.50	64.85	64.86	60.85	57.29	61.42	61.43	64.67	59.26
Total financial assets	95.95	96.39	95.60	95.12	94.66	93.71	93.69	92.98	94.30	91.80
Non-financial assets	4.05	3.61	4.40	4.88	5.34	6.29	6.31	7.02	5.70	8.20

Notes – The average share in total assets of the entire banking sector of Serbia is shown. Source: authors' calculations

During 2011-2020, an average of 28.3% of total Serbian bank assets were measured at fair value. Of this, 18.9% on average related to cash and cash equivalents, and 9.4% to financial assets measured according to FVTPL and FVTOCI models. Banks in Serbia were required to determine the fair value of an additional 65.88% of assets to disclose them in the notes to the financial statements. The structure of the Serbian banking sector balance sheet shows that, over the past ten years, the share of speculative investments in total bank assets has increased. Specifically, the average share of FVTPL and FVTOCI assets in total bank assets increased from 3.81% in 2011 to 12.86% at the end of 2020. Therefore, it can be concluded that the Serbian banking sector's exposure to the effects of changes in the fair value of financial assets has significantly increased in the past ten years.

The share of non-financial assets in total bank assets averaged 6.31% during 2005-2010 and 5.58% during 2011- 2020, which is similar to US and EU banks. Non-financial assets held by Serbian banks mainly consisted of intangible assets, real estate, plant and equipment, for which IFRS provides a fair value measurement option. The extent to which Serbian banks used the fair value option for subsequent measurement of non-financial assets after the onset of the GEC is shown in the table below.

Table 2: Application of FVO by banks in Serbia after the start of GEC

Period	Number of analyzed banks	Intangible Assets (IAS 38)		Non-investment Property (IAS 16)		Plant and Equipment (IAS 16)		Investment Property (IAS 40)	
		%	number of banks	%	number of banks	%	number of banks	%	number of banks
2008.	21	4.76%	1	28.57%	6	4.76%	1	19.05%	4
2009.	21	4.76%	1	28.57%	6	4.76%	1	19.05%	4
2010.	21	4.76%	1	38.10%	8	4.76%	1	19.05%	4
2011.	21	4.76%	1	38.10%	8	4.76%	1	19.05%	4
2012.	21	4.76%	1	42.86%	9	4.76%	1	28.57%	6
2013.	21	4.76%	1	42.86%	9	4.76%	1	28.57%	6
2014.	21	4.76%	1	42.86%	9	4.76%	1	23.81%	5
2015.	21	4.76%	1	42.86%	9	4.76%	1	23.81%	5
2016.	21	4.76%	1	42.86%	9	4.76%	1	28.57%	6
2017.	21	4.76%	1	42.86%	9	4.76%	1	28.57%	6
2018.	21	4.76%	1	42.86%	9	4.76%	1	23.81%	5
2019.	21	4.76%	1	42.86%	9	4.76%	1	23.81%	5
2020.	21	4.76%	1	42.86%	9	4.76%	1	23.81%	5
Avarage in 2008-2020		4.76%		39.93%		4.76%		23.81%	
AC		95.24%		60.07%		95.24%		76.19%	

Notes – Presented data refer to the number and share of Serbian banks that used fair values for measuring non-financial assets, during the period from 2008 to 2020. Source: authors' calculations

Table 2 shows that during the 2008-2020 period, banks in Serbia used the fair value option for measuring non-financial assets in only 18.32% of cases on average. Fair value was mainly used for measuring non-investment properties (an average of 39.93% of banks) and investment properties (an average of 23.81% of banks). On the other hand, 95.24% of banks in Serbia measured their intangible assets and plant and equipment using the cost model during the same period. Since only 1.09% of total (non-financial) assets owned by Serbian banks were affected by FVA, financial risks related to fair value changes of these assets were negligible.

Analysis indicates that banks in Serbia invested a very small part of their free funds in speculative transactions (purchase of trading and available-for-sale securities), compared to EU and US banks. One reason for this is that Serbian banks had to deposit a large part of their liquid financial assets in NBS accounts, due to a high mandatory reserve requirement ratio. In addition, capital and financial derivatives market in Serbia was small and underdeveloped, while the market for mortgage-backed securities and other types of securities issued on the basis of credit placement

securitization did not even exist., As a result, banks invested the remaining part of their free liquid financial assets in interest-bearing deposits (with the NBS and other banks), government bonds, Ministry of Finance treasury bills, and REPO transactions with NBS. Thus, the Serbian banking sector was generally protected from the consequences of high-risk investments in speculative mortgage-backed securities, whose collapse contributed to the emergence and spread of the global financial crisis. Potential negative effects of FVA implementation on the profitability, liquidity, and stability of the banking sector in Serbia, before the start of the 2008 crisis, were therefore not as high as in the EU and the US.

However, banks in Serbia, like those in the US and EU, were also alowed to apply the previously described mechanisms for limiting the negative effects of fair value changes in the event of crises, sharp declines in financial asset values, and distorted (fire-sale) market prices for the "speculative" part of financial assets that are measured at fair value. Below, we analyze whether and to what extent Serbian banks applied these mechanisms.

Financial instruments reclassification - Banks in the US and the EU reclassified their financial assets during 2008 and 2009, immediately after the start of the GEC, to avoid recognizing losses on financial assets in their financial statements. Table 3 provides an overview of reclassified financial assets by banks in Serbia after the start of the GEC in 2008.

Table 3: Reclassifications of financial assets after the start of the 2008 GEC - for banks in Serbia (in thousands of dinars)

Reclasification type	Year/Amount/Bank				
	2008.	**2009.**	**2010.**	**2011.**	**2012-2020.**
From trading into available-for-sale financial assets	67.113 (OTP bank)	-	181.437 (Vojvodjanska bank)	-	-
From trading financial assets into loans	-	-	-	-	-
From financial assets available for sale into loans	-	-	-	1.920 (Vojvodjanska bank)	-
Total reclassified assets	67.113	-	181.437	1.920	-
Fair value of reclassified assets	-	-	-	-	-
Unrecognized losses in the income statement	-	-	-	-	-

Notes – Table data refer to reclassifications of financial assets, carried out during the period from 2008 to 2020, following the amendments to IAS 39. Source: authors calculations.

Table 3 shows that most Serbian banks refused to disclose information about reclassifications of trading and available-for-sale financial assets into loans and other receivables made after the start of the 2008 GEC. Only OTP Bank disclosed that, during 2008, it reclassified its entire trading financial assets portfolio, valued at 67,113 thousand dinars, into financial assets available for sale, referring in its notes to IAS 39 amendments. Later, in 2010, Vojvođanska Bank also disclosed that it had reclassified 181,437 thousand dinars of trading financial assets into financial assets available for sale, and in 2011, that it had reclassified 1,920 thousand dinars of financial assets available for sale to loans. However, OTP Bank and Vojvođanska Bank did not disclose information required by paragraph 12D of IFRS 7, so it is not possible to determine the effects of these reclassifications on the reported profitability of these banks for the analyzed period.

Other analyzed banks did not disclose any information required by IFRS 7 (paragraph 12) regarding financial asset reclassifications or the effects of reclassification on their profitability (i.e., gains or losses that the bank would have included in net profit or other comprehensive income if the reclassifications had not been made) during the 2008-2020 period. However, the fact that the structure of Serbian banks' financial assets did not change significantly after the start of the 2008 global crisis in the US and its spread to the EU and Serbian market, as shown in Table 1, suggests that banks in Serbia did not significantly explored speculative financial asset reclassification. The behavior of Serbian banks was consistent with that of most EU and US banks, which also ignored regulatory disclosure requirements and refused to disclose information regarding the effects of reclassification on limiting the impact of financial asset fair value declines on periodic results.

Fair value hierarchy (valuation inputs) modifications - Most US and EU banks changed the input levels used for fair value estimations after the start of the 2008 GEC, by increasing the use of models (Level II and III inputs) and, at the same, reducing the use of Level I inputs (quoted market prices). Mark-to-model (Level II and III inputs) valuation is one of several countercyclical instruments for profitability management that banks in the US and EU used during the last global economic crisis to protect themselves from "excessive" asset write-offs due to sharp declines in the market value of financial instruments and to avoid reporting impairment losses in their financial statements. The following table shows which input levels large Serbian banks used for financial asset fair value estimation, as well as changes in the fair value hierarchy after the start of the 2008 crisis.

Table 4: Fair value hierarchy of banking sector in Serbia, during the 2008-2020 period

	Dec. 2008.	Dec. 2009.	Dec. 2010.	Dec. 2011.	Dec. 2012.	Dec. 2013.	Dec. 2014.
Level I	**100.00%**	**61.24%**	47.85%	50.24%	30.84%	22.54%	**19.26%**
Level II	0.00%	**38.76%**	39.76%	37.45%	58.12%	63.95%	**71.31%**
Level III	0.00%	0.00%	12.39%	12.31%	11.04%	13.51%	9.43%

	Dec. 2015.	Dec. 2016.	Dec. 2017.	Dec. 2018.	Dec. 2019.	Dec. 2020.	Average for 2008-2020.
Level I	20.50%	21.54%	25.63%	27.04%	**18.75%**	20.17%	**35.81%**
Level II	66.48%	53.28%	70.05%	68.94%	70.88%	**74.39%**	**54.87%**
Level III	13.02%	**25.18%**	4.32%	4.02%	10.37%	5.45%	**9.31%**

Source: authors' calculations

Data in Table 4 indicates that banks in Serbia, similar to those in the US and EU, began using models and their own estimates, i.e., assumptions (Level II and III inputs) to determine the fair value of financial immediately after the start of the 2008 crisis. This mechanism allowed banks to avoid negative effects arising from the sharp decline in market prices of financial assets. The same table shows that the share of Level I inputs has been consistently decreasing since the beginning of the GEC. Only Unicredit Bank disclosed detailed information on its fair value hierarchy for 2008, as required by IFRS 7. Other banks in Serbia did not disclose information regarding the level of inputs used for fair value estimates; instead, they emphasized in their notes to the 2008 financial statements that the book values of financial assets corresponded to their market (fair) values at the time the financial statements were prepared.

At the end of 2009, the share of Level I inputs was 61.24%, decreasing to 19.26% at the end of 2014 and 18.75% at the end of 2019. This decrease in the share of Level I inputs was compensated by an increase in the share of Level II and III inputs, which reached 71.31% and 9.43%, respectively, at the end of 2014. The share of financial assets estimated using Level III inputs reached a maximum of 25.18% at the end of 2016, while the share estimated using Level II inputs reached a maximum of 74.39% at the end of 2020. Unlike US and EU banks, which made most changes to the fair value hierarchy by the end of 2009, banks in Serbia made changes to their fair value hierarchy throughout the entire 2009-2020 period.

Effects of FVA mechanisms application on Serbian banks' profitability - Although previous analyses show that banks in Serbia used FVA hedging mechanisms to mitigate the negative effects of FVA on their profitability and financial position

during the 2008-2020 period, the actual effects of their implementation cannot be directly determined, as banks in Serbia did not disclose all information required by IFRS.

Table 5 data shows the extent to which banks in Serbia complied with the requirements of IFRS 13 and IFRS 7, specifically whether they disclosed information about the effects of FVA hedging mechanisms on banks' profitability indicators.

Table 5: Disclosure of information related to FVA by banks in Serbia, in the period from 2008 to 2020

Period	*Number of analyzed banks*	*Fair value hierarchy*[15]		*Fair value hierarchy modifications* [16]		*Financial assets reclassification and the effects of reclassification on bank periodic result* [17]		*Effects of applying Level III inputs on NI and OCI*[18]	
		%	*banks number*	*%*	*banks number*	*%*	**banks number**	*%*	**banks number**
2008.	22	4.55%	1	0.00%	0	4.55%	1	0.00%	0
2009.	22	22.73%	5	0.00%	0	0.00%	0	0.00%	0
2010.	22	31.82%	7	0.00%	0	4.55%	1	0.00%	0
2011.	22	31.82%	7	0.00%	0	4.55%	1	0.00%	0
2012.	21	38.10%	8	0.00%	0	0.00%	0	0.00%	0
2013.	21	*52.38%*	*11*	*0.00%*	*0*	*0.00%*	*0*	*0.00%*	*0*
2014.	*21*	***95.24%***	*20*	*0.00%*	*0*	*0.00%*	*0*	*0.00%*	*0*
2015.	21	95.24%	20	0.00%	0	0.00%	0	0.00%	0
2016.	21	95.24%	20	0.00%	0	0.00%	0	0.00%	0
2017.	21	100.00%	21	0.00%	0	0.00%	0	0.00%	0
2018.	21	100.00%	21	4.76%	1	0.00%	0	0.00%	0
2019.	21	95.24%	20	4.76%	1	0.00%	0	0.00%	0
2020.	21	95.24%	20	*4.76%*	*1*	*0.00%*	*0*	*0.00%*	*0*
2008-2020 average		***65,97%***		***1,10%***		***1,05%***		***0,00%***	

Source: authors' calculations

15 IFRS 7, paragraph 27, IFRS 13, paragraphs 91a и 93b.
16 IFRS 7, paragraph 25, IFRS 13, paragraph 93c и 93d.
17 IFRS 7, paragraph 12.
18 IFRS 7, paragraph 28, IFRS 13, paragraph 91B, 93e, 93f.

In 2008, prior to the IFRS 7 amendments, only Unicredit Bank disclosed fair value hierarchy information, while the remaining banks (95.45%) did not. After the IASB published the amended IFRS 7 in March 2009, which requires additional disclosures about financial instruments carried at fair value, the number of banks in Serbia disclosing fair value hierarchy information gradually increased to 11 (52.38%) by 2013. The volume and quality of fair value hierarchy disclosures increased significantly since the start of IFRS 13 implementation, as 20 (95.24%) Serbian banks disclosed fair value hierarchy information in their notes to the 2014 financial statements. These results are consistent with research by Lambert et al. (2011) and Laghi et al. (2012).

Banks in Serbia did not disclose information on fair value hierarchy modifications for the 2008-2020 period, nor on the effects of such modifications on periodic results. The exception is Erste Bank, which disclosed this information from 2018 to 2020. Although OTP Bank (in 2008) and Vojvođanska Bank (in 2010 and 2011) disclosed information on financial asset reclassifications, none of the 21 analyzed Serbian banks disclosed information on the effects of reclassification on periodic results and profitability indicators. This behavior is consistent with that of most US and EU banks, which also ignored regulatory disclosure requirements regarding the impact of reclassifications on profitability. The quality of disclosure of this information has not improved even after the implementation of new standards, IFRS 13 and IFRS 9. Unlike US and EU banks, banks in Serbia did not disclose data on deviations between the Level III financial assets market value and book value, as required by IFRS 13, paragraph 93, during the period from 2008 to 2020. Therefore, investors in Serbia do not have access to information on the effects of applying Level III inputs on banks' periodic results and profitability.

CONCLUSION

Research shows that during the 2005-2020 period, banks in Serbia predominantly chose historical cost as the measurement basis for non-financial assets, while they measured a relatively high percentage of total financial assets at fair value, similar to banks in the US and EU. The share of speculative (trading) securities in Serbian banks' total assets was several times lower than in US and EU banks, which is a consequence of the underdevelopment of the domestic capital market and, in particular, the absence of a market for mortgage-backed securities and other types of securities issued through loan securitization. Thus, in general, the Serbian banking sector was largely protected from the potential negative impact of fair value accounting (FVA) on banks' profitability and stability, i.e., from the consequences of write-offs and loss recognition based on high-risk investments in speculative and mortgage-backed securities.

Analyses indicate that in the past 15 years, Serbian banks used FVA as an accounting policy instrument and applied FVA mechanisms contained in IFRS to mitigate the negative effects of financial crises and disruptions in capital markets on profitability and stability. Banks made modifications to the fair value hierarchy (inputs for fair value assessment), while they generally did not exploit the possibility of using financial asset reclassifications as a mechanism for managing business results, unlike most banks in the US and EU. The extent to which the application of the above-mentioned FVA mechanisms has limited the negative effects of capital market turmoil on the profitability and financial position of Serbian banks, however, cannot be directly determined, because banks did not disclose all information required by IFRS, similar to most banks in the US and EU, which have also ignored the disclosure requirements of regulatory authorities and standards. Implementation of IFRS 13 and IFRS 9 did not improve the quality of Serbian banks' disclosures regarding the impact of FVA on profitability. This has greatly reduced the quality of information that investors and other stakeholders in Serbia use to assess the economic performance and position of banks, as well as the risks to which banks are exposed, in connection with the application of FVA.

One of the research limitations is that it did not include analysis of the deviation between the market and book value of Serbian banks' financial assets. Future research should include other emerging economies and additional variables to create a clearer picture of the global effects of FVA mechanisms on banking sector profitability.

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PRIMJENA KONCEPTA FER VRIJEDNOSTI KAO INSTRUMENTA RAČUNOVODSTVENIH POLITIKA - EMPIRIJSKI DOKAZI IZ BANKARSKOG SEKTORA SRBIJE

SAŽETAK

U radu se ispituje fleksibilnost standarda finansijskog izvještavanja koji određuju opseg primjene fer vrijednosti, kao i stepen u kojem ta fleksibilnost omogućava bankama da koriste računovodstvo fer vrijednosti (FVA) kao instrument računovodstvenih politika za prilagođavanje finansijskog izvještavanja kratkoročnim potrebama i ciljevima menadžmenta. Uzorak obuhvata sve banke koje su aktivno poslovale u Republici Srbiji u periodu od 2005. do 2020. godine. Istraživanje je zasnovano na longitudinalnom pristupu i komparativnoj analizi. Rezultati analize pokazuju da ne postoje značajna odstupanja prosječnog dijela finansijske imovine koju su banke u SAD, EU i Republici Srbiji mjerile po fer vrijednosti u periodu 2005–2020. godine, te da su banke u Republici Srbiji, slično bankama u SAD i EU, primjenjivale mehanizme zaštite od fer vrijednosti kako bi ublažile negativne efekte poremećaja i kriza na tržištima kapitala na finansijske izvještaje. U kojoj mjeri je primjena navedenih mehanizama uticala na ograničavanje negativnih efekata fer vrijednosti finansijskih instrumenata na profitabilnost i finansijski položaj banaka u Republici Srbiji, međutim, nije moguće direktno utvrditi, jer banke u Republici Srbiji nisu objavile sve informacije propisane Međunarodnim standardima finansijskog izvještavanja (MSFI), postupajući poput većine banaka u SAD i EU, koje su također ignorisale zahtjeve regulatornih tijela za objavljivanje informacija.

Ključne riječi: *računovodstvo fer vrijednosti, instrumenti računovodstvenih politika, banke, profitabilnost banaka*

JEL: M41, M48, G21