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THE IMPACT OF INVESTMENTS IN FINANCIAL ASSETS ON THE FINANCIAL POSITION AND PROFITABILITY OF INSURANCE COMPANIES IN CROATIA

UTJECAJ ULAGANJA U FINANCIJSKU IMOVINU NA FINANCIJSKI POLOŽAJ I PROFITABILNOST DRUŠTAVA ZA OSIGURANJE U HRVATSKOJ

ABSTRACT: The aim of this study is to identify is there a significant impact of investments in financial assets on the financial position and profitability of insurance companies in Croatia. The survey included 15 insurance firms in Croatia that operated from 2017 to 2021. In order to process data and achieve research aims, correlation and multiple regression analyses were applied. The findings of the survey indicated a statistically significant connection among the carrying amount of financial assets and financial position, while only the carrying amounts of loans and receivables and financial assets at fair value through profit or loss are statistically significantly connected with the profitability. The study also pointed out that the financial position of insurance firms in Croatia is most affected by financial assets available for sale, while profitability is most affected by loans and receivables.

KEY WORDS: financial assets, financial position, profitability, insurance companies, Croatia

JEL: M41

SAŽETAK: Cilj ovog istraživanja jest utvrditi postoji li značajan utjecaj ulaganja u financijsku imovinu na financijski položaj i profitabilnost osiguravajućih društava u Hrvatskoj. Istraživanjem je obuhvaćeno 15 osiguravajućih društava u Hrvatskoj koja su poslovala od 2017. do 2021. godine. Za obradu podataka i postizanje ciljeva istraživanja primijenjena je korelacijska i višestruka regresijska analiza. Nalazi istraživanja ukazali su na statistički značajnu povezanost između knjigovodstvene vrijednosti financijske imovine i financijskog položaja, dok su samo knjigovodstveni iznosi zajmova i potraživanja i financijske imovine

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pofer vrijednosti kroz račun dobiti i gubitka statistički značajno povezani s profitabilnošću. Studija je također pokazala da na financijski položaj osiguravajućih društava u Hrvatskoj najviše utječe financijska imovina raspoloživa za prodaju, dok na profitabilnost najviše utječu zajmovi i potraživanja.

KLJUČNE RIJEČI: financijska imovina, financijski položaj, profitabilnost, osiguravajuća društva, Hrvatska

JEL: M41

1. INTRODUCTION

Insurance companies are one of the key financial intermediaries in modern financial systems of developed market economies. They are also large investors in financial instruments, so investments in financial assets can significantly affect their financial position and profitability. In the Croatian financial system, banks are still the most important financial institution, although the importance of insurance companies is growing slightly, since the gross written premium in the last ten years has increased from HRK 9,076,600 in 2013 to HRK 11,698,341 in 2021 (CFSSA, 2023).

Insurance companies in Croatia use “International Financial Reporting Standards (IFRS)” for financial reporting. Although from January 1, 2018, the recognition and measurement of financial instruments is defined within the “International Financial Reporting Standard 9 Financial Instruments (IFRS 9)”, until December 31, 2022, insurance companies in Croatia applied “International Accounting Standard 39 Financial instruments: Recognition and measurement (IAS 39)” according to the temporary exemption approach established in “International Financial Reporting Standard 4 Insurance Contracts (IFRS 4)”. The temporary exemption approach, along with the overlay approach, were two approaches set out in IFRS 4 to address insurance companies’ concerns that using IFRS 9 together with IFRS 4 would result in accounting inconsistencies and potential volatility “in profit or loss in the periods among the initial appliance of IFRS 9 and the forthcoming Standard for insurance contracts” which would be very difficult to justify to financial statements users (IASB, 2016, p. 3). “The overlay approach required the application of IFRS 9” but gave the issuers of insurance contracts “an option to adjust profit or loss for eligible financial assets by removing any additional accounting volatility that may arise from applying IFRS 9” (IASB, 2016, p. 3). The temporary exemption approach gave insurance companies the opportunity to continue applying IAS 39 until the appliance of the new insurance contract standard (IASB, 2016, p. 6). The European Commission also adopted Regulation (EU) 2017/1988 of November 3, 2017, which gave the insurance sector within a group (which falls within the Directive 2002/87/EC) the possibility to postpone “the usage of IFRS 9 until the implementation of the new insurance contract standard” (Commission Regulation (EU) 2017/1988, 2017). Many insurance companies within the European Union have decided to use the temporary exemption approach and implement “IFRS 9 together with the new insurance contracts standard” in order to avoid accounting discrepancies in their financial statements (van Bragt, 2022). In May 2017, the IASB completed a project to develop a new insurance contract standard – “International Financial Reporting Standard 17 Insurance Contracts (IFRS 17)”. The European Commission adopted IFRS 17, which replaced IFRS 4

and became effective in the European Union from January 1, 2023. Therefore, all insurance companies within the European Union are obliged to implement IFRS 9 along with IFRS 17 from January 1, 2023 (Commission Regulation (EU) 2022/1491).

The structure of investments in financial assets in insurance companies in the European Union (and therefore also in Croatia) is influenced by the Solvency II legislative and regulatory framework, which began to be adopted in 2009 (Directive 2009/138/EC). According to the Solvency II regulatory framework, insurance companies should apply the prudent person principle when investing in financial and other assets (Directive 2009/138/EC, p. 60) and measure investments in financial and other assets by economic or market values (Directive 2009/138/EC, p. 45) for regulatory purposes.

This study analyses the effect of investments in financial assets on the financial position and profitability of Croatian insurance companies from 2017 to 2021. Specifically, this study determines the structure of investments in financial assets in Croatian insurance companies, investigates the interdependence of certain financial assets' categories (according to IAS 39) and financial position, and the interdependence of certain financial assets' categories and the profitability of Croatian insurance firms.

2. LITERATURE REVIEW

2.1. Accounting of financial assets based on IAS 39 and IFRS 9

Insurance companies in Croatia applied IAS 39 for accounting of financial assets until December 31, 2022. IAS 39 defined four financial assets' categories, namely: (a) "financial assets at fair value through the profit and loss (FVTPL)"; (b) "financial assets held-to-maturity (HTM)"; (c) "loans and receivables (L&R)" and (d) "financial assets available-for-sale (AFS)" (IAS 39, 2018). Financial asset was classified based on the entity's intention (IAS 39, 2018). "Financial assets at fair value through profit and loss" (FVTPL) included those assets "held for trading or designated at initial recognition to be measured at fair value through profit and loss" (IAS 39, 2018). "Held-to-maturity investments" (HTM) were "non-derivative financial assets for which the entity had the intention and capability to hold to maturity", while "loans and receivables" (L&R) were "non-derivative financial assets with fixed or determinable payments that were not listed in an active market" (IAS 39, 2018). "Financial assets available-for-sale (AFS)" included those "financial assets not classified in any other category" (IAS 39, 2018).

IAS 39 required that "all financial assets at initial recognition be measured at fair value on the acquisition date plus transaction costs, except for financial assets at fair value through profit and loss, which were evaluated only at fair value on the acquisition date" (IAS 39, 2018). Subsequently, "loans and receivables and financial assets held-to-maturity were evaluated at amortized cost, while financial assets at fair value through profit and loss and financial assets available-for-sale were evaluated at fair value at the financial statements' date" (IAS 39, 2018). "The change in fair value between" two financial statements' dates were "included in profit or loss if the financial asset was within financial assets at fair value through profit and loss or in other comprehensive income if the financial asset was within financial assets available-for-sale" (IAS 39, 2018).

IFRS 9 defined the approach of classifying all financial assets on two factors: (a) “business model of the entity for managing financial assets; and (b) contractual characteristics of cash flows of financial assets” (IASB, 2014: 7). The first factor determines “the way in which the entity generates cash flows from financial assets” (by gathering “contracted cash flows or by selling financial assets or both”) (IASB, 2014: 8). The second factor determines “whether the contractual cash flows are exclusively repayments of the principal and collection of interest” (IASB, 2014: 10). According to “IFRS 9, there are three financial assets’ categories”, namely: “(a) financial assets at amortised cost (AC)”; “(b) financial assets at fair value through other comprehensive income” (FVTOCI) “and (c) financial assets at fair value through profit or loss” (FVTPL) (IFRS 9, 2020, A375 and A376). If “a financial asset is held for collecting contractual cash flows, and the contractual cash flows are exclusively repayments of the principal and collection of interest”, then it is “classified as a financial asset at amortized cost” (IFRS 9, 2020: A376). “If the financial asset” is also “held for collecting contractual cash flows and selling, and the contractual cash flows are solely repayment of principal and collection of interest”, then “it is classified as a financial asset at fair value through other comprehensive income” (IFRS 9, 2020, A376). “Financial assets at fair value through profit and loss” include those assets “not classified in any of the aforementioned categories”. “All financial assets” intended “for trading” represent “financial assets at fair value through the profit and loss” (IFRS 9, 2020, A376).

“According to IFRS 9, financial assets are” initially evaluated “at fair value increased by the transaction costs of acquiring or creating the financial asset, except for financial assets at fair value through profit and loss, which are evaluated only at fair value on the acquisition date” (IFRS 9, 2020, A380). Subsequently, “financial assets at amortized cost” are evaluated at “amortized cost”, while “financial assets at fair value through other comprehensive income and financial assets at fair value through profit or loss are measured at fair value at the financial statements’ date” (IFRS 9, 2020, A380). The difference “in fair value among two financial statements’ dates are” included “in profit or loss if the financial asset is within financial assets at fair value through profit or loss or in other comprehensive income if the financial asset is within financial assets at fair value through other comprehensive income” (IFRS 9, 2020, A387).

Since all insurance companies in Croatia applied IAS 39 instead of IFRS 9 until the implementation of IFRS 17, from January 1, 2023, they must apply IFRS 9 together with IFRS 17. This means that insurance companies in Croatia must reclassify “financial assets from categories of IAS 39 to categories of IFRS 9” on January 1, 2023, which can have a certain effect on their financial position and performance and consequently affect their profitability (Perčević, 2020, p. 65). The findings of the research conducted within the Croatian banking sector revealed “that the reclassification of financial assets from categories of IAS 39 to categories of IFRS 9 had a greater effect on financial performance than on the financial position” (Perčević, 2020, p. 65). Therefore, the introduction of IFRS 9 in the Croatian insurance sector will probably affect its financial position and performance.

2.2. Solvency II requirements regarding the structure and measurement of investments in financial assets

Solvency II is a comprehensive “legislative and regulatory framework for insurance and reinsurance companies in the European union which entered into force in January

2016” (EIOPA, 2023; Krišto & Naletina, 2009). It “was adopted in November 2009” by the Directive 2009/138/EC “which was amended by Directive 2014/51/EU of the European Parliament and of the Council of 16 April 2014” (the “Omnibus II Directive”) (EIOPA, 2023). Solvency II contains “a risk-based capital requirements approach under which insurance companies should” be able to “manage all risk exposures and sustain an amount of capital needed to cover their risk profile” (Krišto & Naletina, 2009). “A risk-based approach of Solvency II” enables the assessment of “the overall solvency of insurance companies through quantitative and qualitative measures” (EIOPA, 2023). “The Solvency II regulatory framework is based on three pillars” (Jakovčević & Krišto eds., 2012, p. 299). Pillar I defines the assets and liability measurement and sets the capital requirements (EIOPA, 2023). Pillar II sets the requirement regarding the “governance and risk management of the insurance companies and the own risk and solvency assessment (ORSA)” (EIOPA, 2023). Pillar III “sets the supervisory reporting and public disclosure” (EIOPA, 2023).

“Under Solvency II insurance companies should invest in financial and other assets according to the prudent person principle” (Directive 2009/138/EC, p. 60). The application of the prudent person principle generally assumes the following: (a) “insurance and reinsurance undertakings shall only invest in assets and instruments whose risks the undertaking concerned can properly identify, measure, monitor, manage, control and report, and appropriately take into account in the assessment of its overall solvency needs”; (b) “all assets shall be invested in such a manner as to ensure the security, quality, liquidity and profitability of the portfolio as a whole” and (c) “assets held to cover the technical provisions shall also be invested in a manner appropriate to the nature and duration of the insurance and reinsurance liabilities” (Directive 2009/138/EC, p. 61). The Solvency II Directive promotes the freedom of investment, “do not require the localization of assets” within the Union and prohibits the pledging of assets (Directive 2009/138/EC, p. 61). Due to all mentioned above, it is observable the Solvency II affects the structure of investment of insurance companies.

Solvency II introduces the concept of economic balance sheet which assumes the economic or market “valuation of assets and liabilities based on” an overall approach to all balance sheet positions and consequently enables the market valuation of all risks to which balance sheet items are exposed (CIB, 2010). According to the “Solvency II Directive insurance and reinsurance companies should value assets and liabilities as follows”: (a) “assets shall be valued at the amount for which they could be exchanged between knowledgeable willing parties in an arm’s length transaction” while (b) “liabilities shall be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm’s length transaction” (Directive 2009/138/EC, p. 45). Comparing the requirements of IAS 39 and IFRS 9 with Solvency II, it is evident that there is a difference in the measurement of financial assets classified as HTM and L&R in accordance with IAS 39 or classified as AC in accordance with IFRS 9. However, the measurement of financial assets classified as FVTPNL and AFS in accordance with IAS 39 or classified as FVTOCI and FVTPNL in accordance with IFRS 9 does not differ significantly compared to Solvency II.

2.3. Results of previous studies

There are numerous studies that investigated the various “factors that affect the profitability of insurance companies” (Chen & Wong, 2004; Malik, 2011; Charumathi, 2012;

Yuvaraj & Gashaw, 2013; Burca & Batrinca, 2014; Çekrezi, 2015; Pjanić, Milenković, Kalaš & Mirović 2018; Sugiharto, Sulistiowati & Nofiyanti, 2019; Morara & Sibindi, 2021; Ben Dhiab, 2021; Ahmeti & Iseni, 2022). Most of these studies concentrated on identifying the determinants of profitability in a particular insurance sector. In general, these studies analysed the impact of several factors, such as leverage, company size, company age, gross written premium growth, liquidity, investment performance, loss ratio, risk, and equity capital, on the return on assets ratio (ROA). The findings of these studies differ depending on the type of insurance firms surveyed, the period of the survey, and the specific insurance sector surveyed. A study conducted in Malaysia, Singapore, Taiwan and Japan between 1994 and 1999 found that “the financial health of general insurers” was significantly influenced by “company size, investment performance, liquidity ratio, premium growth and operating margin”, while “financial health of life insurers are significantly affected by “company size, investment performance and change in product and asset mix” (Chen & Wong, 2004, p. 469).

Malik (2011) found that “the volume of capital and company size” are significantly “positively associated with profitability”, “while loss ratio and leverage ratio” are strongly “negatively associated with profitability” of insurers in Pakistan over the period 2005 to 2009 (Malik, 2011, p. 315). Shawar & Siddiqui (2019) found that gross premium written are significantly associated with financial performance, while company size is significantly negatively associated with sales and investment income in Pakistan insurance companies from 2013 to 2017 (Shawar & Siddiqui, 2019, p. 29).

Charumathi (2012) concluded in a study that liquidity ratio and company size are significantly positively linked to profitability of Indian life insurers from 2008 to 2011, while gross premium growth, leverage ratio and logarithm of equity are significantly negatively linked to profitability (Charumathi, 2012).

Yuvaraj & Gashaw (2013) determined that growth, company size and capital volume are positively linked to profitability, while debt and liquidity ratio are significantly negatively linked to profitability of insurers in Ethiopia from 2003 to 2011 (Yuvaraj & Gashaw, 2013, p. 138). Shiferaw & Gujral (2022) confirmed that company size and growth are positively and statistically significantly linked to profitability of insurance firms in Ethiopia from 2010 to 2019. (Shiferaw & Gujral, 2022, p. 10504).

Burca & Batrinca (2014) determined that “leverage, company size, gross premium growth, risk retention ratio and solvency margin affect the financial performance of Romanian insurance companies in the period from 2008 to 2012”. (Burca & Batrinca, 2014, p. 299).

Çekrezi (2015) in a study conducted in Albanian insurance companies from 2008 to 2013 concluded that leverage ratio and risk are negatively associated and tangibility of assets is positively associated with ROA of insurers in Albania (Çekrezi, 2015, p. 1).

In their study, Pjanić, Milenković, Kalaš & Mirović (2018) determined that “premium growth, leverage, operating costs and profit margin” had the highest effect on the profitability “of Serbian non-life insurers from 2010 to 2015” (Pjanić et al, 2018, p. 333).

Sugiharto, Sulistiowati & Nofiyanti (2019) concluded in a study that low “risk based capital and technical reserves” increased “the profitability of life insurers” in Indonesia from 2011 to 2016, but high capital caused the decrease in financial performance (Sugiharto, Sulistiowati & Nofiyanti, 2019, p. 215).

Morara and Sibindi (2021) concluded that firm size is positively associated and firm age is negatively associated with profitability indicators of insurers in Kenya from 2009 to 2018 (Morara & Sibindi, 2021).

Ben Dhiab (2021) identified that rate of premium growth, tangibility and fixed asset ratio positively affect “the profitability of Saudi insurance firms from 2000 to 2017”, while loss ratio, debt ratio and company age negatively affect the profitability. (Ben Dhiab, 2021, p. 235).

Ahmeti & Iseni (2022) concluded that debt ratio, company size and age are significantly linked to financial performance of insurers in Kosovo from 2015 to 2020. (Ahmeti & Iseni, 2022, p. 122).

There are also studies that investigated “the impact of the financial crisis and the COVID-19 pandemic on the financial position and performance of” insurers (Schich, 2009; Grofcikova & Izakova, 2021). Schich (2009) concluded that “the global financial crisis” of 2008 “had an effect on the” solvency and financial position of insurers mainly through their investments in financial assets (Schich, 2009, p. 1). Grofcikova and Izakova (2021) identified the negative “effect of the COVID-19 crisis on the financial position of insurance firms” in Slovakia (Grofcikova & Izakova, 2021, p. 1).

Olowokudejo and Ukpong (2021) found that in life insurance companies in Nigeria from 2008 to 2019, assets are mostly statistically significantly related to profitability, while only some liabilities are significantly related to profitability (Olowokudejo & Ukpong, 2021, p. 11).

Khresiat (2019) identified that investment in financial assets statistically significantly affect the profits in listed insurance companies in Jordan from 2013 to 2017 (Khresiat, 2019, p. 1). The aforementioned studies, directly or indirectly, confirmed the influence of investment in financial assets on the financial position (Chen & Wong, 2004; Schich, 2009; Olowokudejo & Ukpong, 2021) as well as on the financial success and profitability of insurance companies (Khresiat, 2019). This paper relies on the results of these studies and strives to contribute to existing knowledge in this field by determining the extent to which investments in financial assets affect “the financial position and profitability” indicators “of Croatian” insurance firms (Perčević, 2020).

3. METHODOLOGY AND DATA

This research strives to determine whether investments in financial assets affect “the financial position and profitability of Croatian” insurance firms (Perčević, 2020). Moreover, the survey seeks to answer these questions:

1. In which categories of financial assets financial assets in insurance companies in Croatia mostly classified?
2. Can a change in the carrying amount of a particular category of investment in financial assets significantly affect the change in total assets and thus the change in the financial position of insurance companies in Croatia?
3. Is there a statistically significant interdependence among the particular category of financial assets and the profitability in insurance companies in Croatia?

Research questions are the basis for setting up research hypotheses. Two research hypotheses were set. The first hypothesis (H1) assumes a statistically significant interdependence among the carrying amounts of financial assets and the total assets of insurance companies in Croatia so a change in the carrying amount of financial assets can significantly affect the change in financial position. The second hypothesis (H2) assumes a statistically significant interdependence among the carrying amounts of financial assets and the profitability of insurance companies in Croatia. The survey referred to a period of five consecutive years from 2017 to 2021 and included all insurance companies that actively employed in Croatia during that period. The total number and types of insurance firms in the research period are presented in table 1.

Table 1. The total number and types of insurance companies from 2017 to 2021

Type of insurance company / Date	31.12. 2017.	31.12. 2018.	31.12. 2019.	31.12. 2020.	31.12. 2021.
Life insurance	5	4	3	3	3
Non - Life insurance	7	6	5	4	4
Composite	8	8	8	8	8
Reinsurance	0	0	0	0	0
Total	20	18	16	15	15

Source: Croatian Financial Services Supervisory Agency, 2023, available on <https://www.hanfa.hr/publikacije/statistika/#section2> (accessed 15 March 2023)

The research was based on 15 Croatian insurance firms that operated in each year from 2017 to 2021., of which 4 are life insurance, 3 non-life insurance and 8 composite insurance.

The data required for the research were gathered from financial statements of insurance companies, which are available on their official websites, as well as from the official websites of the Croatian Financial Services Supervision Agency (CFSSA). In the research, investments in financial assets are divided, “in accordance with IAS 39, into financial assets at fair value through profit and loss (FVTPNL), financial assets held to maturity (HTM), loans and receivables (L&R), and financial assets available for sale (AFS)” (IAS 39, 2018). Financial position represents “the economic resources that the company owns and the sources of financing for those assets” (Libby, Libby & Short, 2009, p. 9). Generally, financial position refers to the balances of total assets, liabilities and equity at the reporting date. As investments in financial assets are included in total assets, it is logical that changes in the carrying amount of financial assets affect the change in total assets. But this research aims to investigate whether changes in the carrying amount of a certain category of financial assets have a statistically significant effect on total assets. If there is a statistically significant interdependence between the carrying amount of a certain category of financial assets and total assets, it is assumed that changes in the carrying amount of that category of financial assets significantly affect the change in the total assets and, consequently, the change in the financial position. Therefore, for research purposes, total asset is a variable representing financial position. Profitability, in research, is measured by the return on assets (ROA) ratio, which is calculated by dividing net profit by total assets. As the carrying amounts of

financial assets are included in total assets, changes in the carrying amounts of financial assets affect ROA. Specifically, an increase in the carrying amount of financial assets will decrease ROA, while a decrease in carrying amount will increase ROA. However, changes in the carrying amount of particular financial assets affect not only the total assets, but also the net profit. An increase in the fair value (carrying amount) of FVTPNL will increase net profit and consequently increase ROA, while a decrease in fair value will decrease net profit and ROA. Impairment of L&R and HTM will reduce net profit and consequently reduce ROA, while reversal of impairment loss will increase net profit and ROA. Changes in the fair value (carrying amount) of AFS do not affect net profit. Therefore, FVTPNL, HTM and L&R have a double effect on ROA, they affect net profit (the numerator of ROA) and also total assets (the denominator of ROA). Given that the carrying amount of a certain category of financial assets affects both net profit (numerator ROA) and total assets (denominator ROA), the overall influence of the carrying amount of financial assets on profitability (ROA) is determined by correlation and regression analysis between the carrying amount of a particular category financial assets and ROA. In doing so, it is considered that there is a statistically significant influence of the carrying amount of a certain category of financial assets on profitability if there is a statistically significant relationship between the carrying amount of that category of financial assets and ROA.

For each insurance company that is included in the research, all the data needed to carry out the research were taken from their audited financial reports. Correlation and multiple linear regression were employed to answer the questions and test the research hypotheses. The first hypothesis was tested using correlation analysis among the carrying amount of each category of financial assets and total assets and using multiple linear regression model. In the regression equation, total assets represent the dependent variable, while the carrying amounts of the financial asset categories represent the independent variables. The second hypothesis was tested by correlation analysis among the carrying amount of each category of financial assets and ROA and by multiple linear regression models. In the regression equation, ROA is the dependent variable, while the carrying amounts of the financial asset categories are the independent variables.

4. FINDINGS AND DISCUSSION

The total assets of the Croatian insurance sector are slightly increasing from 2017 to 2021. Profit after tax (net profit) and ROA increased from 2017 to 2019, then decreased in 2020 and increased again in 2021. A significant decrease in profit after tax and ROA in 2020 is the repercussion of the COVID-19 pandemic. In 2021, net profit and ROA increased again, indicating recovery from the COVID-19 pandemic. The specific movement of total assets, profit after taxation and ROA of the Croatian insurance sector for the period from 2017 to 2021 is seen in table 2.

Table 2. Total assets, profit after tax and ROA of the Croatian insurance sector from 2017 to 2021 (in 000 kn)

Items / Years	2017.	2018.	2019.	2020.	2021.
Total assets	39,427,609,793	41,592,442,052	45,511,956,524	47,513,814,045	48,423,200,662
Profit or loss after tax	585,784,758	752,066,304	949,542,192	568,765,715	811,720,627
ROA	1.49%	1.81%	2.09%	1.20%	1.68%

Source: Author's calculation based on data from annual reports of insurance companies in Croatia and CFSSA, 2023, available on <https://www.hanfa.hr/publikacije/statistika/#section2> (accessed 15 March 2023)

Since the goal of the research is to analyse the association among investments in financial assets and the total assets (and consequently the impact on the change in the financial position) of Croatian insurance firms, the carrying amounts of financial assets are reported as a percentage of the total assets of the insurance firms included in the research. These results are observable in table 3.

Table 3. The share of financial assets in the total assets of Croatian insurance firms in Croatia in the period from 2017 to 2021

Financial asset category / Years	2017.	2018.	2019.	2020.	2021.
Financial assets held to maturity (HTM)	16.82%	15.17%	12.05%	8.05%	8.47%
Financial assets available for sale (AFS)	44.76%	46.14%	49.21%	50.77%	50.82%
Financial assets at fair value through profit or loss (FVTPNL)	3.91%	1.67%	1.18%	1.04%	1.07%
Loans and receivables (L&R)	7.74%	8.56%	8.12%	7.07%	5.85%
Total financial assets	73.24%	71.54%	70.57%	66.93%	66.21%

Source: Author's calculation

The portion of financial assets in the total assets of insurance companies in Croatia is decreasing and ranged from 73.24% in 2017, 71.54% in 2018, 70.57% in 2019, 66.93% in 2020 to 66.21% in 2021. Among financial assets, AFS has the largest share in total assets, followed by HTM and L&R, while FVTPNL has the smallest share in total assets of insurance companies. The figures presented in table 3 indicate that financial assets constitute a significant part of the total assets of insurance firms in Croatia. Therefore, changes in the carrying amounts of financial assets can cause a significant change in total assets and consequently significantly change the financial position. Since financial assets are divided into four categories according to IAS 39, this paper additionally investigates whether the change in the carrying amounts of certain categories of financial assets can significantly affect

the change in the financial position of insurance companies in Croatia. For this reason, correlation analysis is used to investigate the correlation between the carrying amount of a certain category of financial assets and the amount of total assets of insurance companies in Croatia. Table 4 presents the findings of the correlation analysis.

Table 4. The correlation among the carrying amounts of financial assets and total assets of insurance companies in Croatia from 2017 to 2021

Correlations		Total Assets
Pearson Correlation	Held to maturity investments (HTM)	,802
	Financial assets available for sale (AFS)	,901
	Financial assets at fair value through profit or loss (FVTPL)	,166
	Loans and receivables (LR)	,601
Sig. (2-tailed)	Held to maturity investments (HTM)	,000
	Financial assets available for sale (AFS)	,000
	Financial assets at fair value through profit or loss (FVTPNL)	,154
	Loans and receivables (L&R)	,000

Source: Author's calculation

The correlation coefficient indicates a statistically significant strong positive correlation among the carrying amount of HTM and total assets, as well as among the carrying amount of AFS and total assets. Furthermore, the Pearson correlation coefficient indicates a statistically significant medium-strong positive correlation among the carrying amount of L&R and total assets. The correlation coefficient also points a weak positive correlation among the carrying amount of FVTPNL and total assets, but it is not significant. The findings of the correlation analysis point to the existence of a statistically significant relation among the carrying amounts of financial assets and the total assets of insurance companies in Croatia. This means that changes in the carrying amounts of financial assets can significantly cause a change in total assets and consequently significantly affect the change in the financial position.

In order to confirm the statistically significant connection among the carrying amounts of financial assets and total assets in insurance companies in Croatia, a regression analysis was applied. In the regression model, total assets are defined as the dependent variable, while the carrying amounts of HTM, AFS, FVTPNL, and L&R are the independent variables. Table 6 presents the findings of the regression, while table 5 demonstrates the quality measures of the regression model.

Table 5. Measures of quality of the regression model on the relation among the carrying amounts of financial assets and total assets in insurance companies in Croatia

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,992 ^a	,983	,982	363593012,955	,983	1024,772	4	70	,000	1,762
a. Predictors: (Constant), LR, FVTPNL, AFS, HTM										
b. Dependent Variable: Total Assets										

Source: Authors' calculation

Table 6. The regression analysis on the relation among the carrying amounts of financial assets and total assets in insurance firms in Croatia from 2017 to 2021

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-53166489,909	67401010,693		-,789	,433		
	HTM	,921	,104	,198	8,827	,000	,479	2,089
	AFS	1,353	,042	,666	31,887	,000	,550	1,820
	FVTPNL	2,228	,390	,090	5,716	,000	,962	1,039
	LR	2,883	,144	,349	19,966	,000	,786	1,273

Source: Authors' calculation

The values of R-square and adjusted R-squared values show that this regression model can be considered appropriate since 98% “of the variation in the dependent variable is explained by the variation in the independent variables” (Bluman, 2004), p.526). Furthermore, the p-value is below 0.05, so this model can be considered significant. According to the Durbin-Watson test this model does not have serious problems with autocorrelation. The values of tolerance and VIF show “that the model has no problem with multicollinearity” (Bluman, 2004).

In the model, all independent variables are significant at the 1% level and are also positively linked to the dependent variable. This means that changes in the carrying amount of each category of financial assets cause a significant change in total assets, and thus a significant change in the financial position of insurance companies in Croatia. The increase in the carrying amounts of financial assets will cause a significant increase in total assets and vice versa. According to standardized coefficients, AFS have the largest impact on total assets, followed by L&R and HTM, while FVTPNL have the smallest impact on total assets in insurance firms in Croatia.

The results of correlation and regression suggest that there are sufficient evidences to accept the first research hypothesis. In other words, these results point out on the existence of statistically significant interdependence among investments in financial assets and the total assets of Croatian insurance companies so changes in the carrying amounts of financial assets can significantly cause a change in the financial position of insurance companies

in Croatia. These findings are consistent with a study conducted on insurance companies in Asia that found that investment performance affects financial health (Chen & Wong, 2004), as well as a study conducted on life insurance companies in Nigeria that confirmed the existence of a relation among the profitability and balance sheet items and pointed out that “asset and liability management” affects the financial position and profitability of life insurance firms (Olowokudejo & Ukpong, 2021). The findings of this paper are also consistent with a study conducted in insurance companies “during the financial crisis in 2008”, which confirmed that the financial position of insurance companies is mainly affected by their investments in financial assets (Schich, 2009, p. 1).

According to the findings of this paper the financial position of insurance companies is most affected by AFS and consequently exposed to the risk of changes in fair value. In the current economic conditions characterized by rising inflation, an increase in the fair value of AFS will more significantly affect the total assets, and thus the financial position, in relation to other categories of financial assets.

This paper further investigates the impact of investment in financial assets on the profitability of insurance companies. Correlation and regression are employed to identify the impact of investment in financial assets on profitability and to test the second research hypothesis. Correlation analysis determines the correlation among the carrying amount of particular category of financial assets and ROA. Table 7 lists the findings of the correlation analysis.

Table 7. The correlation among the carrying amount of financial assets and ROA of Croatian insurance companies from 2017 to 2021

Correlations		
		ROA
Pearson Correlation		1,000
	Held to maturity investments (HTM)	,115
	Financial assets available for sale (AFS)	,096
	Financial assets at fair value through profit or loss (FVTPNL)	,208
	Loans and receivables (L&R)	,499
Sig. (2-tailed)		.
	Held to maturity investments (HTM)	,326
	Financial assets available for sale (AFS)	,414
	Financial assets at fair value through profit or loss (FVTPNL)	,073
	Loans and receivables (L&R)	,000

Source: Authors' calculation

Pearson's correlation coefficient suggests a statistically significant medium-strong positive correlation among the carrying amount of L&R and ROA and a weak positive correlation among the carrying amount of FVTPNL and ROA that is significant at the 10% level. Other correlations are not statistically significant. These results suggest that a change in the carrying amount of L&R has a significant effect on net profit. A decrease in the carrying amount of L&R is likely to have a significant effect on the decrease in ROA and vice versa.

In order to identify in more detail the relationship among the carrying amount of financial assets and the profitability of insurance firms in Croatia, regression analysis is used.

In the regression model, ROA represents a dependent variable, while the carrying amounts of financial assets' categories are defined as independent variables. The results of regression are visible in table 9, while the regression quality measures are visible in table 8.

Table 8. Measures of quality of the regression model on the relation among the carrying amounts of financial assets and ROA in insurance companies in Croatia

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,581 ^a	,338	,300	,01045561	,338	8,938	4	70	,000	2,454
a. Predictors: (Constant), LR, FVTPNL, AFS, HTM										
b. Dependent Variable: ROA										

Source: Authors' calculation

Table 9. The results of a regression analysis on the relation among the carrying amounts of financial assets and ROA in insurance companies in Croatia from 2017 to 2021

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	,008	,002		3,989	,000		
	HTM	-4,216E-012	,000	-,193	-1,372	,174	,479	2,089
	AFS	3,748E-013	,000	,030	,225	,822	,550	1,820
	FVTPNL	3,099E-011	,000	,273	2,756	,007	,962	1,039
	LR	2,289E-011	,000	,602	5,488	,000	,786	1,273

Source: Authors' calculation

The R-square value points that the variation in the carrying amounts of the financial asset categories explains 33.8% of the variation in ROA. The regression model is significant at the 5% level. The Durbin-Watson test value is 2.454 and is still at an acceptable level, which means that the model does not have major problems with autocorrelation. The values of tolerance and VIF show "that the model has no problem with multicollinearity" (Bluman, 2004).

In the regression model, only L&R and FVTPNL are significant variables. This means that the change in the carrying amount of L&R and FVTPNL have a significant effect on ROA. In other words, a decrease in the carrying amount of L&R and FVTPNL will significantly reduce ROA and vice versa. According to the values of the standardized coefficients, L&R have a greater impact on ROA than FVTPNL. On the basis of the correlation and regression results, the second hypothesis cannot be fully accepted since only L&R and FVTPNL are statistically significantly related to ROA of Croatian insurance firms. At the same

time, L&R have a medium-strong impact, while FVTPNL have a weak effect on the profitability of insurance companies in Croatia. According to these results, managers in insurance companies in Croatia can manage profitability primarily through L&R. These findings are in line with a study that identified “the statistically significant impact” of financial assets “on the profits of listed insurance companies” in Jordan from 2013 until 2017 (Khresiat, 2019).

Since insurance companies in Croatia must start applying IFRS 9 instead of IAS 39 from January 1, 2023, in order to maintain the current effect of financial assets on financial position and profitability, financial assets should be reclassified from the categories of IAS 39 to IFRS 9 categories as follows: (a) AFS should generally be reclassified as FVTOCI; (b) L&R and HTM should be reclassified as AC and (c) FVTPNL should be kept within the same category.

This study has certain limitations. It refers to the period from 2017 to 2021, which is a relatively short period for correlation and regression analyses. In addition, the research period also includes a period of instability caused by the pandemic of COVID-19. The paper did not investigate the impact of income and expenses from investments in financial assets on the financial performance of insurance firms. Furthermore, the study did not analyse the impact of financial liabilities and reserves on the financial position and profitability of insurance companies in Croatia, which is also a significant limitation of this research. Finally, the study analysed the influence of investments in financial asset on the financial position and profitability for all insurance companies together, it did not analyse life and non-life insurance separately.

However, the findings in this study have opened new interesting research questions. Future research on this topic will analyse the impact of income from investments in financial assets on the financial performance of insurance firms. Furthermore, the influence of investments in financial assets on the financial position and performance will be analysed separately for life and non-life insurance companies. Finally, future research will analyse the effect implementing IFRS 9 and IFRS 17 on the financial position and performance of insurance companies in Croatia.

5. CONCLUSION

Insurance companies are one of the key financial intermediaries in the modern financial systems of developed market economies, while their importance in the Croatian financial system is growing. They are also among the largest investors in financial instruments, so investments in financial assets can significantly affect their financial position and profitability. This paper strives to identify the impact of investments in financial assets on the financial position and profitability of insurance firms in Croatia. Insurance firms in Croatia prepare financial statements based on IFRS. According to the temporary exemption approach defined in IFRS 4 and Regulation (EU) 2017/1988, insurance companies in Croatia applied IAS 39 until December 31, 2022. Due to that, this study explores how each category of financial assets defined in IAS 39 affect the financial position and profitability in Croatian insurance firms from 2017 to 2021. Correlation and multiple linear regression are employed to meet the goals of the survey. The survey was conducted on 15 Croatian insurance firms that actively operated during the research period.

The research findings indicated that the carrying amount of financial assets has a statistically significant impact on total assets and can consequently cause a significant change in the financial position of insurance companies in Croatia. In addition, AFS has the greatest impact on total assets and consequently on the change in financial position, followed by L&R and HTM, while FVTPNL has the smallest impact on total assets and consequently on the change in financial position. According to these findings, managers can influence the financial position of insurance firms by focusing primarily on AFS and then on L&R. The research results also showed that the carrying amount of L&R has a statistically significant medium-strong impact, and the carrying amount of FVTPNL has a weak impact on the profitability of Croatian insurance firms. According to these results, managers in Croatian insurance companies should concentrate on L&R to improve the profitability. Since insurance firms in Croatia start applying IFRS 9 from January 1, 2023, in order to maintain the existing effect of investments in financial assets on the financial position and profitability, financial assets should be reclassified from the categories of IAS 39 to the categories of IFRS 9 as follows: (a) AFS should generally be reclassified as FVTOCI; (b) L&R and HTM should be reclassified as AC and (c) FVTPNL should be kept within the same category. When interpreting the findings of this study, its limitations must be taken into account.

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