

UDK:336,241.7:336.2.029.6:264.12:336:427.44:368.02-78:368.023.1(497.11)
DOI: 10.5937/TokOsig2201050V

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IMPORTANCE OF DEFERRED INCOME TAX IN INSURANCE COMPANIES: CASE OF THE REPUBLIC OF SERBIA

SCIENTIFIC PAPER

Abstract

Insurance companies in the Republic of Serbia (RS) are required to report deferred income tax in accordance with the International Accounting Standards (IAS) 12 – Income Taxes. They recognize deferred tax assets and deferred tax liabilities on the balance sheet or deferred tax expenses and deferred tax income on the income statement. This paper examines the materiality of the deferred income tax in Serbian insurance companies, as well as its impact on assessing profitability and corporate income tax burden. The research conducted from 2017 to 2020 covered 16 insurance companies, and has shown that the effective tax rates in an average Serbian insurance company are lower than the prescribed rate of income tax. The research results have shown that typically, deferred tax does not materially represent a significant item in a statement of financial position of insurance companies. In addition, when assessing profitability and corporate income tax burden of insurance companies, deferred income tax is not a significant item on a balance sheet.

Keywords: *income tax, deferred tax, IAS 12, materiality, profitability, insurance.*

JEL classification: *G22, H25, M41.*

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Paper received on: 12. October 2021.
Paper accepted on: 20. January 2022.

I. Introduction

Taxation of insurance companies has certain specificities in relation to the taxation of real-sector companies. Perhaps the most significant specificity relates to the tax on non-life insurance premiums payable in the Republic of Serbia (RS) at a rate of 5%. Additionally, insurance and reinsurance services in RS are exempt from value added tax. However, just like real-sector businesses, insurance companies are required to submit a tax balance and file income tax return, regardless of whether the result of a business year is gain or loss.

The earnings before tax on the income statement are usually different from the taxable profit reported in the tax balance. This is because of different regulations which determine earnings before tax and taxable income.² Earnings before tax are determined by the accounting standards, while taxable profit is stipulated in the tax laws. Temporary differences between the earnings before tax and taxable profit lead to the deferred income tax.

Deferred income tax can be extremely important in insurance companies. For example, auditors are often interested in deferred tax which causes modified audit opinion.³ However, deferred income tax is often seen as a controversial issue⁴ that is difficult to apply in practice. In addition, there are still numerous problems and dilemmas as to the application of the deferred tax concept.⁵

The last ten years in RS have seen a decrease in the number of insurance companies and an increase in the number of foreign-owned companies. Additionally, financial indicators of this industry have reached satisfactory values,⁶ which are more favorable than those of numerous Central and Eastern European countries.⁷ Nevertheless, despite the consolidation of the insurance sector in RS over the last decade, there is still significant room for improvement of its efficiency.⁸ Some of the methods used to improve efficiency can be found in the legal approach which seeks to reduce current tax expenses or introduce adequate management of deferred income tax expenditures.⁹

² N. Wong, Accounting for Deferred Taxes under NZ IAS 12, *University of Auckland Business Review*, 8(1), 2006, p. 55.

³ S. Vučković-Milutinović, Analysis of Modifications to Auditor's Opinion on Financial Statements of Listed Companies in Serbia, *Ekonomika preduzeća*, 67(3-4), 2019, p. 212.

⁴ N. Wong, p. 55.

⁵ R. Colley, J. Rue, A. Valencia, A. Volkan, Accounting for Deferred Taxes: Time for a Change, *Journal of Business & Economics Research*, 10(3), 2012, p. 149.

⁶ M. Sokić, Analysis of Insurance Industry CARMEL Indicators in Republic of Serbia, *Insurance Trends*, 35(2), 2019, p. 7.

⁷ M. Cerović, Underwriting Results in Serbia in 2016, *Insurance Trends*, 33(3), 2017, p. 72.

⁸ Z. Đurić, M. Jakšić, A. Krstić, DEA Window Analysis of Insurance Sector Efficiency in the Republic of Serbia, *Economic Themes*, 58(3), 2020, p. 291.

⁹ K. Holland, R. Jackson, Earnings Management and Deferred Tax, *Accounting and Business Research*, 34(2), 2004, p. 101.

Therefore, the subject of this research is the significance of deferred income tax in Serbian insurance companies.

This paper has two main goals. The first goal is to examine the materiality (significance) of the deferred income tax in the financial statements of insurance companies in RS. The second goal is to explore the impact of the deferred income tax on the profitability on the assessment of profitability and corporate income tax burden of insurance companies in RS.

Income tax is an under-researched area in insurance companies. At times, when analyzing their profitability, these companies do not even take into account the income tax,¹⁰ but use the results before tax. Therefore, this research contributes with supplementary results to those of previous researches of the deferred income tax role. Additionally, according to the author's best knowledge, this is the first research on deferred income tax in RS.

With the exception of the introduction and conclusion, this paper is comprised of four parts. In the first part, research hypotheses were developed based on the analyses of previous researches. The second part shows context analysis, through the specifics of the tax environment in which RS insurance companies operate. The third part explains the methodology of the research and the research sample. The fourth part presents the research results and discussion.

II. Development of Research Hypotheses

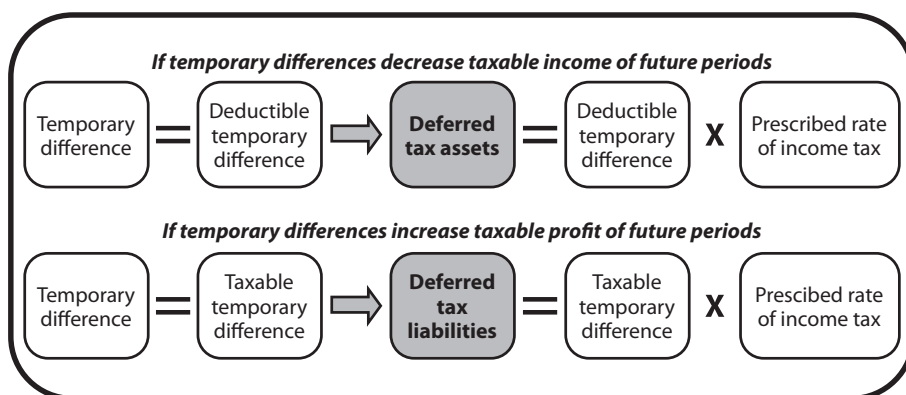
Although accountants in RS perceive the calculation of deferred income tax as complex,¹¹ the calculation algorithm is relatively simple. According to the International Accounting Standard (IAS) 12 – Income Taxes, deferred tax assets and deferred tax liabilities are determined for temporary imbalances between the carrying amount and tax basis of assets and liabilities, according to the algorithm shown in Figure 1.

The insurance company will present deferred tax assets when the tax base of the asset (liability) is greater (lower) than its carrying amount. The difference between the two values is a deductible temporary difference, multiplied by the prescribed rate of income tax. On the other hand, deferred tax liabilities are expressed when the carrying amount of the asset (liability) is greater (lower) than its tax amount. The difference between the two values is a taxable temporary difference, which is also multiplied by the prescribed rate. Additionally, deferred tax assets and liabilities typically result in deferred tax expenses and income in the insurance company's income statement.

¹⁰ R. Zainudin, N. Mahdzan, E. Leong, Firm-Specific Internal Determinants of Profitability Performance: An Exploratory Study of Selected Life Insurance Firms in Asia, *Journal of Asia Business Studies*, 12(4), 2018, p. 533.

¹¹ V. Obradović, M. Čupić, D. Dimitrijević, Application of International Financial Reporting Standards in the Transition Economy of Serbia, *Australian Accounting Review*, 28(1), 2018, p. 48.

Figure 1. Algorithm for determining deferred tax assets and deferred tax liabilities



Source: author, according to H. Sozbilir, V. Kula, E. Baykut, A Research on Deferred Taxes: A Case Study on BIST Listed Banks in Turkey. *European Journal of Business and Management*, 7(2), 2015, p. 2.

In theory and practice, a number of criteria for determining materiality have been developed, where total assets and total revenues are most commonly used.¹² In this regard, the materiality threshold is usually set at a level of 0.5% to 2% of the total assets or total revenue. Materiality criteria often used are also income before tax, net assets, or EBITDA. Although usually expressed in the net amount (the difference between deferred tax assets and deferred tax liabilities), deferred tax may be materially significant item of the balance sheet and income statement.¹³ Habanec and Bohusova¹⁴ show that deferred income tax becomes particularly significant after switching from national accounting standards to International Financial Reporting Standards. Kyriazopoulos et al.¹⁵ conclude that the deferred tax is of particular importance in the Greek banking sector and influences their business activity and development potential.

¹² A. Eilifsen, W. Messier, Materiality Guidance of the Major Public Accounting Firms, *Auditing: A Journal of Practice & Theory*, 34(2), 2015, p. 3.

¹³ H. Bohusova, P. Svoboda, L. Semeradova, Deferred Tax for Tax Planning in the Czech Agricultural Companies, *Agricultural Economics*, 65(8), 2019, p. 349.

¹⁴ P. Habanec, H. Bohusova, Comparison of Deferred Tax Materiality Reporting in Accordance with Continental and Anglo-Saxon Reporting System, *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 65(6), 2017, p. 1917.

¹⁵ G. Kyriazopoulos, G. Makriyiannis, M. Logotheti, The Impact of Deferred Taxation on Banking Profitability and Capital Adequacy. Evidence from the Greek Banking System, *International Journal of Applied Economics, Finance and Accounting*, 5(1), 2019, p. 1.

Poterba et al.¹⁶ conclude that the deferred tax assets have gained in importance in many companies that have weathered the economic crisis and its negative effects. These companies recognize the rising amounts of deferred tax assets based on unused tax losses from the crisis period. In addition, these authors find that the share of net deferred tax assets or liabilities in U.S. businesses typically does not exceed 3%.

Traditionally, income tax was perceived as an exogenous category that corporate management cannot influence. Consequently, earnings before tax are often used when evaluating management's work.¹⁷ With the development of tax planning and tax avoidance strategies, income tax takes a significant place in the assessment of managers' work. However, sometimes when analyzing performance, only current tax expense is used, because deferred expense is a non-cash item (which does not cause outflows in the reporting period) of the income statement.¹⁸ Nevertheless, insurance companies are obliged to calculate both current and deferred tax expenses, so there may be significant differences in the profitability assessment based only on current tax expense and that based on both tax expenses. On the other hand, Al-Jafari and Al Samman¹⁹ find that the income tax has no significant impact on the profitability of insurance companies when the prescribed rate of income tax is relatively low.

Vučković-Milutinović and Lukić²⁰ identified different practices in Serbian companies in terms of deferred income tax. Thus, some companies eliminate deferred tax liabilities when calculating the level of indebtedness. Some companies treat deferred tax liabilities as part of equity. In addition, some companies ignore deferred tax assets when analyzing solvency, while others view them as part of working capital when analyzing liquidity.

Deferred income tax can have a significant impact on the overall income tax burden, which consists of current and deferred income tax expense. In this regard, the tax burden is usually measured by different effective tax rates.²¹ Thus, unlike the effective tax rate in accounting, the current effective tax rate does not contain deferred tax expense. Therefore, significant differences are possible between effective

¹⁶ J. Poterba, N. Rao, J. Seidman, Deferred Tax Positions and Incentives for Corporate Behavior around Corporate Tax Changes, *National Tax Journal*, 64(1), 2011, p. 27.

¹⁷ G. Porter, C. Norton, *Financial Accounting: The Impact on Decision Makers*, 6th edition, Mason, OH: South-Western Cengage Learning, 2009, p. 431.

¹⁸ S. Bolton, Cash Flow Based Business Valuations, *Business Valuation Review*, 10(4), 1991, p. 172.

¹⁹ M. Al-Jafari, H. Al Samman, Determinants of Profitability: Evidence from Industrial Companies Listed on Muscat Securities Market, *Review of European Studies*, 7(11), 2015, p. 303.

²⁰ S. Vučković-Milutinović, R. Lukić, Analysis of Deferred Taxes in the Business Environment in Serbia, *Economia. Seria Management*, 16(1), 2013, p. 25.

²¹ B. Lee, A. Dobiyski, S. Minton, Theories and Empirical Proxies for Corporate Tax Avoidance, *Journal of Applied Business and Economics*, 17(3), 2015, p. 21.

tax rates, both in the real sector,²² and in the financial sector.²³ Taking Czech insurance companies as an example, Bohusova and Vavrova²⁴ find a significant impact of the deferred income tax on the effective corporate tax rate. Fernandez-Rodriguez et al.²⁵ present different results of research conducted on Spanish companies, depending on the effective tax rate used.

One can rationally assume that deferred income tax leads to a greater difference between effective tax rates in companies that rely on temporary differences between earnings before tax and taxable profit. In such case, the current income tax expense is lower, but deferred income tax expense emerges, so there is a difference between an effective tax rate that contains deferred expense and an effective tax rate that does not contain deferred expense. On the other hand, lasting differences lead to a reduction in the current tax expense, but do not cause increase in deferred tax expense and thus, the difference between effective tax rates does not exist.

Research into deferred income tax in RS insurance companies is almost non-existent. Nevertheless, drawing on the findings of previous researches, the author of the paper assumed that deferred income tax is a materially significant item, namely, that it has a significant impact on assessing profitability and the corporate income tax burden on insurance companies. Therefore, the following hypotheses are formulated:

- H₁: Deferred income tax is a materially significant balance sheet item in insurance companies operating in the Republic of Serbia.
- H₂: Deferred income tax has a statistically significant effect on the profitability assessment of insurance companies in the Republic of Serbia.
- H₃: Deferred income tax has a statistically significant effect on the assessment of corporate income tax burden on insurance companies in the Republic of Serbia.

III. Context Analysis

In general, in the calculation of the income tax burden, insurance companies in RS are subject to the same regulations as real-sector businesses. The procedure of taxing their earnings is prescribed by the Law on Corporate Income Tax (*Official*

²² I. Salihi, S. Sheikh Obid, H. Annuar, Measures of Corporate Tax Avoidance: Empirical Evidence from an Emerging Economy, *International Journal of Business and Society*, 14(3), 2013, p. 412.

²³ S. Vržina, Alternativni pristupi merenju efektivne stope poreza na dobitak u bankama, *Finansije*, 73(1-6), 2018, p. 45.

²⁴ H. Bohusova, E. Vavrova, The Structure of the Deferred Income Tax and Its Influence on Indicators Describing the Economic Performance of Commercial Insurance Companies, *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 55(3), 2007, p. 143.

²⁵ E. Fernandez-Rodriguez, R. Garcia-Fernandez, A. Martinez-Arias, Influence of Ownership Structure on the Determinants of Effective Tax Rates of Spanish Companies, *Sustainability*, 11(5), 2019, p. 1441.

Gazette of RS, 153/2020) and accompanying bylaws. Unlike some countries where the higher tax rate is applied to financial institutions (for example Belarus), Serbian insurance companies are subject to the same prescribed rate of income tax (15%) as real sector companies. Insurance companies are obliged to follow the paragraphs IAS 12 – Income Taxes.

Nevertheless, the specifics of the insurance industry make the accounting of the current and deferred income tax somewhat different from that of real-sector companies. Insurance companies are important institutional investors, and a significant portion of the funds are invested in government securities.²⁶ Returns on such securities are exempt from income tax, which allows insurance companies to reduce expenses on profit taxes. This also reduces the effective tax rate of insurance companies.

In relation to deferred income tax, the literature lists the difference between the carrying value and tax basis of fixed assets,²⁷ i.e. the difference between accounting and tax depreciation. Nevertheless, fixed assets have less significance in insurance companies than in real sector companies, so it is important to consider some other sources of deferred tax in the insurance industry.

A significant portion of the deferred tax in financial institutions comes from the translation of securities, which institutions keep in the portfolio, to their fair value.²⁸ For example, the increase in the fair value of these securities leads to an increase in unrealized gain from investment in securities. Unrealized gains increase deferred tax liabilities, which will be realized when the securities are sold. The change in deferred tax on this basis has no impact on the insurance company's income statement, but on the report on the other results of the company.

Nevertheless, change in most other sources of deferred tax that occur in RS has an impact on the balance sheet of insurance companies. Some of the most common sources are depreciation of fixed assets, long-term provisions, unused tax losses, unused tax incentives, and impairment of assets.²⁹ These sources lead to the following items in the income statement of insurance companies:

- deferred tax expense (loss from decrease in deferred tax assets and increase in deferred tax liabilities) and
- deferred tax income (profit from increase in deferred tax assets and decrease in deferred tax liabilities).

²⁶ M. Sokić, Insurance Companies as Institutional Investors in the Republic of Serbia, *Insurance Trends*, 31(4), 2015, p. 49.

²⁷ J. Poterba, N. Rao, J. Seidman, p. 27.

²⁸ S. Vučković-Milutinović, R. Lukić, p. 25.

²⁹ S. Vržina, V. Obradović, J. Bogičević, Financial Reporting on Income Tax in Serbia and Croatia: An Empirical Analysis, *Ekonomika preduzeća*, 68(5-6), 2020, p. 330.

IV. Research Methodology and Development of Research Sample

The research in this paper is based on the idea of Bohusova et al.³⁰, who measured the materiality of the deferred tax, but also compared the company's items with and without deferred tax. Therefore, statistical tests were used to compare groups. The aim of the tests is to examine the existence of a statistically significant difference between the two groups. Additionally, it is possible to use parametric and nonparametric tests. The application of parametric tests is based on the group arithmetic means, with the required normal distribution of used variables. On the other hand, the application of nonparametric tests is based on group median, but distribution normality of used variables is not required.

The normality of distribution was tested using the Jarque-Bera test. In the case of normal distribution, the test is based on arithmetic mean (t-test), while in the absence of normal distribution, a median-based test was used (Wilcoxon/Mann-Whitney method). Statistical processing of data was performed in EViews econometric software. Confidence levels were 10%, 5% and 1%.

The materiality of the deferred income tax was measured by two variables – the materiality of deferred tax on the balance sheet (*MAT1*) and the materiality of deferred tax on income statement (*MAT2*). This paper used two materiality criteria – total assets and operating (functional) income of the company, using materiality thresholds of 1% and 0.5%. The profitability of insurance companies was also measured by two variables – *ROA1*, which includes the effects of deferred tax, and *ROA2*, which does not include these effects. Two measures of income tax burden were also used - current effective tax rate (*ETR1*) and the accounting effective tax rate (*ETR2*). Definitions of used variables are provided in Table 1.

Table 1 Variable definitions

Mark	Formula
<i>MAT1</i>	(Deferred tax assets – Deferred tax liabilities) : Total assets
<i>MAT2</i>	Loss (profit) from deferred tax : Operating income
<i>ROA1</i>	(Profit before tax – Current tax expenditure ± Loss (gain) from deferred tax) : Total assets
<i>ROA2</i>	(Profit before tax – Current tax expense : Total assets
<i>ETR1</i>	Current tax expense : Profit before tax
<i>ETR2</i>	(Current tax expense ± Loss (gain) from deferred tax) : Profit before tax

³⁰ H. Bohusova, P. Svoboda, L. Semeradova, p. 349.

The first research hypothesis was tested comparing *MAT1* and *MAT2* with materiality thresholds of 1% and 0.5%. The second research hypothesis was tested by comparison of *ROA1* and *ROA2*, while the third research hypothesis was tested comparing *ETR1* and *ETR2*.

The research covered all insurance companies in RS, active at the end of 2020. At the end of 2020, insurance activities in RS were carried on by sixteen insurance companies. In this regard, there were four insurance companies dealing with life insurance, six non-life insurance companies, while six companies carried out both life and non-life insurance. The list of insurance companies is shown in Table 2.

Table 2 List of insurance companies in RS at the end of 2020

Company name	Balance Sum (in 000 Din)	Company name	Balance Sum (in 000 Din)
Generali	72,701,091	Uniqa non-life	6,939,005
Dunav	57,254,667	Milenijum	6,526,511
Wiener Stadtische	45,101,871	Merkur	5,018,486
Grawe	35,007,876	Sava non-life	4,227,816
DDOR	22,480,125	Globos	2,493,177
Uniqa life	11,114,805	OTP	2,256,428
Triglav	9,778,678	Sogaz	1,999,931
AMS	7,084,415	Sava life	1,457,542

The research is based on the data taken from individual financial statements of insurance companies, published on the official website of the Business Registers Agency (www.apr.gov.rs). Insurance companies are obliged to audit their financial statements, which increases reliability in their use.³¹ The paper presents a sampled period from 2017 to 2020, because financial statements on the website of the Business Registers Agency are available for that time span. During that period, the prescribed rate of income tax was at a constant level of 15%.

Using a four-year period for sixteen insurance companies, the research sample included 64 observations. This sample size was used to calculate *MAT1*, *MAT2*, *ROA1* and *ROA2*. On the other hand, fifty-nine observations were used to calculate *ETR1* and *ETR2*. Five observations were eliminated due to loss before tax, because effective tax rates have no clear economic meaning in negative pre-tax result.³²

³¹ B. Jovković, The Analysis of Auditor's Reports of Insurance Companies in the Republic of Serbia, *Temе*, 42(4), 2018, p. 1277.

³² M. Hanlon, S. Heitzman, A Review of Tax Research, *Journal of Accounting and Economics*, 50(2-3), 2010, p. 127.

V. Research Results and Discussion

1. Descriptive Analysis

Table 3 presents the results of descriptive statistics of used variables. The data from the table indicate that the materiality of the deferred income tax in the average Serbian insurance company is lower than the usual thresholds of 1% and 0.5%. Only four observations have *MAT1* greater than 1%, while sixteen observations have *MAT1* greater than 0.5%. In addition, the three insurance companies have *MAT1* greater than 0.5% in all four years. On the other hand, only two observations have *MAT2* greater than 1%, while the three observations have *MAT2* greater than 0.5%.

Table 3. Descriptive statistics

	<i>MAT1</i>	<i>MAT2</i>	<i>ROA1</i>	<i>ROA2</i>	<i>ETR1</i>	<i>ETR2</i>
Arithmetic mean (in %)	0.351	0.113	2.514	2.506	5.546	4.194
Minimum (in %)	0.000	0.000	-12.613	-12.613	0.000	-77.192
Median (in %)	0.094	0.024	2.531	2.531	4.498	5.432
Maximum (in %)	2.638	2.219	9.522	9.526	23.079	22.486
Standard deviation (in %)	0.544	0.312	3.597	3.584	6.106	12.728
Variation coefficient	1.550	2.761	1.431	1.430	1.101	3.035
Observations	64	64	64	64	59	59

Although the vast majority of observations performed with a positive result before tax, a significant proportion of them recorded only low or moderate levels of profitability. However, there are observations with slightly higher profitability. Thus, 22 observations had *ROA1* between 0% and 2%, although fourteen observations had *ROA1* of more than 5%. On the other hand, 21 observations had *ROA2* between 0% and 2%, although fourteen observations had *ROA2* of more than 5%.

Effective tax rates in an average Serbian insurance company are lower than the prescribed rate. In fact, only four observations had *ETR1* higher than 15%, while as many as 24 observations had *ETR1* equal to 0%. In addition, six insurance companies had *ETR1* equal to 0% in all four years. On the other hand, only three observations had an *ETR2* greater than 15%, while 19 observations had *ETR2* equal to 0%. Five observations had a negative *ETR2*. In addition, in all four years, four insurance companies had both *ETR1* and *ETR2* equal to 0%.

In the course of the research, some interesting practices in terms of deferred income tax of insurance companies were identified. Firstly, the two insurance companies failed to show either deferred tax assets or deferred tax liabilities in four years taken as a sample, despite the fact that they were right to recognize deferred tax assets. They also did not state any amount of current or deferred tax expenses.

Despite earnings before tax, these companies had a tax loss on their tax balance, due to the fact that income from government securities was tax-free. With tax losses expected in the future, they decided not to recognize deferred tax assets.

Secondly, in all four sampled years, the two insurance companies disclosed the same net amount of deferred tax assets. In the income statement, they did not show a deferred income tax. These companies did not recognize deferred tax assets in the maximum amount available, but only in the amount in which deferred tax assets are likely to be realized at the expense of future taxable profit. Interestingly, these companies did not change their assessment of the possibility to realize deferred tax assets over a period of four years, so the amount of deferred tax assets remained unchanged.

Thirdly, one insurance company expressed net deferred tax assets or liabilities in all four sampled years, but did not disclose a deferred income tax on the income statement in any year. That company decided to recognize the deferred tax only based on the fair value measurement of the securities available for sale, where this source of deferred tax had no effect on the company's balance sheet.

2. Statistical Test Results

To determine which statistical tests (parametric or nonparametric) would be used, the normality of distribution of used variables was examined, using the Jarque-Berra test. The test results are shown in Table 4. Given that for five out of six variables probability equals zero, normal distribution of these variables cannot be assumed. Therefore, it is more convenient to use nonparametric statistical tests. Similar results will be obtained if other tests for distribution normality are used. According to Shapiro-Wilk and Kolmogorov-Smirnov tests, none of the used variables has normal distribution.

Table 4 Testing for normality distribution of used variables

	<i>MAT1</i>	<i>MAT2</i>	<i>ROA1</i>	<i>ROA2</i>	<i>ETR1</i>	<i>ETR2</i>
Jarque-Bera statistics	165.257	2,992.052	101.972	105.865	5.905	1,927.466
Probability	0.000	0.000	0.000	0.000	0.052	0.000
Observation	64	64	64	64	59	59

Table 5 presents the results of statistical tests for materiality of the deferred income tax in the Serbian insurance companies. The results show that there is a statistically significant difference at the level of 1% between *MAT1* and the used materiality thresholds. Similar conclusions can be drawn about *MAT2* variable. In other words, the results show that *MAT1* and *MAT2* are significantly lower than the materiality thresholds used. In general, the results indicate that the deferred income

tax does not represent a materially significant item in the financial statements of insurance companies in RS. Therefore, *the first hypothesis is rejected*.

Table 5 Statistical test results – materiality of deferred income tax

Variable 1	Variable 2	Test Value	p-value
MAT1	1%	9.128145	***0.000
MAT1	0.5%	5.214991	***0.000
MAT2	1%	9.811516	***0.000
MAT2	0.5%	9.484380	***0.000

Note: Statistically significant at 10% (*), 5% (**) and 1% (***).

The difference between used profitability measures was analyzed based on the statistical test, the results of which are shown in Table 6. Test results indicate that there is no statistically significant difference between *ROA1* and *ROA2*. Such results are not surprising. Although *ROA1* has a higher arithmetic mean than *ROA2*, these measures of profitability have equal median values. The results indicate that the inclusion of deferred tax expense in the calculation of profitability does not lead to a statistically significant change in the assessment of earning capacity of insurance companies in RS. Therefore, *the second hypothesis is rejected*.

Table 6 Statistical test results – difference between profitability measures

Variable 1	Variable 2	Test Value	p-value
ROA1	ROA2	0.014297	0.989

The results of the statistical test for the difference between effective tax rates used are shown in Table 7. Although *ETR1* has a higher arithmetic mean than *ETR2*, whereas *ETR2* has a higher median than *ETR1*, the difference between these two effective tax rates is not statistically significant. This means that the inclusion of deferred expense on income tax in the calculation of the effective tax rate does not lead to a statistically significant change in the assessment of the income tax burden on Serbian insurance companies. These results also indicate that choosing the values used in the effective tax rate numerator is not crucial to assessing the corporate tax burden. Therefore, *the third hypothesis is rejected*.

Table 7 Statistical test results – difference between effective tax rates

Variable 1	Variable 2	Test Value	p-value
ETR1	ETR2	0.096554	0.923

A number of reasons can explain low materiality of the deferred income tax, i.e. its small impact on assessing profitability and the income tax burden on the insurance companies in RS. Firstly, there are a number of countries in the world where the rate of income tax is higher than 30% (some countries impose rates on certain industries of more than 50%). Therefore, the prescribed profit tax rate in RS of 15% can be considered relatively low. Given that deferred tax assets and liabilities are calculated by multiplying temporary differences and the prescribed rate, it is clear that a low rate results in a lower amount of deferred tax.

Secondly, deferred tax assets and liabilities are usually expressed in the net amount. IAS 12 stipulates that the deferred income tax on the balance sheet is expressed in the net amount when the company has the right to express the current tax assets and liabilities in the net amount, and when the deferred tax assets and liabilities relate to the profit tax imposed by the same tax authorities. In the research sample used, only three observations did not show a net amount, so they also displayed deferred tax assets and deferred tax liabilities. Therefore, it is possible that the materiality of the deferred income tax would be significantly higher if deferred tax assets and liabilities were not expressed in the net amount.

Thirdly, it is possible that a low significance of deferred tax expense and income comes from the IAS 12 provisions. This accounting standard advocates the use of liability method. According to this method, the advantage is given to the balance sheet, i.e. determining of deferred tax assets and liabilities. On the other hand, deferred income tax can be seen as a residual. In other words, deferred tax expense and income are the sole consequence of changes in deferred tax assets and liabilities.

Fourthly, a specific method of recognizing deferred tax assets (and associated deferred tax revenues) may affect the materiality of deferred tax. Deferred tax assets are recognized on the basis of deductible temporary differences, unused tax credits, and unused tax losses, but only to the extent that taxable earnings are likely to exist for the realization of these funds.

The fifth point is that RS can be treated as a state with relatively small differences between earnings before tax and taxable income. Many European states with continental legal systems have relatively similar regulations for determining earnings before tax and taxable income. Thus, earnings before tax are the starting point for determining taxable income. In such case, the temporary differences are smaller, and thus the amount of deferred tax assets and liabilities is lower.

3. Robustness Assessment

The paper also analyzes the robustness of the presented results. In other words, it examined whether and to what extent the research results would change if certain research assumptions were changed. Thus, the initial research sample was

divided into two groups. The first group consists of half of the observations with the highest values of total assets, while the second group consists of half of the observations with the lowest values of total assets. This enabled to analyze whether the size of the insurance company affects the significance of deferred income tax, or whether the importance of deferred income tax differs between larger and smaller insurance companies.

There are several reasons why the size of the company was selected as a criterion for examining robustness. Firstly, due to greater diversification, larger organizations are less likely to express losses.³³ This means that the emergence of deferred tax assets based on unused tax losses is less likely in larger insurance companies. In contrast, larger insurers may show deferred tax assets to a greater degree, as they can expect higher future taxable earnings for the realization of deferred tax assets.

Secondly, the size can be a significant determinant of the profitability of insurance companies. It is usually pointed out that larger insurance companies in RS have higher profitability.³⁴ Thirdly, the company size may influence the effective tax rates of insurance companies. Under the political power hypothesis, larger companies have lower effective tax rates, whereas under the political cost hypothesis, larger companies have higher effective tax rates.³⁵

Table 8 shows the results of the robustness analysis for the materiality assessment of the deferred income tax. The results show that deferred tax is not materially significant item in the financial statements of either larger or smaller insurance companies. In other words, the company size is not a determinant of the materiality of the deferred income tax. Therefore, the conclusions of the first research hypothesis are robust in connection with dividing the research sample.

Table 8 Analysis of results robustness – materiality of deferred income tax

Variable 1	Variable 2	Test Value	p-value
Panel A. Half of the observations with the largest total assets			
MAT1	1%	6.883394	***0.000
MAT1	0.5%	2.749051	***0.006
MAT2	1%	6.971426	***0.000
MAT2	0.5%	6.506179	***0.000

³³ J. Zimmerman, Taxes and Firm Size, *Journal of Accounting and Economics*, 5(1), 1983, p. 119.

³⁴ J. Kočović, B. Paunović, M. Jovović, Determinants of Business Performance of Non-Life Insurance Companies in Serbia, *Ekonomika preduzeća*, 62(7-8), 2014, p. 367; M. Pjanić, N. Milenković, B. Kalaš, V. Mirović, Profitability Determinants of Non-Life Insurance Companies in Serbia, *Ekonomika preduzeća*, 66(5-6), 2018, p. 333.

³⁵ A. Kraft, What Really Affects German Firms' Effective Tax Rate? *International Journal of Financial Research*, 5(3), 2014, p. 1.

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Variable 1	Variable 2	Test Value	p-value
Panel B. Half of the observations with the lowest total assets			
<i>MAT1</i>	1%	5.964651	***0.000
<i>MAT1</i>	0.5%	4.586537	***0.000
<i>MAT2</i>	1%	6.884295	***0.000
<i>MAT2</i>	0.5%	6.884295	***0.000

Note: Statistically significant at 10% (*), 5% (**) and 1% (***).

Table 9 presents the results of the robustness analysis for the assessment of the difference between the used profitability measures. The results show that there is no statistically significant difference between the measures of profitability used in either larger or smaller insurance companies. This means that the size of the company does not influence the conclusion on the effects of deferred profit tax on profitability estimates. Therefore, the conclusions of another research hypothesis are robust in connection with dividing the research sample.

Table 9 Analysis of results robustness – difference between measures of profitability

Variable 1	Variable 2	Test Value	p-value
Panel A. Half of the observations with the largest total assets			
<i>ROA1</i>	<i>ROA2</i>	0.087294	0.930
Panel B. Half of the observations with the lowest total assets			
<i>ROA1</i>	<i>ROA2</i>	0.147707	0.883

Table 10 shows the results robustness analysis for the assessment of the difference between effective tax rates used. It can be concluded that there is no statistically significant difference between effective tax rates in larger or smaller insurance companies. The size of the company does not affect the conclusion of the deferred income tax regarding the assessment of the income tax burden. Therefore, the conclusions of the third research hypothesis are robust in dividing the research sample.

Table 10 Analysis of the robustness of results – the difference between effective tax rates

Variable 1	Variable 2	Test Value	p-value
Panel A. Half of the observations with the largest total assets			
<i>ETR1</i>	<i>ETR2</i>	0.494974	0.621
Panel B. Half of the observations with the lowest total assets			
<i>ETR1</i>	<i>ETR2</i>	0.620473	0.535

VI. Conclusion

Insurance companies in RS are obliged to present deferred income tax in financial statements, in accordance with IAS 12. Therefore, the paper examined the materiality of the deferred tax and its impact on assessing profitability and corporate income tax burden of insurance companies. The research was conducted on a sample of 16 insurance companies in the period from 2017 to 2020.

The research results show that deferred income tax is not materially significant item in the financial statements of the Serbian insurance companies. Its participation in the balance sheet and income statement is significantly lower than the usual materiality thresholds. Such results are primarily due to the presentation of deferred tax assets and liabilities in the net amount and the similar methods of calculating earnings before tax and taxable profit.

The research also found that deferred income tax has no statistically significant impact on assessing profitability and the corporate income tax burden. In other words, there is no significant difference between the measure of financial performance, i.e. the measure of the corporate income tax burden that contain deferred tax and those that do not contain deferred income tax. Such results are primarily due to the low materiality of deferred tax items, but also the fact that the deferred income tax on the income statement is only a calculation residual of deferred tax assets and balance sheet liabilities.

A number of involved persons may find the presented research results useful. Firstly, the auditors of financial statements may use the information about the deferred income tax materiality when choosing the subject of their attention. Secondly, when considering the methods of managing company performance, the managers of insurance companies may benefit from the information that deferred income tax has no significant effect on profitability. Thirdly, when looking at the tax burden on different economy sectors, national tax authorities can use the information about the corporate income tax burden on insurance companies.

Nevertheless, the research results also have certain limitations. The research is based on a sampling method, so the results may differ in a different sampling period or a different number of insurance companies. It is also possible that the change of the research methodology would lead to a change in the results of the research. Additionally, the research was conducted on insurance companies operating in only one country.

A particular limitation of research can be found in the fact that insurance companies, in accordance with IAS 12, present deferred tax assets and liabilities in the net amount. Therefore, separate amounts of deferred tax assets and liabilities could not be used in the research. Such separate amounts are disclosed in the notes to the financial statements only by a small number of companies.

Future research could include a longer time span to cover the pre-2013 period when the prescribed rate of income tax in RS was 10%. A separate analysis of life and non-life insurance could also be useful. In addition, for the purposes of comparison, the research could also include other countries.

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Translated by: **Zorica Simović**