The Global Pension Index of Slovakia

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Abstract

In every corner of quality of the world, the issue of pension system is being addressed. One of the most important documents that has offered its evaluation is the Mercer consulting firm and the CFA Institute, in cooperation with the Monash Center for Financial Studies. Since Slovakia is not included among the countries that evaluate these companies in their study, this paper offers the calculation of the Global Pension Index for Slovakia in the year 2020. Based on the data obtained and the grade from A to E, Slovakia is one of the countries that are rated by C+ with a total score of 65 points out of 100 as a country with a pension system "that has some good features, but also includes major risks and/or shortcomings that should be addressed. Without these improvements, its efficacy and/or long-term sustainability can be questioned." The problems that affect the pension index of Slovakia are very low pensions for low-income groups, the level of pension assets as a percentage of GDP at the level of 14.35%, the participation in the labour rate at the level of 4.5% for the age 65 and over, and low real economic growth.

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INTRODUCTION

The pension system in the Slovak Republic is based on three pillars. The first one is a pay-as-you-go pillar, which is defined benefit and is regulated by Act 461/2003 Coll. on social insurance and is administered by the Social Insurance Agency. In the first pillar, policyholders only pay contributions to the Social Insurance Agency, and at old age, the Social Insurance Agency will provide them with income according to the number of years worked, income during working life, and current pension value, which is determined on the basis of the growth of the average wage. The second pillar is partially voluntary and is a capitalization scheme representing appreciation in the funds of pension management companies under Act 43/2004 Coll. on old-age pension savings. The third pillar is entirely established on a voluntary

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basis and the conditions of its operation are regulated by Act no. 650/2004 Coll. on supplementary pension savings. Its main advantage is the acquisition of a supplementary pension for the employee and the tax advantage of the employer, who pays a certain amount of contributions for the employee.

The ever-increasing life expectancy, but also the declining birth rate, can significantly affect the stability of pension systems. Changes in capital markets make us to think about investment strategies in both the public sector and private pension funds. Therefore, it is essential to follow up strategies for the development of pension systems and their quality worldwide. The Organisation for Economic Cooperation and Development (OECD) offers every year a detailed overview of the development of pension funds in the Global Pension Statistics, (Global Pension Statistics, 2021). The project was launched in 2002 by the OECD Working Party on Private Pensions and its Task Force on Pension Statistics. The project provides a valuable means to measure and monitor the pension industry. It allows intercountry comparisons of current statistics and indicators on key aspects of retirement systems across OECD and non-OECD countries.

The Global Pension Index 2020 document of the Mercer company (Mercer, 2020) undoubtedly plays a very important role in this area. In the document (formerly known as the Melbourne Mercer Global Pension Index) renowned experts have been evaluating adequacy, sustainability, and integrity of retirement incomes. Since its inception in 2009, it has expanded to cover 39 systems, which represents almost $^{2}/_{3}$ of the world's population, using more than 50 indicators, divided into three sub-indices – adequacy, sustainability, and integrity. However, Slovakia is not included among these countries. Therefore, we offer the determination of the global pension index for Slovakia in compliance with all requirements, which are set out in Mercer (2020).

According to the document the overall index value for each system represents the weighted average of the three sub-indices as follows: 40% for the adequacy sub-index, 35% for the sustainability sub-index, and 25% for the integrity sub-index. The weights determined in this way have been used since 2009, when the index was introduced.

The Adequacy sub-index is the most important way to compare different pension systems. The basic concept is the net replacement rate. According to Mercer (2020), this sub-index takes into account the basic level of income provided by each scheme as well as the net replacement rate at income levels ranging from 50% to 150% of the average wage. In 2020, the net replacement rate in Slovakia was 69%, but the forecast for the future is that it will gradually decrease (OECD, 2020c).

The Sustainability sub-index involves the old-age dependency ratio, pension age, real economic growth over the long-term, level of government debt and public pension expenditure, saving rates, and investment returns.

The Integrity sub-index considers the integrity of the overall pension system but with a focus on funded schemes, which are normally found in the private sector system. This sub-index includes the quality of pension plans and meaningful amount of costs that are associated with determining the amount of pensions and with their payment in the long term.

The Mercer company appears to have no competition in setting the Global Pension Index. Determining this index has been their domain for almost 13 years. However, investigation of pension savings and insurance is presented in several papers. Berstein and Morales (2021) investigate the role of a longevity insurance for defined-contribution pension systems. Hinrichs (2021) offers an overview of pension reforms in Europe. Jakubík et al. (2009) analyse the sensitivity for a dynamic stochastic accumulation model for optimal pension savings management. Špirková et al. (2019) provide a detailed analysis of a payout phase product of the old-age pension savings scheme in Slovakia. Kaščáková et al. (2015) analyze the social and economic situation of the older generation in Slovakia.

The paper is organized as follows. Section 1 – *Preliminaries* provides basic information on the calculation of the global pension index 2020. Individual tables for better orientation in the text show the maximum score values and the corresponding weights of individual indicators set out in the original document. Section 2 – *Determination of score values of individual sub-indices* offers the calculation of the score of individual indicators and subindices for Slovakia for year 2020. Subsection 2.1 gives score value of the *adequacy sub-index*, subsection 2.2 score value of the *sustainability sub-index*, and subsection 2.3 score value of the *integrity sub-index*. Section 3 – *Global pension index of Slovakia* offers a complete summary of results, score values of individual sub-indices and overall global pension index for Slovakia for 2020. Final section summarizes the obtained results.

1 PRELIMINARIES

The individual indicators that enter into the calculation of the Global Pension Index are marked A1–A11 for the adequacy sub-index, S1–S9 for the sustainability sub-index and R1–R5, P1–P7 and Costs for the integrity sub-index. In addition, some indicators sometimes have two or more questions, and their answers are in some cases assigned different weights. These questions are marked with the letters a, b, or a, b, c, d. The indicators are rated on a scale from 0 to 10, some from 0 to 1, 0 to 2, 0 to 5, or 0 to 18, respectively. Those indicators that are rated on a scale from 0 to 10 are listed in Tables 1–3 as 10. Those that are rated on a scale from 0 to 1, 0 to 2, 0 to 5 or 0 to 18, are finally converted to a scale of 0 to 10 and are written in the tables in the form 10(1), 10(2), 10(2+1), 10(5) and 10(18), respectively. Based on (Mercer, 2020), we present clear tables with individual weights of indicators in a standardized form, i.e.,. Mercer (2020) states the weights in the sum of 100%. All relevant scales are situated in Tables 1–3, where there is a total score of 150 for the adequacy sub-index, 150 for the sustainability sub-index, and 260 for the integrity sub-index.

In the rows marked with the letter x, we present the weighted scores of individual indicators on a 10-point scale.

Table 1 Indicators of the adequacy sub-index

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
a	10	10	10	10(2)	10(2+1)	10	10(2)	10(2)	10	10	10(2)
b	10(2)		10	10(2)							10(2)
Normalized weights											
a	0.15	0.25	0.05	0.02	0.1	0.1	0.075	0.03	0.05	0.05	0.01
b	0.025		0.05	0.03							0.01
x	1.75	2.5	1.0	0.5	1.0	1.0	0.75	0.3	0.5	0.5	0.2
Total score = 150											
Sum of normalized weights = 1								(Mercer, 2020) Sum of weights = 100%			
Sub-index value = $10 \times \sum x = 100$								(Mercer, 2020) Sub-index value = 100			

Source: Author's work according to Mercer (2020)

Table 2 Indicators of the sustainability sub-index

	S1	S2	S3	S4	S5	S6	S7	S8	S9
a	10	10	10	10	10	10	10(2)	10	10(2)
b			10		10	10	10(2)		
c			10						
d			10						
					Normalized weights				
a	0.2	0.15	0.05	0.1	0.08	0.05	0.04	0.09	0.01
b			0.05		0.02	0.05	0.01		
c			0.05						
d			0.05						
x	2.0	1.5	2.0	1.0	1.0	1.0	0.5	0.9	0.1
Total score = 150									
Sum of normalized weights = 1							(Mercer, 2020) Sum of weights = 100%		
Sub-index value = 10 × ∑ *x* = 100							(Mercer, 2020) Sub-index value = 100		

Source: Author's work according to Mercer (2020)

Table 3 Indicators of the integrity sub-index

	R1	R2	R3	R4	R5	P1	P2	P3	P4	P5	P6	P7	Costs
a	10(2)	10(2)	10(2)	10(2)	10(15)	10	10(2)	10(2)	10(2)	10(2)	10(2)	10(2)	10
b	10(2)	10(2)	10(2)	10(2)				10(2)		10(2)	10(2)		10(5)
c		10(5)	10(2)										
d			10(2)										
							Normalized weights						
a	0.025	0.04	0.04	0.025	0.15	0.1	0.05	0.025	0.05	0.025	0.05	0.025	0.05
b	0.05	0.02	0.04	0.025				0.025		0.025	0.025		0.05
c		0.04	0.025										
d			0.02										
x	0.75	1.0	1.25	0.5	1.5	1.0	0.5	0.5	0.5	0.5	0.75	0.25	1.0
Total score = 240													
Sum of normalized weights = 1									(Mercer, 2020) Sum of weights = 100%				
Sub-index value = 10 × ∑ *x* = 100									(Mercer, 2020) Sub-index value = 100				

Source: Author's work according to Mercer (2020)

Section 2 provides answers to the individual questions that were set out in the original document, our comments on the individual indicators and their score regarding the conditions of Slovakia for 2020.

2 DETERMINATION OF SCORE VALUES OF INDIVIDUAL SUB-INDICES

In this section, we list all the questions and indicators. Moreover, we answer individual questions and assign them score. Finally, they are summarized in Section 3, Tables 6–8.

2.1 The adequacy sub-index

"The adequacy sub-index considers the benefits provided to the poor and a range of income earners as well as several design features and characteristics which enhance the efficacy of the overall retirement income system. The net household saving rate, the level of household debt and the home ownership rate are also included representing non-pension savings and, as such, important indicators of financial security during retirement" (Mercer, 2020: 47).

Question A1

A1a What is the minimum pension, as a percentage of the average wage, that a single-aged person will receive?

A1b How is the minimum pension increased or adjusted over time? Are these increases or adjustments made on a regular basis?

Publication (Mercer, 2020: 48) states that "an important objective of any retirement income system is to provide a minimum pension to the aged poor. In terms of the World Bank's recommended multi-pillar system, it represents the non-contributory basic pension or Pillar 0, which provides a minimum level of income for all aged citizens. Eligibility for this minimum pension requires no period in the paid workforce, but will often require a minimum period of residency. This question also considers how the minimum pension is increased or adjusted over time".

"For the first part of this question (A1a) "a minimum pension below 30% will score less than the maximum value of 10, with a zero score if the pension is 10% or less of the average earnings, since such a pension offers very limited income provision" (Mercer, 2020: 48).

If a person in the SR is not insured at all in the Social Insurance Agency (or in any other EU country or other countries with which the Slovak Republic has concluded relevant social security contracts) during his active working life until he reaches retirement age, he will not be entitled to any pension from the Social Insurance Agency. In such rare cases, the citizen may profit from another state social benefit, which is not within the competence of the Social Insurance Agency and therefore cannot be considered a pension. A senior who has not been entitled to the payment of a retirement pension and has no other income is entitled to a benefit in material need according to § 10 par. 2 letter a) of the Act on Assistance in Material Needs. The highest amount of assistance in material needs for an individual if the conditions stipulated by law are met is 198.60 € per month. Based on this fact, we can give 0 points to the sub-question A1a.

The valorisation of pensions in Slovakia takes place regularly in accordance with § 82 of the Increment Pension Benefits Act 461/2003 Coll. on Social Insurance (Social Insurance Act., 2021a), therefore, we give the sub-question A1b 1.5 points for increases granted on a regular basis related to price inflation.

Question A2

What is the net pension replacement rate for a range of income earners?

"The OECD (2012) calculates on page 161 net pension replacement rates for a single person at a range of income levels (revalued with earnings growth) throughout his/her working career. These calculations assume no promotion of the individual throughout his/her career, in other words, the individual earns a particular percentage of average earnings throughout. To recognise that a range of income levels exist in practice, we have used the net replacement rates at three income levels: namely 50%, 100% and 150% of average earnings. Net replacement rates at these three levels are given weightings of 30%, 60% and 10%, respectively, which recognises that there are more individuals who earn less than the average wage than above it" (Mercer, 2020: 49).

On the basis of the OECD (2019: 157) the data for Slovakia are published in Table 4.

Table 4 Net pension replacement rates by earnings (in %)

	Half of the average wage	The average wage	1.5 times the average wage	Weighted average
SR 2019	71.7	65.1	63.3	66.9

Source: Author's work according to OECD (2019)

"The maximum score for this indicator is obtained for any country with a result between 70% and 100%. Any score outside this range scores less than the maximum with a zero score being obtained for a result of less than 20%" (Mercer, 2020: 50).

The net pension replacement rate by earnings for Slovakia is 66.9 % and its score corresponds to 9.38 points.

Question A3

A3a What is the net household saving rate in the country?

A3b What is the level of household debt in the country, expressed as a percentage of GDP?

"The living standards of the elderly will depend on the benefits arising from the total pension system, as well as the level of household savings outside the pension system" (Mercer, 2020: 51).

Based on data from the OECD (2020b), we found that the household savings rate in Slovakia was 5.16%.

"A maximum score is obtained for any country with a saving rate of 20% or higher, and a zero score for any country with a saving rate of less than minus 5%" (Mercer, 2020: 51). For 5.16% we can give Slovakia 4.06 points.

The level of household debt represents the financial liabilities that households must pay back in the future. According to OECD (2020a) the level of household debt in Slovakia represented almost 49.49% of GDP in 2020. "A maximum score is obtained for any country with zero household debt, and a zero score for any country with household debt of 130 percent of GDP or higher" (Mercer, 2020: 51). This means that we award to Slovakia 6.19 points.

Question A4

A4a Are voluntary member contributions made by a median- income earner to a funded pension plan treated by the tax system more favourably than similar savings in a bank account?

A4b Is the investment income earned by pension plans exempt from tax in the pre-retirement and/or post-retirement periods?

The amount of total retirement benefits that a retired individual receives depends on both compulsory contributions and voluntary contributions, the amount of which is often significantly affected by the existence of a taxation incentives. Investment returns are considered a critical aspect of the adequacy sub-index, as they often have a more significant impact on the final amount of benefits than the contributions themselves.

In Slovakia, it is possible to voluntarily save for retirement through pension companies within the second pillar (5 companies) and third pillar (4 companies). There is a potential tax relief, which depends on the amount of the contribution. Participation in the third pillar allows participants to reduce their tax base by 180 €. The management fee is slightly lower here, i.e., 0.3% for the second and 0.9%

for the third pillar (MLSAaF SR, 2021a). For these reasons, we give the sub-question A4a 2 points. All contributions paid are included in the payment of pensions and the difference, i.e., yield, is taxed at a 19% interest rate of tax according to § 43 par. 3 letter e) of Act 595/2003 Coll. Income Tax (2021). Although there are benefits to savings in pension companies, in particular, a tax concession, the yield is not exempt from tax. Therefore, the score for the second sub-question A4b is 0 points.

Question A5

A5a Is there a minimum access age to receive benefits from private pension plans (except for death, invalidity, and/or cases of significant financial hardship)?

A5b If so, what is the current age?

The free availability of invested funds in the stages before retirement age reduces the effectiveness of these funds, as it leads to a reduction in their assets and can thus adversely affect the amount of pension income paid by pension companies.

Two points are awarded for answering the first question in the affirmative. If earlier availability is only allowed in certain situations, 1 point is awarded. In other cases, the number of points is zero.

The second part of the question then concerns only those countries that received two points from the previous question. Zero to one point is added to countries where the age limit is between 55 and 60 years. The maximum score, 1 point, is reached if the minimum age for participants in the availability of funds is 60 years (Mercer, 2020: 53).

We obtained the required information from the website of the Social Insurance Agency, (2021a). Under the second pillar, the old-age pension can be paid to the saver at the earliest from the first day of the calendar month in which the saver has reached retirement age. Early selection is not possible, so we awarded 2 points for question A5a. For a full pay-out, the participant must be 62 years old, so we awarded 1 point for question A5b. Finally, we award these questions a total of 10 points.

Question A6

A6a What proportion, if any, of the retirement benefit from the private pension arrangements is required to be taken as an income stream?

A6b Are there any tax incentives that exist, or favourable conversion rates, to encourage the taking up of income streams?

"The primary objective of a private pension system should be to provide income during retirement. This indicator focuses on whether there are any requirements in the system for at least part of the benefit to be taken as an income stream, or if there are any tax incentives to encourage the take-up of income streams. For the first question, a maximum score is achieved where between 60% and 80% of the benefit is required to be converted into an income stream. A percentage above 80% reduces the flexibility that many retirees need, whilst an answer below 60% is not converting a sufficient proportion of the benefit into an income stream. A percentage below 30% results in a score of zero. For the second question, where there is no requirement for an income stream, half the maximum score could be achieved where significant tax incentives exist to encourage income streams" (Mercer, 2020: 53).

The total amount of contributions for old-age insurance in Slovakia, i.e., until the first and the second pillar, is 18% of the assessment base. Of which in 2020, the contribution to the first pillar represented 13% and to the second pillar 5% (MLSAaF SR, 2021d).

The forms of pension payment from the second pillar are: life annuity, temporary pension or programmed withdrawal. Programmed withdrawal from the 2nd pillar can also be transferred by a one-off withdrawal of the total amount saved. The only condition for the programmed withdrawal is that the sum of the amounts of pension benefits paid to the saver will be higher than the reference amount. In 2020, the reference amount was set at 464.60 € (The Social Insurance Agency, 2021d). So, according to Mercer (2020: 53) the sub-question A6a achieved a rating of 0 points.

"If it is not necessary for some part of the benefit to be covered in the form of an annuity, but are offered, for example, incentive tax relief for annuity income, these countries can receive up to 5 points" (Mercer, 2020: 53). Based on data published by MLSAaF SR (2021b) and the Social Insurance Agency (2021a) we found that tax incentives or favourable conversion rates for income streams, are not available in Slovakia. Therefore, we awarded the A6b sub-question 0 points.

Question A7

A7a On resignation from employment, are plan members normally entitled to the full vesting of their accrued benefit?

A7b After resignation, is the value of the member's accrued benefit normally maintained in real terms (either by inflation- linked indexation or through market investment returns)?

A7c Can a member's benefit entitlements normally be transferred to another private pension plan on the member's resignation from an employer?

"Each question was evaluated with a score of 2 for "yes", 0 for "no" and between 0.5 and 1.5 if it was applied in some cases. The actual score depended on the actual circumstances" (Mercer, 2020: 54).

The authors of the index assumed the existence of Occupational funds in the pension systems of the surveyed countries. Although there are no employee funds in Slovakia, and the given indicator does not fit into the Slovak environment, the questions are set in a sufficiently general way that they can be applied to all pension systems.

We found the answers to the research (MLSAaF SR, 2021d) dedicated to the third pension pillar.

Within the framework of old-age pension savings, it is not possible to cancel the contract and withdraw money early. Therefore, we give the A7a sub-indicator a rating of 2 points.

After resignation, the value of the member's accrued benefit is normally maintained in real terms. Based on this, sub-indicator A7b received a rating of 2 points.

Since 2013, when the amendment to the Supplementary Pension Savings Act was approved, the participant is allowed a free transfer between individual pension companies after one year from the conclusion of the contract, therefore the A7c sub-indicator received a rating of 2 points.

Question A8

Upon a couple's divorce or separation, are the individuals' accrued pension assets normally taken into account in the overall division of assets?

"The adequacy of an individual's retirement income can be disrupted by a divorce or separation. It is desirable that, upon a divorce or separation, the pension benefits that have accrued during the marriage be considered as part of the overall division of assets. The question was assessed on a three-point scale with a score of 2 for 'yes', 1 if it was applied in some cases and 0 for 'no'" (Mercer, 2020: 55).

According to §150 of the Civil Code 40/1964 Coll. each spouse is entitled to demand that he be reimbursed for what has been spent on the partner's other property. Therefore, if the payments to the pillars were made from common funds, the other partner has the right to settle these investments according to the cited legal resolution. We can state that the cash invested in the funds are the subject of divorce proceedings and we assign a rating of 2 points to the indicator A8.

Question A9

What is the level of home ownership in the country?

"In addition to regular income, home ownership represents an important factor affecting financial security during retirement. A maximum feasible level is considered to be 90%. Hence a home ownership level of 90% or more scores maximum results whilst a level of 20% or less scores zero" (Mercer, 2020: 55).

According to the Eurostat database (2020), the share of Slovak citizens owning dwellings was 92.3%, which represents a score of 10 points.

Question A10

What is the proportion of total pension assets invested in growth assets?

Hinz et al. (2010) state that an international comparison of pension fund returns may not be of sufficient informative value, there is no single and available way of allocating active income that is suitable for all fund's participants.

"A zero percentage in growth assets highlights the benefit of security for members, but without the benefits of diversification and the potential for higher returns. No exposure to growth assets scores 2.5 out of 10. This score increases to the maximum score of 10 as the proportion in growth assets increases to 45% of all assets. If the proportion in growth assets exceeds 65% the score is reduced to reflect the higher level of risk and volatility" (Mercer, 2020: 56).

In 2020, the share of equity funds was 13.7% and index funds 16.4% of total assets managed by pension management companies (MLSAaF SR, 2021c). Their common – 30.1% share represents a rating of 7.02 points on a 10-point scale.

Question A11

A11a Is it a requirement that an individual continues to accrue their retirement benefit in a private pension plan when they receive income support such as a disability pension or paid maternity leave?

A11b Does your system provide any additional contributions or benefits for parents who are caring for young children whilst the parent is not in the paid workforce?

"These questions were assessed on a three-point scale with a score of 2 for 'yes', 1 if contributions are paid in some cases and 0 for 'no'" (Mercer, 2020: 57).

An unemployed person can use voluntary pension insurance in the Social Insurance Agency. The period of voluntary insurance, when the voluntarily insured person pays the premiums properly and on time, is valued as the period of insurance when assessing entitlement to benefits from the Social Insurance Agency (2021d). Under the second pillar, the insured person does not have to continue to contribute to the fund in the event of loss of employment. In the case of supplementary pension savings, the insured has the right to interrupt, without any sanctions, because there is no state contribution. In the case of the first sub-question A11a, the score is equal to one.

During both maternity and parental leave, the state pays pension insurance premiums for the parents (Social Insurance Agency, 2021b). For this reason, the second sub-question A11b is rated 2 points.

2.2 The sustainability sub-index

The sustainability sub-index includes several indicators that should ensure the long-term stability of pension systems. These indicators focus on the economic importance of private pension funds, life expectancy in retirement now and in the future, the workforce of the elderly population, the current state of public expenditure on pensions and government debt, and real economic growth.

Question S1

What proportion of the working-age population are members of private pension plans?

Saving in private pension companies ensures the stability of the pension system, as it relieves state spending. Therefore, it is important that the proportion of the working-age population on private schemes is as high as possible.

The publication (Pensions at a Glance, 2019: 116) states that overall participation in funded pensions by type of plan, 2017 or latest available year as a percentage of the working-age population is approximately 38%. However, in Slovakia, this value has risen sharply in recent years. MLSAaF SR (2021d) states, that the number of savers as of 31 December 2020 was in the second pillar of 1 626 177 savers and in the third pillar 861 344 savers. The number of economically active inhabitants in 2020 was 2 712 700 (Working age population, 2021). Thus, the proportion of the working age population for the second pillar is 60% and for the third pillar 32%. Tatra Bank (2021) states that about 60 to 68% of Slovaks save or declare that they save for retirement. Since some savers may be in the second, but also in the third pillar, we assume that the proportion of the working-age population is 64%. According to Mercer (2020: 59), based on the conversion from the interval (15–80)%, we allocate to the S1-Coverage Indicator a value of 7.54.

Question S2
What is the level of pension assets, expressed as a percentage of GDP, held in private pension arrangements, public pension reserve funds, protected book reserves, and pension insurance contracts?

The indicator S2 – Level of Assets is important for the stable payment of pensions in the future.

By using data from the Gross Domestic Product (2021) and Private pension assets Slovakia (2020), we obtain the level of pension assets as a percentage of GDP at the level of:

$$\frac{13\ 137.18\,\text{mil €}}{91\ 555.5\,\text{mil €}} \times 100\ \% = 14.35\ \%.$$

According to Mercer (2020: 60) conversion from interval (0–175)% to a 10-point scale gives to indicator S2 a value of 0.82.

Question S3
S3a What is the current life expectancy at the state pension age?
S3b What is the projected life expectancy at the expected state pension age in 2050?
S3c What is the projected old age dependency ratio in 2050?
S3d What is the estimated Total Fertility Rate (TFR) for 2015–2020?

We gradually answer individual questions to determine the indicator S3 – Life Expectancy at State Pension Age.

Life expectancy, according to (Statistical Office SR, 2021a), for a 63-year-old person (unisex) is 18.4 years and thus, according to Mercer (2020: 61) based on the scale from (28–18) years to 10-point scale, a value of 10.

Based on data from (Eurostat, 2021b) the projected life expectancy for 65-year-old person is 21.55 years. The projected life expectancy for men is 19.7 and for women 23.4 year. In our calculation, we used a simple arithmetic mean of these values for simplicity. Within the same scale, a value of 6.45 is assigned for S3b.

The old age dependency ratio is given by:

$$\text{Old age dependency ratio} = \frac{\text{population age 65+}}{\text{population 15–64}} \times 100\ \%.$$

The Eurostat database indicates the value of old age dependency ratio 51.4% and thus we assign, within the same scale, a score of 4.65 to S3c.

We determined the total fertility rate for Slovakia as the average value for the period 2015–2020. It is at the level of 1.50, so we will assign using the same scale the value 3.34 to S3d.

Question S4
What is the level of mandatory contributions that are set aside for retirement benefits (i.e., funded), expressed as a percentage of wages?

These include mandatory employer and/or employee contributions towards funded public benefits (i.e., social security) and/or private retirement benefits.

The Act 43/2004 Coll. in the old age pension scheme (2021), Article 22, item (e), states: "The rate of mandatory contributions shall be in 2020, 5% of the assessment base". Thus, according to Mercer (2020: 63) by transforming the scale (0–12)% to a 10-point scale, the value 4.17 is assigned to indicator S4 – Funded Mandatory Contributions.

Question S5
S5a What is the labour force participation rate for those aged 55-64?
S5b What is the labour force participation rate for those aged 65 or over?

Based on data from the International Labour Organization (2020) the labour force participation rate for ages 55–64 is 61.3%. According to Mercer (2020: 64) by scaling from (40–80)% to 10 points, we assign for indicator S5a – Labour Force Participation Rate aged 55–64, score 5.33.

For ages 65 and over, the participation in the labour rate is at the level of 4.5% and the assigned score for S5b, when applying the same scale, is 1.5.

Question S6
S6a What is the level of adjusted government debt (being the gross public debt reduced by the size of any sovereign wealth funds that are not set aside for future pension liabilities), expressed as a percentage of GDP?
S6b What is the level of public expenditures on pensions expressed as a percentage of GDP, averaged over the latest available figure and the projected figure for 2050?

According to Eurostat (2021b) the level of adjusted government debt as a percentage of GDP is on the level of 60.7%. Mercer (2020: 65) states: "A maximum score was achieved for countries with a zero or negative level of adjusted government debt, with a zero score for countries with an adjusted government debt of 150% of GDP or higher." Based on the scale of GDP to 10-point scale, we give a value 5.98 for indicator S6a – Adjusted Government Debt.

The International Labour Organization (2020a) states that the level of public expenditures on pensions is for year 2020 on the level of 8.3%, and for 2050 on the level of 8.8% of GDP. Hence, the average is 8.56%. Based on Mercer (2020: 65): "A maximum score was achieved for systems with public pension costs of 2% of GDP or less, with a zero score for systems with costs of 16% of GDP or higher." Therefore, by scaling from (16–2)% of GDP to a 10-point scale, score 5.32 is assigned to indicator S6b – Public cost of pensions.

Question S7
S7a In respect of private pension arrangements, are older employees able to access part of their retirement savings or pension and continue working (e.g., part time)?
S7b If yes, can employees continue to contribute and accrue benefits at an appropriate rate?

Older employees can receive a pension and can also work in addition to receiving a pension, so we assign a score of 2 to sub-indicator S7a, and thus assign a value of 10.

A pensioner can work and also receive a pension from the first pillar, but he can still have his funds valued in the second and third pillar. This means that we assign a maximum score of 2 to the sub-indicator S7b and we give a value of score 10.

Question S8
What is the real economic growth rate averaged over seven years (namely the last four years and projected for the next three years)?

The real economic growth rate shows the rate of change in a country's GDP, typically from one year to the next. The real GDP growth rate is a more useful measure than the nominal GDP growth rate because it considers the effect of inflation on economic data.

The average of the real economic growth rate averaged over seven years (2017–2023), International Monetary Fund (2021b) is on the level of 2.22%, i.e., and based on the scale from (−1.0–5.0)% to 10-point scale, we set indicator S8 – Real Economic Growth to a value of score 5.37.

Question S9
Is it a requirement for the pension plan's trustees/executives/fiduciaries to consider Environmental, Social and Governance (ESG) issues in developing their investment policies or strategies?

According to Directive (EU) 2016/2341 of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (2021), member states should require institutions for occupational retirement provision to disclose information on whether environmental, social, and management factors are taken into account in investment decisions and how they form part of their risk management system. The countries of the European Union must transpose these new rules into their national law by 13 January 2019 (European Commission, 2021). Therefore, we assign 2 points from the maximum score to this question.

2.3 The integrity sub-index

"The integrity sub-index considers three broad areas of the pension system: regulation and governance, protection and communication for members and operating costs" (Mercer, 2020: 69).

2.3.1 Regulation and governance

Question R1
R1a Do private sector pension plans need regulatory approval or supervision to operate?
R1b Is a private pension plan required to be a separate legal entity from the employer?

Act 43/2004 Coll. on old-age pension savings, §47 states that a pension fund management company is a joint-stock company with its registered office in the Slovak Republic, the subject of which is the creation and administration of pension funds for the implementation of old-age pension savings. The National Bank of Slovakia grants the permission to establish and operate a pension fund management company is granted by the National Bank of Slovakia, which subsequently supervises pursuant to §113.

Act 650/2004 Coll. in the Supplementary Pension Scheme, §22 states that a supplementary pension company is a joint stock company with its registered office in the Slovak Republic, the subject of which is the creation and administration of supplementary pension funds for the purpose of supplementary pension savings. The National Bank of Slovakia grants the permission to establish and operate a supplementary pension company, which subsequently supervises pursuant to §69.

Neither pension management companies nor supplementary pension companies can be dependent on the employer. We give a maximum score of 2 points for each question.

Question R2
R2a Are private sector pension plans required to submit a written report in a prescribed format to a regulator each year?
R2b Does the regulator make industry data available from the submitted forms on a regular basis?
R2c How actively does the regulator discharge its supervisory responsibilities? Please rank on a scale of 1 to 5.

In Act 43/2004 Coll. in old-age pension savings, Article 109 states that the pension fund management company is obliged to submit to the National Bank of Slovakia no later than three months after the end of the accounting period an annual report on equity management for the previous calendar year, alsoannual reports on the management of assets in managed pension funds for the previous calendar year. In Act 650/2004 Coll., Section 67 stipulates the same information obligations of a supplementary pension company towards the National Bank of Slovakia. The National Bank of Slovakia requires regular sending of information from pension companies, their annual, half-yearly, and quarterly activity reports, collects data on the volume of assets and investments, regularly publishes summary statistics and information on the development of individual funds, performs remote and on-site supervision. We give a maximum score of 2 points for the first two questions. We give a score of 4 points to the last question according to supervisory responsibilities scaling system (Mercer, 2020: 71).

Question R3

R3a Where assets exist, are the private pension plan's trustees/executives/fiduciaries required to prepare an investment policy?

R3b Are the private pension plan's trustees/executives/ fiduciaries required to prepare a risk management policy?

R3c Are the private pension plan's trustees/executives/ fiduciaries required to prepare a conflicts of interest policy?

R3d Are the private pension plan's trustees/executives/ fiduciaries required to have:
– one or more independent members included in the governing body?
– equal member and employer representation on the governing body?

The second chapter of the sixth part of the Act 43/2004 Coll. deals with the investment of assets in pension funds and defines, inter alia, in §81 assets in a pension fund, in §82 the rules for limiting and distributing risk for a pension fund, in §85 the strategic location of pension fund investments. The second chapter of the fifth part of the Act deals with the conditions of operation of a pension management company, §53 sets out the rules of prudential business of a pension management company, §55a defines risk management and measurement, §58 conflicts of interest. The answers to all four questions are explained in the same way in the individual paragraphs in Act 650/2004 Coll. We give a maximum score of 2 points for all four questions.

Question R4

R4a Do the private pension plan's trustees/executives/ fiduciaries have to satisfy any personal requirements set by the regulator?

R4b Are the financial accounts of private pension plans (or equivalent) required to be audited annually by a recognised professional?

The information obligation of pension management companies to the National Bank of Slovakia is enshrined in Act 43/2004 Coll., §109. Regular audits are enshrined in §56, which concerns bookkeeping. It is stated that the financial statements of the pension fund management company and the pension fund are stated to be audited by an auditor or an audit company and approved by the general meeting of the pension management company. The pension fund management company is required to notify the name of the auditor in writing to the National Bank of Slovakia, which is entitled to reject the auditor within the specified period. Subsequently, the pension fund management company is obliged to notify the new auditor in writing, and the National Bank of Slovakia is entitled to reject the auditor, and then determine which auditor verifies the financial statements of the pension fund management company and the pension fund. The answers to both questions are explained in Act 650/2004 Coll. in §30 and §67. We give a maximum score of 2 points for each question.

Question R5

R5a What is the government's capacity to effectively formulate and implement sound policies and to promote private sector development?

R5b What respect do citizens and the state have for the institutions that govern economic and social interactions among them?

R5c How free are the country's citizens to express their views? What is the likelihood of political instability or politically motivated violence?

Every year, the World Bank compiles a Global Governance Indicator, which consists of 6 parts: Government Effectiveness, Regulatory Quality, Rule of Low, Control of Corruption, Voice and Accountability, Political Stability and Absence of Violence/Terrorism. Values for individual parts range from −2.5 to +2.5. After adding up all the values, a value of 3 is added to the total indicator to avoid negative values of the indicator.

According to the World Bank (2019), Slovakia received the value of the Worldwide Governance Indicator 3.88 (0.59 for Government Effectiveness, 1.01 for Regulatory Quality, 0.53 for Rule of Low, 0.22 for Control of Corruption, 0.86 for Voice and Accountability, 0.67 for Political Stability and Absence of Violence/Terrorism). We give a score of 6.88 (3.88 + 3) out of the maximum possible value of 15 (Mercer, 2020: 73).

2.3.2 Protection and communication for members

Question P1

For defined benefit schemes:

P1a Are there minimum funding requirements?

P1b What is the period over which any deficit or shortfall is normally funded?

P1c Describe the major features of the funding requirements.

For defined contribution schemes, are the assets required to fully meet the members' accounts?

The pension system in Slovakia uses both defined benefit and defined contribution types of funds. The investment rules are clearly set out in Act 43/2004 Coll., Part Six, starting with Section 60, and Section 80 state that the National bank of Slovakia sets out the definition of own funds that a company is required to comply with. The law does not set the maximum possible time for managing the deficit. However, according to the law, due to the nature of the funds, liabilities must be covered by real resources. Within the defined benefit fund, the maximum score of 5 points was awarded when the funding requirements were confronted with actuarial methods and the deficit could not last longer than 4 years. In our case, we award half points, i.e., 2.5 points.

In Act 650/2004 Coll., the investment rules are stated in §53 and the adequacy of own resources in §33. Strict demands are placed on the management of companies' assets; therefore, we give the full number of points, 5 points within the defined contribution fund, thus 7.5 points together.

Question P2

Are there any limits on the level of in-house assets held by a private sector pension plan? If yes, what are they?

The question is mainly focused on the independence of employee funds, which is not common in Slovakia. However, for both types of pension savings under the mentioned acts, it is stated that investments in other funds may not be transferred. If the country's pension system does not include employee funds but meets the share of the so-called in-house assets in private pension funds, the maximum number of points is awarded. Therefore, we can award the maximum number of points for the question, i.e., 2 points.

Question P3

P3a Are the members' accrued benefits provided with any protection or reimbursement from an act of fraud or mismanagement within the fund?

P3b In the case of employer insolvency (or bankruptcy), do any unpaid employer contributions receive priority over payments to other creditors, and/or are members' accrued benefits protected against claims of creditors?

According to Act 43/2004 Coll., §113, the National Bank of Slovakia has supervision over pension funds in Slovakia, which is obliged to protect the interests of consumers when exercising supervision. Assets in the pension fund are not part of the bankruptcy estate of the pension management company, nor may they be used to settle with the creditors of the pension management company. A new management company is designated to manage the funds.

The second level of supervision is represented by the depositary, i.e., the bank that is not property-related to the given fund. According to Section 104, assets in pension funds which are entrusted to the depositary in accordance with the provisions of this Act may not be the subject of enforcement of a decision or execution against the depositary, subject to enforcement of the depositary, and are not part of the bankruptcy estate. In the event of the bankruptcy of the depositary, the owners will not lose their funds, because the depositary does not own the funds.

For each question we award the maximum number of points, i.e., 2 points for each question.

Question P4

When joining the pension plan, are new members required to receive information about the pension plan?

According to Act 43/2004 Coll., §64, which deals with the old-age pension savings contract, the pension fund management company is obliged to inform the person interested in concluding an old-age pension savings contract before concluding the old-age pension savings contract with key information, sufficiently in advance, the statute of the pension fund, with a report on the management of the assets of each pension fund created and managed by the pension fund management company and with a report on the management of the pension management company.

According to Act 650/2004 Coll., §57 before concluding the participation contract, the supplementary pension company is obliged to inform the potential participant about the status of the supplementary pension fund, with key information, on how to take into account environmental factors including climatic, social, organizational and management factors and on the possibilities of obtaining further information. For the question, we award the maximum number of points, i.e., 2 points.

Question P5

P5a Are plan members required to receive or have access to the annual report from the pension plan?

P5b Is the annual report required to show:

– the allocation of the plan's assets to major asset classes?

– the major investments of the plan?

Act 43/2004 Coll., §105 lists all the requirements that the pension fund management company is obliged to make available to savers in the annual report on the management of its own assets and the annual reports on the management of assets in pension funds. In Act 650/2004 Coll., §65, analogous information is given regarding the obligation to inform savers about the annual reports of the funds, which also contain information on the allocation of assets and investments of the company. For both questions, we give 2 points for each question.

Questions P6

P6a Are plan members required to receive an annual statement of their current personal benefits from the plan?

P6b Is this annual statement to individual members required to show any projection of the member's possible retirement benefits?

According to Act 43/2004 Coll., §108, the Pension fund management company is obliged to send a statement from the saver's personal pension account on the last day of the calendar year.

The statement shall include, inter alia, the saver's retirement age or the estimated retirement age of the saver, the amount corresponding to the current value of the saver's personal pension account at the end of the calendar year, information on the saver's contributions to his personal pension account during the last 12 months, on the amount of appreciation of the saver's personal pension account at the end of the calendar year, information on remuneration, costs and fees due to the saver, information on the retirement age pension forecast, which includes the baseline scenario, the optimistic scenario and the pessimistic scenario based on possible economic scenarios if the saver is not a beneficiary old-age pension or early retirement pension paid by program selection. The same obligations are set out in Act 650/2004 Coll., §66 item a.

The models of personal account statements and statements in supplementary pension savings are set out in Measure of the MLSAaF SR (2021). For both questions we give a maximum 2 points for each question.

Question P7

Do plan members have access to a complaints tribunal which is independent from the pension plan?

The mentioned acts contain specific information on complaints, a citizen can file a complaint within the framework of financial consumer protection with the National Bank of Slovakia, which is the financial market supervisory authority.

According to Act 43/2004 Coll., §114, the subject of supervision is not, however, the resolution of disputes arising from the contractual relations of a pension management company, the hearing and decision-making of which is regulated by the competent court or other body according to a special regulation. If the National Bank of Slovakia finds a violation of consumer rights, it may impose sanctions on a financial institution, see §115. Analogously, Act 650/2004 Coll. deals with supervision in §69 and sanctions in §71.

We give the question a maximum rating of 2 points.

2.3.3 Costs

C1a What percentage of total pension assets is held in various types of pension funds?

C1b What percentage of total pension assets are held by the largest ten pension funds/providers?

The long-run efficiency of a pension system depends on the costs that will affect the pension income of the fund members themselves. Different types of pension funds have different cost structures. As pension funds increase in size, their costs as a proportion of assets will decrease and benefits will be passed on to fund members. The aim is to minimize costs and improve profit.

Pension funds in Slovakia are managed by pension fund management companies under the second pillar and by supplementary pension companies under the third pillar. The net asset value of the guaranteed and non-guaranteed pension funds of all 5 pension fund management companies operating in Slovakia as of 31 December 2020 was 10 336.64 mil. € (Association of Pension Fund Management Companies, 2021). The net asset value of the four supplementary pension companies operating in Slovakia as of 31 December 2020 was 2 672.61 mil. € (Annual reports of individual companies, 2021). In the first question, a value was assigned from 1 (for individual private funds) to 10 (for centralized funds). The weight of these values depended on their share of assets in each type of fund. In Slovakia, we only have individual funds, so we assign a rating of 1 point to the first question.

In 2020, pension assets in Slovakia were held in 17 pension funds of pension fund management companies and in 19 pension funds of supplementary pension companies. 73.87% of all pension assets were held in the 10 largest pension funds (Association of Pension Fund Management Companies, 2021).

Score 1 was awarded when these assets in the 10 largest funds accounted for less than 10% of all assets, rising to a maximum score of 5 when these assets accounted for more than 75% of all assets. In the second question, we award 4.93 points.

3 GLOBAL PENSION INDEX OF SLOVAKIA

This chapter presents all our score values found for individual questions and their associated indicators. Our final results are recorded in Tables 5–8. The sign x* indicates the real weighted score values of individual indicators on a 10-point scale.

Table 5 Indicators of the adequacy sub-index, Slovakia 2020

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11
a	0.00	9.38	3.91	10(2)	10(2+1)	0.00	10(2)	10(2)	10	7.02	5(1)
b	7.5 (1.5)		6.19	0(0)							10(2)
Normalized weights											
a	0.15	0.25	0.05	0.02	0.1	0.1	0.075	0.03	0.05	0.05	0.01
b	0.025		0.05	0.03							0.01
x^*	0.188	2.345	0.505	0.20	1.00	0.00	0.75	0.3	0.5	0.351	0.15
Sub-index value = $10 \times \sum x^* = 62.9$											

Source: Author's work

Table 6 Indicators of the sustainability sub-index, Slovakia 2020

	S1	S2	S3	S4	S5	S6	S7	S8	S9
a	7.54	0.82	10	4.17	5.33	5.98	10 (2)	5.37	10 (2)
b			6.45		1.5	5.32	10 (2)		
c			4.65						
d			3.34						
Normalized weights									
a	0.2	0.15	0.05	0.1	0.08	0.05	0.04	0.09	0.01
b			0.05		0.02	0.05	0.01		
c			0.05						
d			0.05						
x^*	1.508	0.123	1.222	0.417	0.456	0.565	0.50	0.483	0.1
Sub-index value = $10 \times \sum x^* = 53.7$									

Source: Author's work

Table 7 Indicators of the integrity sub-index, Slovakia 2020

	R1	R2	R3	R4	R5	P1	P2	P3	P4	P5	P6	P7	Costs
a	10(2)	10(2)	10(2)	10(2)	4.59(6.88)	7.5	10(2)	10(2)	10(2)	10(2)	10(2)	10(2)	1
b	10(2)	10(2)	10(2)	10(2)				10(2)		10(2)	10(2)		9.86(4.93)
c		8(4)	10(2)										
d			10(2)										
Normalized weights													
a	0.025	0.04	0.04	0.025	0.15	0.1	0.05	0.025	0.05	0.025	0.05	0.025	0.05
b	0.05	0.02	0.04	0.025				0.025		0.025	0.025		0.05
c		0.04	0.025										
d			0.02										
x^*	0.75	0.92	1.25	0.5	0.689	0.75	0.5	0.5	0.5	0.5	0.75	0.25	0.543
Sub-index value = $10 \times \sum x^* = 84.0$													

Source: Author's work

Table 8 The overview of sub-indices score for the monitored countries of Europe, 2020

	Country	Overal score	Adequacy	Sustainability	Integrity
1.	Netherlands	82.6	81.5	79.3	88.9
2.	Denmark	81.4	79.8	82.6	82.4
3.	Finland	72.9	71.0	60.5	93.5
4.	Sweden	71.2	65.2	72.0	79.8
5.	Norway	71.2	73.4	55.1	90.3
6.	Germany	67.3	78.8	44.1	81.4
7.	Switzerland	67.0	59.5	64.2	83.1
8.	Ireland	65.0	74.7	45.6	76.5
9.	Slovakia	65.0	62.9	53.7	84.0
10.	United Kingdom	64.9	59.2	58.0	83.7
11.	Belgium	63.4	74.6	32.4	88.9
12.	France	60.0	78.7	40.9	57.0
13.	Spain	57.7	71.0	27-May	78.5
14.	Poland	54.7	59.9	40.7	65.9
15.	Austria	52.1	64.4	22-Jan	74.6
16.	Italy	51.9	66.7	18-Aug	74.4
	Average	65.5	70.1	49.8	80.2

Source: Author's work

The total Global Pension Index with weights of 40% for the adequacy sub-index, 35% for the sustainability sub-index and 25% for the integrity sub-index is 65.0 points from the 100-point scale. Based on the grade from A to E, which is listed in Mercer (2020: 6), Slovakia is rated by grade C+ as a country with a pension system "that has some good features, but also has major risks and/or shortcomings that should be addressed. Without these improvements, its efficacy and/or long-term sustainability can be questioned." Slovakia is one of the countries whose overall index value is 65.0 points, and it shares the eighth and ninth place with Ireland in the monitored European countries. Slovakia has the lowest value of the sustainability sub-index, namely 53.7 points.

CONCLUSION

In our paper, we have determined the Global Pension Index 2020 for Slovakia according to the original document. As the overall grade C+ shows, based on the grade from A to E, Slovakia is not among the countries with the best pension system. For example, the second pillar of retirement savings is not as profitable as it should be. This unfavourable situation regarding the appreciation of funds was caused in 2009 and subsequently in 2013 by the political intervention of the transfer of a huge amount of money from equity funds to bond funds, and savers are significantly impoverished by returns. In this way, the savings of more than 800,000 savers were transferred. This unfavourable situation endures. The net replacement rate is currently at 69%, but there is a serious concern that it will rapidly fall well below 50%. Therefore, it is essential that future retirees save in the second pillar and in the third pillar. Of course, also the third pillar currently shows serious shortcomings. These are mainly high administrative fees, which are paid even at a time when the appreciation of savings is very weak, even negative. Another serious problem is that in 2020, only 32% of the economically active population was saving in the third pillar, and about 30% of them did not pay contributions in 2020. As part of improving the pension system in Slovakia, it is necessary for the state to assume greater responsibility in the investment strategy of the funds offered. Our ambition is to offer our results to representatives of Mercer, CFA Institute and Monash Center for Financial Studies and ask them to include Slovakia in the group of monitored countries.

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