REPUBLIC OF SLOVENIA
FISCAL COUNCIL

Analysis of fiscal effects arising from the proposed amendments to tax legislation

(prepared on the proposal of the Commission for Public Finance Control of the National Assembly of the Republic of Slovenia)

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At its meeting on 2 June 2021, the National Assembly's Commission for Public Finance Control adopted a decision proposing the Fiscal Council prepare a comprehensive analysis of fiscal effects of the government's tax package and submit it to the Commission. The Fiscal Council received the Commission's decision on 3 June 2021.

The analysis drawn up by the Fiscal Council consists of three parts: (i) a presentation of the estimated direct or static impact of the proposed tax reforms on the general government balance; (ii) an overview of the current tax burden in areas of expected tax reforms including an international comparison; (iii) a model assessment of the dynamic impact of the proposed tax reforms. The dynamic analysis is more comprehensive than the static assessment, however, its results should also be considered with caution due to the parameter estimates included in the models. In the model estimates, the Fiscal Council was not able to take into consideration the entire range of factors that could affect the competitiveness of the economy and the potential GDP.

In its explanation of the proposed tax reforms, the Slovenian government presented the assessment of their direct and static impact on the general government balance, expressing its belief that the loss of general government revenue could be compensated by higher economic growth or higher consumption and other measures. However, the government presented no calculations as to the expected extent of economic growth or consumption following the proposed tax changes and no potential additional measures necessary to neutralise their impact on the general government balance.

1. Direct static impact of the proposed reforms on the general government balance

The proposed tax reforms pertain to the amendments of three existing acts and the adoption of one act that would, according to government's estimates, directly result in a loss of EUR 335 million in general government revenue in 2022 and EUR 937 million annually in 2025 after its final enforcement following the preliminary period.[1] The adoption of the draft Act Amending the Personal Income Tax Act,[2] which according to the government's estimates would result in a EUR 846 million loss in general government revenue upon the final enforcement of the proposed

Table 1.1: Assessment of direct impact of the proposed taxation changes

expected reduction of general government revenue in EUR million	2022	2023	2024	2025
ACT AMENDING THE PERSONAL INCOME TAX ACT	**247**	**467**	**645**	**846**
• Increase in general tax allowance	184	375	553	726
• Reduction of the tax rate in the last tax bracket from 50% to 45%	9	9	9	9
• Change in terms of motivating employees through vague provisions for wage payments on the basis of business performance	20	20	20	20
• Harmonisation of tax allowances and scale with the growth coefficient of consumer prices	10	10	10	10
• Proposal for the reduction of the tax rate on capital income from 27.5% to 25%, including the tax rate on capital gains from the disposal of capital, depending on the period of capital ownership	9	16	16	16
• Change of tax rate on property rental income from 27.5% to 15%, with a decrease of nominal costs from 15% to 10%	4	18	18	18
• Possibility of choice whether to include capital income in the annual personal income tax assessment		8	8	8
• Oprostitev bonitete za električna vozila	2	2	2	30
• Seniority allowance	9	9	9	9
ACT AMENDING THE CORPORATE INCOME TAX ACT	**27**	**27**	**27**	**27**
• Increase of tax allowance for donation from 0.3% or 0.2% to 1% of income	2	2	2	2
• More favourable recognition of provisions for pensions, long-service bonuses and severance payments at retirement	6	6	6	6
• Increase in recognised entertainment expenses and the expenses of a supervisory board or other body performing a supervisory function only from 50% to 60%	3	3	3	3
• Allowance for investments in the green and digital transition	17	17	17	17
• Change in allowance for carrying out practical training within professional education	0	0	0	0
ACT AMENDING THE VALUE ADDED TAX ACT	**12**	**14**	**14**	**14**
• Upgrading the FURS information system	0	0	0	0
• 15 new jobs will be created to support the performance of additional tasks related to the introduction of new VEM rules	0	0	0	0
• Change in the place of taxation*				
• Abolishment of the exemption on VAT charged for the import of goods in shipments of negligible value (up to EUR 22)	9	9	9	9
• Possibility of VAT deduction for purchases of electric vehicles	2	5	5	5
DEBUREAUCRATISATION ACT	**50-165**	**50-165**	**50-165**	**50-165**
• Social cap for earnings over EUR 6000 gross – government estimate	50	50	50	50
• Social cap for earnings over EUR 6.000 gross – lower ZPIZ and ZZZS estimates	115	115	115	115
• Social cap for earnings over EUR 6.000 gross – higher ZPIZ and ZZZS estimates	165	165	165	165
TOTAL	**335-450**	**558-673**	**736-851**	**937-1.052**

*Source: DZ RS, ZPIZ, ZZZS. Note: * The effect can not be estimated at this time.*

[1] The proposal of planned amendments does not define whether these estimates include the assumptions on the changes in behaviour of economic entities.

[2] https://imss.dz-rs.si/IMiS/ImisAdmin.nsf/ImisnetAgent?OpenAgent&2&DZ-MSS-01/c8a7908d1ff247fbf06dc21c7807dc7b7df06ba7a61d681dce6a75fd93e5c20a - Only in Slovene.

changes in 2025, is expected to have the largest fiscal impact. The most important effect would arise from the proposed gradual increase in general tax allowance from EUR 3500 to EUR 7500. The draft Act includes eight other amendments, which would decrease the revenue by EUR 120 million. According to the government's estimates, the direct effect of the draft Act Amending the Corporate Income Tax Act[3] would total EUR 27 million a year and EUR 14 million in the case of the draft Act Amending the Value Added Tax Act.[4] As for the latter, it is not possible to assess the effect of changing the place of taxation, which could have a positive impact according to the government's estimates. In the draft Debureaucratisation Act[5], the government also proposed to introduce an upper limit for social contributions paid above the monthly income of EUR 6000 gross. The government estimates that the direct decrease in revenue based on this proposal would amount to EUR 50 million a year. According to the Pension and Disability Insurance Institute of Slovenia (ZPIZ) and the Health Insurance Institute of Slovenia (ZZZS), this effect could total EUR 115–165 million a year.[6] Following the end of the preliminary period as of 2025, the total direct effect of all measures proposed on the revenue decrease is expected to amount to EUR 937–1,052 million. This constitutes between 4.4% and 5.2% of the entire general government revenue or around 2% of the 2019 GDP.[7] Considering the proposed measures, the largest effect would be felt in the context of personal income tax, with the difference amounting to almost a third of the 2019 revenue.

In this regard, the Fiscal Council cautions that the tax reforms adopted in 2019 were introduced last year and, according to the estimate of the then government, were expected to result in an around EUR 70 million loss of general government revenue. According to the assurances made at that time, the loss would be compensated by a more effective collection of tax liabilities. Already at the adoption of the above reforms, the Fiscal Council has expressed doubts over such assumptions[8] and also assesses that the impact of these changes on macroeconomic and fiscal trends is not visible yet due to the epidemic.

2. Overview of tax burden in areas of expected tax reforms in an international comparison

The taxation on labour is slightly higher than the average in OECD member countries, which are also EU Member States, while the effective taxation of corporate income is among the lowest in the OECD area and the EU. According to the government, the main objective of solutions proposed is to provide a tax relief on labour (income from employment) and thereby to help the economy and the population recover from the COVID-19 pandemic and reduce administrative burden. Based on the latest data, the taxation on labour – measured as personal income tax and social contributions of the employer and the employee without benefits – as part of labour costs is somewhat higher in Slovenia than the average taxation of 22 EU Member States, which are also OECD members.[9] The tax rate depends on the type of the household and income. According to SURS, as much as 60% of the population between 25 and 64 years lives together with their children, making it the most representative sample for comparisons of labour tax rates. Based on the OECD data, for two-parent families with two chil-

[3] https://imss.dz-rs.si/IMiS/ImisAdmin.nsf/ImisnetAgent?OpenAgent&2&DZ-MSS-01/70e7c99bbc1447bc55bcc616450f4a56d8efc3184e87f0d8b139b5029211de73 - Only in Slovene.

[4] https://imss.dz-rs.si/IMiS/ImisAdmin.nsf/ImisnetAgent?OpenAgent&2&DZ-MSS-01/7693eee22a0874a38f6da00db5b079615c82367ddc35b03ebe3c209045331eff - Only in Slovene.

[5] https://imss.dz-rs.si/IMiS/ImisAdmin.nsf/ImisnetAgent?OpenAgent&2&DZ-MSS-01/996f0347bfa2823a1daa401dc2bc9a56a1a5b6a01344054156ab13d8feda9f74 - Only in Slovene.

[6] Around EUR 110 million a year according to the Fiscal Council's assessment.

[7] Taking IMAD's projections and Fiscal Council's extrapolation for years following the IMAD's forecast period into account, this effect is expected to be at around 1.7% of GDP in 2025.

[8] Assessment of compliance of the Proposal of budgets of the Republic of Slovenia for 2020 and 2021 with the fiscal rules, October 2019 (p. 22–24). Available at: https://www.fs-rs.si/wp-content/uploads/2019/10/Ocena-oktober-2019_koncna_ANG.pdf.

[9] OECD Taxing Wages 2021, p. 63. Available at: https://www.oecd-ilibrary.org/docserver/83a87978-en.pdf?expires=1622111709&id=id&accname=ocid53026753&checksum=FB577EE2870E1700D828ABB82E6D68FD.

dren, where both parents' income equals the average personal income in the country, the tax on labour (personal income tax and all social contributions) in 2020 constituted 38.6% of labour costs (see Table 2.1). This is 1.5 pp more than the average of EU Member States, which are also OECD members, and the 10th highest tax rate among these 22 countries. For example, the tax rate for this house-

Table 2.1: Taxation on labour (income tax plus employer and employee social contributions less cash benefits as share of labour costs), 2020

Married with 2 children (100-100% avg. wage)		Married with 2 children (100-67% avg. wage)		Single, no children (100% avg. wage)		Married, no children (100-67% avg. wage)		Single with two children (67% avg. wage)	
Belgium	47.1	Belgium	43.4	Belgium	51.5	Belgium	48.6	Turkey	35.1
Germany	44.3	Germany	41.5	Germany	49.0	Germany	47.2	Sweden	32.8
France	43.6	France	40.2	Austria	47.3	Austria	45.5	Greece	28.9
Italy	43.4	Italy	40.0	France	46.6	France	43.9	Slovakia	28.9
Greece	40.6	Sweden	38.7	Italy	46.0	Hungary	43.6	Germany	28.1
Austria	40.2	Turkey	37.8	Czechia	43.9	Italy	43.6	Belgium	25.5
Sweden	40.1	Greece	37.4	Hungary	43.6	Czechia	43.0	Spain	24.5
Turkey	39.2	Austria	37.0	**Slovenia**	**42.9**	**Slovenia**	**41.8**	Italy	23.9
Finland	38.9	Portugal	36.4	Sweden	42.7	Sweden	41.8	Finland	23.8
Portugal	38.8	Slovakia	36.3	Latvia	41.8	Latvia	40.3	Latvia	23.4
Slovenia	**38.6**	Spain	36.3	Portugal	41.3	Slovakia	40.3	Portugal	23.4
Slovakia	37.9	Finland	35.9	**OECD-EU 22**	**41.3**	**OECD-EU 22**	**39.5**	Hungary	22.6
Spain	37.9	Hungary	35.6	Finland	41.2	Portugal	39.4	Norway	22.4
Czechia	37.3	**Slovenia**	**35.5**	Slovakia	41.2	Greece	39.3	Czechia	21.9
OECD-EU 22	**37.1**	Czechia	35.1	Greece	40.1	Finland	38.5	Austria	19.8
Hungary	36.9	**OECD-EU 22**	**34.3**	Turkey	39.7	Turkey	38.4	**OECD-EU 22**	**18.2**
Latvia	36.4	Latvia	33.9	Spain	39.3	Spain	37.9	Estonia	17.9
Norway	34.0	Norway	32.5	Luxembourg	37.5	Estonia	35.4	Japan	17.4
Estonia	32.8	Denmark	30.5	Estonia	36.9	Lithuania	35.4	France	17.3
Nethelands	32.3	Estonia	30.5	Lithuania	36.9	Norway	34.6	Mexico	16.5
Denmark	32.2	Iceland	29.9	Nethelands	36.4	Poland	34.5	Iceland	16.1
Iceland	32.0	Japan	29.7	Norway	35.8	Denmark	34.1	**Slovenia**	**14.3**
Lithuania	31.9	Lithuania	29.4	Denmark	35.2	Nethelands	33.4	Korea	13.9
OECD average	**31.3**	**OECD average**	**28.9**	Poland	34.8	**OECD average**	**33.0**	**OECD average**	**13.7**
Japan	30.7	Nethelands	28.5	**OECD average**	**34.6**	Luxembourg	32.4	UK	9.2
Luxembourg	30.4	UK	26.5	Japan	32.7	Japan	32.1	Lithuania	8.2
Ireland	29.1	Australia	26.3	Iceland	32.3	Iceland	30.9	USA	7.0
UK	28.9	Luxembourg	25.5	Ireland	32.3	Canada	29.0	Chile	6.1
Australia	28.4	Ireland	24.2	UK	30.8	UK	28.9	Luxembourg	6.1
Canada	26.8	Canada	23.5	Canada	30.4	Ireland	28.1	Nethelands	6.0
Poland	24.4	Poland	22.0	Australia	28.4	Australia	26.3	Switzerland	4.4
USA	24.1	USA	21.3	USA	28.3	USA	26.2	Denmark	4.0
Korea	21.0	Korea	19.3	Korea	23.3	Korea	22.0	Israel	2.7
Mexico	20.2	Mexico	18.7	Israel	22.4	Switzerland	21.9	Ireland	1.3
Israel	19.2	New Zealand	17.6	Switzerland	22.1	Israel	19.1	Australia	1.2
New Zealand	19.1	Israel	16.0	Mexico	20.2	Mexico	18.7	Poland	-3.5
Switzerland	18.2	Switzerland	15.7	New Zealand	19.1	New Zealand	17.1	Canada	-17.9
Chile	7.0	Chile	6.6	Chile	7.0	Chile	7.0	New Zealand	-18.1

Source: OECD. Note: OECD members that are not EU members are presented in red.

Figure 2.1: Structure of the population 25-64 years (2018)

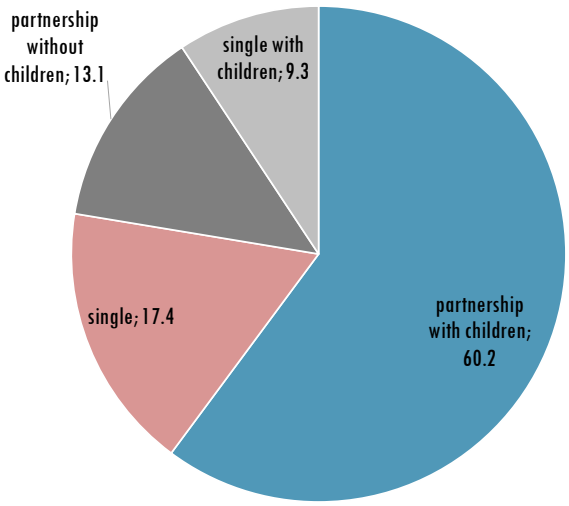
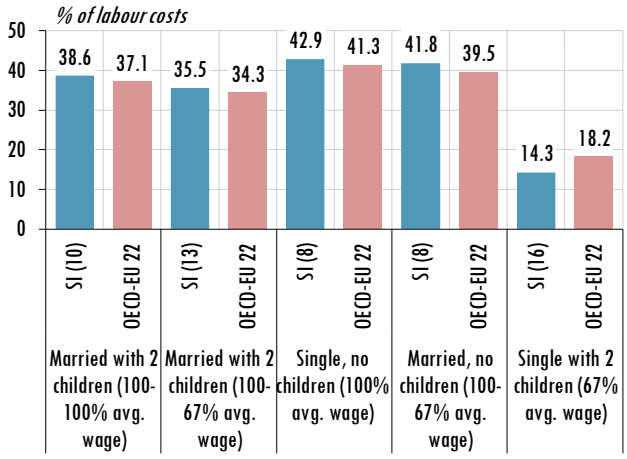


Figure 2.2: Income tax plus employer and employee social contributions less cash benefits (2020)

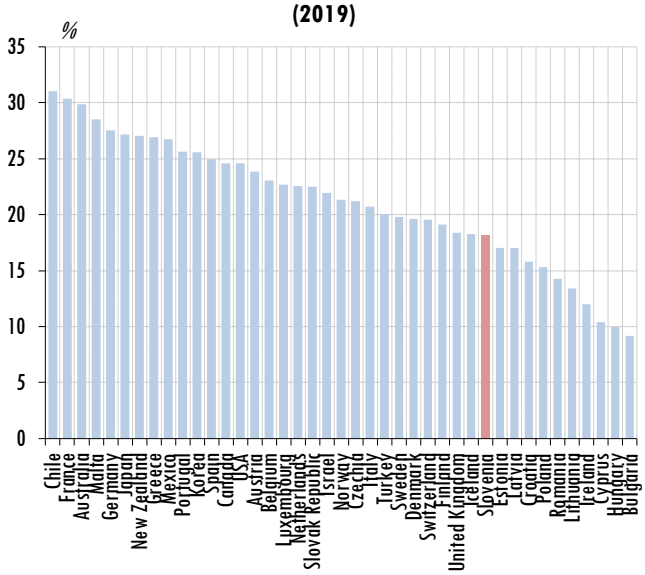


Source: OECD. Note: rank of Slovenia among the 22 EU countries that are OECD members by taxation is noted in brackets.

hold type is 40.4% in Austria and 37.3% in the Czech Republic. The tax rate for singles without children and for two-adult households without children is somewhat higher than 40%. It also exceeds the average of the EU Member States, which are also OECD members, while the tax rate for single-parent families with children is considerably lower than the average. According to the OECD data for the taxation of corporate income, the effective corporate income tax rate in Slovenia in 2019 totalled 18.1%. This is the 11th lowest effective tax rate among the 40 states that are OECD and EU members.[10]

In the 2011–2018 period, the effective personal income tax rate decreased by 3.1 pp, with significant changes regarding income brackets.[11] It fell from 22.5% in 2011 to 19.4% in 2018. The de-

Figure 2.3: Composite effective average corporate tax rate (2019)



Source: OECD.

[10] OECD has 37 member countries, while the EU Member States that are not OECD members include Bulgaria, Cyprus, Croatia, Malta and Romania. This information is not available for Colombia.

[11] Information obtained from the Ministry of Finance's annual publication Basic statistical information from income tax assessments.

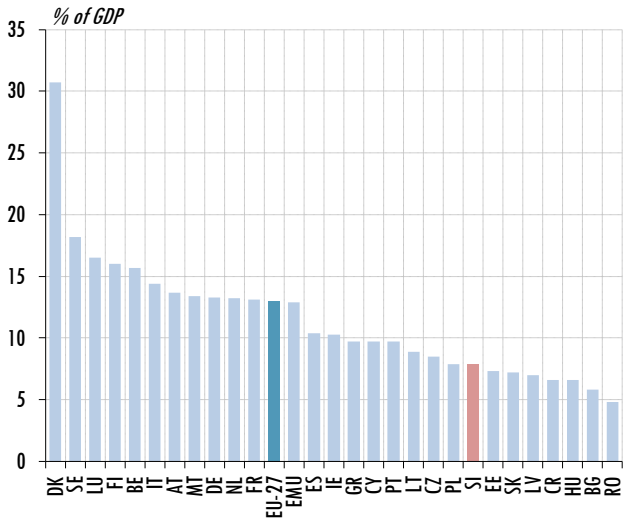
Table 2.2: Effective income tax rates by income brackets

	2011	2012	2013	2014	2015	2016	2017	2018	*2018/2011*
up to minimum wage	10.0	9.6	10.2	8.8	2.9	2.9	2.9	2.7	*-7.3*
from minimum wage to 60% of AW	13.0	12.8	12.9	12.5	7.3	7.3	7.5	7.7	*-5.3*
from 60% of AW to 70% of AW	13.9	13.8	14.1	13.8	10.1	10.4	10.7	11.0	*-2.9*
from 70% of AW to 80% of AW	14.2	14.0	14.3	12.8	12.1	12.4	12.9	13.4	*-0.8*
from 80% of AW to 90% of AW	15.3	15.1	15.3	14.3	14.6	14.8	15.2	15.7	*0.4*
from 90% of AW to 100% of AW	16.4	16.3	16.0	16.1	16.2	16.4	16.7	17.2	*0.8*
from 100% of AW to 110% of AW	17.7	17.4	17.1	17.2	17.2	17.3	17.6	18.0	*0.3*
from 110% of AW to 120% of AW	18.1	17.8	17.2	17.5	17.5	17.8	18.1	18.6	*0.5*
from 120% of AW to 130% of AW	19.8	19.6	19.2	19.3	19.5	19.6	19.9	20.3	*0.5*
from 130% of AW to 140% of AW	21.2	20.8	20.3	20.4	20.5	20.6	20.8	21.1	*-0.1*
from 140% of AW to 150% of AW	22.5	22.0	21.0	21.2	21.2	21.2	21.4	21.7	*-0.8*
from 150% of AW to 160% of AW	23.7	23.2	21.7	21.8	21.9	21.8	22.0	22.3	*-1.4*
from 160% of AW to 170% of AW	24.8	24.3	22.5	22.7	22.7	22.5	22.6	22.9	*-1.9*
from 170% of AW to 180% of AW	25.8	25.4	23.4	23.6	23.7	23.3	23.1	23.5	*-2.3*
from 180% of AW to 190% of AW	26.8	26.3	24.3	24.4	24.5	24.2	23.7	24.1	*-2.7*
from 190% of AW to 200% of AW	27.6	27.2	25.2	25.3	25.4	25.0	24.3	24.7	*-2.9*
from 200% of AW to 250% of AW	29.5	29.2	27.3	27.5	27.6	27.1	25.6	25.9	*-3.6*
from 250% of AW to 300% of AW	32.0	31.7	30.3	30.5	30.4	30.1	27.4	27.6	*-4.4*
from 300% of AW to 400% of AW	34.1	33.9	32.8	33.0	32.9	32.6	29.0	29.4	*-4.7*
from 400% of AW to 500% of AW	35.9	35.7	35.0	35.2	35.1	34.8	31.4	31.8	*-4.1*
from 500% of AW to 600% of AW	36.9	36.8	36.7	36.9	36.9	36.7	34.0	34.5	*-2.4*
from 600% of AW to 700% of AW	37.6	37.6	38.8	39.1	38.9	38.9	36.5	37.1	*-0.5*
from 700% of AW to 800% of AW	38.1	38.0	40.4	40.6	40.7	40.5	38.6	38.9	*0.8*
from 800% of AW to 900% of AW	38.7	38.5	41.8	41.8	41.9	41.7	40.2	40.5	*1.8*
from 900% of AW to 1000% of AW	38.7	38.7	42.6	42.7	42.6	42.7	41.2	41.3	*2.6*
over 1000% of AW	39.8	40.1	45.8	46.1	46.0	45.9	45.2	45.4	*5.6*

AW - average wage

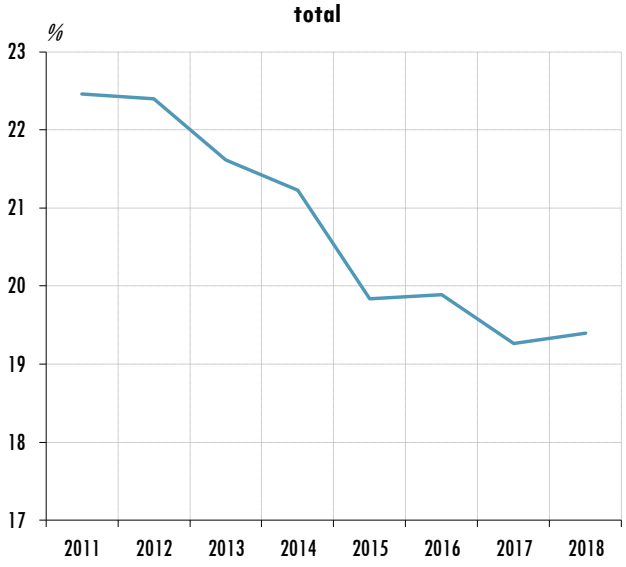
Source: MoF, FC calculations.

Figure 2.4: Revenue from current taxes on income, wealth, etc (2019)



Source: Eurostat. Note: D5 (ESA methodology), which is comprised mainly from personal and corporate income tax.

Figure 2.5: Effective personal income tax rate - total



Source: FURS, FC calculations.

crease was the largest for taxpayers with income up to and including the minimum wage and for taxpayers with income higher than twice the amount of the average wage. For taxpayers earning between 2.5- and 5-times the average wage, the reduction totalled more than 4 pps, which was mainly the result of tax reforms from 2017 when a new income bracket between the second and the third bracket was introduced and the tax rate of the fourth bracket decreased. In this period, the effective tax rate for taxpayers with income between 80% and 130% of the average wage and for taxpayers with income 7-times the amount of the average wage slightly increased. It is estimated that the effective tax rate was further reduced in 2019 and 2020. In 2019, the holiday allowance up to and including the average wage was exempt from personal income tax and social security contributions. In 2020, additional amendments were introduced, which, above all, include an additional increase in general tax allowance and the amendment to the tax scale by lowering the tax rate of the second and the third income brackets and increasing the limits for all income brackets.

The general government revenue from current taxes on income and property[12] as share in GPD is lower by almost a half compared to the EU average. Revenue from current taxes on income and property, which is largely made up of personal income tax and corporate income tax, was 7.8% of GDP in 2019, making it the 8th lowest share in GDP among the EU Member States. In the EU average, this type of revenue constituted 13% of GDP. The share of this revenue type in Slovenia dropped more than a decade ago after the financial crisis and it was 8.9% of GDP in the average of the 2005 –2008 period. Together with revenue from social contributions, in 2019 this share was 23.8% of GDP and 27.2% of GDP in the EU average.

3. Model assessment

The Fiscal Council based the model estimates of fiscal effects of the proposed tax reforms on a wide spectrum of parameters and model infrastructure available. A standard selection of tools was applied in simulations. The static estimate of fiscal effect presented in Chapter 1 was upgraded by dynamic simulations, taking into account the direct and indirect links as well as feedback effects between fiscal and macroeconomic aggregates. The dynamic analysis is thus more comprehensive, however, its results should also be considered with great caution due to the parameter estimates[13] included in the models.

Model and dynamic evaluations of economic policy effects are inevitably subject to many uncertainties. Although model parameters are usually estimated, they may often be exogenously – and thus subjectively – determined. At the same time, the responsiveness of macroeconomic variables in simulations is already determined by the model structure itself. Model parameters are estimated or determined based on past correlation between model variables, which is why simulation results only reflect historical links between the variables observed. The fact that such behaviour of economic agents may change over time and does not necessarily correspond to a past behaviour or response introduces additional uncertainty into model assessments. In the model estimates, the Fiscal Council was unable to take into consideration the entire range of factors that could influence the competitiveness of the economy and the volume of the potential GDP.[14] Due to the limited availability of model tools, certain fac-

[12] D5 according to the ESA methodology.

[13] For example, when not sufficient data or no sufficiently long time series for statistical assessments are available. In such cases, parameters from the literature, which are usually used as estimates for other countries, are generally applied. For example, see Hansen and Heckman (1996) or Chapter 6 in DeJong and Dave (2012).

[14] For example, wide ranges of indicators of such factors are published in regular annual Development Reports (IMAD), Tax database (OECD), Taxing wages (OECD), Education at a glance (OECD), Health at a glance (OECD and European Commission), etc.

tors have been included in the model infrastructure to a limited degree and are as such exogenously or, at least in structural models, partly endogenously determined in the simulation environment of models used in this assessment. In light of the above, it should be taken into account that econometric models reflect only an estimate of reality and that it is not possible to include all factors potentially having effect on the decisions of economic agents.[15]

The assessments on the impact of tax reforms on economic activity and fiscal results in Slovenia are relatively rare. Using the structural VAR approach, the analysis of Jemec et al. (2013) showed only a modest and short-term positive effect of tax reduction on economic activity (the estimated short-term tax multiplier[16] was lower than one), while the long-term effect was deemed statistically insignificant. The multiplier comparison in Caprirolo and Glažar (2013) based on the application of the dynamic stochastic general equilibrium (DSGE) model indicates a relatively small impact of tax increase on economic activity. On the revenue side, only the results of simulations using the modified value-added tax are presented.[17] In addition to the relatively small effects of a temporarily higher value-added tax, the simulation results for Slovenia in Kilponen et al. (2015) based on the DSGE model reflect an even smaller negative effect on economic activity in the case of an increase in tax on household and corporate income. The multipliers in both simulations using DSGE models increase significantly in the case of a permanent tax reform, as multipliers of household income tax and, above all, of corporate income tax increase substantially in absolute terms compared to the value-added tax multiplier.[18] The IMAD's analyses (2018 and 2019) on the effects of tax reforms from 2017 and 2019, which included the reduction of tax burden on household income, partly financed through the increase in tax burden on corporate income, showed a joint positive effect of the then proposed changes on economic activity; however, such effect would not suffice to balance the general government deficit caused by reforms. Given the models used in the IMAD's analysis, a lower personal income tax burden would affect the reduction in the tax wedge, which would result in higher net wages and lower labour costs. Therefore, in accordance with the model structure the labour demand would rise, while higher net wages would result in a labour supply increase, which would lead to a higher participation in the labour market and a larger number of hours worked. As a result of the model structure, higher employment rates would lead to an increase in investment, while the consumption would rise as well due to higher household income. With respect to the simulation results presented and the projected fiscal effects of personal income tax change, the Fiscal Council's estimates that the tax multiplier of the model used by the IMAD in the above analyses is at around −1.5 in a few years after the introduction of reforms and at −2 in the long term (this means that, in the case of a reduction in personal income tax revenue by 100 units, GDP would increase by 150 or 200 units respectively). Although the analysis by Neck et al. (2021) identifies positive effects of the reduction in household income tax on economic activity and, above all, employment, it does not enable the tax multiplier to be determined, because the size of the shock is not defined.

[15] The US Congressional Budget Office (CBO) as one of the most established independent fiscal institutions with extensive experience in the assessment of fiscal effects of legislative proposals only applies the dynamic model to proposals with wide-ranging effects on public finances. In doing so, CBO points out that the estimates of macroeconomic effects of proposals using the dynamic model are rather uncertain, because they are based on many assumptions regarding the change in behaviour of economic agents. For more information, see Lynch and Gravelle (2020).

[16] Tax multiplier indicates the extent of GDP increase in case of a tax reduction. For example, a tax multiplier of −2 indicates that with a tax decrease (increase) of EUR 100, GDP increases (decreases) by EUR 200.

[17] The analysis also shows that the effects of an increase in direct tax (on household income and corporate income) on economic activity are considerably more negative, however, the results are not presented.

[18] In case of a permanent increase in household income tax and corporate income tax, the tax multiplier for Slovenia in this analysis is −1.4 and −3.3, respectively. Both multipliers are among the higher multipliers compared to the multipliers for other analysed EU Member States and by around 50% higher than the multiplier estimates for the euro area.

The assessments of macroeconomic and fiscal effects of the proposed tax reforms were based on a spectrum of parameters and model infrastructure available. The effects were evaluated based on a simple multiplier model, multiplier model with reverse effects, structural macroeconomic model and a DSGE model. The characteristics of models and specifics of individual simulations are as follows:

a) In determining the simple tax multiplier, a marginal propensity to consume of 0.75 and the import component of household consumption of 0.33 were used based on the Fiscal Council's own assessment and the surveyed literature.[19] The tax multiplier based on these assumptions is −1,3.[20]

b) The simple model applied by the Fiscal Council to regularly prepare simulations when drafting its publication was used as multiplier model with reverse effects. It enables the simulation of the effects of various economic growth assumptions on public finance and of fiscal policy effects on economic growth. In this model, economic activity affects public finance through automatic stabilisers, while the fiscal policy affects economic activity reversely via multipliers.[21]

c) The structural macroeconomic model is mainly applied by the Fiscal Council for in-house simulations and forecasts, and is used for medium-term analyses. Its structure is similar to the SVAR (Structural Vector Autoregression) models. This type of model includes a strong dynamic component (VAR models)[22] limited by the theoretical restrictions of the coefficients entering into behaviour equations. A significant characteristic of this model is also the inclusion of a risk indicator, which is endogenous to changes in key macroeconomic aggregates, including general government balance,[23] while substantially affecting private investment. From the perspective of analysing fiscal policy effects, an essential characteristic of the model, which includes both the GDP production and expenditure side (aggregate supply and demand), is also the implicitly included response function, which reflects (partial or estimated based on historical links) the response of the fiscal policy to potential deviations from the baseline scenario. Therefore, the responses of the structural model with and without[24] the fiscal policy response were simulated. A simulation, in which the companies adjust (reduce) gross wages for the full extent of household tax allowances with the fiscal policy's response function being "disabled", was added.[25]

d) The model assessments based on the DSGE model were prepared using the simulations from Kilponen (2015), which, inter alia, contains a direct comparison of responses to fiscal policy shocks for most EU Member States.[26] The elasticities of the GDP response, which in the above analysis are only available for the first and second year of the shock in the case of a permanent shock of taxes on household income, were adequately interpolated by years in accordance with the expected tax reforms from our analysis.

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[19] See Box 2 in Bank of Slovenia (2019).

[20] If the regressive character of the proposed tax reform and the assumption that the marginal propensity of higher income classes is lower than the average (for example, see Caroll et al., 2014) were considered to a greater extent, the tax multiplier would be −1, with the assumed propensity to consume of 0.65 and the same import component of consumption of 0.33. Results based on these assumptions are also presented in simulations.

[21] For a more detailed explanation of the model, see: http://www.fiscalcouncil.ie/wp-content/uploads/2012/09/FAR_Sept2012.pdf (Priloga B).

[22] Due to a large number of variables included and the resulting statistical limitations in the inclusion of their deferrals in individual formulas, the structural model used does not fully reflect the VAR model structure.

[23] This implicitly substitutes the exogenously determined monetary policy in the model. The monetary policy being exogenous makes sense only in the case of a small economy within a monetary union. Modified financing costs in the model are reflected by a real interest rate, which is endogenous with regard to price trends.

[24] The model is designed in such a manner that revenue components are entered in the formulas for general government expenditure based on historical links between both variables. For simulation purposes, the basic model version can be adjusted to eliminate this link and thereby exclude the response of general government expenditure on revenue changes.

[25] This is an extreme assumption suggesting that net household revenue would remain unchanged, while the tax incentive based on the proposed tax reforms would actually be granted to companies.

[26] The Kilponen (2015) analysis contains the GDP elasticity in relation to tax increase. A symmetry between the effects of tax increase and decrease was assumed in our analysis, although it may not always be ensured in model responses.

e) Simulations were also prepared based on the DSGE model version[27] currently available to the Fiscal Council. In this context, two simulations were prepared: in the first simulation, the burden on household income is reduced due to lower tax rates, while in the second simulation the tax on corporate profit is reduced, which results in an adjustment (reduce) of gross wages for the full extent of household tax allowances. In the response of macroeconomic variables in DSGE models, the expectations of economic agents or, in this case, households about the mere announcement of measures play a crucial role. A permanent shock, which means that the measures remain in force even after 2025, was explicitly assumed in the model.[28]

No microeconomic models to assess the direct effects of the proposed tax reform on the distribution of household income and the impact of this distribution on macroeconomic and fiscal aggregates are available to the Fiscal Council. According to the Fiscal Council's estimates, due to the differences in marginal propensity to consume in different income brackets the use of these models with the effects of the proposed changes in personal income tax legislation would probably imply smaller aggregate effects of the reform on economic activity and labour supply. Even if microeconomic models were used, the analysis of effects on the social security cap would be extremely difficult, because the proposed amendments concern an extremely small portion of employees (roughly 1%), while the model infrastructure usually only allows for simulations by quintiles or deciles.

In addition to the limitations pertaining to the used model infrastructure, many factors can affect the effects of the proposed amendments to tax legislation. These include, for example, the position or the responsiveness of the monetary policy. The impact of the fiscal policy is usually greater in the case of an expansionary monetary policy, which ensures favourable financing conditions.[29] The public debt level also affects the assessment of effects, because a high public debt is deemed to limit the effectiveness of the fiscal policy, especially in the absence of a stimulative monetary policy.[30] The effects also depend on the cyclical position of the economy, as the fiscal policy effects are generally larger during a recession,[31] and on the uncertainty in the economy, because high uncertainty or situations in which, for example, the private sector postpones decisions on spending, enhance the effects of the fiscal policy.[32] The sources of financing negative fiscal results can also impact the effects of the proposed changes. The reviewed literature also shows that the most favourable short-term effects on economic activity would be achieved through public borrowing if the initial public debt were not high, if the monetary policy is accommodative and if such financing and total debt costs were considered sustainable. The least favourable short-term effects would arise if the financing would be based on the reduction of expenses, which generally have relatively higher multipliers in absolute terms.[33]

The static effects of the proposed amendments to tax legislation was used as input in the analysis. Individual measures with the expected static effect of less than 0.1% of GDP were not taken into consideration. Thus, only estimates of changes in personal income tax from Table 1.1, which at the same time constitute the largest proportion of changes of the full range of expected tax reforms, were used as shocks in simulations. A considerable number of assumptions, which were estimated and calibrated to the greatest extent possible, were taken into account in the analysis. Various models do not

[27] For details, see Clancy et al. (2014).

[28] The same assumption was also used in other models. It is specifically pinpointed in this context, because the inclusion of expectations in the behaviour of economic entities is specific to DSGE models.

[29] For example, see Amendola et al. (2019), Batini et al. (2014) or Coenen et al. (2010).

[30] For example, see Chapter 2 in IMF (2020).

[31] Auerbach and Gorodnichenko (2011).

[32] See Chapter 2 in IMF (2020).

[33] For example, see Barrell et al. (2012), Batini et al. (2014) or Boussard et al. (2012).

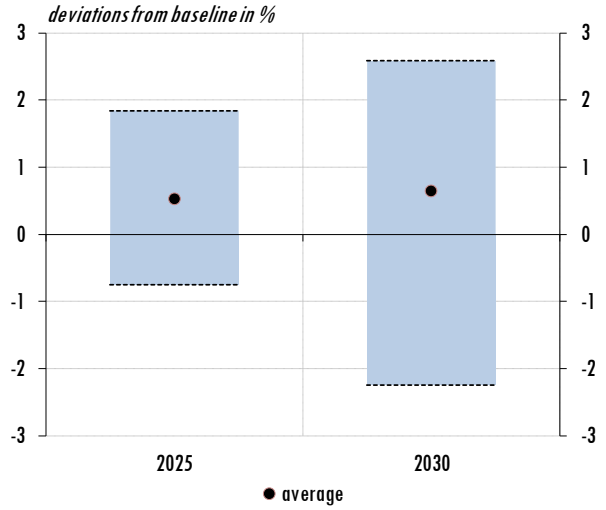
allow the simulations of effects for the same period. Thus, the model results for the period of shock and for the long-term period (for 2030) are presented in Table 3.1.

Table 3.1: Simulations of the effects of proposed tax changes

	2022	2023	2024	2025	2030
Impact on GDP:	*deviations from the baseline in %*				
a1) basic multiplier (MPC=0,75, m=0,33)*	0.6	1.1	1.5	1.8	2.6
a2) basic multiplier (MPC=0,65, m=0,33)*	0.5	0.8	1.1	1.4	1.9
b) Multiplier model with feedback effects	0.3	0.5	0.7	...	...
c1) Structural model with fiscal policy reaction function	-0.1	-0.3	-0.5	-0.8	-2.2
c1) Structural model without fiscal policy reaction function	0.0	0.0	-0.1	-0.1	-0.6
c1) Structural model without fiscal policy reaction function & with enterprise respons	0.1	-0.1	-0.1	-0.1	-0.4
d) Estimate based on Kilponen et al. (2015)*	0.1	0.5	0.8	1.0	2.0
e1) DSGE without response of enteprises	0.0	0.1	0.1	0.2	0.7
e1) DSGE with response of enteprises	0.1	0.3	0.5	0.8	1.3
	2022	2023	2024	2025	2030
Impact on general government balance:	*deviations from the baseline in % of GDP*				
a1) basic multiplier (MPC=0,75, m=0,33)*	-0.2	-0.4	-0.5	-0.6	-0.3
a2) basic multiplier (MPC=0,65, m=0,33)*	-0.3	-0.5	-0.7	-0.8	-0.6
b) Multiplier model with feedback effects	-0.5	-0.8	-1.0	...	...
c1) Structural model with fiscal policy reaction function	-0.5	-0.5	-0.6	-0.7	-0.3
c1) Structural model without fiscal policy reaction function	-0.9	-1.1	-1.4	-1.7	-1.9
c1) Structural model without fiscal policy reaction function & with enterprise respons	-0.4	-0.6	-0.7	-0.9	-1.0
d) Estimate based on Kilponen et al. (2015)*	-0.4	-0.7	-0.8	-1.0	-0.5
e1) DSGE without response of enteprises	-0.1	-0.4	-0.7	-0.9	-0.3
e1) DSGE with response of enteprises	-0.3	-0.7	-1.1	-1.5	-0.5

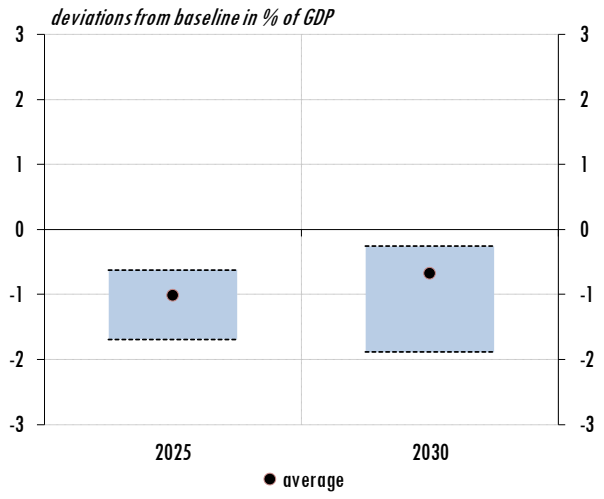
Source: Fiscal Council. Note: Estimate is based on unity elasticity of government revenues with regard to change in GDP in each simulation.*

Figure 3.1: Impact on GDP



Note: Blue field denotes the area between upper and lower bounds of model simulations shown in Table 3.1. Average is a simple average of all the results of model simulations.
Source: FC, FC calculations.

Figure 3.2: Impact on general government balance



Note: Blue field denotes the area between upper and lower bounds of model simulations shown in Table 3.1. Average is a simple average of all the results of model simulations.
Source: FC, FC calculations.

The model simulations carried out indicate a relatively uncertain impact on economic activity, which is expected to be positive on average, however, the impact on public finances could be negative. The Fiscal Council again pinpoints various factors of model assessments, where the results should be interpreted with great caution. The range of estimated values of the impact of the tax reforms proposed is relatively wide both for the response of economic activity as well as for the impact of these reforms on the general government balance. The average model responses show that tax reforms would have a more positive impact on economic activity in the long term. This implies that the reforms proposed could also affect the increase in potential output, particularly where aggregate demand is less pronounced in comparison to the models explicitly using the multiplier. While the general government balance would deteriorate particularly in the period of reform being introduced, the long-term negative effect of tax reforms on public finances would be somewhat smaller due to a gradual strengthening of economic activity. The impact of the proposed tax reforms would gradually increase in the period of their introduction (see Table 3.1). The range of impact estimates of proposed reforms on the general government balance five years after its enforcement is between −0.3% and −1.9% of GDP. Considering the model assessments, the negative impact of the proposed tax reforms on the general government balance cannot be completely avoided unless the proposed reforms are accompanied by additional measures adopted to ensure fiscal neutrality.

In addition to the model assessments presented, an illustrative assessment of the required economic growth that would ensure fiscal neutrality of the proposed reforms without adopting any additional discretionary measures was made. To compensate for the lower short-term general government revenue, the proposed tax reforms should considerably accelerate the expected relatively high economic growth. Simple calculations[34] show that the growth of economic activity in the simulation period should be 1–1.5 pp higher than projected in the IMAD's spring forecast 2021. For the 2022–2024 period, IMAD forecast an average annual growth of 3.6%, which is almost double the long-term average (1991–2020: 2.0%), while the output gap should become positive in this period given the current estimates.[35] Considering the simulation results, the tax multiplier should be almost −2.5 for the economic growth to adequately accelerate.[36] With marginal propensity to import remaining unchanged, the households' marginal propensity to consume should increase from the assumed 0.75 in the baseline scenario to 0.95. This also applies vice versa, with marginal propensity to consume remaining unchanged, the marginal propensity to import should decrease to only a third of the assumed value from the baseline scenario. This means that the share of import in the additional household consumption should be at around 10%. From the point of view of the national economy supply side, the total factor productivity should increase by 1–1.5 pp per year in accordance with the previously stated estimate of the economic growth required to compensate for the lower short-term general government revenue. Given the standard parameters of the production function,[37] the overall employment rate should increase by 2–2.5 pp per year more than the assumed employment rate growth in the last IMAD's projections.

[34] The fulfilment of the minimum condition is sought for the formula of $dY > d(T/Y)/(dT)$, where Y stands for GDP, dY for the reform-conditioned change in GDP, T for general government revenue and dT for the reform-conditioned change in general government revenue.

[35] For example, see Chapter 2.1 in Fiscal Council (2021).

[36] Such a high multiplier has not been observed in any of assessments undertaken for Slovenia. At the same time, the analysis performed by Gale and Samwick (2014) suggests that the effect of changes in household income tax is relatively low or even negative.

[37] The share of labour input usually constitutes around two thirds of the entire labour cost in the Slovenian economy. This corresponds to the labour "weight" in the production function. For example, see Radovan (2020).

The simulations presented show that, without adopting additional discretionary measures to ensure the fiscal neutrality of the reforms, the proposed tax reforms pose an additional risk to the medium-term sustainability of public finances. According to model assessments, the general government debt could cumulatively increase by between 4 and 14 pps of GDP due to the proposed tax reforms. Nevertheless, the simulations of proposed reforms indicate lower risks to the medium-term sustainability in comparison to the risks arising from standardised shocks in the recent analysis of the medium-term debt sustainability performed by the Fiscal Council.[38] Given the estimates presented, the primary budget balance should deteriorate less than the size of the standardised shock from the medium-term debt sustainability analysis, while economic activity is even expected to increase, which is contrary to the standardised shock from the above analysis that projected a decrease in activity. Just like in other euro area countries, the increase in general government debt does not result in an increase of the required yields in the case of additional borrowing in the current conditions of an exceptionally stimulative monetary policy. However, the ability of monetary policy to further cut financing costs are gradually being narrowed down and, as the economy recovers, the probability of monetary policy to begin the tightening in the future is on the rise.

Considering additional risks to the long-term sustainability of public finances arising from the proposed tax reforms, at least a partial neutralisation of the expected loss of general government revenue would be necessary. Certain methods of such neutralisation (as indicated by the simulations with the fiscal policy's response function "enabled") or a deterioration in financing conditions could further increase the risk of worsening the medium-term sustainability of public finances, which is already at risk due to demographic changes. The deterioration of the sustainability of public finances could thus directly and indirectly also occur due to the proposed tax reforms, particularly if these were to cause additional macroeconomic imbalances. At the same time, the decision on financing a potential loss of general government revenue may also act as an incentive to invest additional efforts into eliminating ineffective expenses, expanding tax bases or introducing tax burdens that allow for increases without any significant negative impact on economic growth.

[38] See Box 4.1 in Fiscal Council (2021).

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