

ROMANIA

Reimbursable Advisory Services Agreement on Improving the Tax Framework in Romania in the context of the National Recovery and Resilience Plan (P178899)

Deliverable 1: Report on the tax system in Romania, including benchmarking and recommendations to inform Client's reform of the tax framework

March 2023

Disclaimer

This work is a product of the staff of The World Bank. The findings, interpretation, and conclusions expressed in this paper do not necessarily reflect the views of the Executive Directors of the World Bank or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work and does not assume responsibility for any errors, omissions, or discrepancies in the information, or liability with respect to the use of or failure to use the information, methods, processes, or conclusions set forth. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

This report does not necessarily represent the position of the European Union or the Romanian Government.

Copyright Statement

The material in this publication is copyrighted. Copying and/or transmitting portions of this work without permission may be a violation of applicable laws.

For permission to photocopy or reprint any part of this work, please send a request with the complete information to either: (i) Ministry of Finance (Libertății Boulevard no 16, Sector 5, Bucharest, Romania) or (ii) the World Bank Group Romania (Vasile Lascăr Street, No 31, Et 6, Sector 2, Bucharest, Romania).

This report has been delivered in March 2023 under the Reimbursable Advisory Services Agreement on Improving the Tax Framework in Romania in the context of the National Recovery and Resilience Plan (P178899) signed between the Ministry of Finance and the International Bank for Reconstruction and Development (IBRD) on June 30, 2022. It corresponds to Deliverable 1 under the above-mentioned agreement.

Acknowledgments

This review has been led by Alastair Thomas (Senior Economist, World Bank). The project team consisted of: Martin Holmer (Tax Specialist), Rajiv Kumar (Senior Economist), Olena Makeieva (Tax Specialist), Ana Maria Manuela Mot (Public Sector Specialist), Victor Mylonas (Tax Specialist) and Alastair Thomas (Senior Economist). Helpful comments were received from the following World Bank staff: Reena Badiani-Magnusson, Ana Cebreiro Gomez, Radu Comsa, Dragos-Christian Dinu, Jonas Fallov, Ana Mercado, Catalin Puna, Alberto Leyton, Silver Namunane, Gaute Solheim and Adina-Maria Voda. Special thanks are due to the staff of the Ministry of Finance of Romania for their excellent collaboration during the preparation of this report.

Table of Contents

Executive Summary.....	8
1. Introduction	15
2. Level, sources and trends in tax revenue.....	17
3. Assessing Romania’s tax system	19
3.1. Taxation of labor income.....	19
3.1.1. Current tax rules on labor income	19
3.1.2. Little progressivity.....	20
3.1.3. Poor work incentives.....	24
3.1.4. Additional work disincentives due to benefit withdrawal.....	26
3.1.5. Narrow base.....	27
3.1.6. Reform options	27
3.1.7. Simulation results for reform scenarios.....	31
3.2. Taxation of capital income	38
3.2.1. Current tax rules on capital income.....	38
3.2.2. Low and non-neutral taxation of capital income.....	39
3.2.3. Comparatively low taxation of dividends	42
3.2.4. Reform options	43
3.3. Taxation of immovable property.....	44
3.3.1. Current tax rules on immovable property	45
3.3.2. An inequitable and inefficient area-based design	45
3.3.3. Variation in tax rates.....	46
3.3.4. Extensive use of concessions	46
3.3.5. Reform options	46
3.4. Taxation of corporate income	47
3.4.1. A low rate.....	47
3.4.2. A small number of taxpayers in the regular CIT regime	48
3.4.3. Use of tax incentives	49
3.4.4. Reform options	54
3.5. Small business taxation	55
3.5.1. Microenterprise tax regime	56
3.5.2. Distortions to business form.....	59
3.6. Taxation of energy use	61

3.6.1.	Context.....	61
3.6.2.	Brief Overview of Fiscal Regime.....	62
3.6.3.	Effective Fossil Fuel Taxation in Romania and Abroad	64
3.6.4.	Reform Options.....	67
3.7.	Value-added taxation	71
3.7.1.	The current VAT regime	71
3.7.2.	A narrow VAT base and low compliance.....	72
3.7.3.	Reform options	74
4.	A package of tax reforms to support the National Recovery and Resilience plan	75
	References	85
	Appendix 1. R&D tax incentives.....	89
	Appendix 2. Detailed Results of the Mitigation Policy Analysis.....	92
	Appendix 3. Overview of the Climate Policy Assessment Tool (CPAT)	103
	Appendix 4. Methodology for the Distributional Analysis of Climate Mitigation Policies in CPAT	105

List of Figures

Figure 1.	Tax revenue as a percentage of GDP, 2020	17
Figure 2.	Tax revenue by tax type, Romania vs EU27, 2020	18
Figure 3.	PIT and SSC revenues (% of GDP), 2020.....	19
Figure 4.	Average and marginal tax rates and wedges for a single individual across income levels, 2022..	21
Figure 5.	Top PIT rates in European OECD countries.....	22
Figure 6.	Inequality in disposable income (Gini index), 2019	22
Figure 7.	Average tax wedge, 2021.....	23
Figure 8.	Average tax wedge in European OECD countries, 2021	24
Figure 9.	Marginal tax wedge in European OECD countries, 2021	25
Figure 10.	Marginal tax wedge in European OECD countries, 2021	25
Figure 11.	Work disincentives from tax-benefit system interaction, 2020	26
Figure 12.	Average and marginal tax rates from reform scenarios (single individual).....	36
Figure 13.	METRs across asset types, Romania (2022 rules)	40
Figure 14.	METRs across asset types – 40 high-income country median (2016).....	41
Figure 15.	Overall statutory tax rates on dividend income (for top PIT rate taxpayer), 2022	42
Figure 16.	Recurrent property tax revenues (% of GDP), 2020	44
Figure 17.	CIT revenue (% of GDP), 2020	48
Figure 18.	CIT rates in EU countries, 2021	48
Figure 19.	Prevalence of income tax incentives around the world	51
Figure 20.	Romania: Total Carbon Prices (TCP) by Fossil Fuel, 2019	64
Figure 21.	Romania: Indirect Carbon Prices (ICP) by Fossil Fuel, 2019.....	65
Figure 22.	VAT C-efficiency ratios, European countries, 2019.....	72
Figure 23.	Distributional impact of reduced VAT rates in 20 OECD countries.....	74

List of Tables

Table 1. Tax revenue decomposition in Romania, 2008-2020.....	18
Table 2. Average tax rates across income bands from Reforms 1-4.....	33
Table 3. The number of taxpayers divided by the categories.....	48
Table 4. Effective tax rates across business forms under tax rules applicable as of 1 January 2023	60
Table 5. Romania: Relative Increases in Baseline Energy Prices by Scenario	69
Table 6. VAT policy gap estimates.....	73

List of Boxes

Box 1. Increasing analytical capacity in the Ministry of Finance	37
Box 2. Evidence on the effectiveness of tax incentives	50
Box 3. Use and design of R&D tax incentives around the world	52

List of Acronyms

AEOI	Automatic Exchange of Information
ANAF	National Agency for Fiscal Administration
ATR	Average Tax Rate
CIT	Corporate Income Tax
EET	Exempt-Exempt-Taxed system
EITC	Earned-Income Tax Credit
EU	European Union
FFSR	Fossil Fuel Subsidy Reform
GDP	Gross Domestic Product
GHG	Green House Gas Emissions
IEA	International Energy Agency
IMF	International Monetary Fund
INECP	Integrated National Energy and Climate Plan
METR	Marginal Effective Tax Rate
MNE	Multinational Enterprise
NDC	Nationally Determined Contribution
NRRP	National Recovery and Resilience Plan
OECD	Organisation for Economic Cooperation and Development
PIT	Personal Income Tax
R&D	Research and Development
SME	Small and Medium-sized Enterprise
SSC	Social Security Contribution
VAT	Value-Added Tax
WB	World Bank

Executive Summary

At 26.3 percent of GDP (including social security contributions), tax revenue in Romania is the second lowest in the European Union (EU). Extensive preferential tax regimes and exemptions for various labor categories and microenterprises, reduced value-added tax (VAT) rates for a broad range of goods and services, alongside a very low flat personal income tax rate of 10% (which was cut from 16% in 2018), have diminished the tax base, introduced considerable distortions, and negatively affected the fairness of the tax system. Consequently, there is significant scope to increase tax revenue through shifts in tax policy, while at the same time increasing both the efficiency and equity of the tax system. This report examines the main tax policy settings in Romania, assesses key tax policy challenges and presents a package of reform recommendations to increase tax revenue while also increasing efficiency and equity.

This report has been prepared as part of the Reimbursable Advisory Services Agreement on Improving the Tax Framework in Romania in the context of the National Recovery and Resilience Plan (NRRP). The scope of the report is restricted to potential reforms to tax policy settings. However, it should also be borne in mind that significant tax administration improvements are also required in Romania. In particular, as part of the NRRP, a major investment in the digitalization of the tax administration (ANAF) is currently being undertaken. This digitalization process will enable ANAF to manage its tax collection and tax compliance processes more effectively and efficiently, including improved risk management processes, as well as enabling the provision of online services for taxpayers to ease compliance. It is crucial that this major digitalization process is successfully completed. Moreover, there is also a need for additional investment in tax administration capacity, particularly to address current staff shortages in key areas such as risk management and auditing, as well as additional investment in staff training (for example, through greater use of the Taxation School of ANAF), and taxpayer education programs. The tax policy recommendations developed in this report and summarised below are proposed on the basis that these tax administration improvements are also progressed.

Tax reforms should also be pursued in conjunction with expenditure reforms which aim to improve the efficiency of public spending and the quality of public service delivery. Through the NRRP, Romania is progressing work on: reforming the pension system (including special pensions) to address equity aspects in a fiscally sustainable manner; restructuring the public pay system to place more focus on performance and equity; and gradually introducing program-based budgeting in the central administration. These are key reforms that will strengthen the linkages between public resources and results, and should help to alleviate some of the ongoing budgetary pressures.

The report proposes a wide range of tax policy reforms. In line with the NRRP goals, the overarching purpose of the proposed reforms is to ensure that Romania's tax system contributes to promote and preserve sustainable economic growth. More specifically, the reforms aim to allow Romania to improve competitiveness, while supporting fiscal sustainability and environmental goals, and to bring a fairer, more efficient, simpler and more transparent tax system capable of better supporting the economy and facilitating taxpayer compliance. The key reforms are summarized below:

Reform the taxation of labor income to increase equity and improve work incentives for low-income workers.

- Reassess the merits of the existing personal income tax (PIT) rate structure, and consider introducing a progressive PIT rate schedule for labor income (and unincorporated personal business income).
- Remove the PIT exemptions for workers in agriculture, construction, and information technology (IT) sectors.
- Lower the total burden placed on low-income workers due to substantial health and pension contributions, by either:
 - Removing the 10% health contribution (and fully funding healthcare instead through general taxation); or
 - Introducing a refundable earned-income tax credit (EITC) that offsets part of the current health and/or pension contribution burden on low-income workers. If health contributions are maintained, consider broadening the contribution base by, for example, removing the exemption for construction workers and potentially also high-income pensioners.

These proposed reforms are interlinked, and so it is important that they be implemented together as a package. The reforms could be implemented with various parameter settings that lead to different tax rate profiles across the income distribution. The most appropriate parameter settings will depend in part on the equity preferences of the government, and should be informed by microsimulation modelling – which enables assessment of the potential revenue and distributional impacts of different options. The World Bank has been able to conduct some simplified microsimulation modelling, drawing on a restricted micro-dataset from PIT tax returns for 2021. This simplified modelling shows, for example, that a revenue neutral reform lowering average tax rates for workers earning less than RON 50,000 by around 6-10 percentage points could be funded by an increase in average tax rates of around 3-4 percentage points for taxpayers earning more than RON 100,000, together with removing existing PIT exemptions. Prior to implementing the reforms, the Ministry of Finance should further invest in the development of microsimulation modelling capacity to further inform the design of the proposed reforms.

A number of additional issues will also need to be addressed before implementation is possible. First, the redesign and implementation of a progressive PIT system, and introduction of an EITC, will require adjustments to the withholding tax and tax return processes. Second, if healthcare contributions are removed, it will be necessary to ensure that appropriate budgetary processes are put in place for the full financing of healthcare expenditure through general taxation prior to the removal of the healthcare contributions. Finally, as part of the NRRP, a timeline has already been agreed for the gradual reduction of the tax concessions for workers in the construction sector to occur between 2025 and 2028. In light of these factors, it is therefore proposed that the above reform package be announced immediately, but with their coordinated implementation to occur between 1 January 2025 and 1 January 2028.

Given this delay, as an interim measure, Romania could consider further expanding the size of the existing PIT allowances, as this will immediately increase the progressivity of the PIT system and enhance work incentives for low-income individuals. This interim reform should also be informed by the PIT microsimulation model, so would not be feasible until mid-2023 at the earliest.

Reform the taxation of capital income to increase efficiency and equity.

- Remove the transaction tax on sale of residential property, and replace it with a 10% capital gains tax, potentially with a moderate exemption amount for owner-occupied property. The capital gains tax should be implemented on a forward-looking basis, applying only to properties purchased after the date the reform is announced. While reducing revenue, this avoids the need to revalue all properties.
- Maintain the current 10% tax rate on capital gains earned through an intermediary (e.g. an investment fund), and do not proceed with the announced concessionary 1%/3% split rate reform. This will maintain neutrality between direct and intermediated investment in shares, whereas the announced reform would result in a significant tax concession being provided for intermediated investment as opposed to direct investment.
- Increase the dividend tax rate to 10% to match the taxation of most other forms of capital income.

Improve the design of recurrent property taxation.

- Move from an area-based to a market value-based property tax system in order to improve both equity and efficiency. Consider also merging the land and buildings taxes into a single tax as this would allow market values to more easily be estimated based on market transactions.
- Once the move to a market value base has been undertaken, reassess the entire rate structure with the view to increasing total recurrent property tax revenue above its current comparatively low level amongst EU countries.
- Restrict the use of property tax concessions to those targeted at low-income and elderly taxpayers, government buildings, and as limited a range of public benefit organizations as possible. At a minimum, undertake a regular reassessment and cost-benefit analysis of property tax concessions.

The shift to a market value base will require significant work to develop a mass valuation model and related administrative systems, and the timeline for implementation will consequently be dependent on the progress of this work. The World Bank has committed to assisting Romania with the development of the necessary valuation model and related systems, and analysis and advice in this regard will be provided in subsequent reports.

Reform corporate income tax (CIT) incentives to improve effectiveness and transparency.

- Simplify the R&D tax incentive to a single enhanced deduction, removing the current tax holiday for R&D start-ups. Improve the take-up of the R&D enhanced deduction by reviewing and clarifying the definition of eligible R&D expenses.
- Reassess the policy objective and effectiveness of the tax exemption for reinvested profits. If the primary goal is to incentivize investment, then consider implementing an investment tax credit instead. Do not proceed with the announced expansion of the scope of the tax exemption for reinvested profits until the reassessment of the effectiveness of the existing regime has been undertaken.
- Remove the CIT rate reduction available for companies that increase equity. While this measure is only scheduled to be in place between 2021-2025, it is poorly targeted in that the initial 2 percentage point reduction can be received by companies not increasing equity.

- Commit to a regular reassessment of corporate tax incentives, to ensure they continue to cost-effectively meet their objectives, and publish tax expenditure estimates for each concession as part of an annual tax expenditure report.

Improve the design of the microenterprise regime and reduce distortions to business form.

- Lower the threshold for eligibility to the microenterprise regime to equal the VAT threshold (currently EUR 88,500). To give businesses time to adjust, this reform could be implemented in a staged manner, starting with the already agreed reduction to EUR 500,000 as of 1 January 2023; then to EUR 250,000 as of 1 January 2024, and reaching the (inflation adjusted) VAT threshold as of 1 January 2025. The microenterprise and VAT registration thresholds should then remain aligned.
- Implement consolidation rules to prevent the artificial splitting of businesses to access the microenterprise regime.
- Remove the ability to deduct specified expenses against turnover. This will further simplify the regime and reduce opportunities for tax evasion. If desired, a fixed deduction amount (as a percentage of turnover) could be applied instead.
- Undertake a reassessment of the appropriate turnover tax rate. The proposed 1% rate implies a profit margin of around 6.25%, which is likely to be below the actual profit margin of most microenterprises, resulting in concessionary tax treatment for microenterprises as compared to companies subject to the ordinary CIT regime.
- Equate the taxation of employees and self-employed workers by removing the SSC ceiling currently applied to self-employed workers. An alternative option would be to apply an SSC ceiling to both employees and self-employed workers – although any implications for pension entitlements would then also need to be assessed.

Reform energy taxation to more effectively price carbon emissions and provide greater neutrality across fuel types.

- Plan for and gradually proceed with the elimination of fossil fuel subsidies. A necessary precondition for externality-inclusive energy price reform is the absence of fossil fuel subsidies. Potential candidates for fossil fuel subsidy reform (FFSR) in Romania consist of the subsidies for coal, natural gas, and district heating.
- Introduce additional carbon pricing (e.g., via higher excise tax rates) to address the presence of fossil fuel externalities. To fully internalize climate and other externalities, fossil fuel prices in 2030 are estimated to need to increase by approximately 50 percent (gasoline), 62 percent (diesel), 34 percent (LPG), 55 percent (kerosene), 51 percent (other/non-transport oil products), 113 percent (coal), 32 percent (natural gas) and 7 percent (electricity) relative to their baseline levels (i.e., absent additional carbon pricing).
- Use some of the revenues generated from FFSR and additional carbon pricing to compensate vulnerable groups.

These recommendations, both in relation to FFSR as well as the introduction of additional carbon pricing, should take place in a gradual and well-coordinated manner. The fossil fuel subsidy phase-out would, ideally, commence in early 2024 and take place incrementally such that by a target year (e.g., year 2030)

subsidies are completely phased out. Likewise, carbon pricing should be increased starting from year 2024 at a fraction of the target carbon price, with the price being progressively ramped up to reach its full level by a target year (e.g., year 2030). The choice of target year (by which fossil fuel subsidies should be completely phased out and the carbon price should reach its target level) would depend on the government’s objectives regarding the pace of the transition process.

Broaden the VAT base

- In the short term, Romania should consider removing reduced VAT rates that have been introduced for non-distributional purposes, such as reduced rates on restaurant food, hotel accommodation, books, newspapers, magazines, museums, zoos, gardens and parks. These reduced rates have a negative distributional impact, distort consumption decisions, cost revenue, and are unlikely to be an effective means of addressing any social or cultural goals.
- In the longer term, and certainly not until after the current food and energy price crisis is over, additional base broadening should be considered in relation to reduced VAT rates that were introduced for distributional purposes, including the reduced rates on food, pharmaceuticals, water supply, firewood and district heating. To ensure that poor households are not disadvantaged by such a reform, the reform would need to be complemented by targeted cash transfers to fully compensate the poorest households. This reform should be informed by a microsimulation model, to identify the needed coverage of cash transfers compared to existing social assistance transfers.

Improve analytical capacity within the Ministry of Finance

- To better implement the proposed reforms regarding the PIT, CIT and VAT, Romania needs to enhance its tax microsimulation modelling capacity. This can help to inform the implementation stage of the reform process. Consideration should also be given to the development of additional analytical tools, such as VAT gap models. The World Bank can provide support to the Ministry of Finance in the development of these analytical tools.
- To ensure these analytical tools are able to be effectively used and maintained, the Ministry of Finance should also be provided with the necessary resources to enable the unit responsible for the analytical tools to be fully staffed.

REFORM TIMELINE

The proposed reform timeline is outlined below, presenting first the reforms that can be implemented in the next year, followed by those requiring a staged or deferred implementation that would also allow for necessary and aligned reforms in tax administration to take effect. The table also highlights areas where reform may be required following the completion of additional analysis.

Immediate reforms	
PIT: <ul style="list-style-type: none"> • Further increase the basic allowance amounts. • Replace the transaction tax with a capital gains tax on sale of residential property. • Maintain the 10% tax rate on capital gains earned through an intermediary. 	2023

<ul style="list-style-type: none"> • Increase the dividend tax rate to 10% to match the taxation of most other forms of capital income. 	
<p>CIT:</p> <ul style="list-style-type: none"> • Simplify the R&D tax incentive to a single enhanced deduction. • Review and clarify the definition of R&D expenses eligible for the enhanced deduction. • Remove the tax holiday for R&D start-ups. • Remove the CIT rate reduction available for companies that increase equity. 	2023
<p>Microenterprise regime:</p> <ul style="list-style-type: none"> • Implement consolidation rules to prevent the artificial splitting of businesses to access the microenterprise regime. • Remove the ability to deduct expenses against turnover. <p>Small business taxation</p> <ul style="list-style-type: none"> • Remove the SSC ceiling currently applied to self-employed workers. 	2023
<p>VAT:</p> <ul style="list-style-type: none"> • Remove reduced VAT rates currently applied for non-distributional purposes. 	2023

Reforms with a deferred or staged implementation	
<p>PIT:</p> <ul style="list-style-type: none"> • Introduce a progressive PIT rate schedule. • Remove PIT exemptions for construction, IT and agricultural workers. • Remove the healthcare contribution (and fund healthcare through general taxation), and/or introduce a refundable earned income tax credit targeting low-income workers. 	2025-2028
<p>CIT:</p> <ul style="list-style-type: none"> • Undertake a review of the effectiveness of the tax exemption for reinvested profits. 	Review in 2023; reform in 2024.
<p>Microenterprise regime</p> <ul style="list-style-type: none"> • Lower the threshold for eligibility to the microenterprise regime to equal the VAT registration threshold. 	2023-2025

<ul style="list-style-type: none"> • Undertake a reassessment of the appropriate turnover tax rate, and adjust the rate if required. 	Review in 2023; reform in 2024.
<p>Energy taxation:</p> <ul style="list-style-type: none"> • Increase excise tax rates on fossil fuels. • Remove fossil fuel subsidies. 	2024-2030
<p>Property taxation</p> <ul style="list-style-type: none"> • Move from area-based to market value-based property tax system. • Restrict the use of property tax concessions to those targeted at low-income and elderly taxpayers, government buildings, and as limited a range of public benefit organizations as possible. • Reassess the entire rate structure with the view to increasing total recurrent property tax revenue above its current comparatively low level amongst EU countries. 	<p>Target 2025, but subject to progress in development of mass valuation model and related administrative systems.</p> <p>Following implementation of market-value based tax.</p>
<p>VAT:</p> <ul style="list-style-type: none"> • Remove reduced VAT rates currently applied for distributional purposes and provide compensation for low-income households through cash transfers. 	2025

1. Introduction¹

The World Bank's 2021 report on "Policies for a fiscally sustainable recovery", highlighted the need for significant fiscal consolidation over the medium term in Romania, with a predominant focus needed on increasing tax revenues (World Bank, 2021). At 26.3 percent of GDP (including social security contributions), tax revenue in Romania is the second lowest in the EU – where the average was 41.3 percent in 2020. Extensive preferential tax regimes and exemptions for various labor categories and microenterprises, reduced VAT for a broad range of goods and services, alongside a very low flat personal income tax rate of 10% (which was cut from 16% in 2018), have diminished the tax base considerably. Consequently, there is significant scope to increase tax revenue collection, while at the same time increasing both the efficiency and equity of the tax system.

To address these concerns, and as part of Romania's National Recovery and Resilience Plan (NRRP) recently approved by the European Union, the Romanian Ministry of Finance has agreed to undertake a review of the tax framework. To assist them in undertaking this review, the Ministry of Finance has requested technical assistance from the World Bank in the form of a comprehensive assessment of the current tax system in Romania. This report provides that assessment. It contributes to Milestone 205 of the NRRP: "Review of the tax framework: Analysis of Romania's tax system with the objective to produce recommendations to ensure that the tax system contributes to promote and preserve sustainable economic growth".

The broad objective of the review is to "allow Romania to improve competitiveness, while supporting fiscal sustainability and environmental goals. It should also bring a fairer, more efficient, simpler and more transparent tax system capable of better supporting the economy and facilitating taxpayers' compliance". The NRRP further specifies that the review should: "identify distortions and areas where relevant tax legislation should be adjusted, in particular for corporate income tax, income tax and social security contributions as well as property taxation, so as to inform decisions for a gradual withdrawal of excessive tax incentives. The review of the tax framework shall also aim at expanding green taxation, including as flanking measure for the sustainable transport and energy components." In addition to the above requirements, the NRRP identifies the following reform objectives:

- improve the structure of tax revenues;
- increase the tax revenue to GDP ratio by 0.5 percentage points by 2025 as compared to 2019;
- eliminate distortions and loopholes in the tax system that allow taxpayers to minimize taxes (undermining the fairness of the system), in particular income tax and social contributions;
- simplify tax rules to facilitate compliance and administration, and elimination of preferential exemptions and treatments;
- achieve a more efficient tax system and a fairer distribution of the tax burden;
- amend property taxation, including in particular by encouraging the free imposition of allowances by local authorities within centrally defined ranges and estimating the tax base as close as possible to the market value of the property.
- implement the reforms by 31 March 2025.²

¹ Unless otherwise stated, this report reflects the situation in Romania as of December 2022.

² *Annex to the Council Implementing Decision on the approval of the assessment of the recovery and resilience plan for Romania*, European Commission, approved on 3 November 2021, p230-231.

Following discussions with the Ministry of Finance, it was agreed that the review would cover the following areas:

- Personal income tax and social security contributions
- Taxation of personal capital income
- Recurrent property taxation
- Corporate income tax
- Small-business taxation (including the special regime for micro-enterprises)
- Environmentally related taxes (focusing on the taxation of energy use)
- Value-added taxes

The focus of this review is on potential reforms to tax policy settings, whereas consideration of tax administration reforms is beyond the scope of this report. However, it should be borne in mind that significant tax administration improvements are also required in Romania. In particular, as part of the NRRP, a major investment in the digitalization of the tax administration (ANAF) is currently being undertaken. This digitalization process will enable ANAF to manage its tax collection and tax compliance processes more effectively and efficiently, including improved risk management processes, as well as enabling the provision of online services for taxpayers to ease compliance. It is crucial that this major digitalization process is successfully completed.

In addition to the digitalization process, there is also a need for additional investment in tax administration capacity, particularly to address current staff shortages in key areas such as risk management and auditing. Ensuring staff have adequate training is also crucial, including initial training for new employees as well as ongoing training for existing staff. This could be achieved through greater use of ANAF's Taxation School. Greater investment in taxpayer education programs to foster voluntary compliance is also needed. The tax policy recommendations developed in this report are provided on the basis that these tax administration improvements are also progressed.

Regarding property taxation, the World Bank is also providing technical assistance regarding the implementation of IT systems to apply market-value based taxation. That work is complementary to the analysis in this report.

Note that the World Bank has also proposed the construction of microsimulation models to analyze the revenue and distributional impacts of potential reforms to the personal and corporate income tax systems and the VAT system. While it was agreed that the construction of such models would be beyond the scope of this current project, the World Bank strongly recommends the development of such models by Romania as a priority, and that these models be utilized in the implementation phase of the reform process. The World Bank can provide assistance with development of these models. In this report, the World Bank has been able to present some simulation results, based on limited data and a simplified approach, for potential personal income tax reforms. However, this does not replace the need for investment in full microsimulation modelling capacity, including both the development of the models and allocation and training of the necessary human resources to utilize and maintain the models.

The report proceeds as follows: Section 2 provides background on the sources of tax revenue in Romania; Section 3 details the key tax policy concerns exhibited in Romania's current tax system, including benchmarking with other European countries and analysis of potential reform options; Section 4 then draws on the preceding analysis to present a package of reform recommendations.

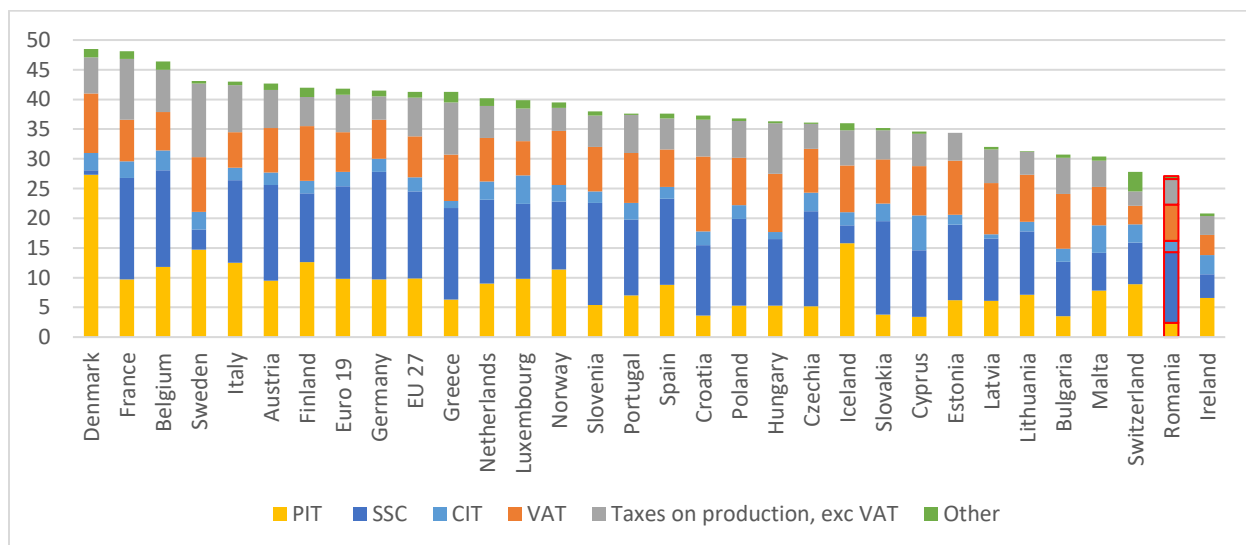
2. Level, sources and trends in tax revenue

The scope for increasing tax revenue in Romania is highlighted by the low tax-to-GDP ratio as compared to other EU countries. Figure 1 presents tax revenue (including social security contributions, SSC) as a percentage of GDP in EU countries, broken down by major tax types. Figure 1 shows that Romania raises the second lowest total tax revenue (as a % of GDP) in the EU. Furthermore, it emphasizes the heavy reliance of Romania on SSC and low reliance on personal income tax revenue (lowest in the EU). Corporate income tax revenue is also low compared to most other EU countries (6th lowest in the EU at 1.9% of GDP).

Figure 2 (left-hand panel) further highlights the low reliance on direct taxes (PIT and CIT) and greater reliance on indirect taxes and social contributions in the total tax mix, as compared to the EU 27 average. Meanwhile, the right-hand panel emphasizes the low aggregate revenue raised by labor and capital in Romania as compared to the average in the EU.

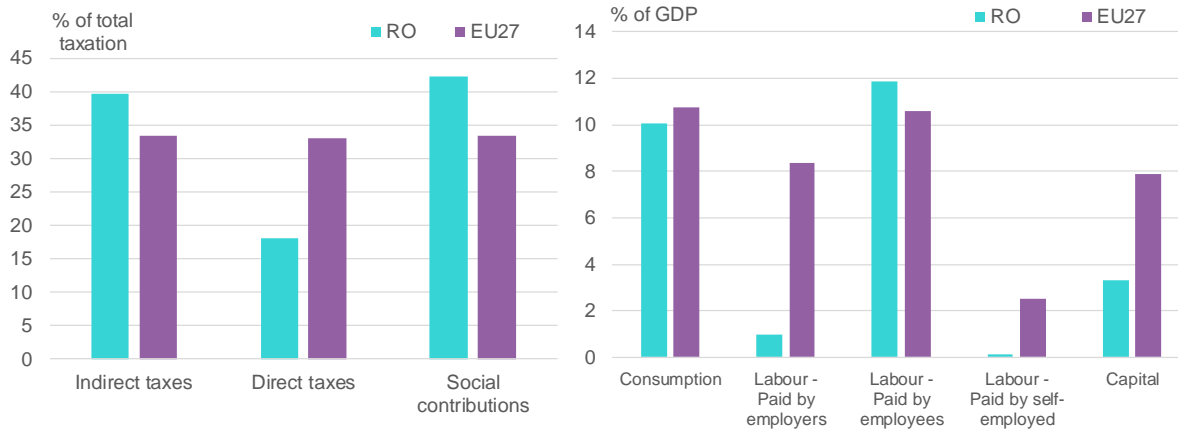
Table 1 shows that tax revenue in Romania has also fallen since 2015. Between 2011-2015, total tax revenue in Romania was around 28% of GDP, but the impact of tax cuts in 2015 led to a drop to around 26% since then (with a low of 24.9% in 2017). Since 2015, there has been a slight decrease in indirect taxes (driven by the lowering of the standard VAT rate). Direct taxes (both PIT and CIT) have also fallen over this period. Meanwhile, having fallen between 2011-2015, social contributions have increased since 2016, and are now 2 percentage points higher than in 2011, although this increase was not sufficient to outweigh the falls in VAT, PIT and CIT. SSC are also now predominantly borne legally by employees rather than employers.

Figure 1. Tax revenue as a percentage of GDP, 2020



Source: Eurostat. Note: Data covers EU27 countries plus Iceland, Norway, Switzerland.

Figure 2. Tax revenue by tax type, Romania vs EU27, 2020



Source: Eurostat

Table 1. Tax revenue decomposition in Romania, 2008-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Structure by type of tax										
Indirect taxes	13.2	13.3	12.8	12.8	13.4	11.4	10.4	10.5	10.7	10.5
VAT	8.7	8.3	8.1	7.6	8.1	6.4	6.2	6.3	6.2	6.1
Taxes and duties on imports excluding VAT	0.4	0.5	0.4	0.3	0.4	0.4	0.3	0.3	0.2	0.2
Taxes on products, except VAT and import duties	3.5	3.8	3.6	3.9	4.0	3.8	3.3	3.3	3.4	3.3
Other taxes on production	0.6	0.7	0.7	1.0	0.9	0.8	0.6	0.6	0.9	0.8
Direct taxes	6.1	5.8	5.9	6.2	6.6	6.4	6.1	4.9	4.8	4.7
Personal income taxes	3.3	3.4	3.4	3.5	3.7	3.7	3.6	2.4	2.3	2.4
Corporate income taxes	2.3	1.9	2.0	2.1	2.3	2.2	2.0	2.1	2.1	1.9
Other	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.4	0.5	0.4
Social contributions	9.1	8.8	8.6	8.5	8.1	8.0	8.4	10.6	10.5	11.1
Employer	5.6	5.5	5.6	5.5	5.0	4.9	5.3	1.2	1.0	1.0
Employee	3.5	3.2	3.0	3.0	3.1	3.1	3.2	9.4	9.6	10.2
Total	28.3	27.9	27.4	27.5	28.1	25.9	24.9	26.0	26.0	26.3

Source: Eurostat

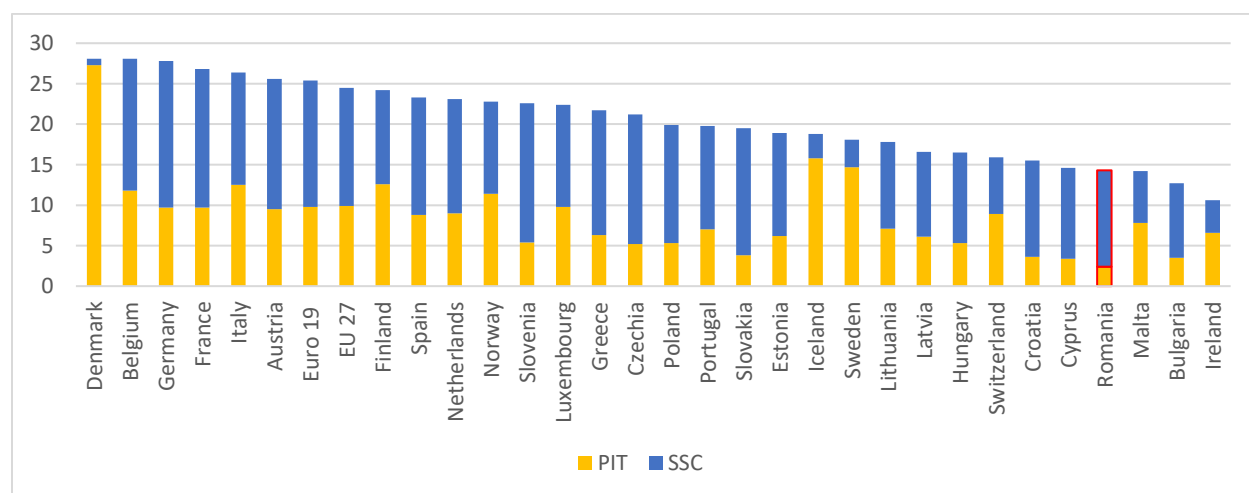
3. Assessing Romania's tax system

This section considers, in turn, different components of Romania's tax system, benchmarking it against other European countries, highlighting key policy concerns, and discussing potential reform options. The section considers: taxation of labor income (including PIT and SSC); taxation of capital income; recurrent property taxation; corporate income taxation; small business taxation (including the microenterprise tax regime); taxation of energy use; and value-added taxation.

3.1. Taxation of labor income

As noted in Section 2, Romania raises very little tax revenue from the personal income tax compared to other EU countries. This low revenue is driven by a number of factors, including a low flat PIT rate and a range of exemptions. While Romania relies comparatively more heavily on SSC, it still raises relatively little total revenue from PIT and SSC combined as compared to other EU countries (Figure 3). However, in addition to low tax revenue, there are a broader range of policy concerns regarding the application of PIT and SSC to labor income, and its impact on incentives and on equity goals.

Figure 3. PIT and SSC revenues (% of GDP), 2020



Source: European Commission

3.1.1. Current tax rules on labor income

The personal income tax (PIT) is applied to labor income at a 10% flat rate. A personal allowance is provided for salary and wage earners. As of 1 January 2023, the allowance amount is calculated as a percentage of the gross minimum wage. For a monthly gross salary or wage equal to the gross minimum wage (of RON 3,000 as of 1 January 2023), the allowance equals 20% of the minimum wage (RON 600 per month) if the taxpayer has no dependents, increasing to 45% if the taxpayer has four or more dependents (RON 1,350 per month). Only one parent can claim the higher rate for dependent children. For individuals earning between RON 1 and RON 2,000 per month above the gross minimum wage, the allowance is reduced to zero in a lock-step manner.³ While the new allowance amounts remain relatively similar to

³ The allowance's percentage amount falls by 0.5 percentage points in a lock-step manner as income increases into successive RON 50 per month bands of income. The allowance then drops to zero when income reaches RON 2,000 per month above the gross minimum wage. In Figure 4, this lock-step phase out is approximated by a smooth 30% phase out rate over the RON 2,000 per month phase-out range.

previous levels, they are phased out from a higher income level due to the linkage to the minimum wage, resulting in a small reduction in tax paid for taxpayers earning between RON 12,000-60,000 per year.⁴

Two additional deductions were also introduced as of 1 January 2023. An additional allowance equal to RON 100 per month is now provided to a working parent for each child up to the age of 18 that is enrolled in an educational institution. Only one parent can claim this allowance, and it is not income tested. An allowance is now also provided for any working individual up to the age of 26 years equal to 15% of the gross minimum wage, as long as their income is less than RON 2,000 above the gross minimum wage.

In addition to PIT, social security contributions (SSCs) are also applied to labor income: a 25% pension contribution and a 10% health contribution are levied on salary and wage income from the first leu earned. These contributions are deductible against the PIT base, which reduces the effective PIT rate down to 6.5%. In addition, employers pay a work insurance contribution of 2.25% on gross labor income.

The combined effect of these rules can be seen in Figure 4, which presents the average and marginal PIT rates, combined PIT plus employee SSC rates, and the total tax wedge (which also includes employer SSC) across income levels from RON 0 to RON 100,000.⁵ There are several clear implications from Figure 4 that are discussed below in turn.

3.1.2. Little progressivity

First, the flat rate structures of the PIT and SSC mean that progressivity is low. The existence of the basic and dependent allowances provides some progressivity (in terms of an increasing average tax rate), but the basic allowance is targeted purely at low-income workers, so the average tax rate becomes flat for a single individual from RON 60,000 – which is below the 2022 average wage of RON 77,484 (or even the 2021 figure of RON 68,784)⁶. For individuals with children, the average tax rate is also almost completely flat from RON 60,000 onwards (although technically it does keep increasing very slightly because the additional RON 100 per child in education per month allowance is not phased out).

The lack of progressivity contrasts strongly with the tax systems in most other European countries where progressive PIT schedules often have top marginal PIT rates above 40% (See Figure 5). In contrast, only three other EU countries have flat rate PIT systems: Bulgaria, Estonia and Hungary (with rates of 10%, 20% and 15%, respectively).⁷ Furthermore, the lack of progressivity in Romania's PIT system is of particular

⁴ In 2022, the allowance was specified as a fixed amount rather than a percentage: RON 510 per month for individuals with a monthly gross salary equal to RON 1,950 or less, with an additional allowance of RON 160 for up to three dependents. The total allowance was RON 1,310 for taxpayers with four or more children. For individuals earning between RON 1,950 and 3,600 per month, the allowance was reduced to zero in a lock-step manner.

⁵ The total tax wedge is defined as: $(\text{PIT} + \text{employee SSC} + \text{employer SSC}) / (\text{gross labor income} + \text{employer SSC})$. Note that Figure 4 assumes the taxpayer is over 26 years of age and so not eligible for the additional 15% deduction. For the one-earner family with two children scenario, both children are assumed to be aged under 18 and enrolled in an educational institution.

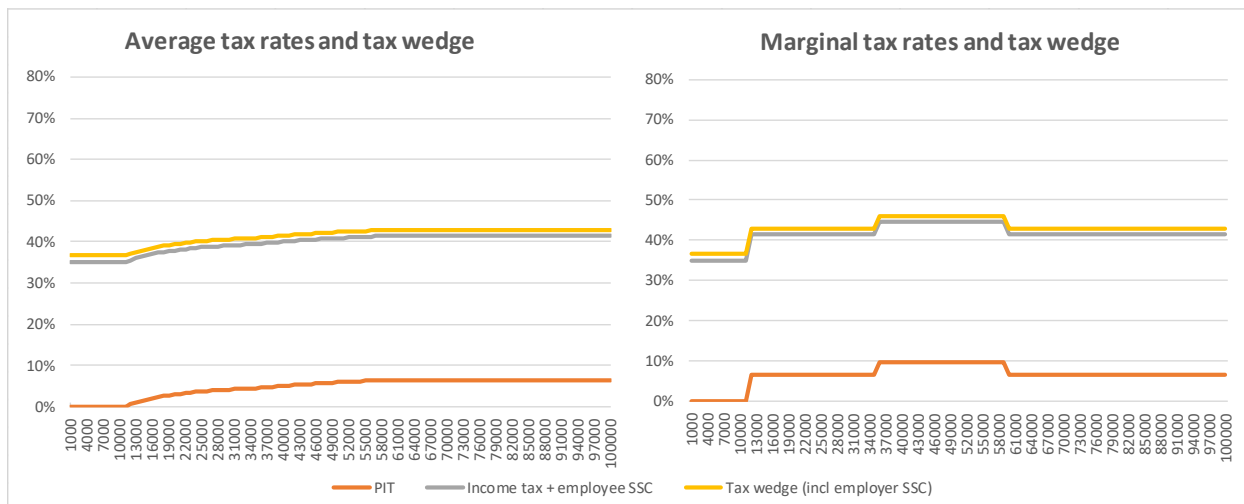
⁶ The National Institute of Statistics reports an average monthly wage of RON 6,457 in September 2022. This compares to RON 5,732 in September 2021.

⁷ While most countries apply PIT systems with progressive rate schedules, a small number of countries have flat rate systems. Flat rate systems have historically been most common in central and eastern Europe, where since the early 1990s a number of countries introduced them – including Albania, Czechia, Estonia, Georgia, Hungary, Latvia, Lithuania, North Macedonia, Russia, Romania, Slovakia, Ukraine and Serbia (Sabirianova Peter et al., 2009). These flat rate systems were favored due to their relative simplicity, which was considered to generate improvements in compliance and reductions in administration costs, and for their potential to increase work incentives. More

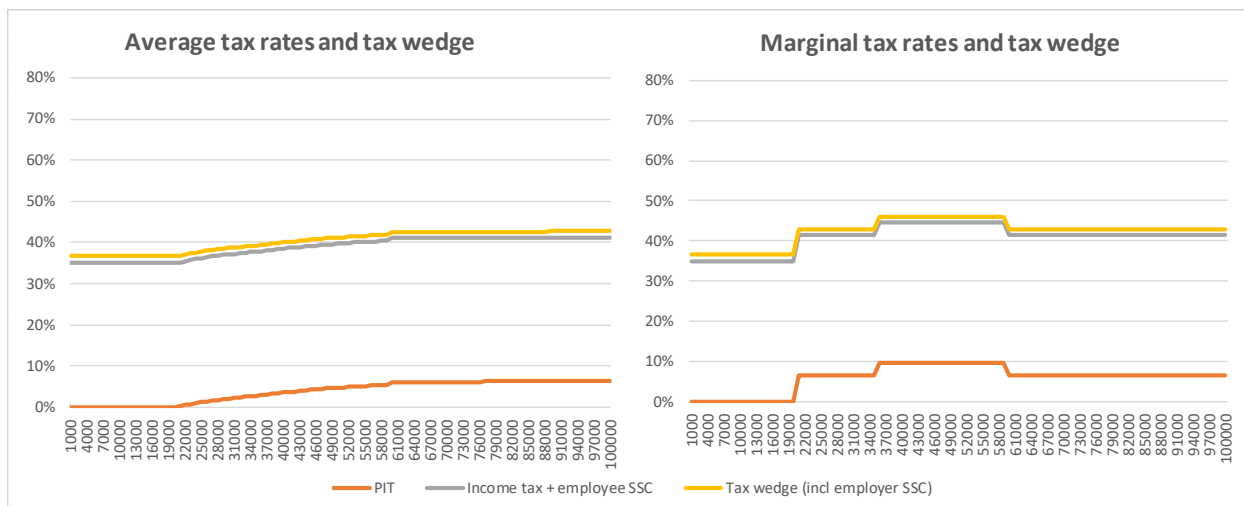
concern in light of the comparatively high degree of inequality in disposable income in Romania as compared to other European countries (Figure 6).

Figure 4. Average and marginal tax rates and wedges for a single individual across income levels, 2022.

Single individual



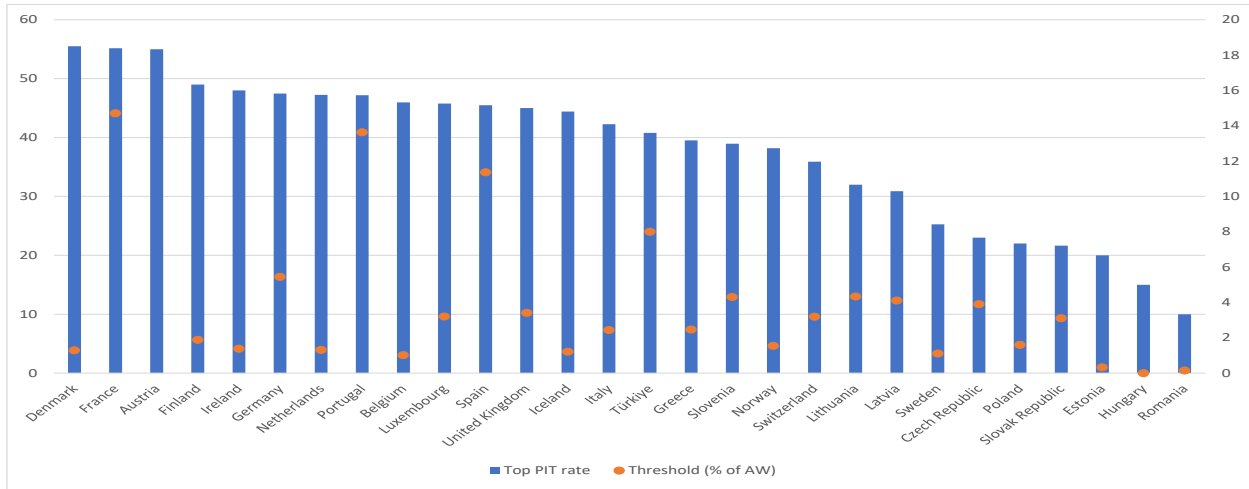
One-earner family with two children



Source: World Bank staff calculations

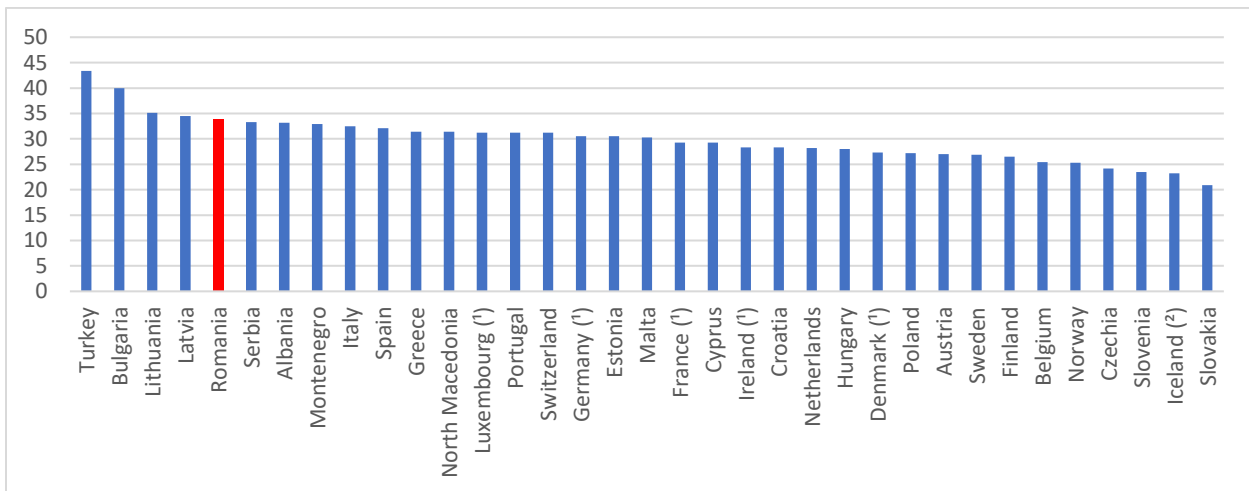
recently, though, there has been a trend in the opposite direction, with Albania, Czechia, Latvia, Lithuania, North Macedonia, Serbia and Slovakia all moving back to progressive PIT rate structures. The movement away from flat rate systems is a reflection of multiple factors, including modest impacts on work incentives, a desire to increase revenues while simultaneously raising the equity of the system, limited positive impacts arising from simplicity in the context of various exemptions and advances in tax administration. Within the EU, currently only Bulgaria, Estonia, Hungary and Romania apply flat rate PIT systems.

Figure 5. Top PIT rates in European OECD countries



Source: OECD Tax Database. Note: Combined central plus sub-central rate, where applicable.

Figure 6. Inequality in disposable income (Gini index), 2019

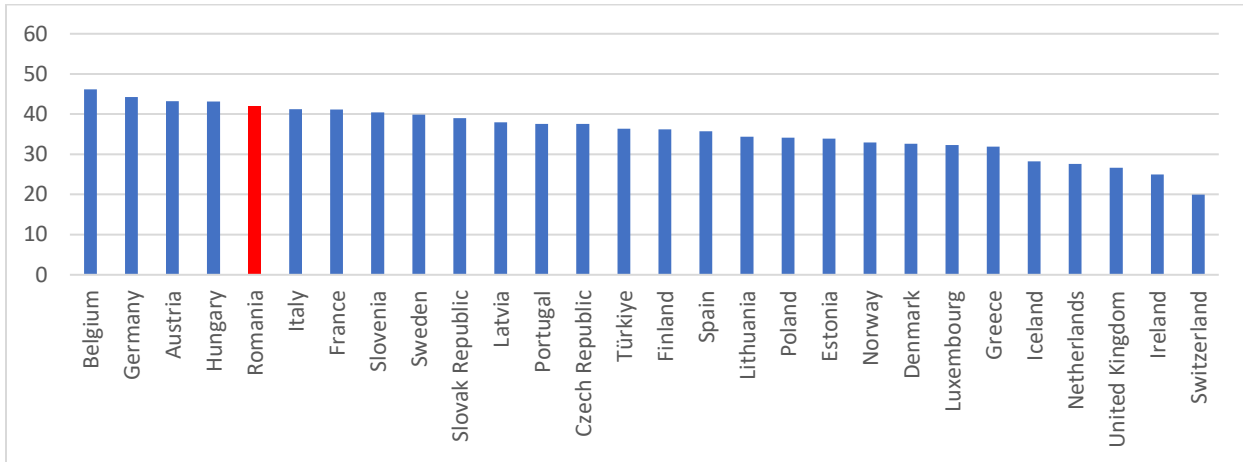


Source: Eurostat

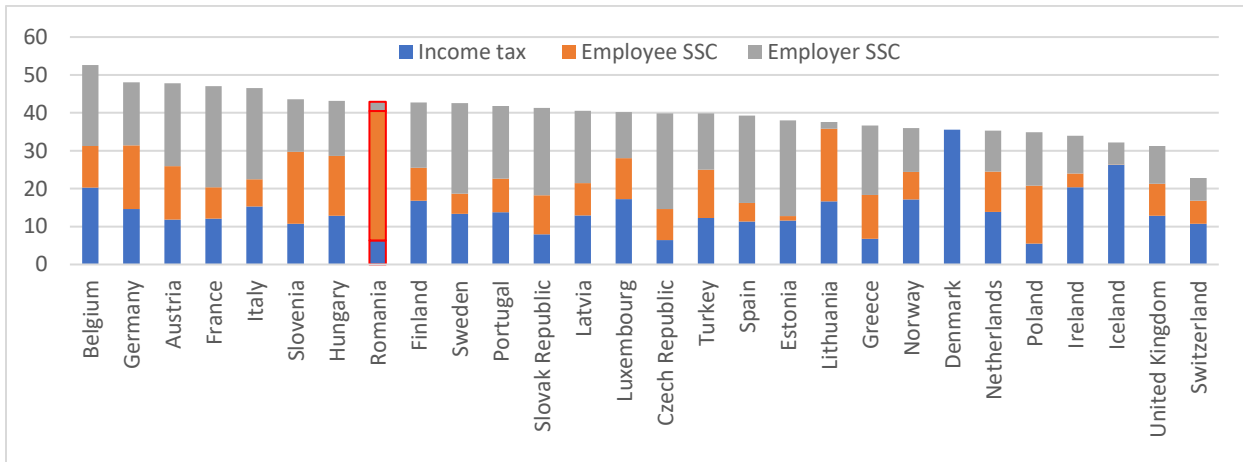
The implications of Romania’s flat rate structure become clearer when comparing tax wedge results with other European countries. Figure 7 presents the average tax wedge across European OECD countries for single individuals earning 67%, 100% and 167% of the average wage in each country (and its decomposition between PIT, employee SSC and employer SSC at 100% of the average wage). The Romanian results reflect the 2023 tax rules, but use the 2021 average wage of RON 68,784 to provide comparability with 2021 results for other countries. The flat rate system results in a comparatively high tax wedge at 67% and 100% of the average wage, and a more moderate tax wedge at 167% of the average wage. A striking result is the degree of reliance on SSC as compared to PIT, with PIT being only 6.4% of total labor costs (after the deductibility of SSC against PIT liability), the second lowest of all countries considered (after Poland).

Figure 7. Average tax wedge, 2021

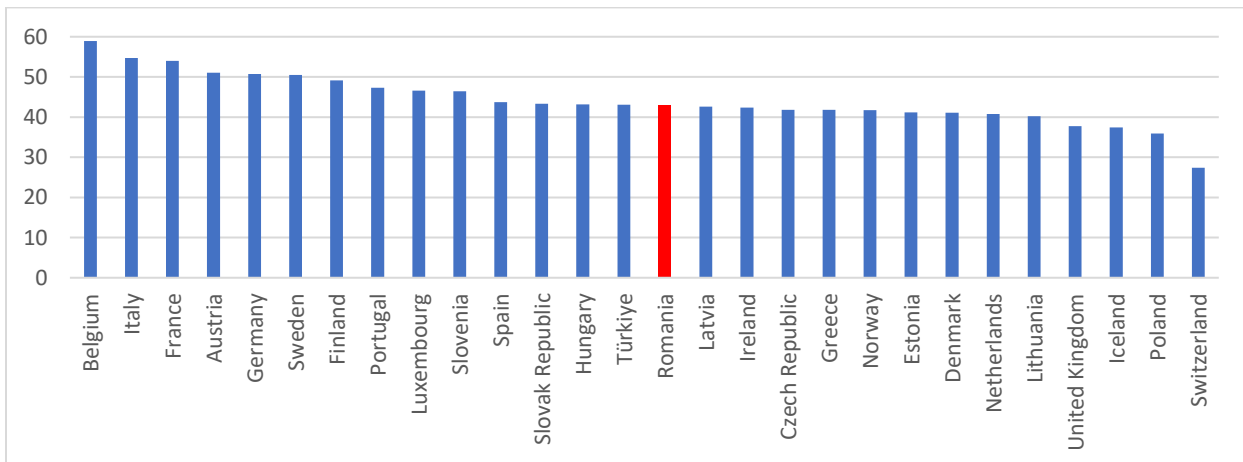
Single individual earning 67% of the average wage



Single individual earning 100% of the average wage



Single individual earning 167% of the average wage



Source: OECD (2022a)

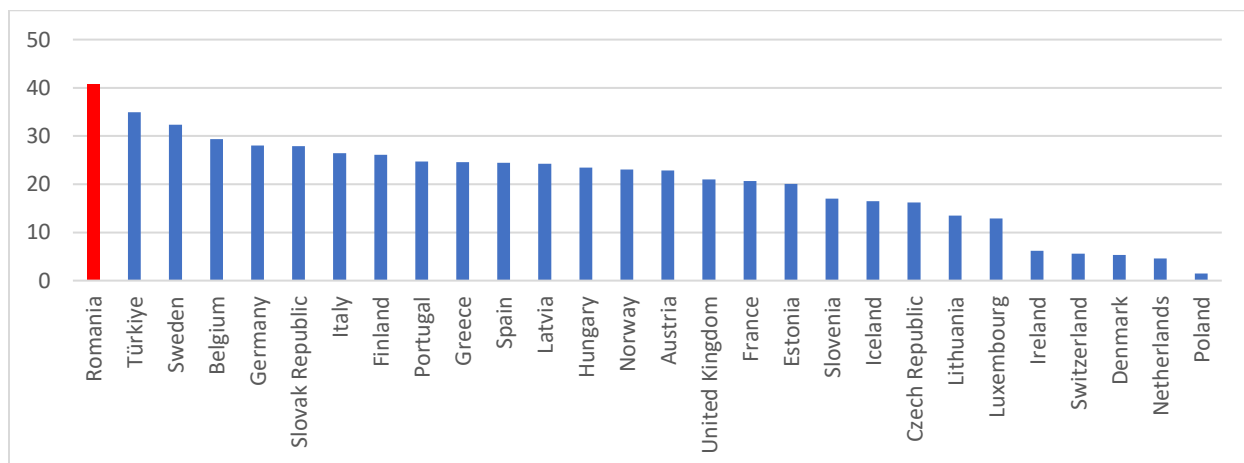
3.1.3. Poor work incentives

Despite the low PIT rate, the total tax burden including SSC on low-income workers is high.⁸ Due to the presence of pension and health contributions paid from the first leu earned, the combined PIT plus employee SSC rate is at least 35% and rising to 41.5% at RON 60,000, with the total average tax wedge rising from 36.6% to 42.9%. This creates a significant disincentive for low-income individuals to enter the workforce, and also encourages informality.

The relatively high level of taxation at low and middle incomes, and comparatively moderate taxation at high income levels for single individuals was illustrated above in Figure 7. However, for low-income families with children or sole parents, the results are even more stark. For example, while the tax wedge for a low-income single individual is 5th highest, for a sole parent with two children it is the highest of all European countries (Figure 8). Again, this is primarily due to the substantial SSC paid from the first leu earned. An additional factor, though, is that many other European countries provide significant support aimed at families with children, such as targeted child tax credits or deductions, whereas Romania's dependent allowances provide more modest support for families with children, despite the recent increases.

Figure 8. Average tax wedge in European OECD countries, 2021

Single individual with two children earning 67% of the average wage



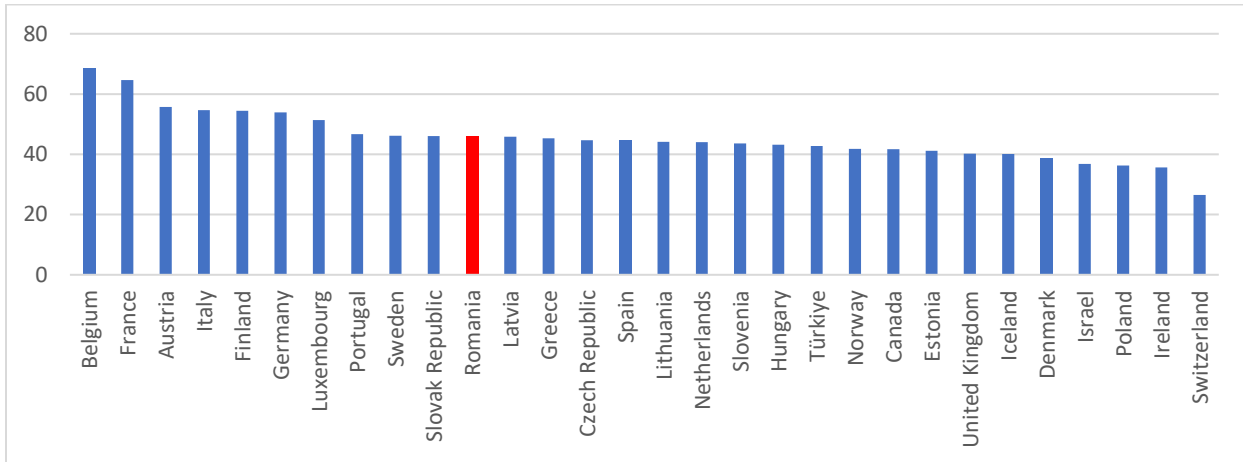
Source: OECD (2022a)

In addition to high average tax rates, the flat rate structure in Romania results in moderately high marginal tax rates at low income levels (Figure 9). This creates disincentives for low-income individuals already in the workforce to look to work longer (e.g. to move from part-time to full-time) and harder and move out of poverty. That said, for individuals or families with children, these marginal rates are lower than in many European countries due to the less significant phasing-out of targeted support, as noted above.

⁸ SSCs are compulsory and have some redistributive element. However, they do confer future expected benefits and may therefore have a smaller behavioral impact than a pure tax. Employee and employer SSC are typically assumed to be borne by workers (with employer SSC fully passed on to workers in the form of lower wages). However, their economic incidence could fall on employees or employers depending on bargaining power in labor markets.

Figure 9. Marginal tax wedge in European OECD countries, 2021

Single individual earning 67% of the average wage



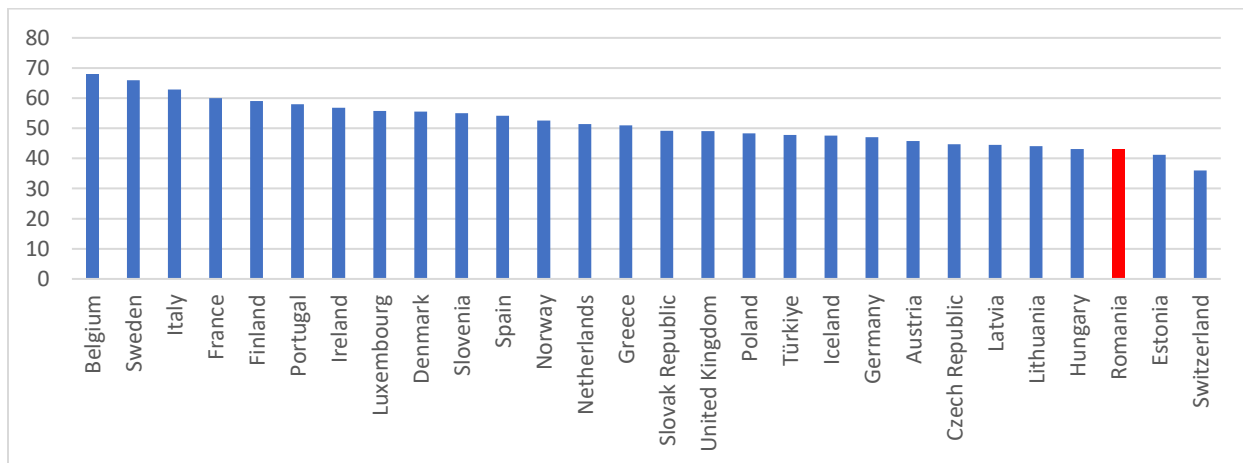
Source: OECD (2022a)

The phasing out of the basic allowance does increase marginal tax rates, but the impact is relatively moderate as illustrated in Figure 4: an additional 3 percentage points between RON 36,000-60,000 (for a single individual). This is, however, a simplified representation showing the average impact over the phase-out range. The actual lock-step nature of the allowance’s design results in exceptionally high METRs for single leu income increases at RON 50 intervals over the RON 36,000-60,000 range. As a worker’s marginal increase in income is extremely unlikely to be a single leu, the impact of these spikes in the marginal tax rate can be expected to be small. Nevertheless, a more typical flat withdrawal rate would smooth out the METRs over the withdrawal region.

In contrast to the comparatively high average and marginal tax wedges for low-income workers in Romania, Figure 10 shows the flat rate design to result in a comparatively low marginal tax wedge for high-income workers. This shows a key benefit that a flat rate system can provide: relatively low work disincentives for high-income individuals.

Figure 10. Marginal tax wedge in European OECD countries, 2021

Single individual earning 167% of the average wage



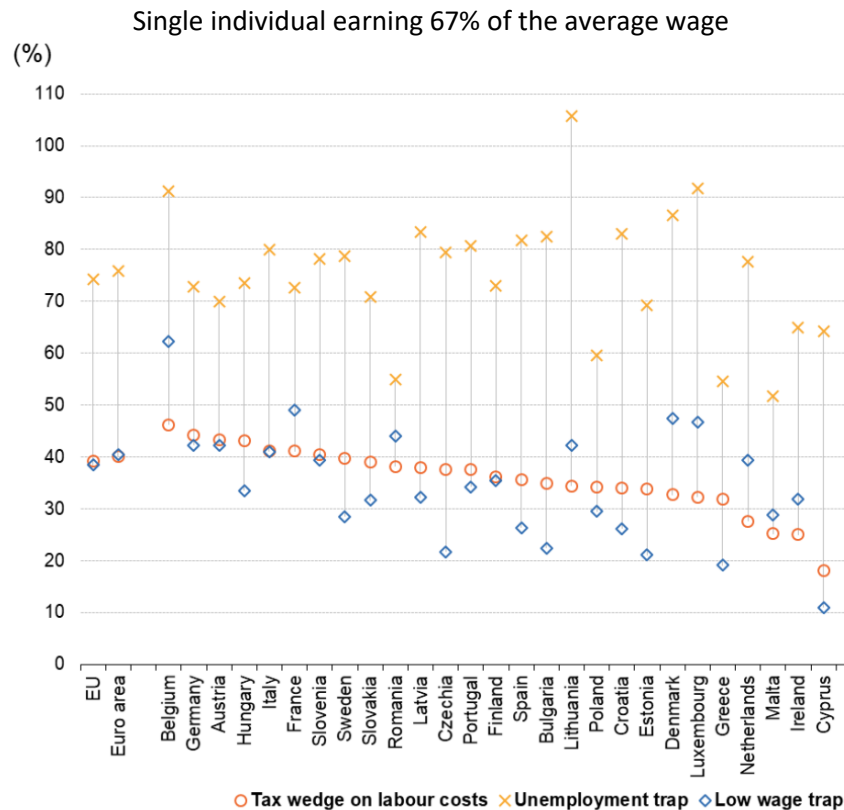
Source: OECD (2022a)

3.1.4. Additional work disincentives due to benefit withdrawal

As noted above, the flat rate tax system in Romania creates significant disincentives for low-income workers to participate in formal employment. However, a full analysis of participation disincentives must also take account of the interaction between tax and benefit systems, as the loss of out-of-work benefits on top of taxation of in-work income, can further discourage participation of low-income workers.

Figure 11 presents estimates of the heightened disincentive to participate due to the loss of out-of-work benefits such as unemployment, housing and social assistance benefits (the “unemployment trap” indicator). It also provides estimates of the heightened disincentive for low-income workers to increase hours worked or work effort due to the loss of benefits from a marginal increase in income (the “low wage trap” indicator). These results show that the overall work disincentives are even higher when taking account the interaction between tax and benefits systems. However, because of the relatively small magnitude of out-of-work benefits in Romania compared to many other EU countries, the increase beyond the tax wedge itself is comparatively moderate. The majority of the overall work disincentives in Romania is created by the taxation of in-work income.

Figure 11. Work disincentives from tax-benefit system interaction, 2020



Note: The “unemployment trap” indicator (also known as a “participation tax rate”) measures how much of gross (in-work) income is “taxed away” by the combined effects of PIT, employee SSC, and from the withdrawal of unemployment and other benefits when an unemployed individual moves into employment. The “low wage trap” indicator (or METR), measures how much of the increase in gross (in-work) earnings is “taxed away” by the combined effects of PIT, employee SSC, and any withdrawal of benefits when gross income increases from 33% to 67% of the average wage in the country.

Source: OECD / Eurostat. See: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Wages and labour costs#Gross wages.2Fearnings](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Wages_and_labour_costs#Gross_wages.2Fearnings)

3.1.5. Narrow base

Another significant concern regarding the taxation of labor income is the narrowness of the tax base. There are currently exemptions from PIT in place for workers in the information technology (IT), construction and agriculture sectors. The agriculture exemption was just introduced in 2022, while the IT exemption was expanded, as of 1 January 2023, from private sector IT workers to now also include public sector IT workers.⁹ In addition, employees in the construction sector are exempt from the 10% health contribution and pay a lower pension contribution of 21.25% (with no reduction in benefit entitlement), instead of 25%. Meanwhile, the employer work insurance contribution is lowered from 2.25% to just 0.3375% in the construction sector.

The exemptions cover a significant proportion of the potential labor tax base – with the IT and construction sectors containing 10.8 percent of all employees and being responsible for 9.8 percent of gross value added (World Bank, 2021). Meanwhile the recent exemption of the agriculture sector has removed around 10% of the labor force from the tax base (IMF, 2022a). The Ministry of Finance estimates that the total revenue foregone (both PIT and SSC) in 2023 from the IT, construction, and agriculture exemptions, respectively, is: RON 1.320 billion; RON 5.535 billion; and RON 2.384 billion.¹⁰

The exemptions appear to have been introduced to attract workers to the IT and construction sectors, possibly due to a perceived shortage of IT and construction workers. In part, these concerns are also likely to have been created by the high tax wedge on low- and middle-income workers noted above. This is also likely to be the case for the recent agriculture exemption. However, selective concessions are difficult to justify as they reduce revenue (forcing a higher tax rate on other bases, or lower government expenditure), risk interest group pressure to expand concessions further, are not necessarily well targeted, and often create tax avoidance opportunities. More generally, they are likely to be inefficient (as they distort employment decisions) and inequitable (as they result in different individuals earning the same income paying different levels of tax).

3.1.6. Reform options

There is a strong case to reform the taxation of labor income in Romania in order to increase tax revenue, improve equity, and increase work incentives for low and middle-income workers. This subsection discusses a range of possible reform options, while the following subsection illustrates the potential impacts of different reforms drawing on tax return microdata.

Reforming tax allowances

The simplest way to increase the progressivity of the tax system and provide support to low-income workers would be to further increase the amounts of the existing PIT allowances. Even with a flat rate PIT, the provision of an allowance creates progressivity and increases work incentives by lowering the tax burden for those receiving the allowance. Even if the allowance was provided to all taxpayers (as is often the case in other countries), this would still result in an increasing average tax rate. If it remains targeted as is currently the case in Romania, it will lower the average tax rate for those below the maximum income threshold (as was illustrated in Figure 4).

⁹ The IT exemption applies to IT experts such as: database administrator, analyst, computer systems engineer, software system engineer, IT project manager, programmer, computer systems designer, computer system programmer, support analyst, software product development engineer.

¹⁰ This estimate does not include the impact of the expansion of the IT exemption to public sector workers.

Irrespective of whether the allowance amounts are increased, one reform that should be considered is the revision of the current lock-step income targeting mechanism. It would be preferable, for example, for a single withdrawal rate – e.g. of 30% – to be applied for every leu increase in income above a specified threshold until the allowances are exhausted.¹¹

One concern held in many countries with provision of a non-income tested allowance is that they can have a regressive impact by providing a greater tax reduction to higher income taxpayers who are subject to higher marginal tax rates in a progressive PIT system. This is not a concern currently given Romania's flat rate system as a tax deduction will benefit rich taxpayers proportionately as much as poor taxpayers.

Introducing an earned-income tax credit (EITC)

An alternative option to expanding the allowances would be to redesign them as tax credits. For example, an earned-income tax credit (EITC) could be adopted. An EITC is a tool adopted in many (particularly OECD) countries to both target support to poorer households and increase incentives to participate in formal employment. This is achieved through restricting eligibility for the credit to those in-work (much like Romania's current basic allowance which applies only to wage earners). Importantly, an EITC could be made refundable so that even if the taxpayer is not paying any PIT they would still benefit from the tax credit. Given that SSC is paid from the first leu, this would be a way of lowering the overall tax wedge below the significant level of SSC. Converting the allowances to tax credits would also guarantee the concessions have a progressive impact even following a move to a progressive PIT schedule.¹²

A refundable EITC would be more administratively complex than an allowance, and could also create incentives for abuse. However, such concerns can be mitigated – for example, by incorporating the refundability within the employer withholding process, offsetting SSC due, rather than through paying the refund directly to taxpayers. Meanwhile, the work contingent requirement could be implemented simply by linking the EITC to earned income (as opposed to more complex options, such as hours worked requirements that are applied in some countries).

Introducing a progressive rate structure

The degree to which progressivity can be increased through changes in allowances or tax credits remains limited by the existing 10% flat rate. If equity goals result in a desire for greater increases in progressivity then a movement to a progressive PIT rate structure is likely to be necessary. Not only can a progressive structure enable a reduction in the PIT paid at the bottom end of the distribution, but it can enable higher rates to be imposed at higher parts of the income distribution.

One simple possibility would be to apply a zero rate at the bottom end of the distribution, and apply a higher rate at the top end of the distribution. That said, the provision of the tax allowance and a zero-rate band aim to achieve broadly similar goals, so it may be preferable to simply adopt the increased allowance amount (or EITC) together with a higher PIT rate (or rates) at the top of the income distribution. Importantly, though, if the allowance were preferred to a zero rate band, then it should continue to be

¹¹ Detail on the income distribution is a crucial factor in determining the most appropriate income range over which to phase out the allowance. This can be obtained as part of the construction of a full PIT microsimulation model as proposed in this report. A preliminary analysis is provided in Section 3.1.7.

¹² That said, if the existing allowances were fully withdrawn at an income level below the level at which a higher rate applies, then they would not have any regressive impact.

income targeted and withdrawn at an income level below the level at which a higher tax rate applies to avoid disproportionately benefiting richer taxpayers. Replacing the allowance with an EITC, as discussed above, may be a simpler option. One possibility, as an interim measure, would be to immediately increase the allowance, before moving to an EITC in the medium term.

The main cost of applying a progressive tax schedule is the potential impact of a higher top marginal tax rate on efficiency, in particular discouraging labor supply of high-income workers as well as impacting entrepreneurial incentives. High tax rates can also impact other margins, including incentives for education and avoidance and evasion activity (see, e.g., Saez et al., 2012). However, these disincentives relate to the overall level of the marginal tax rate rather than to the adoption of a progressive rate schedule *per se*. As illustrated in Figure 10, high-income workers in Romania currently face the 3rd lowest marginal tax wedge amongst European OECD countries, suggesting some scope for increasing top marginal tax rates.

In the end, the appropriate tax rate structure is largely a political decision regarding the trade-off between equity and efficiency, and depends strongly on the equity goals of the government. However, this decision can be informed by empirical evidence.¹³ Regarding efficiency impacts, insights for Romania can be drawn from a recent study by Barrios et al. (2020) who combine a microsimulation and DSGE model to examine the impacts of introducing progressive tax reforms in six Central and Eastern European countries with flat rate PIT systems, including Romania.¹⁴ Barrios et al. (2020) simulate two revenue-neutral reforms: (1) a reform introducing a refundable EITC funded by a progressive PIT schedule; and (2) a reform introducing (or increasing in the case of Romania) a basic allowance funded by a higher flat tax rate. In each country, and for both reforms, they find very small but positive impacts on employment and output. These results effectively reflect the gain from encouraging low-income workers into the formal workforce outweighing the loss from discouraging labor supply of high-income earners. The results are consistent with previous evidence casting doubt on the ability of flat tax reforms to increase labor supply (see, e.g., Ivanova et al., 2005).¹⁵

¹³ Optimal tax theory also provides support for a progressive PIT schedule. For example, Diamond and Saez (2011) draw on this literature to provide recommendations consistent with applying a progressive PIT schedule together with an EITC (with the withdrawal of the EITC leading to a U-shaped optimal tax schedule).

¹⁴ The six countries covered are: Bulgaria, Estonia, Hungary, Latvia, Lithuania and Romania.

¹⁵ The two main arguments typically given in favor of a flat rate PIT structure are that they can increase efficiency (by lowering marginal tax rates for high-income earners) and simplicity (by applying a single rate rather than multiple rates, deductions and allowances). In some cases fairness arguments can also be made in favor of a package of reforms that includes a flat tax, where it is accompanied with base broadening including the removal of deductions that may have a regressive impact, particularly in a progressive system. In practice, a key problem with flat rate PIT systems is that they are typically combined with substantial SSC resulting in a significant total tax burden on labor, and so do not have as significant an impact on work incentives for top-income earners as may be claimed. Furthermore, by imposing a comparatively high tax wedge on low-income workers they can have a significant negative impact on participation in formal employment of low-income workers. This is exactly the situation in Romania, as illustrated in detail in Figures 4-10. A further problem is that flat-tax systems have not typically been implemented in the simple manner envisioned by proponents (i.e. a single flat rate, with or without a basic exempt amount). Instead, countries tend to apply additional deductions or tax credits to provide support to households. This is again the case in Romania where the complicated allowance system with lock-step income targeting is in place. The overall result is that potential efficiency and simplicity gains from a flat tax reform are reduced or eliminated, while equity goals are less able to be achieved. See Keen et al. (2008) for a detailed review and assessment of country experiences with flat tax reforms.

Regarding distributional impacts, Barrios et al. (2020) unsurprisingly find that both reforms would reduce inequality and poverty in each country as compared to the existing flat tax systems. The first (progressive PIT schedule) reform was found to have a larger impact on inequality and poverty than the second (higher flat rate) reform in four of the six countries, including Romania, with the size of the distributional impacts in the latter depending significantly on country-specific features. In the next section, this report finds similar distributional impacts for Romania (drawing on tax return microdata rather than the survey data used by Barrios et al., 2020). In particular, it highlights that (due to the targeted nature of Romania's allowances), it is impossible for such a flat rate reform to achieve any progressivity in the top half of the taxpayer income distribution.

Overall, in light of the greater ability to address equity goals through a progressive rate structure, and the positive (though minimal) impacts on employment and output, the case to shift to a progressive PIT schedule in Romania appears strong. This case is strengthened further in light of the high level of inequality present in Romania (Figure 6).

Regarding implementation, a progressive PIT rate reform could build off the existing schedular system, so the progressive PIT rate schedule would apply to labor income and (unincorporated) personal business income. In the longer term, though, Romania could consider moving from a schedular system to a comprehensive system that applies the marginal PIT rate schedule to all personal income (including capital income).

Income assessment period

Currently, PIT liability is assessed on a monthly basis. However, on movement to a progressive PIT schedule, a monthly assessment period would potentially disadvantage taxpayers earning variable income levels throughout the year as compared those earning constant income levels. Therefore, moving from a monthly assessment period to an annual assessment period should be considered. The monthly tax withholding system can be adjusted to take account of the progressive tax schedule to ensure that, in most cases, monthly withholding payments correspond to annual PIT and SSC obligations, thereby preventing most taxpayers earning only salary and wage income from having to file a tax return.¹⁶

Adjusting healthcare financing

PIT reforms (aside from a refundable tax credit), can only reduce the total tax wedge on low-income workers to a small degree because the majority of the tax wedge is comprised of SSC. Lowering SSC burdens – particularly on low-income workers – therefore also warrants consideration.

In general, SSC reform is complicated as it may impact future benefit entitlements. This is particularly the case with pension contributions where there is typically an actuarial link between contributions made and future expected benefits. However, unlike pension contributions, there is no actuarial link in the Romanian system between healthcare contributions and future expected healthcare benefits. As such, there is no clear rationale for funding healthcare through SSC on labor income as compared to funding

¹⁶ For example, taxpayers can be allocated a tax code based on their circumstances to determine the correct monthly tax amounts to be withheld by employers (the United Kingdom and New Zealand are examples of this approach). For a taxpayer working a single job throughout the year, the tax code should result in the correct PIT and SSC amounts being withheld each month. In a more complicated case, such as where a taxpayer works more than one job, there may be a need for consolidation at year end.

healthcare – as with any other government expenditure – from general taxation.¹⁷ Evidence also suggests that contributory systems can lead to greater inequality and fragmentation in health systems, while use of general tax revenues, rather than contributions, has been more successful in moving low and middle-income countries towards universal health coverage (Yazbeck et al., 2020). In light of this, and the already significant pension contributions being imposed on low-income workers, there becomes a strong case for lowering the labor tax wedge by removing the healthcare contribution and funding healthcare entirely through general taxation.

If an EITC were implemented, then this would lessen the need for removing the health contribution, although the two reform options are in no way mutually exclusive. If the health contribution were to be maintained, then at least some degree of base broadening should be considered. Indeed, while there is limited justification for restricting health financing to just labor income, there is even less justification for restricting it to only a subset of labor income. As noted in World Bank (2021), options for broadening the base of health contributions include: removing the exemption for construction workers; removing the exemption for high-income pensioners; and removing the tax exemption for all pensioners and providing compensating social benefits to low earners.

Deductibility of SSC

The deductibility of SSC significantly reduces the effective PIT rate from 10% to 6.5%. However, on movement to a progressive PIT schedule, the deductibility of SSC would provide a greater benefit to taxpayers subject to a higher marginal tax rate. To prevent this regressive impact, deductibility should be removed. Expansion of the income-tested allowances, or an EITC, can be used to compensate for removal of deductibility of SSC in a way that ensures progressivity.

Removing exemptions

Rather than selectively picking certain industries to favor, a better approach would be to lower the tax burden on low-income workers across the board, as proposed above. This will positively impact all low-income workers rather than just those in particular sectors.

In order to ensure that taxes are not increased on low-income groups, it is important for reforms to the bottom end of the distribution to be undertaken at the same time as the reform to the tax exemptions. The revenue loss from the various measures discussed above to reduce the tax burden on low incomes can be funded by the gain from the removal of the exemptions, the increase in the top PIT rate, as well as in other areas of the tax system as discussed subsequently in the report.

3.1.7. Simulation results for reform scenarios

While a full PIT microsimulation model is not currently available for Romania, the World Bank has been able to conduct some simplified PIT microsimulation modelling drawing on a restricted micro-dataset

¹⁷ The financing of healthcare through contributions on labor income is common amongst European countries, particularly those that initially introduced health *insurance* systems that provided coverage just to contributing formal sector workers in and around the first half of the 20th century. However, as these countries have moved away from pure insurance systems and towards providing universal health coverage, additional revenues have needed to be sought, at least in part, from general taxation. In contrast, countries such as the United Kingdom and New Zealand have fully financed their public healthcare systems through general taxation since the late 1940s (Kutzin et al., 2016; Yazbeck et al., 2020).

from PIT tax returns for 2021, provided by the Romanian Ministry of Finance. This enables the illustration of several potential reform scenarios.

However, there are a number of limitations in the data and modelling. First, the restricted dataset only enables an analysis of the taxation of labor income, not capital income. Second, the dataset does not provide information regarding tax allowances received, nor is demographic information available on family composition or taxpayer age. Consequently, a simplified approach to modelling allowances is required. This approach applies the basic allowance percentage amount applicable for a single individual to all individuals in the data. The separate allowance amount for children in education, and for workers aged under 26, are not modelled. Note also that the withdrawal of the basic allowance is modelled in a simplified “smoothed” manner (as was the case in the calculations for Figure 4), applying a 30% phase out for every leu increase in income, rather than the actual lock-step design.¹⁸ Despite these limitations, the model is able to very closely match the actual tax revenue in the year of the data.¹⁹

Data is not available for individuals in the construction and IT sectors as they were exempt in the year of the data (2021) and so did not complete tax returns (if only earning labor income). As such, the removal of these exemptions is not able to be modelled. However, tax expenditure estimates are available from the Ministry of Finance based on macro data, and these are used as an estimate in determining the revenue that could be generated from removal of the exemptions when presenting revenue neutral reform scenarios. However, as they are external to the model, distributional analysis is not possible for construction and IT workers. This also creates potential further inaccuracy in the simulations, as some construction and IT workers would be subject to higher marginal tax rates with the introduction of a progressive PIT rate structure, whereas the tax expenditure estimates are based on the current 10% flat PIT rate.

Data is available for workers in the agriculture sector (as in 2021 agriculture was fully taxable under the PIT). However, agricultural workers are not able to be identified in the restricted dataset provided. Therefore, it is not possible to model tax changes specific to agricultural workers. A consequence of this is that the reforms cannot take account of the increase in tax revenue from the removal of the new agricultural worker exemption. The simulations effectively assume the exemption was never in place.

Given the restricted nature of the dataset and modelling, the simulation results presented below should therefore only be taken as indicative of the likely impacts of the reform proposals considered. Furthermore, they should not be seen as replacing the need for the development of a full set of models. Indeed, a key recommendation of this report is for the Ministry of Finance to develop a full set of PIT, CIT and VAT microsimulation models and, equally crucially, for the necessary staffing resources to be provided to enable the continued use and development (including annual updating) of these models. It is anticipated that many of the above data and modelling limitations will not be faced in development of a full PIT model with an unrestricted dataset from tax returns, and the World Bank is ready to provide support to Romania in the development of such models. Box 1 further discusses limitations in analytical capacity currently faced by the Ministry of Finance.

¹⁸ For a 10% marginal tax rate, the 30% allowance withdrawal rate translates to a 3 percentage point increase in the marginal effective tax rate (METR).

¹⁹ For the year of the data, 2021, the model estimates PIT revenue on wages of RON 20.889 billion. This compares to the 2021 revenue figure of RON 20.549 billion, as reported by Eurostat (Eurostat, 2023). The model therefore overestimates revenue by RON 0.340 billion (about 1.7%), likely driven by the simplified modelling of allowances.

Reform scenarios

The simplified model is used to examine four potential reform scenarios. These reforms are designed to be revenue neutral. The reform scenarios aim to achieve three goals: broaden the PIT base; increase progressivity; and increase work incentives for low-income workers. In each reform scenario, the PIT (and SSC) base is broadened by removing the exemptions for workers in the IT and construction sectors (but not the agriculture sector due to the modelling limitations noted above). This raises approximately RON 2.7 billion of PIT revenue. Revenue raised from increased SSC is assumed to be earmarked to the health and pension systems so is not included when determining revenue neutrality of the reforms. Different approaches are then taken to adjust the progressivity of the system and improve low-income earner work incentives.

Table 2 presents average tax rate (ATR) results under the current law, and for each of the four reform scenarios. Results are projected out from 2021 to 2023 levels by applying adjustment factors for wage and employment growth as provided by the Ministry of Finance. The ATR results are presented across RON 10,000 bands of gross annual (not monthly) income for annual income up to RON 100,000. An 11th income band contains all taxpayers earning above RON 100,000. This final income band accounts for approximately 18 percent of all taxpayers, who earn around half (48 percent) of all gross income and, under the current tax rules, pay around half of all PIT and SSC (49 percent). Note that more than half (54 percent) of all taxpayers are in the bottom five income groupings (earning less than RON 50,000), and that the annual average gross income is approximately RON 65,000.²⁰

Table 2. Average tax rates across income bands from Reforms 1-4

Income group	Annual income (RON)	Number of taxpayers	Current	Reform 1		Reform 2		Reform 3		Reform 4	
			ATR	ATR	Diff.	ATR	Diff.	ATR	Diff.	ATR	Diff.
1	10,000	806,000	35.0	35.0	0	25.0	-10.0	25.4	-9.6	25.7	-9.3
2	20,000	533,000	36.7	35.4	-1.3	27.2	-9.5	28.1	-8.6	30.2	-6.5
3	30,000	458,000	38.6	37.5	-1.1	29.7	-8.9	29.3	-9.3	32.1	-6.5
4	40,000	1,125,000	39.5	38.7	-0.8	30.9	-8.6	29.8	-9.7	33.0	-6.5
5	50,000	810,000	40.5	39.8	-0.7	35.3	-5.2	33.6	-6.9	34.2	-6.3
6	60,000	548,000	41.2	40.7	-0.5	41.2	0.0	38.9	-2.3	36.8	-4.4
7	70,000	453,000	41.5	41.3	-0.2	43.5	2.0	41.0	-0.5	38.5	-3.0
8	80,000	370,000	41.5	41.5	0	43.5	2.0	41.0	-0.5	39.4	-2.1
9	90,000	299,000	41.5	41.5	0	43.5	2.0	41.3	-0.2	40.0	-1.5
10	100,000	236,000	41.5	41.5	0	43.5	2.0	41.9	0.4	40.6	-0.9
11	Above	1,237,000	41.5	41.5	0	43.5	2.0	45.3	3.8	44.8	3.3
ALL		6,874,000	41.0	40.8	-0.2	40.8	-0.2	40.8	-0.2	40.4	-0.6

Notes: ATR = average tax rate; Diff. = difference in ATR between reform and current law.

Scenarios:

Current: current law.

Reform 1: remove PIT exemptions; increase basic allowance.

Reform 2: remove PIT exemptions; introduce EITC; higher flat rate PIT (13%).

Reform 3: remove PIT exemptions; introduce EITC; progressive PIT (6/12/18%); remove SSC deductibility.

Reform 4: remove PIT exemptions; remove health SSC; progressive PIT rate (10/20/25%); remove SSC deductibility.

Source: World Bank staff calculations drawing on 2021 PIT tax return microdata.

²⁰ This includes only income from salary and wages.

Reform 1 aims to increase progressivity and low-income work incentives by increasing the level of the basic allowance. This increase is funded just by the PIT revenue generated from removing the IT and construction exemptions, which allows an increase in the (simplified) allowance amount from RON 7,200 to RON 10,080 (RON 600 to RON 840 per month). The effective phase-out rate of the allowance is unchanged at 30% above RON 36,000. ATRs are shown to fall slightly for taxpayers in the second to seventh income bands. There is no difference for taxpayers in the bottom band as they already paid no PIT due to the basic allowance. These small ATR reductions illustrate that a reform funded just from the removal of the IT and construction exemptions can have only a limited impact. To have a more substantive impact on ATRs, additional revenue is needed either from sources external to the PIT or to raise additional revenue from the PIT itself. Larger reform packages are therefore considered in reforms 2-4.

Reforms 2 and 3, rather than increasing the basic allowance, look to introduce a refundable earned-income tax credit (EITC). A simple phase-in phase-out EITC design is adopted: the EITC is phased in at a 10% rate per RON 1 of gross wage income until it reaches a maximum amount of RON 4,000. After this point it is then phased out at a rate of 20% per RON 1 of additional income.²¹

To fund the EITC, additional revenue is required above that gained from removing the exemption on construction and IT workers. Reform 2 provides the additional funding through a simple increase in the flat PIT rate from 10% to 13%. Results in Table 2 show that reform 2 produces a far more substantial reduction in tax paid than reform 1 did for low-income groups, reducing ATRs by as much as 8-10 percentage points in income groups 1-4, and by around 5 percentage points in group 5. The refundable nature of the EITC is clearly shown by the 10 percentage point fall in the ATR for the bottom income group. This group was not paying any PIT (due to the basic allowance), and so now effectively pays negative PIT on their income. In practice, this could be implemented through the tax administration paying (“refunding”) this amount directly to the taxpayer. However, a preferable approach is likely to be to adjust the monthly tax/SSC withholding system so that employers would deduct less in total from the taxpayer’s wage.

While the reform clearly increases work incentives for low-income workers, the results for middle and higher income groups illustrate the limitation of the flat rate PIT system in terms of achieving progressivity. Table 2 shows that all taxpayers in the 7th and higher income groups now pay more tax under reform 2 than before. This is because they do not benefit from the EITC, but must pay the higher PIT rate (the 3 percentage point increase results in a 2 percentage point ATR increase due to the deductibility of SSC). As a result, while there is now progressivity over the bottom 5-6 groups (with an increasing ATR), there remains no progressivity from the 6th group onwards (constant ATR). This means a worker earning the average wage continues to pay the exact same ATR as the very highest income earners.

²¹ The work-contingent requirement is applied by basing the tax credit on wage income rather than total income. This, for example, is the approach followed in the United States. In contrast, some countries (e.g. the United Kingdom, Ireland, New Zealand) apply hours worked requirements. (See OECD (2011) for a discussion of the merits of different EITC design options). Given the similar work-contingent (and income-tested) nature of Romania’s current basic allowance, similar results could have been obtained from adopting a larger increase in the basic allowance than was modelled in reform 1. However, with the potential move to a progressive PIT schedule in mind, a tax credit is instead modelled to avoid the potential for a higher marginal rate to be applied to some of the allowance. (Alternatively, to prevent this, the larger allowance could be fully phased out prior to the level at which a higher marginal PIT rate applies).

Reform 3 seeks to create progressivity over the entire income distribution by funding the EITC through the introduction of a progressive PIT rate schedule. In light of the move to a progressive schedule, the deductibility of SSC is also removed to prevent it from having a regressive impact. The removal of SSC deductibility generates significant revenue in itself, therefore enabling lower PIT rates than would otherwise be required. To obtain revenue neutrality, various PIT rate structure and threshold combinations could be adopted. The scenario presented in Table 2 introduces a 3-rate schedule with a bottom rate of 6 percent applying to income up to RON 80,000; a middle rate of 12% applying to income between RON 80,001 and RON 189,000; and a top rate of 18% applying on income above RON 189,000.

The results in Table 2 show that reform 3 is able to produce similar reductions in the ATR for low-income groups as in reform 2, but to also provide progressivity in the middle and upper parts of the income distribution (with ATRs now increasing across the full income distribution). Whereas the 7th and higher income groups all faced an increase in ATR under reform 2, now only the top two income groups face a higher ATR than before.

Reform 4, instead of introducing an EITC, seeks to lower the tax wedge on low-income workers by removing the 10% health contribution (with healthcare being financed fully through general taxation instead, as part of the revenue-neutral reform). Removing the healthcare contribution is more expensive than introducing the income-targeted EITC because all taxpayers benefit from the removal of the health contribution. A three-rate progressive PIT schedule is again employed to raise the necessary revenue in a progressive manner, but rates need to be higher than in reform 3 in order to achieve revenue neutrality. As before, various rate and threshold combinations could be adopted, but the scenario presented in Table 2 applies a bottom rate of 10% on income up to RON 42,000; a middle rate of 20% on income between RON 42,001 and RON 100,000; and a top rate of 25% on income above RON 100,000. As before, because of the adoption of a progressive schedule, the deductibility of SSC (now just the 25% pension contribution) is again removed.

Reform 4 shows a relatively similar pattern of ATRs to reform 3. Low-income groups again receive substantive reductions (though less than in reform 3), with middle-income groups now benefiting from slightly larger reductions. Now only the very top income group faces an increase in their ATR. The similar pattern of results highlights that either type of approach can be effective at increasing the progressivity of the PIT and the participation incentives of low-income workers.

Figure 12 provides a graphical illustration of the impact of reforms 3 and 4 as compared to the current law. It shows both average and marginal tax rates (MTRs). Note that Figure 12 presents mechanical calculations for specific income levels based on the underlying tax parameters (as in Figure 4). Unlike Table 2, it is not based on the tax return microdata, and so, for example, the average rates will not perfectly match the average rates for income bands presented in Table 2.

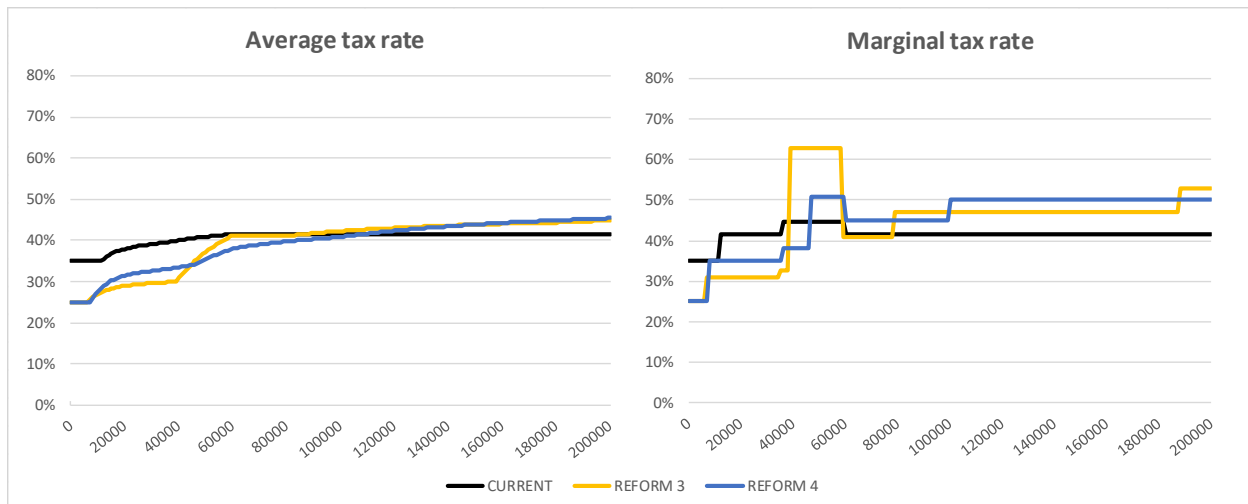
The left hand panel in Figure 12 reflects the results discussed above for reforms 3 and 4, with ATRs falling below the current law level at low income levels, and increasing above the current law level at higher income levels. The most obvious difference between reforms 3 and 4 is the jump in ATR between RON 40,000-60,000 where the EITC is phased out, whereas the increase is smoother for reform 4.

The impact of phasing out the EITC can also be seen in the MTR in the right hand panel. Initially, the phase-in of the EITC lowers the MTR by 10 percentage points (from 41.5% to 31.5%). However, at RON 40,000, both this 10 percentage point reduction is lost (as the EITC phase-in ends), and there is a further 20

percentage point increase (as the EITC phase-out begins). The MTR then drops by 23 percentage points at RON 60,000 as both the EITC and basic allowance are fully phased out. The tax return data suggests around 19-20% of taxpayers are earning within the RON 40,000-60,000 range. This increase in MTR is the unavoidable cost of targeting support – and while the EITC will increase participation incentives for lower income workers, it will reduce incentives to work longer (or potentially harder) for some taxpayers already in work. However, empirical evidence highlights that the positive impact of EITCs on labor force participation strongly outweighs any reduction in hours worked by those already working.²² Additionally, the reform scenarios presented here are only illustrative, and full microsimulation modelling will be able to identify alternative, and likely preferable, phase-out rates and ranges to achieve revenue neutrality while minimizing any negative impact on hours worked.²³ Furthermore, as discussed above, Barrios et al. (2020) found the employment gains from an EITC to also outweigh the negative impact of the higher marginal tax rates on top earners funding the EITC.

At the top of the income distribution, the trade-offs in financing the reform are also apparent. For reform 3, the top PIT rate only needs to apply from a very high level to achieve revenue neutrality (the resulting top marginal tax rate of 53% applies to approximately just the top 5% of income earners). In contrast, reform 4 actually applies a slightly lower top marginal tax rate of 50% (25% PIT plus 25% pension contribution) than in reform 3, but this rate needs to apply from a significantly lower threshold to achieve revenue neutrality (applying to roughly the top 18% of income earners).

Figure 12. Average and marginal tax rates from reform scenarios (single individual)



Source: World Bank staff calculations

²² See, for example, OECD (2011) for a summary of the empirical literature.

²³ There is a similar (though smaller) jump in the METR under reform 4 between RON 47,000-60,000. This in fact illustrates the problem of applying an allowance (rather than tax credit) with a progressive PIT system. At RON 47,000, the higher 20% PIT rate kicks in, and this means that the withdrawal of the allowance (at the smoothed 30 percent withdrawal rate), results now in a 6 percentage point increase in MTR instead of the previous 3 percentage point increase, leading to an overall 13 percentage point increase in the MTR. At RON 60,000, the allowance is fully withdrawn so the MTR drops by 6 percentage points, now reflecting just the 25% pension contribution and 20% PIT rate.

Box 1. Increasing analytical capacity in the Ministry of Finance

A key limitation faced by the Ministry of Finance that has been identified in the World Bank's review is its ability to analyze the distributional impacts of potential tax reforms. While the Ministry has good capacity – drawing on macro data – for standard revenue forecasting and for estimating revenue impacts of proposed reforms, it currently has no microsimulation modelling capacity and limited staffing capacity to adopt such additional analytical tools.

Microsimulation modelling is a key tool for policy makers to analyze the potential impacts of tax reform proposals. Microsimulation models can be used to estimate both the revenue and distributional impacts of reforms, as well as the size of tax expenditures, and can also feed into general revenue forecasting models. A key recommendation of this report is therefore for the Ministry of Finance to develop a full set of PIT, CIT and VAT microsimulation models. The World Bank can provide support with the development of these microsimulation models.

Microsimulation models are typically built for PIT, CIT and VAT. CIT models are based on corporate tax return microdata, while VAT models are typically based on household budget survey microdata. PIT models can be based on either income survey microdata or personal tax return microdata.¹ There are merits in both data sources. Survey data enables broader distributional analysis to be undertaken as it includes information on non-taxpayers and more demographic information than typically in tax return data. However, income data in surveys is less reliable than in tax return data, particularly at higher income levels. As a result, tax return data enables greater accuracy in revenue calculations. In schedular systems such as Romania, tax return data also enables separate modelling of labor and capital income potentially taxed at different rates, and also does not require assumptions to be made regarding income sharing within households (which is necessary with household-based survey data).

Romania's Ministry of Finance is currently developing income survey-based PIT microsimulation capability drawing on the EUROMOD approach. This work should continue to be progressed, including current proposals to augment the EUROMOD model with tax return information to improve modelling accuracy for high-income earners. However, for the reasons noted above, there is considerable merit in complementing this income-survey based model with a tax return-based PIT microsimulation model (in addition to the construction of CIT and VAT models).

An equally crucial limitation on the Ministry of Finance's current analytical capacity is staffing capacity. Sufficient trained staff are needed to ensure the continued use and maintenance (including annual updating) of microsimulation models once constructed. However, the department responsible for assessing the impacts of reform proposals (the Macroeconomic Analysis and Policies Department) is currently significantly understaffed as compared to approved levels. Increasing the number of staff in the department, and ensuring they have strong quantitative skills, should therefore be prioritized to ensure modelling capacity.

¹ Sometimes expenditure survey data is used, although this creates additional inaccuracies above and beyond the use of income survey data given that the base of the PIT is income, and savings patterns can generate significant differences between income and expenditure.

3.2. Taxation of capital income

Another consequence of the low flat rate PIT system in Romania, is comparatively low taxation of capital income (as investment income is, in general, taxed at the 10% PIT rate). In addition to the consequent revenue impact, the low taxation of capital income raises additional equity concerns because capital income is predominantly earned by higher income groups. Furthermore, concessionary treatment of certain savings vehicles exacerbates these equity concerns as well as raising efficiency concerns regarding the distortionary effects of the tax rules on portfolio allocation decisions.

3.2.1. Current tax rules on capital income

Currently, a 10% final withholding tax is applied to interest income (e.g. from bank accounts or corporate bonds). However, interest on state or municipal bonds is exempt. Dividends are also subject to a final withholding tax, currently at 5%, but increasing to 8% as of 1 January 2023.²⁴ This is on top of taxation at the corporate level, where the tax rate is 16% (although a number of corporate tax concessions apply as discussed in Section 3.3).

Capital gains on corporate shares are taxed at 10% on a realization basis, as are gains on bonds issue below par. Capital gains on sale of derivatives are also taxed at 10%. There is, however, no taxation of capital gains earned on residential property. While no capital gains tax is applied to residential property, a transaction tax is applied on sale, currently at a rate of 3% of the sale value paid by the seller (after a deduction of RON 450,000). However, as of 1 January 2023 this will change to a split rate of 1% for properties held more than three years, and 3% for properties held for three years or less (with no deduction). A transaction tax also applies to the sale of securities.

Rental income is currently subject to taxation at 10%, with the ability to deduct a standard amount equal to 40% of rental income to account for expenses incurred, although taxpayers are allowed to claim individual expenses if they prefer.²⁵ Mortgage interest is not deductible for tax purposes. Imputed rental income from owner-occupied property is not subject to taxation.

Mandatory and voluntary private pensions are taxed under an Exempt-Exempt-Taxed (EET) system. Contributions into mandatory private pension plans are fully tax deductible. Contributions into voluntary private pension plans are tax deductible up to a cap of EUR 400 per year. There is no taxation of income earned by a pension fund. On distribution, private pension income is tax exempt up to RON 2,000 per month (plus any deduction for health contributions), above which it is taxed at the flat income tax rate of 10%. Above RON 4,000 per month pension income is subject also to the health contribution at 10%.

Intermediated investment via an investment fund is taxed in the hands of the individual investor for open-ended funds as these have no legal personality. In contrast, closed funds are corporations and are therefore subject to corporate income tax and tax on dividends on distributions to investors. Notably, as of 1 January 2023, capital gains earned through an intermediary will be subject to a concessionary tax rate of 1% if shares are held for more than one year or 3% if held for one year or less.

²⁴ A participation exemption exists for inter-corporate dividends where there is a greater than 10% participation interest that is uninterrupted for at least one year.

²⁵ Separate rules apply for the rental of up to five rooms within a private house for tourist accommodation, based on income norms.

3.2.2. Low and non-neutral taxation of capital income

The current tax treatment of capital income raises concern for two reasons. First, the low taxation of capital income is a concern from an equity perspective. Capital income is predominantly earned by high income individuals, therefore effective taxation of capital income is crucial to ensuring the progressivity of a tax system. This is exacerbated by the fact that – as shown in Section 3.1 – very little progressivity is achieved from the PIT in Romania, which is the most common mechanism for achieving progressivity in other European countries’ tax systems.

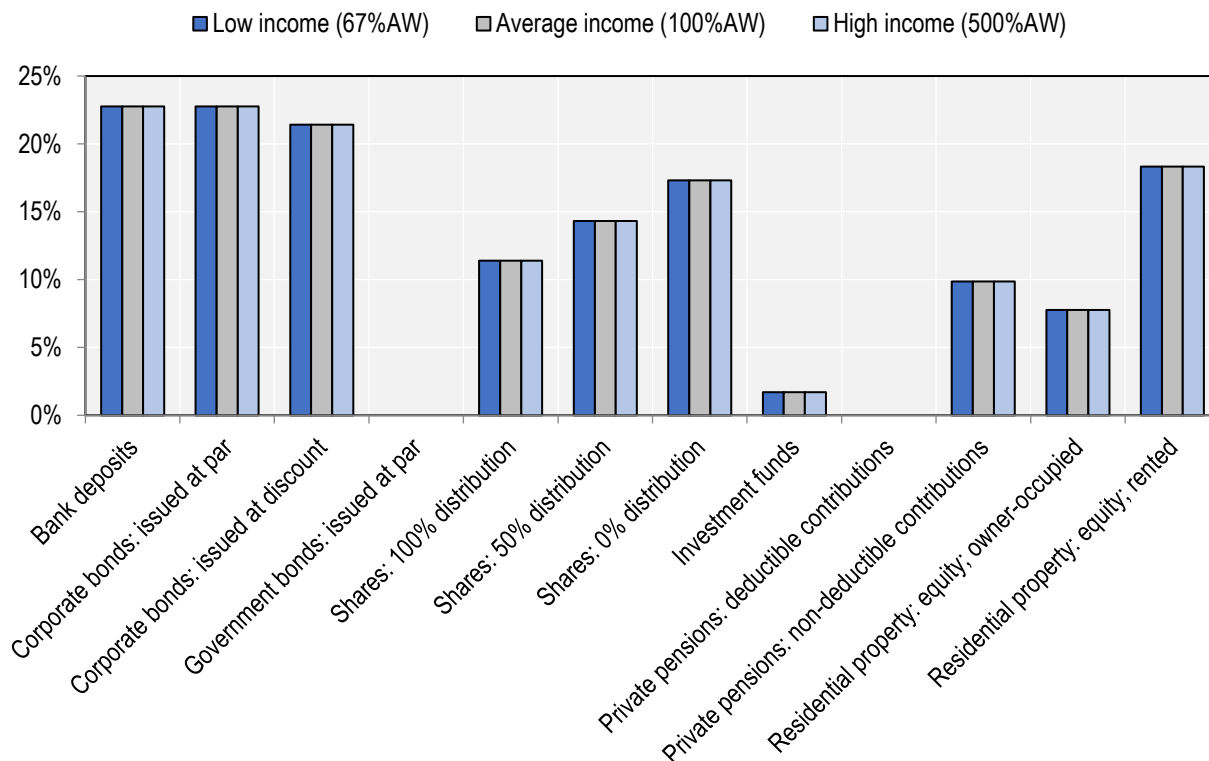
Second, there is non-neutrality across different savings options. This is of concern both from an efficiency perspective and an equity perspective. From an efficiency perspective it is desirable that the tax system does not impact on portfolio allocation decisions – which requires neutral tax treatment across savings options. From an equity perspective, neutrality is also preferable, as non-neutrality risks wealthier taxpayers with greater information seeking out savings options that are taxed favored. Indeed evidence suggests that, across OECD countries, higher income taxpayers tend to save disproportionately more than middle and lower income taxpayers in tax preferred assets (OECD, 2018).²⁶

To illustrate the non-neutral tax treatment of savings in Romania, Figure 13 presents marginal effective tax rates (METRs) across a range of assets, calculated following the methodology developed in OECD (2018). METRs enable a wide range of taxes and tax design features to be incorporated into a single indicator in a comparable manner. This includes the impact of multiple taxes on a particular savings vehicle, deductions and variations in the tax base, build-up of untaxed or tax-deferred returns over time, variation in the type of return generated, and taxation of the inflationary component of investment returns.²⁷

²⁶ As OECD (2018) notes, there are two main aspects of tax neutrality: neutrality regarding the allocation of savings over the lifecycle; and neutrality regarding portfolio allocation. Greater policy concern is generally given to the latter over the former as empirical evidence clearly shows that taxes affect portfolio allocation decisions, while evidence is more mixed as to whether taxes affect lifecycle savings (and hence the aggregate level of savings). Neutrality regarding portfolio allocation requires that different savings vehicles are taxed equivalently at the margin, thereby ensuring that asset returns, rather than tax considerations, drive investment decisions.

²⁷ Following OECD (2018), the METRs consider a saver contemplating investing an additional currency unit in one of a range of assets. The investment is a marginal investment, both in terms of being an incremental purchase of the asset, and in terms of generating net returns just sufficient to make the purchase worthwhile (as compared to the next best savings opportunity). The approach assumes a fixed pre-tax real rate of return and calculates the minimum post-tax real rate of return that will, at the margin, make the savings worthwhile. The METR can then be calculated as the difference between the pre- and post-tax rates of return divided by the pre-tax rate of return. A pre-tax return of 3% is assumed, with inflation equal to the pre-crisis 2021 figure of 3.83% (on the basis that current inflation rates are transitory in nature). For each asset type, results are presented for three different taxpayer types (low-, average-, and high-income taxpayers). Results are presented for a five-year expected holding period (except for private pensions and housing where a 20-year holding period is assumed due to the typically longer-term nature of such investments). For additional detail of the methodology see OECD (2018). Note that the housing METR results exclude recurrent property taxes, based on an assumption that they act largely as a “benefits tax” (i.e. as a payment for local public services received), and so have minimal impact on savings incentives. However, it is important to note that there remains considerable debate in the literature as to the incidence of recurrent property taxes, and it is arguable that they may be borne to some extent by investors and therefore distort savings decisions (see, e.g., Zodrow, 2007, for further discussion).

Figure 13. METRs across asset types, Romania (2022 rules)



Source: World Bank staff calculations based on OECD (2018) methodology.

Figure 13 shows significant variation in METRs across asset types. The most heavily taxed assets are bank deposits and corporate bonds, that are both taxed at the flat 10% rate. The higher METR is the result of the taxation of nominal gains in an inflationary environment. Corporate bonds issued at a discount are taxed slightly less as the capital gain component benefits from deferral of taxation until realization.

In contrast, the most concessionary tax treatment is provided to government bonds and to private pension contributions made up to the contribution limit. Government bonds are simply untaxed, whereas the EET regime for private pensions creates an effective tax rate of zero because the net present value of the immediate deductibility against PIT of pension contributions fully offsets the future taxation of pension payments.

Figure 13 also shows investment funds to be highly tax favored. These results assume the extreme scenario of an open-ended investment fund that invests fully in shares that do not distribute dividends under the new rules effective 1 January 2023. Therefore taxation only occurs on sale of the shares held by the fund which are subject to the low capital gains tax rate of 1% if held by the fund for more than one year.²⁸ There is consequently a clear non-neutrality between directly held shares generating capital gains (“Shares, 0% distribution”) and indirectly held shares generating capital gains (“Investment funds”).

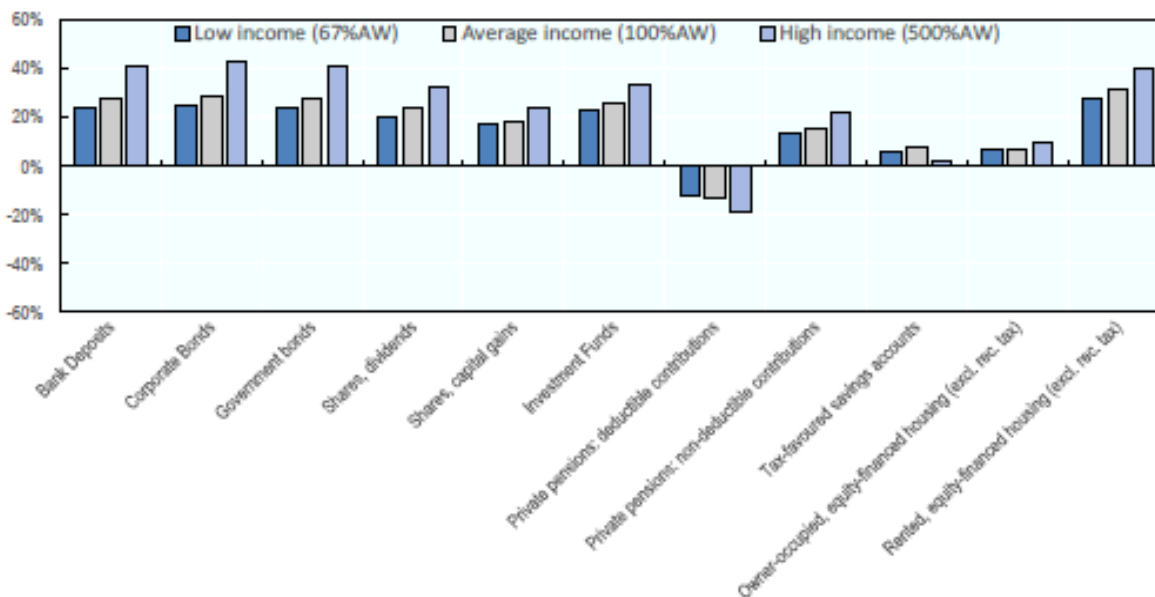
²⁸ If the fund invested in interest bearing or dividend distributing assets, or sold shares held for three or less years, then the METR would increase, through it would still be highly concessionary as long as a significant proportion of investments were held in non-dividend distributing equity investments. Indeed this is the incentive created by the tax rules.

More generally regarding shares, the differential tax treatment of dividends and capital gains can be seen in the differing METRs for investments in shares with differing distribution strategies. Shares that distribute all returns annually as dividends face a comparatively low METR because dividends are taxed at just 5%, whereas if all returns are distributed as capital gains on realization, these are taxed at 10%, and even the deferral benefit of the realization based taxation is not sufficient to counter the higher tax rate. That said, this distribution benefit clearly pushes the METR below that for bank deposits and corporate bonds.

Finally, owner-occupied residential property can be seen to be tax favored compared to most other assets. This is because capital gains and imputed rental are not taxed, with the only taxation being the 3% transaction tax. It should be noted that the METR will fall further in the new year when the long term transaction tax rate falls to from 3% to 1%. This creates a clear distortion between owner-occupied and rented residential property where rental income is taxed, although as capital gains are untaxed, rental property investment is still taxed less heavily than bank accounts and bonds.

Romania is not alone in providing non-neutral tax treatment across savings options. This can be seen in Figure 14 which provides averages across 40 (predominantly OECD) countries of METRs for a similar range of assets, based on 2016 data. Rates are shown for the OECD average inflation rate in 2016 of 1.59%, and show significant variation in METRs.

Figure 14. METRs across asset types – 40 high-income country median (2016)



Source: Thomas (2021), drawing on OECD Savings tax models

In addition to the non-neutralities, two further factors are of note in comparing Romania’s system to the OECD average results. First, there is no progressivity in Romania – METRs are equivalent irrespective of the income level of the taxpayer. In contrast, the OECD METRs generally increase with income. This is because a significant number of OECD countries apply progressive PIT rates to capital income. That said, a significant number of OECD countries also adopt a similar flat rate capital income tax approach as in Romania (dampening the overall degree of progressivity shown in Figure 14). That said, even countries that apply flat rates to most financial assets often still apply progressive tax rates to rental income.

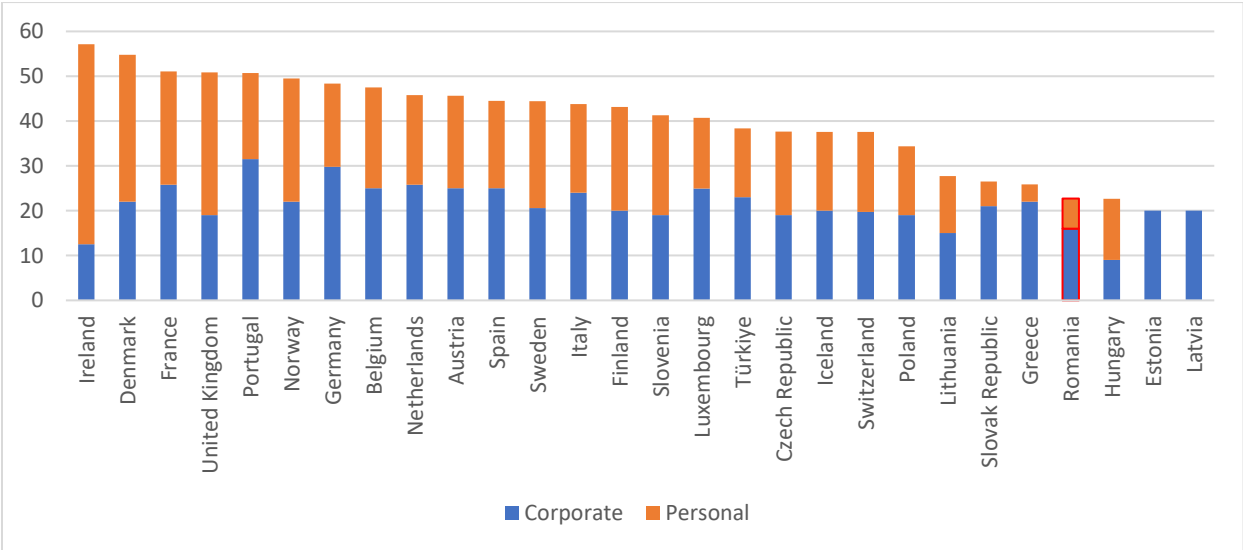
Additionally, the application of progressive rates can be seen to have a regressive impact on private pension savings in countries that provide tax deductions for contributions (as these benefit taxpayers subject to higher marginal rates on their labor income). Second, the magnitude of the rates in Figure 14 are misleading in comparison to Figure 13 as the OECD results are based on a significantly lower inflation rate. Indeed, rates calculated, for comparison at the same 1.59% rate as in the OECD average, result in significantly lower rates in Romania for all asset types except government bonds and private pensions.

Despite the significant degree of non-neutralities across countries, a rationale remains necessary to justify any shift away from neutrality. For example, many OECD countries provide highly concessionary tax treatment for private pensions in order to encourage greater long-term savings, while tax concessions for owner-occupied housing may also be based on a similar long-term savings rationale. Beyond this, non-neutralities are more difficult to justify. There is therefore a strong case to reassess the tax treatment of capital income to move towards greater neutrality – in Romania and in other countries.

3.2.3. Comparatively low taxation of dividends

To ensure comparability with the OECD results in Figure 14, the Romanian results in Figure 13 for investment in corporate shares only considers taxation at the personal level (including where remitted by the company as with Romania’s dividend withholding tax). However, a full understanding of the taxation of investment in shares requires consideration of taxation at both the corporate and personal level. In Romania income earned by a company will be taxed at the CIT rate of 16%, and then if distributed as a dividend will be taxed at 5% (8% as of 1 January 2023). Even following the increase to 8%, this results in a relatively low tax burden on investment in shares as compared to other European countries. This can be seen in Figure 15 which presents the combined statutory tax rate across European countries. Of course, the extent of corporate tax concessions may lower the effective CIT rate below the statutory rate, while deferral of dividends will lower the total.

Figure 15. Overall statutory tax rates on dividend income (for top PIT rate taxpayer), 2022



Source: OECD Tax database

In addition, as was illustrated in Figure 13, the differential rates applied to dividends and capital gains results in a preference for returns to be distributed as dividends rather than as capital gains, thereby creating a distortion toward investing in companies that annually distribute dividends. This would be largely prevented if dividends were taxed at the same 10% rate as capital gains (rather than 5% or 8%), though deferral would again favor capital gains. If taxed at 10% the effective tax rate will be higher than on other savings options, although this is the typical result of a classical tax system as applied in many countries.

3.2.4. Reform options

In order to increase both the efficiency and equity of the tax system Romania should consider increasing the degree of neutrality in the taxation of capital income. Most obviously, this would require taxing at the same 10% rate assets or income types currently receiving (or about to receive) preferential tax treatment. This includes not proceeding with the announced reduction in the capital gains tax rate on intermediated sale of shares, and introducing a capital gains tax on residential property.

Maintaining the 10% capital gains tax rate on intermediated share sales will ensure neutrality between direct and intermediated investment in shares, whereas the announced reform would result in a significant tax concession being provided for intermediated investment as opposed to direct investment. It would also distort the investment choices by funds, favoring investment in assets returning gains rather than dividends or interest.

Imposing a capital gains tax on owner-occupied property can create political economy challenges. However, one way to gain political support for the taxation of capital gains on owner-occupied housing would be to provide a generous exemption threshold, so only wealthier taxpayers are subject to the tax.²⁹

Additionally, Romania should consider lowering or removing the transaction tax on sale of residential property. While transaction taxes are very common, they discourage transactions and therefore result in inefficiency in both the housing market and the labor market. While a realization-based capital gains tax will also discourage transactions, a capital gains tax will be less distortive to portfolio allocation decisions

²⁹ Capital gains taxes on residential property are typically imposed on a nominal basis, with the gain calculated as the difference between sale and initial purchase price. Deductions against the taxable capital gain are also typically allowed for costs associated with the property such as real estate agent fees, legal costs, expenditure on capital improvements made to the property (or, equivalently, the purchase value may be 'uplifted' by these costs). In many countries, a tax-free amount is provided either for administrative or equity reasons. Evidence of purchase price can be required, for example, via a signed copy of the sale and purchase agreement from when the property was first purchased, while invoices can be required to support deductions for agent fees as well as legal, valuation and other deductible services. As a transitional arrangement, it is proposed that the capital gains tax would be implemented on a forward-looking basis, applying only to properties purchased after the date the reform is announced, or alternatively after the date the legislation is enacted. While this gives up some potential revenue, it avoids the need to value all properties at implementation (OECD, 2006). An alternative would be to apply capital gains tax to all properties sold after the implementation date. However, this would effectively impose retrospective taxation which may be considered unfair (as they were purchased with the expectation of a tax-free gain), while documentation of very long-held properties may also be difficult to obtain to determine purchase price. Another key issue relates to tax treatment on death of the owner. Alternative approaches are possible, including applying a deemed realization at death triggering capital gains tax liability, or deferral until sale by the recipient (but with the original purchase price transferred to the inheritor). The latter option may be preferred as it prevents the need for valuation at death, although by deferring realization it will lower revenue. (OECD, 2006, provides additional discussion on these design issues).

and better achieve equity goals because, unlike a transaction tax, a capital gains tax is linked to the investment return. That said, the transaction tax should only be removed if it is replaced by a capital gains tax (but even if the transaction tax is maintained, the capital gains tax should still be introduced).

Romania should also consider increasing the dividend tax rate to 10% to match the taxation of most other forms of capital income. This will eliminate the current tax preference for dividends over capital gains. This would result in the effective (PIT plus CIT) rate on shares being higher than on other savings options, although this is the typical result of a classical tax system as applied in many countries. An alternative approach that could be considered would be, following the introduction of a progressive PIT schedule, to adjust the dividend tax rate so that the total (CIT plus dividend) tax rate on corporate investment matches the top PIT rate.

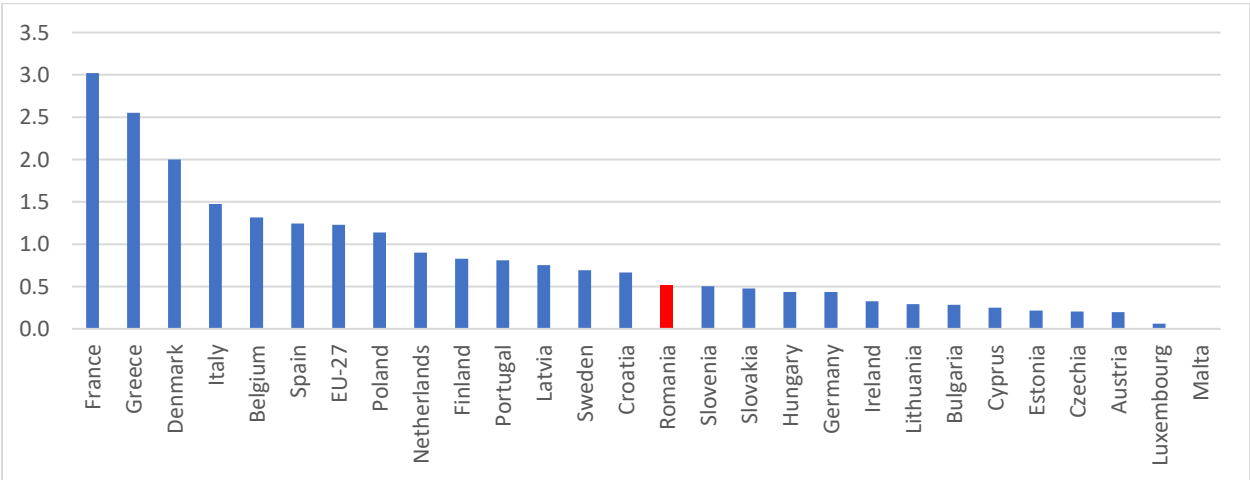
In the longer term, Romania could also consider moving from a schedular system to a comprehensive system that applies the marginal PIT schedule to all personal income (including capital income). This would increase the overall progressivity of the tax system, and concerns regarding capital flight that might otherwise encourage lower taxation of capital than labor income have been reduced as a result of Automatic Exchange of Financial Account Information (AEOI) rules (OECD, 2018).

Irrespective of such a move, it is important that Romania also looks to further improve its AEOI framework to increase tax transparency and minimize tax evasion. In particular, the 2021 Peer Review report by the Global Forum on Transparency and Exchange of Information for Tax Purposes (OECD, 2021e) highlighted significant deficiencies in Romania’s domestic legal framework, including in relation to due diligence requirements for reporting financial institutions.

3.3. Taxation of immovable property

Romania raises relatively little revenue from recurrent property taxation. As of 2020, recurrent property taxes generated 0.5% of GDP as compared to an EU27 average of 1.2% (Figure 16). In addition to the low revenue, there are key weaknesses in tax design. In particular, the tax is based on area, which is both inefficient and inequitable when compared to a market value based system.

Figure 16. Recurrent property tax revenues (% of GDP), 2020



Source: European Commission

3.3.1. Current tax rules on immovable property

Romania currently applies separate recurrent taxes on buildings and on land. The design of the recurrent tax on buildings varies depending on whether the building is for residential or non-residential use. The tax on residential buildings is area-based, but subject to adjustments for location, age and type of building/apartment (in order to better reflect the building's value). The base is also adjusted depending on whether or not the property is connected to utilities (electricity, sewerage, water supply and central heating). In contrast, the base for non-residential buildings is market value-based.

Tax rates for the buildings tax are determined locally within a band determined by the central government. A lower band applies to residential property than to non-residential property, but local governments can (and typically do) apply differential rates within the bands to property owned by individuals as compared to legal entities.

The recurrent tax on land is area-based for both residential and non-residential land. Adjustments to the base are made for location and use of the land, with far smaller coefficients applied to agricultural land than to land for construction. Unlike the buildings tax, local authorities have no ability to adjust rates.

Tax exemptions are also applied to a wide range of building types, including government owned buildings, places of religious worship, public education and sports buildings, business incubators, industrial/science/technology parks, and various buildings linked to infrastructure. Concessions can also be applied, at the discretion of local authorities, to, amongst others, buildings owned by low-income households, energy-efficient buildings, buildings of non-governmental organizations, buildings owned by certain cooperatives, and buildings used for tourism activities.

3.3.2. An inequitable and inefficient area-based design

The predominant concern with the current system relates to the tax base. As noted above, the taxes on residential buildings and all taxes on land rely on an area-based system for calculating the tax base. While a set of adjustments are made to attempt to more closely reflect property value, they do so in only a blunt manner. For example, IMF (2022b) highlights that in Bucharest the location adjustment coefficients result in the percentage difference between the highest and lowest value zones being just 13 percent, whereas actual property prices can be expected to vary much more significantly. This results in an inequitable system because, even after the adjustments, the area-based tax provides a poor proxy for a taxpayer's ability to pay. For example, two apartments of the same size may have significantly different market values (e.g. a top floor apartment with a view vs a bottom floor apartment in the same building), but the difference in value (and return) will not be reflected in the current adjusted area-based design.

In contrast, best practice is, where feasible, to adopt a market value-based approach (World Bank, 2020; IMF, 2022b). In addition to the greater equity from more accurately proxying ability to pay, a market value based system will also be more efficient than an area-based system as it will encourage the optimal use of the property.³⁰ In contrast, an area-based tax may result in some households making sub-optimal

³⁰ Market value-based systems can use either capital value or rental value (which are not always equivalent). Systems based on capital value are typically preferable as they capture (and thereby encourage) "highest and best use". They will also ensure vacant land is taxed (thereby encouraging optimal land use), and avoid problems related to rent control policies (World Bank, 2020).

housing choices – such as living in a smaller apartment than would otherwise be optimal in order to minimize the tax.

3.3.3. Variation in tax rates

Allowing local authorities some discretion to adjust tax rates within a centrally determined band is justifiable on the basis that it can encourage greater local government accountability, while preventing undesirable tax competition between localities (IMF, 2022b; World Bank, 2020). However, the flexibility provided to local authorities within this system does raise some concerns. First, local authorities currently have the ability to apply different rates (within the applicable bands) to buildings owned by individuals vs legal entities. However, there is no clear rationale for a distinction based on legal ownership and, as IMF (2022b) notes, this creates arbitrage incentives.

Second, the rate band applicable to non-residential buildings is higher than the rate band applicable to residential property. There is a strong case to tax commercial/industrial property on the basis that businesses benefit from local public services, just as is the case with residential property. However, beyond an amount that reflects this benefit, it can be expected to be more efficient to tax businesses directly through the corporate income tax – as this is linked to profit (Boadway et al., 2010). An additional efficiency argument for taxing commercial/industrial property is to prevent creating an incentive to convert residential property into business property (Boadway et al., 2010). However, while these arguments may justify equivalent taxation of residential and commercial property, they do not justify the current higher rate band applied to residential buildings on Romania.³¹

3.3.4. Extensive use of concessions

A further concern with the current system is its extensive use of concessions. These concessions result in significant revenue losses, and in some cases there is no clear rationale for their existence. It is common practice for countries to offer some concessions in their property tax. In particular, there is a strong case to target support at low-income individuals or elderly individuals that may face cash-flow concerns. Many countries also offer tax concessions for government buildings, and for organizations considered to provide a public benefit. For example, places of religious worship are often exempted. However, such concessions should be kept to a minimum as they can be subject to abuse and, from a political economy perspective, may create pressure for expansion of concessions more broadly. More generally, best practice suggests keeping property tax concessions to a minimum, and also to regularly review their intended objectives and their actual costs and benefits (World Bank, 2020).

3.3.5. Reform options

To improve both efficiency and equity, Romania should look to move to a current market value base for its recurrent property taxation. It is important that the base is then regularly updated, as outdated valuations can allow inequities to develop if property values develop differently over time across regions. World Bank (2020) recommends revaluation every 3-6 years. The shift to a market value base will require significant work to develop a mass valuation model and related administrative systems. Full implementation may therefore not be feasible until at least 2024. The World Bank has committed to assisting Romania with the development of the necessary valuation model and related systems, and analysis and advice in this regard will be provided in subsequent reports.

³¹ There is also some evidence that a tax on commercial property may be more damaging to economic growth than a tax on residential property. While Johansson et al. (2008) find recurrent property taxes in general to be less damaging to economic growth than most other taxes, they also find, for a small sample of countries, recurrent taxes on households to have less adverse effects than those levied on businesses.

Romania should also consider merging its land and buildings taxes into a single tax as this would allow market values to more easily be estimated based on market transactions. That said, there is an efficiency argument in favor of applying a tax just on land value and not on the value of improvements. This is because a tax on land (which is in fixed supply) will not discourage investment in improvements, whereas a tax on land and improvements will (Brys et al., 2016, Boadway et al., 2010). Nevertheless, the valuation argument noted above supports the case for merging both taxes into a single tax on the current market value of land and improvements.

Romania could also consider equating the tax rate bands applicable on residential and commercial/industrial property in order to more accurately reflect local service provision. There would remain a case to tax agricultural property at a lower rate to, for example, reflect differences in local public services provided between urban and rural areas. Romania could also consider removing the ability of local authorities to apply different rates within the allowable band to remove arbitrage incentives. Once the move to market value has been undertaken, a reassessment of the entire rate structure should also be undertaken with the view to increasing total recurrent property tax revenue above its current comparatively low level amongst EU countries.

Finally, Romania should consider significantly reducing the extent of the tax concessions currently applied to the recurrent property taxes. These should be limited to concessions targeted at low-income and elderly taxpayers, government buildings, and as limited a range of public benefit organizations as possible. At a minimum, all concessions should go through a regular reassessment and cost-benefit analysis.

With respect to targeting low-income taxpayers, a difficulty here is that there is not necessarily a clear link between property value and the owner's income. One option to target support would be through an increase in the existing targeted income tax deduction (or a tax credit if a progressive PIT is adopted, as recommended). Alternatively, a fixed lump sum exempt amount could be provided which would, in effect, create a degree of progressivity (with respect to property value) in the design of the property tax. Meanwhile, a tax deferral option could be considered for low-income elderly owner-occupiers of residential property that suffer from cashflow difficulties. Such an option should be income-tested, and would defer payment of property taxes until sale of the property or death of the owner, subject to an interest charge to cover the deferral value.

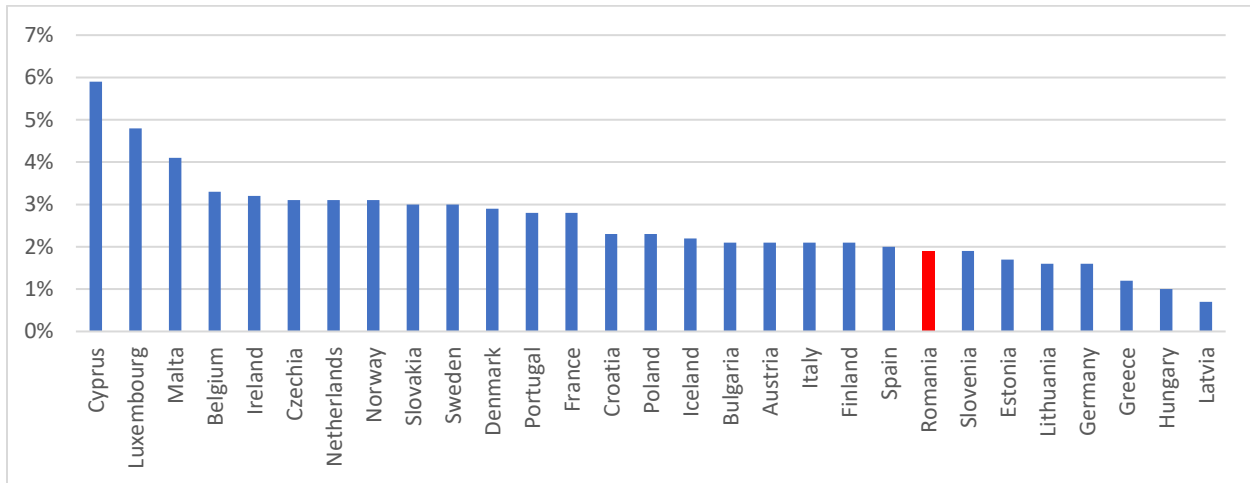
3.4. Taxation of corporate income

As noted in Section 2, CIT revenue in Romania is also low compared to other EU countries. This is further illustrated in Figure 17. There are three key factors contributing to the low CIT revenue: a relatively low CIT rate; the existence of a concessionary microenterprise regime that replaces the normal CIT for the majority of companies; and the presence of various tax incentives.

3.4.1. A low rate

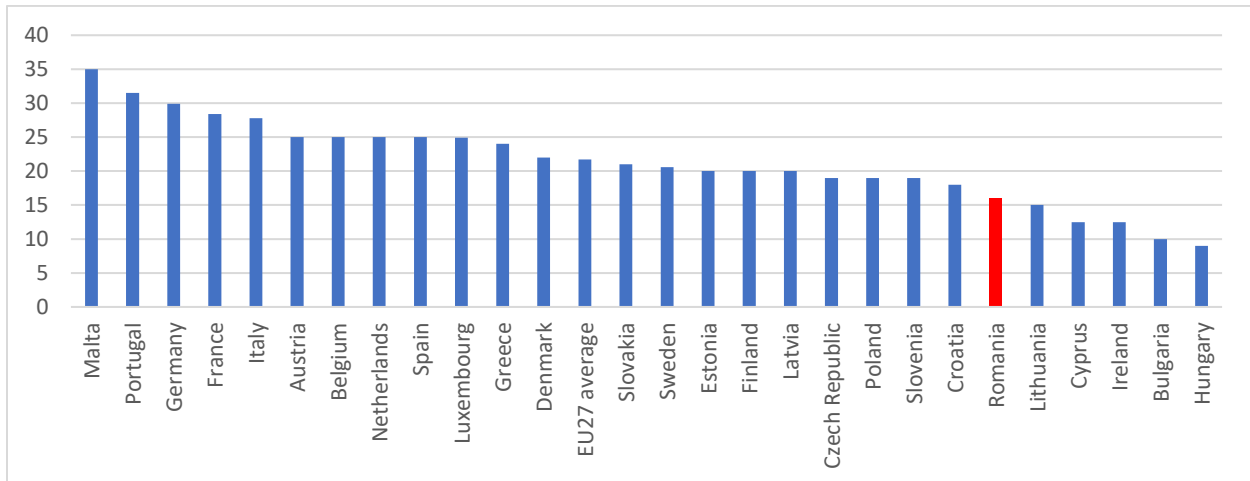
At 16%, Romania's CIT rate is the sixth lowest in the EU (see Figure 18), although it is above several non-EU European countries including Bosnia and Herzegovina, North Macedonia (both 10%), and Serbia (15%). Furthermore, it is only just above the 15% global minimum effective CIT rate agreed to by the OECD/G20 Inclusive Framework, and proposed for adoption in the EU. In light of the tax incentives discussed below, it is highly likely that the effective rate for MNEs will be below the proposed 15% minimum tax, enabling other countries to potentially 'claim' the difference.

Figure 17. CIT revenue (% of GDP), 2020



Source: Eurostat

Figure 18. CIT rates in EU countries, 2021



Source: OECD Corporate Tax Statistics

3.4.2. A small number of taxpayers in the regular CIT regime

A key contributor to Romania’s low CIT revenue is the existence of a concessionary “microenterprise” regime that replaces the regular CIT for the majority of companies. The microenterprise regime has an extremely high eligibility threshold of EUR 1 million, making it a “microenterprise” regime in name only. In fact, Ministry of Finance figures show that 96% of companies in Romania are subject to the concessionary microenterprise regime rather than the regular CIT (Table 3).

Table 3. The number of taxpayers divided by the categories

Category of taxpayers	2019	2020
CIT	30,999	30,232
Special tax regime for microenterprises	792,765	815,391

Source: Ministry of Finance, World Bank staff calculations

While thresholds for this regime have varied over the last 20 years, this is not a new problem. For example, in 2017, the Fiscal Council of Romania³² found that around 90% of active companies had operating revenues below the microenterprise regime's then threshold of EUR 500,000. The threshold will be lowered back to EUR 500,000 as of 1 January 2023, which is a positive first step. However, further reform will be needed both to the threshold and regarding other design features of the regime. Detailed discussion of the microenterprise regime is left for the next section of the report that focuses on small business taxation. The remainder of this section instead focuses on tax concessions in the regular CIT system.

3.4.3. Use of tax incentives

The tax base is narrowed as a result of various concessions, including: a set of R&D-related tax incentives; a tax exemption for reinvested profits; and rate reductions to encourage undercapitalized companies to increase equity levels.

A general concern regarding the use of tax incentives is that they are not necessarily effective at achieving their goal – which is typically to increase investment. For example, evidence from investor surveys finds redundancy rates (i.e. the proportion of investment that would have occurred without the tax incentive) often above 70% in a range of developing and emerging economies (James, 2013). Box 2 discusses evidence on the effectiveness of corporate tax incentives further.

More generally, there are a range of costs to the use of tax incentives. These include loss of revenue – both intentional, and unintentional as a result of the tax incentive creating opportunities for tax avoidance. Associated with this is the need to impose higher taxes on other bases to compensate for the revenue loss from provision of the tax incentives. Increased complexity results in higher administrative costs for tax administrations and higher compliance costs for taxpayers. Finally, tax concessions will distort investment decisions by incentivizing some types of investment or sectors over others.³³

Nevertheless, tax incentives are a common feature of tax systems around the world. While tax holidays and income tax exemptions are particularly common in developing countries, potentially due to their lower administrative costs, investment allowances/tax credits and R&D tax incentives are more common in high-income countries. Tax incentives associated with special economic zones are also common (see Figure 19).

Expenditure-based incentives (such as accelerated depreciation and investment/R&D allowances or tax credits) can be expected to be more cost effective than profit-based incentives (such as income tax exemptions and tax holidays) at increasing investment. This is because they are directly linked to investment expenses. In contrast, profit-based incentives are contingent on the profitability of the business. As such, they only benefit successful businesses, and are likely to provide support for highly profitable activities that would have occurred in the absence of the tax incentive (OECD, 2022; IMF, OECD, UN, World Bank, 2015).

³² <http://www.fiscalcouncil.ro/31-ian-2019.pdf>

³³ For a detailed analysis of the costs and benefits of corporate tax incentives, see IMF, OECD, UN, World Bank (2015).

Box 2. Evidence on the effectiveness of tax incentives

The costs and benefits of investment tax incentives are highly design- and context-specific and are not always well understood. Empirical evidence on the benefits of tax incentives is limited but so far confirms that their design is critical for their success. An in-depth understanding of the design of tax incentives is key to understanding their effectiveness, efficiency and whether they contribute to sustainable development outcomes.

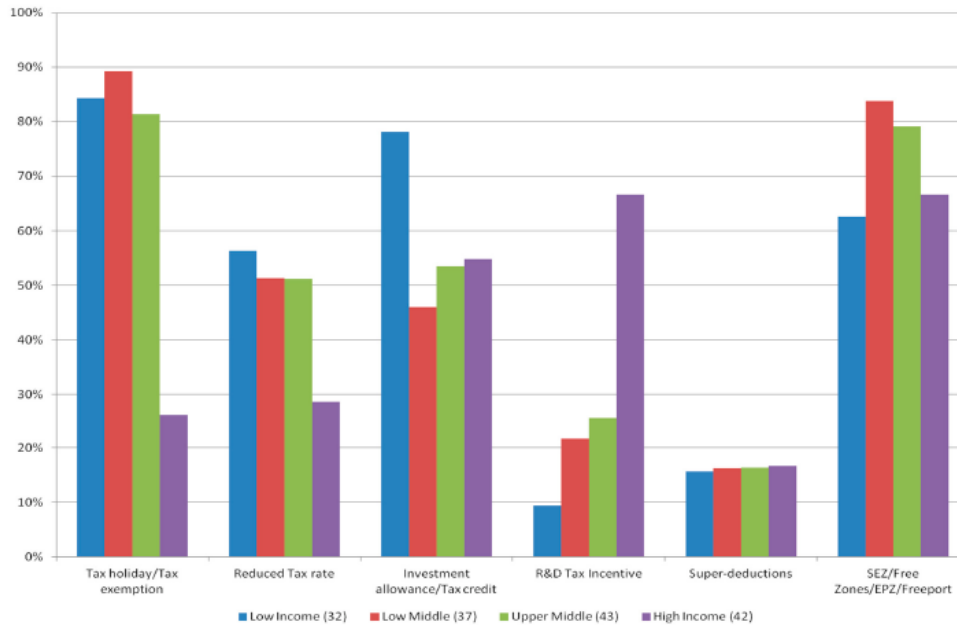
Evidence generally supports the better performance of expenditure-based tax incentives compared to income-based tax incentives. Expenditure-based incentives such as accelerated depreciation or investment allowances increase the likelihood of generating additional investment as they directly target investment expenses. The value of income-based tax incentives such as exemptions or reduced rates, on the other hand, relate to the profit rate of a firm. As such, they only benefit successful firms and likely provide benefits to companies that would invest without the preferential treatment.

Some literature has suggested limited investment responses to income-based incentives in developing economies (Chai and Goyal, 2008; Klemm and Van Parys, 2012). By contrast, there is evidence suggesting that accelerated depreciation and immediate expensing have been effective in increasing investment in OECD countries (Maffini, Xing and Devereux, 2019; Zwick and Mahon, 2017; House and Shapiro, 2008; Cohen and Cummins, 2006). Similarly, among developed countries, evidence of the effectiveness of expenditure-based R&D tax incentives is much more conclusive than for income-based tax incentives, which can induce tax motivated behaviours (Hall, 2019; Gucer and Liu, 2017; OECD, 2020; Appelt et al., 2016; Gaessler, Hall and Harhoff, 2018). In a global context, particularly in the case of mobile activities, tax incentives may act as ‘beggars-ty-neighbour’ instruments leading to no significant increase in global investment but simply to a relocation of investment across jurisdictions (Knoll et al., 2021).

Beyond design features of incentives, framework conditions such as political and institutional stability, the availability of infrastructure and a skilled workforce affect the effectiveness and uptake of tax incentives. In the absence of otherwise attractive economic conditions, tax incentives can result in limited cost-efficiency and effectiveness. Countries with a poor investment environment are unlikely to attract additional investment even with a very generous incentive (IMF, OECD, UN, World Bank, 2015). Van Parys and James (2009) show that FDI responds less to taxation in countries with a poor investment climate. Appelt et al. (2019) show that while some correlation exists between the most generous R&D tax incentives and the average subsidies observed by firms, there is not a one-to-one relationship with differing levels of uptake being one of the reasons behind such discrepancies. Tax incentives are likely most effective when well designed and when coupled with a conducive investment climate (Cui, Hicks and Xing, 2022). Tax incentives are not able to compensate for weak investment conditions (OECD, 2007; Parys et al., 2010). For example, the quality of infrastructure and the regulatory framework are often cited by investors as more important factors in determining their investment location decision than tax incentives (UNIDO, 2013; IMF-OECD, 2017; Canh et al., 2013).

Source: OECD (2022b)

Figure 19. Prevalence of income tax incentives around the world



Note: Figure shows the percent of countries in each of four income groups that have the indicated incentive. The sample size per income group is denoted between brackets.

Source: OECD, IMF, UN, World Bank (2015), drawing on James (2013)

3.4.3.1. The R&D tax concession

There is a clear case (based on positive externalities) to incentivise R&D activity. Consequently, R&D tax incentives are commonly used around the world, although design of the incentives can differ markedly. Box 3 provides a summary of the use R&D tax incentives in other countries, with a particular focus on European and OECD countries.

Romania offers a mix of income-based and expenditure-based tax concessions to incentivize R&D activities, which include: (i) immediate expensing of eligible R&D investment; (ii) an additional deduction amounting to 50 percent of the eligible expenses for R&D activities; (iii) accelerated depreciation for appliances and equipment intended for R&D activities; and (iv) a ten-year tax holiday for start-ups that exclusively pursue innovation and R&D activities.

There are a number of concerns evident with Romania’s current R&D provisions. First, the multiple concessions result in unnecessary complexity, whereas a single concession would both be simpler and likely to provide clearer incentives. Additionally, the definition of “research and development expenses” appears unclearly defined in the legislation. This may have discouraged some businesses from responding to the tax incentive due to the risk of the tax administration not accepting expenditure as eligible for the concession in a tax inspection. This may have contributed to what appears to be a relatively low utilisation of the regime. For example, the tax expenditures for R&D are estimated at 0.01% of GDP in 2021, whereas the EU average tax incentive support to R&D is 0.05% of GDP (and 0.06% for direct funding)³⁴. On the other hand, a lack of clarity in the definition can create opportunities for tax planning to recharacterize otherwise non-eligible expenditure as eligible R&D expenditure.

³⁴ <https://op.europa.eu/en/publication-detail/-/publication/22508340-1149-11ed-8fa0-01aa75ed71a1/language-en/format-PDF/source-262413960>

Box 3. Use and design of R&D tax incentives around the world

R&D tax incentives are offered today by many countries to incentivize innovation and economic growth. As of 2021¹, 34 of the 38 OECD countries, 22 of 27 EU countries and several advanced developing economies (Argentina, Brazil, the People's Republic of China, the Russian Federation, South Africa, and Thailand) offer tax relief for R&D expenditure at central or subnational government level. Tax support for R&D expenditures represent over 80% of total support in Australia, Italy, Japan, Portugal, and Colombia in 2018, while it represents less than 20% of the support granted in countries such as Sweden, New Zealand and Mexico.

Though income-based incentives have been adopted by quite a few countries² (including Romania) in addition to their expenditure-based R&D tax incentives, their effectiveness is often questionable. Most countries providing R&D tax incentives focus the incentives on reducing the cost and encouraging increased expenditures on R&D. In OECD countries, expenditure-based R&D tax incentives are the most favored policy instrument, representing 55% of total government support for business R&D, or around USD 60 billion, in 2018 (OECD, 2021d). Unlike expenditure-based incentives, income-based incentives such as a lower tax rate (unless conditioned on local innovative activity) may encourage shifting of patent registrations and taxable income without a significant change in real economic activity (European Commission, 2015). Further, an income-based incentive by its design gives an ex-post reward only to successful innovators who already hold a monopoly right on their inventions and not the risky activities like experimentation, which entails high rates of failure. Income-based incentives are also prone to abuse as increases in income may be shown due only to a re-labelling or reporting change, not a real increase in total R&D activity or the quality of the resulting R&D.

There is considerable heterogeneity in the design of expenditure-based R&D tax incentives that are offered by countries. Table A1 in Appendix 1 summarizes the main features of R&D tax incentives in OECD, EU and OECD partner countries as collated by OECD (2021).

Definitions of R&D or other types of expenditures eligible for tax relief differ across jurisdictions, though most countries attempt to be consistent with the guidelines as per the OECD Frascati Manual definition (OECD, 2015a). The manual specifies that for expenditure to qualify as R&D expenditure it must satisfy five core criteria – it should be: (1) novel; (2) creative; (3) uncertain; (4) systematic; and (5) transferable and/or reproducible. Only a few countries extend tax relief beyond R&D to other innovation activities, and when they do so, it is typically under much stricter and less generous terms (OECD, 2021d). R&D in the social sciences can sometimes be excluded, possibly because of the difficulty to distinguish from market research and related activities. Table A2 in Appendix 1 summarizes eligible R&D expenditure in a selection of countries.

Countries also differentiate R&D activities for eligibility purposes based on the source of financing and whether the activity is carried out in-house (intramural) or by an external party (extramural). Generally, for an R&D activity to be eligible, the source of financing should be internal funds irrespective of whether the activity is performed in-house or sub-contracted. Some countries may allow higher tax incentives if the third party is unrelated. Countries also differentiate R&D activity based on whether it is performed within the country's jurisdiction or in a foreign jurisdiction. For instance, the US does not treat expenditure on R&D activities performed outside the US as an eligible expense, whereas Croatia allows such expenditure.

Overall, there is a general preference for considering within the scope of eligible R&D costs those relating to labor and other current expenditures. R&D personnel costs account for the largest share of intramural R&D costs, and in principle, the focus on R&D personnel does incentivize investment in human resources based in the domestic economy. Acquisition of capital assets to be used for R&D is less typically supported as assets may be subsequently disposed of or used for other purposes. When available, it is generally in the form of accelerated depreciation rather than expensing of the acquisition cost (González-Cabral et al., 2021).

Most countries provide corporate income tax offsets, with payroll withholding tax credits and social security exemptions being offered in only seven OECD countries as of 2020. The advantage of tax offsets redeemable against payroll tax or social security contributions is that such incentives can be claimed even when there isn't sufficient corporate income tax available for offset and thus are in principle benefit both profit and loss-making companies.

Most countries allow volume-based tax relief as they are simple and easy to administer. However, the limitation of volume-based relief is that it may also cover expenditure which would have been incurred even in the absence of the tax incentive. An incremental R&D incentive (as offered by the US) seeks to minimize the amount of expenditure which does not fulfill the additionality criteria. However, incremental incentives are more complex to design and use, as they increase transaction costs for firms and governments as well as uncertainty about the availability of future subsidies. Moreover, incremental incentives can elicit strategic behaviors to time R&D investment to maximize the tax benefits, thus distorting the temporal profile of the R&D investment. Some countries offer a hybrid system comprising both a volume and an incremental tax credit (Korea, Portugal and Spain) or allowance (Czech Republic and Slovak Republic).

Countries typically provide either a tax allowance or a tax credit, although a small number provide both (see Table A1). Although tax allowances (enhanced deduction from the tax base) and tax credits (deduction from tax liability) are substitutable instruments, they can produce different incentive effects based on their taxability, limitation rules and treatment of unused benefits. An enhanced deduction from the tax base (more than 100 percent of eligible expenditure) can crowd out private investment especially if the loss carry-forward provisions are not very generous (Marino et al., 2016). For instance, consider a scenario where a company has taxable income (before deducting R&D expenditure) of 100. If an enhanced deduction of 150 percent is available, the company will make only an expenditure of $(100/150=)$ 66.7 to achieve a tax-deductible expenditure of 100. Expenditure of 100 will lead to a loss of 50 whose tax benefit will depend on the generosity of carry-forward provisions. Tax credits represent taxable income, thereby lowering their effective value, in Canada and the United Kingdom (R&D tax credit for large companies) or are effectively taxable (Australia, Chile, and the United States) because to claim the headline credit rates the taxpayers must renounce the deductibility of the R&D expenses that are claimed. As payroll and social security related incentives reduce the expense base and increase the taxable income of businesses, such incentives are effectively taxable as well.

Aggregation rules can play an important role, as some groups may be able to break down their R&D tax support claims across separate enterprises to optimize their tax bill. Aggregation rules for related companies can also matter if there are beneficial terms for SMEs since, in the absence of such rules, firms may have incentives to offload their R&D to smaller affiliates. In order to ensure that tax support accrues to the intended beneficiaries and to avoid unintended behaviors, tax authorities often impose aggregation and independence rules (e.g. Canada, United Kingdom).

While carry-over provisions are in place in most OECD and partner economies, the period over which unused tax incentive claims can be carried forward differs notably across countries. In 2020, firms can carry over unused claims for three years in the Czech Republic, for instance, six years in Poland, 8 years in Portugal, 18 years in Spain, and 20 years in the United States. Carry-overs over an indefinite time horizon are further available in several OECD countries (e.g. Australia, Chile, Denmark, Latvia, Lithuania, Turkey) and partner economies (e.g. Argentina, South Africa). Different provisions may also be in place for different schemes within a country. In Belgium, for instance, unused tax credits are carried forward for five years until any excess amounts are made payable to firms. Under the Belgian R&D tax allowance scheme, by contrast, an indefinite carryforward is available to firms.

A tax credit is refundable in several countries (see Table A1), i.e. where a credit excess on top of the tax liability can be paid in full or in part to the taxpayer. Refundability can be particularly helpful for young, innovative firms that are not yet profit-making (e.g. at product development stage). A potential downside of such provisions is that they can also be used by multinationals with the ability to shift profits to other jurisdictions (OECD, 2021d).

¹ OECD (2021d).

² Belgium, People's Republic of China, Colombia, France, Hungary, Ireland, Israel, Italy, Luxembourg, Netherlands, Portugal, Spain, Switzerland (Canton of Nidwalden), Turkey, United Kingdom.

Additionally, as noted by Romania's Fiscal Council (2022), the 50% additional deduction relies on the validation of the R&D project by a specialist from a register which is currently ineffective. A final concern is that there appears to have been a lack of analysis of the effectiveness of the R&D tax incentives at increasing R&D expenditure. Finally, the tax holiday is a particularly blunt instrument as it is not linked in any way to the amount of R&D being undertaken.

3.4.3.2. Tax exemption for reinvested profits

A tax exemption is provided for reinvested profit in technological equipment, computers and peripheral equipment, cash registers and machinery, control and invoicing machinery and devices, as well as in software, produced and/or acquired, including based on the financial leasing contracts, and put into operation, used to pursue the economic activity, is exempted from tax. As an additional incentive, the taxpayer may opt to use the accelerated amortization method in the case of technological equipment, machines, tools, and plants, as well as computers and equipment peripheral to computers. Romania has proposed to expand the scope of the concession to cover reinvestment of profits in a wider set of purchases including all assets used in production, processing, and representing reconstruction, in order to support taxpayers to develop new production capacities, as well as the reconstruction of existing ones. The tax expenditure from reinvested profit, according to the authority, is currently 0.1% of GDP.

The policy objective of this regime is unclear as it mixes features of an investment-linked and a profit-linked concession. The concession is restricted to specific types of investment – as is common with investment tax credits applied in many countries. However, it also restricts the investment to come from reinvested profits as opposed to other sources (such as new equity or debt). There is therefore merit in reconsidering the policy goal of the measure. If the primary goal is indeed to incentivize specific types of investment, then this would be best achieved by an investment tax credit rather than the current profit-based concession.

3.4.3.3. Lower rate for companies increasing equity

A temporary COVID-19 measure has also been introduced between 2021-2025 to encourage companies that have made losses during the pandemic to increase their equity back towards their book value of share capital. Under the measure, the CIT rate is lowered by 2 percentage points for companies whose equity is above 50% of the share capital. Additionally, further CIT rate reductions between 5-10 percentage points are available for companies that increase their equity in a year by between 5% and 25%.

A concern with this regime is that companies that already have equity above 50% of their share capital will be eligible for the 2 percentage point reduction without needing to increase equity. An alternative approach to increase corporate equity would be to restrict the payment of dividends by profitable businesses where their equity has fallen below the book value of share capital. This would ensure increases in equity without the resulting revenue loss.

3.4.4. Reform options

Romania should consider simplifying its set of R&D tax incentives, potentially to a single enhanced deduction. Consideration could also be given to replacing the enhanced deduction with a refundable tax credit as this would also incentivize non-profitable businesses to undertake R&D expenditure, or to allow refundability for start-ups. However, refundable tax credits would require the use of significant tax administration resources to ensure they are effective and not abused. At a minimum, Romania should look to remove the current tax holiday for R&D start-ups as this is not linked to actual R&D activity.

There is also merit in undertaking more detailed analysis to determine why take-up of the current R&D concessions is low. One potential way to improve take-up, as well as to limit tax planning opportunities, would be to provide further clarification regarding the definition of eligible R&D expenses. International best practice in this regard is to draw on the OECD Frascati Manual.

Regarding the tax exemption for reinvested profits, Romania should reassess the policy objective of the regime and its effectiveness at achieving its objective(s). In general, profit-based incentives are inefficient, and investment-based incentives should be preferred to them (see Box 1). As such, if the primary goal is to incentivize investment, then this would be best achieved by an investment tax credit rather than the current profit-based concession. Alternatively, if it is attempting to prevent excessive reliance on related-party debt finance, then an earnings-stripping rule may instead be preferable. Greater use of accelerated depreciation and expensing of capital costs could also be preferable options, particularly as these are proposed to be protected under the new Global Minimum Tax rules.³⁵ In any case, Romania should not proceed with the announced expansion of the scope of the tax exemption for reinvested profits until an assessment of the effectiveness of the existing regime has been undertaken.

Romania should also consider removing the CIT rate reduction available for companies that increase equity. While this measure is only scheduled to be in place between 2021-2025, it is poorly targeted as the initial 2 percentage point reduction can be received by companies not increasing equity, and may be prone to abuse.

More generally, good practice would be to undertake regular reassessments of existing corporate tax incentives, to ensure they continue to cost-effectively meet their objectives, and to regularly publish tax expenditure estimates for each concession.

Finally, if implemented, the 15% global minimum effective tax rate for large multinational enterprises (MNEs) will provide a fundamental change to the international tax framework, and will also have an impact on the effectiveness of tax incentives. For example, tax holidays are likely to be incompatible with the global minimum tax, while accelerated depreciation will be compatible as noted above. Given Romania's already low statutory tax rate, there is significant risk of tax incentives pushing a company's effective average tax rate below 15% and hence becoming ineffective – at least for MNEs. Romania should continue to assess its tax incentives in light of the global minimum tax proposals as they proceed to implementation. It should also undertake additional analysis on the likely implications of the minimum tax, including potential revenue and investment impacts. More generally, Romania should consider the introduction of a qualified domestic minimum top-up tax (QDMTT) to ensure that any 'top-up' revenue is collected by Romania rather than by other countries.

3.5. Small business taxation

The taxation of small businesses in Romania is dominated by the microenterprise regime noted in the previous section. However, there are additional and interrelated issues regarding the impact of tax provisions on business form. This section first considers the design of the microenterprise regime, before turning to the impacts of tax provisions on business form.

³⁵ The ETR used in top-up tax calculations uses an adjusted CIT measure in the numerator, which uses book depreciation rather than tax depreciation.

3.5.1. Microenterprise tax regime

The current microenterprise tax regime is a turnover tax regime applying to incorporated businesses with turnover less than EUR 1,000,000. The current regime applies a rate of 1% of (adjusted) turnover for businesses with one or more employees and 3% for businesses without employees. Several adjustments to turnover are made, including, amongst others, deductions for the cost of unsold inventory and work in progress, and for sponsorship expenses (up to 20% of the turnover tax).

Romania has legislated a set of reforms to the microenterprise regime to be effective from 1 January 2023. These reforms will:

- Lower the turnover eligibility threshold from EUR 1,000,000 to EUR 500,000.
- Require one or more employees and apply a single rate of 1%.
- Limit to 3 the number of microenterprises in which a shareholder or associate can have more than 25% of participation or voting rights.
- Exclude from the regime legal entities carrying out activities in: banking, insurance and reinsurance, capital markets (including intermediation activities in these areas), in the field of gambling, as well as Romanian legal entities that carry out exploration, development and/or exploitation of oil fields and natural gas.
- Limit revenues from “consulting and management” to 20% of turnover.

The current microenterprise regime is significantly flawed. The proposed reforms will go some way to fixing the problems with the regime, but they will not be sufficient. The next section highlights the key problems to be addressed. Potential solutions are then discussed.

3.5.1.1. Too high an eligibility threshold

The main purpose of simplified SME tax regimes – such as a turnover tax regime – is to lower the compliance burden faced by small businesses. This is because small businesses tend to face a disproportionate compliance burden as compared to larger businesses. For example, a large business may be able to employ in-house accounting and legal expertise, whereas a small business is unlikely to be able to do so. Additionally, in some countries, small businesses may not have the skills necessary to easily comply with complex tax reporting requirements. Importantly, the rationale for these measures is not to provide a concessionary tax regime in the sense of a lower effective tax rate than for larger businesses (although this may be the result in some cases).

When considered in this context, it is clear that the current EUR 1,000,000 threshold for Romania’s microenterprise regime is too high. Indeed, it results in the vast majority of companies in Romania applying the microenterprise regime: Ministry of Finance data shows that, in 2020, the number of microenterprise tax regime taxpayers was 815,391 compared with just 30,232 taxpayers subject to the corporate income tax. Many of these businesses are of significant size so as to not justify application of a simplified tax regime. This also goes some way to explaining Romania’s low CIT revenue (as was illustrated in Figure 17).

Additionally, the high threshold results in inconsistency between value-added tax (VAT) and corporate income tax (CIT) design. As with most VAT regimes worldwide, a threshold is applied to remove from the VAT regime taxpayers that face disproportionate compliance costs relative to the tax revenue generated (as well as disproportionate tax administration and enforcement costs to the tax administration). However, at EUR 88,500, the VAT threshold is currently far lower than the microenterprise regime

threshold. Ministry of Finance figures show that approximately 25% of microenterprise regime taxpayers are VAT registered.

3.5.1.2. A low turnover tax rate

Turning to the appropriate turnover tax rate, as noted above, the purpose of a turnover tax regime should not be to lower the tax burden, but to reduce compliance costs. However, the simplified nature of a turnover tax itself necessarily results in less accuracy in taxing income (as turnover is used as a proxy for income). This means that the effective tax rate on businesses will vary depending on their actual profit margin – favouring high profit margin businesses relative to low profit margin businesses. This exacerbates the impact of the current high threshold, as it increases the incentive for highly profitable businesses to artificially split themselves to become eligible for the microenterprise regime and benefit from the lower effective tax rate. Lowering the threshold can be expected to significantly alleviate this concern.

Additionally, though, whether the proposed 1% tax rate (as of 1 January 2023) is appropriate depends on the profit margins of microenterprises. Given a CIT rate of 16%, applying a 1% turnover tax rate effectively assumes microenterprises have a profit margin of 6.25% (after the allowed deductions). Analysis by the IMF (2022a) suggests that the average profit margin of SMEs with employees is around 12%, suggesting the 1% rate is inappropriately low.

3.5.1.3. Ability of firms to split to access the microenterprise regime

A concern with any simplified SME regime is the risk of larger businesses being split into smaller businesses to take advantage of the SME regime. Romania's reform to address this is to limit any taxpayer to having more than a 25% ownership interest in only three microenterprises. However, this will still enable a medium sized business owner to split their business into three, effectively enabling a business with turnover of EUR 1,500,000 (after the reduction in the threshold to EUR 500,000) to still access the microenterprise regime.

3.5.1.4. Exclusions and limitations

The proposed exclusions from the regime appear reasonable on the basis that these industries would be expected to contain businesses with sufficient skills to meet full CIT reporting obligations, and from a practical perspective can be clearly defined. It is noted that a reduction in the microenterprise threshold to the level of the VAT threshold will limit the number of such businesses that would be eligible for the regime in any case as these are likely to have relatively higher turnover.

However, the proposed limitation to 20% of revenues coming from “consulting and management” may warrant further consideration. The term “consultant” is a potentially vague term and may result in a degree of ambiguity as to what is covered by the regime. The reduction in the turnover threshold to the level of the VAT threshold is likely to be a preferable means of restricting eligibility to the regime.

3.5.1.5. Adjustments to turnover

Unlike a pure turnover tax regime, Romania allows a number of adjustments to turnover. However, allowing adjustments reduces the desired simplifying effect of the regime as it will require additional record keeping and calculations to be made. Second, and perhaps more importantly, allowing deductions to be made risks enabling tax evasion – e.g. by claiming personal expenses as business expenses. Even though Romania has specific rules aimed at preventing personal expenses from being deducted, such evasion remains a particular concern in an environment of limited enforcement capacity.

While turnover taxes are not uncommon, allowing adjustments for expenses actually incurred contrasts with the approach taken in other countries, at least across Europe and the OECD. For example, none of the 39 OECD member and G20 countries surveyed by OECD (2015b) reported implementing a turnover tax that was adjusted for expenses. The closest country was Austria, where the SME turnover tax regime allowed 12% of turnover to be deducted “to represent wages, cost of goods (inputs) and related taxes (including VAT on inputs)” (OECD, 2015b). Meanwhile, in the Slovak Republic, a turnover tax regime was in place that provided a 40% deduction (up to a cap) for certain unincorporated SMEs, but this turnover tax regime has now been removed.³⁶

3.5.1.6. Potential reform options

The proposed reduction in the microenterprise threshold is a welcome development. However, there is a strong case for the reform to go further and match the microenterprise regime threshold with the VAT registration threshold. Acknowledging that this may be challenging to implement immediately, an alternative option would be to phase in the threshold reduction over the next 3-4 years, starting with the currently legislated reduction to EUR 500,000.

Complementary to the threshold reduction, Romania should also consider stronger measures to prevent microenterprises splitting to access the regime. Best practice would typically follow a “consolidation” approach, where, for the purpose of qualifying for the microenterprise regime, revenue would be consolidated for all enterprises controlled by related parties. An enterprise would be considered to be controlled if related parties directly or indirectly own more than a 50% formal interest in the entity or are qualified for more than 50% of dividends or payback of capital on liquidation. Additionally, legal entities should not be able to hold a majority ownership in a microenterprise to prevent the use of corporate groups for tax avoidance.

Romania should also consider simplifying the regime by moving to a pure turnover tax with no adjustments allowed. The base for the tax would therefore be total turnover (i.e. gross income from all sources, with no deductions). In addition to simplifying the regime, this would reduce the ability of businesses to evade tax through fraudulently claiming deductions, thereby lowering enforcement requirements. (Of course, turnover can still be underreported so audit activity remains necessary, but becomes simpler). An alternative that could also be considered is to apply a fixed deduction amount (e.g., as in Austria). This would provide an explicit acknowledgement to taxpayers that expenses are being taken account of, but without providing opportunity to overstate expenses.

Romania should also consider undertaking an assessment of average profit margins of microenterprises to determine the appropriateness of the 1% rate. Based on the IMF (2022a) estimates of a profit margin of around 12% for microenterprises with employees, a rate of 1.5% or 2% may be more appropriate. However, no revision of the rate should be made until a detailed analysis has been undertaken using the most recent available data.

In the longer term, an assessment could be made as to the overall merit of the turnover tax regime as compared to alternative simplification measures for small businesses. Unlike in many countries, the turnover tax regime only applies to companies, which reduces the degree of simplification provided by the regime as Romanian companies are also required to meet corporate accounting reporting

³⁶ OECD (2015b) provides a summary of presumptive tax regimes in 39 countries, including turnover tax regimes, but also basic lump-sum and indicator-based regimes.

requirements.³⁷ In this sense, applying the full tax regime, and instead providing simplification through, e.g., simplified payment mechanisms or aligning (and potentially reducing the number of) payment/reporting dates for different taxes could be considered.

3.5.2. Distortions to business form

Another significant concern regarding small business taxation is the potential of the tax rules to distort business form. Ideally a tax system should be neutral regarding business form. However, the current system in Romania treats different business forms differently resulting in potential distortions. There are two potential margins of concern here. First the decision to work as an employee as compared to working as an independent contractor (or “freelancer”). Second, a small business (including an independent contractor) may choose to operate in unincorporated or incorporated form. Potential distortions to these two margins in Romania are considered below.

3.5.2.1. *Employee vs independent contractor*

The underlying tax rules in Romania create a clear incentive for workers to restructure themselves, where feasible, as independent contractors (or ‘freelancers’) rather than as employees. This is particularly feasible in certain high-skilled professions, such as accountants, lawyers, doctors, etc. Rather than providing their services to an employer under an employment contract, they can sell their services – either back to their previous employer, or to one or more other clients.³⁸

In particular, it is the design of SSC that creates disparities between employees and self-employed workers due to the application of an SSC ceiling for unincorporated businesses (including independent contractors) but not for employees. As discussed previously, an employee is subject to PIT at the flat 10% rate and SSC at 35% (with SSC deductible against PIT), resulting in an average tax rate of 41.5% on income above roughly RON 37,000 (accounting for deductions). In contrast, for an unincorporated independent contractor, they will be again subject to PIT at 10%, but will only be liable to pay SSC on the first RON 6,180 (12 times the monthly minimum wage of RON 515). For a taxpayer earning RON 100,000, this results in an average tax rate of just 11.9% as compared to the 41.5% for an employee earning the same income.

An employee may also consider moving into business as a microenterprise, in which case their exact tax burden will depend on their profit margin, which in the case of an independent contractor can be expected to be very high (as they likely have few expenses). That said, in many cases, the microenterprise regime will be unavailable due to restrictions in the type of work. However, for those eligible, with a high profit margin, the average tax rate could be even lower by incorporating and utilizing the microenterprise turnover tax regime.

3.5.2.2. *Small business structure*

In addition to the employee – self-employed margin, differential tax rules affect the choice of business form that a business may take. For example, a small business can operate as an unincorporated business; as an incorporated business electing the normal CIT regime; or as an incorporated business electing the microenterprise regime.

³⁷ Alternatively, applying some degree of simplified accounting to match the tax simplification could be considered, though there is merit in encouraging effective account keeping from a business management perspective.

³⁸ At the extreme, this may create the incentive for businesses and their employees to artificially recharacterize their employment relationship as a contractual service provider relationship in order to lower the tax burden (for example, as occurred in the United Kingdom prior to implementation of the IR35 rules).

Consider, for example, a small business with a single owner-employee. If organized as an unincorporated business, then, like an independent contractor, it will be subject to 10% PIT on its taxable income (gross income/turnover less deductible expenses), and 35% health contributions up to the ceiling of 12 times the monthly minimum wage (with SSC deductible against PIT). As noted above, the profit margin of a typical small business (e.g. a trading business with a significant cost of goods sold) is likely to be much lower than for the previous freelancer scenario.

If organized as an incorporated business electing the normal CIT regime, it will pay 10% CIT on its taxable income, as well as 8% dividend tax (as of 1 January 2023) on distributed profits. Wages paid to the owner-employee will be taxed at 10% PIT and 35% SSC (with SSC deductible against PIT). Meanwhile, if organized as an incorporated business electing the microenterprise regime, then (under the new rules as of 1 January 2023) it will pay the 1% tax on its adjusted turnover, as well as 8% dividend tax (as of 1 January 2023) on distributed profits. Wages paid to the owner-employee will be taxed at 10% PIT and 35% SSC (with SSC deductible against PIT, lowering the effective PIT rate to 6.5%). Note that, in light of the lower taxation of returns distributed as dividends rather than wages, the owner-employee of a company is likely to pay themselves a low wage to minimize their total tax burden.

Table 4 illustrates how these tax rules result in varying effective average tax rates. Results are presented for three different profit margins and three different turnover levels. The results assume that, to minimize SSC liability, an incorporated business only pays its owner/employee the minimum wage, which results in the average tax rate falling as income and turnover increases. The SSC ceiling has the same effect for an unincorporated business. Effective tax rates under the microenterprise regime also vary with the profit margin, favoring high profit margin businesses over low margin businesses.

Table 4. Effective tax rates across business forms under tax rules applicable as of 1 January 2023

	10% profit margin			20% profit margin			30% profit margin		
Turnover (EUR)	50,000	200,000	500,000	50,000	200,000	500,000	50,000	200,000	500,000
Profit	5,000	20,000	50,000	10,000	40,000	100,000	15,000	60,000	150,000
Unincorporated	48.9%	19.7%	13.9%	29.5%	14.9%	11.9%	23.0%	13.2%	11.3%
Incorporated - CIT regime	55.8%	35.5%	27.8%	39.3%	29.1%	25.3%	33.8%	27.0%	24.4%
Incorporated - microenterprise regime	68.5%	30.0%	22.3%	38.2%	19.0%	15.2%	28.2%	15.3%	12.8%

Source: World Bank staff calculations.

Note: Incorporated businesses are assumed to pay their owner-employee a wage equal to the minimum wage.

For all but the lowest turnover/profit margin combination, the results show that the microenterprise regime will provide a lower average effective tax rate than the full corporate tax regime. This differential becomes particularly large at higher profit margins and turnover levels. Additionally, due to the ceiling on SSC, an unincorporated business will face an even lower average effective tax rate, although rates for medium-sized high profit margin businesses are very close to those for unincorporated businesses. That said, if a microenterprise is able to take advantage of the adjustments available to turnover (such as for unsold stock, or sponsorship expenses), then this will lower the effective tax rate of a microenterprise further, potentially even below that of an unincorporated business.

In addition to the basic concern that these differential rates may distort business form decisions, a particular concern is that the rules may discourage business growth. First, an incorporated business may prefer to limit its turnover to a level below the applicable turnover threshold in order to stay in the lower tax microenterprise regime, rather than expand the business. Second, an unincorporated business may prefer not to incorporate. To the extent that incorporation is a typical step in the growth path of small

businesses (due to benefits in terms of limited liability and greater access to finance)³⁹, this may negatively impact small business growth.

3.5.2.1. Potential reform options

To address the differential tax treatment of employees and independent contractors, Romania could consider either applying the SSC ceiling to both employees and self-employed, or removing the ceiling entirely. The former approach would have a regressive impact, so removing the ceiling is likely preferable. Such a reform would be made more feasible if SSC for health contributions was eliminated, leaving SSC only applied on labor income where there is a linkage to future expected benefits.

Removing the SSC ceiling would also remove the disincentive to incorporate, and hence be conducive to business growth. Meanwhile, the proposed reduction in the eligibility threshold for the microenterprise regime, will address to a large degree broader concerns about disincentives to business growth simply by limiting the number of businesses eligible for the regime. This is particularly the case given that the tax rate differentials illustrated in Table 4 are higher for businesses with higher turnover levels (due to the smaller proportion of total income paid out as the owner/employee's wages and subject to SSC).

Beyond these reforms, though, obtaining greater neutrality would be extremely difficult to achieve. First, the microenterprise regime will always favor high profit margin over low profit margin businesses. Second, as long as dividends are taxed differently to wage income, an owner/employee will always be able to minimize their tax burden by paying out a greater proportion of their total income in the less taxed form. Adjusting the dividend tax rate so that the total (CIT plus dividend) tax rate on corporate income matches the PIT rate (or top PIT rate following introduction of a progressive schedule) would improve neutrality across different forms of saving, but would not eliminate non-neutrality of business form due to the SSC due on unincorporated business income.

3.6. Taxation of energy use

3.6.1. Context

Romania needs to take decisive action to comply with its Paris Agreement commitments. Based on the World Bank (WB)-International Monetary Fund (IMF) Climate Policy Assessment Tool (CPAT)⁴⁰, the level of 2030 Greenhouse Gas (GHG) emissions implied by the country's Nationally Determined Contribution (NDC) stands at 74 million tons of carbon dioxide equivalent (CO₂e), while Romania is expected to emit 101 million tons of CO₂e in the "baseline"⁴¹ that same year (Panel A1, Figure a, in Appendix 2). Thus, 2030 GHG emissions would need to fall by approximately 27 percent for Romania to meet its NDC. This would require substantial effort as far as energy price reform (and related climate mitigation policies) is concerned. Specifically, using CPAT, this section estimates the NDC-consistent carbon price for Romania

³⁹ For further discussion, see OECD (2015b).

⁴⁰ CPAT has been jointly developed by IMF and World Bank staff and evolved from an earlier IMF model. CPAT (or earlier versions of it) have been routinely used in bilateral and multilateral analysis of climate mitigation policies. See, for example, Parry, Black and Vernon (2021), Parry, Black and Roaf (2021), Parry, Black and Zhunussova (2022), IMF (2019a, b) and Parry, Mylonas and Vernon (2021). A more detailed description of the model is available in Appendix 3.

⁴¹ This refers to a scenario under which no additional climate mitigation policies (other than the ones implicit in the difference between pre- and post-tax fossil fuel prices of the model) are adopted.

at 185 real 2021 USD/ton CO₂e in 2030^{42,43} That said, the country is currently taking steps in this regard, including via its Integrated National Energy and Climate Plan (INECP)⁴⁴.

Reducing energy-related CO₂ emissions would be one effective way to bring down overall GHG emissions in Romania. Based on International Energy Agency (IEA, 2021) data, energy-related emissions represented close to 70 percent of total GHG emissions in 2020 and 60 percent of these total GHG emissions were comprised of CO₂. In other words, mitigating energy-related CO₂ emissions would address close to 40 percent of total GHG emissions. In terms of fossil fuels, coal, and natural gas each (equally) contributed around a third of total energy-related CO₂ emissions (Panel A1, Figure c). Sector-wise, around a third of these emissions currently come from the power sector (Panel A1, Figure b). In turn, power sector emissions are mainly derived from coal (approximately 70 percent), with the remaining emissions being generated from natural gas (Panel A1, Figure d). The above provides suggestive evidence that effective policy would need to target coal and natural gas (the latter being the most carbon-intensive of the two fuels), to have a tangible effect on overall CO₂ (and, hence, GHG) emissions.

Energy price reform by means of fossil fuel subsidy removal and/or carbon pricing constitutes the most effective tool for addressing Romania's climate mitigation needs along multiple dimensions. A higher price on the carbon content of fossil fuels would: i) take advantage of the full range of mitigation opportunities (across sectors and energy products); ii) make full use of the price mechanism (hence providing a clear signal to economic agents); iii) incentivize a shift towards cleaner energy consumption and investment patterns (by virtue of making carbon-intensive energy more expensive); iv) offer price predictability (especially when introduced and ramped up gradually); v) generate government revenues, expanding fiscal space (including for the compensation of vulnerable groups); and vi) be easy to administer (e.g., as an extension of existing fuel excise taxes) (IMF, 2019a). In addition to the above, carbon pricing policies would be in line with Romania's INECP. By encouraging the production of clean energy and diversification of energy supplies, energy price reform will also support the European Union's "REPowerEU" initiative.⁴⁵

3.6.2. Brief Overview of Fiscal Regime

Romania applies a series of consumption taxes on fossil fuel products. First, VAT is, in principle⁴⁶, levied at the standard rate of 19 percent. Secondly, as a EU Member, Romania is required to adhere to the minimum excise duty rates covering all energy products (including electricity) used for heating and transportation as these are laid out in the Energy Tax Directive 2003/96/EC⁴⁷. For example, road fuel excise

⁴² This is substantially higher than the global average NDC-consistent price of USD 75/ton CO₂e in 2030 (Parry, Black and Roaf, 2021). This calculation assumes that the only new policy that applies is an economy-wide carbon price. In this sense, the calculation is illustrative and aims to gauge the amount of mitigation "effort" that Romania's NDC would require. The NDC could, however, be met via a combination of measures including green investments and the provision of R&D subsidies for the renewables sector.

⁴³ The current NDCs are, at most, consistent with global warming of around 2.5-3 degrees Celsius above pre-industrial levels, which is above the overall Paris Agreement of 2 degrees Celsius (IMF, 2019a). Considering this, more mitigation action (i.e., a more stringent NDC) may be required by Romania in the future.

⁴⁴ See: https://energy.ec.europa.eu/system/files/2020-06/ro_final_necp_main_en_0.pdf.

⁴⁵ For more information on the REPowerEU initiative see: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en.

⁴⁶ Barring any preferential tax treatment of energy products, such as exemptions and/or reduced tax rates.

⁴⁷ For the detailed list of minimum excise rates by energy product within the Directive, see: https://taxation-customs.ec.europa.eu/taxation-1/excise-duties/excise-duty-energy_en

duties are levied at: i) RON 1,948.23/1,000 liters (leaded gasoline); ii) RON 1,656.36/1,000 liters (unleaded gasoline); and RON 1,518.04/1,000 liters (diesel). Relatedly, as far as customs duties are concerned, Romania would apply the EU Common Customs Tariff⁴⁸. In this respect, fuel sellers (wholesalers, gas station operators) in Romania are under legal obligation to register with the customs authority. Finally, the EU Emissions Trading System (ETS) (which covers over half of the EU's Greenhouse Gas (GHG) emissions⁴⁹) is another channel of effective energy/fossil fuel taxation for Romania.

The Romanian regime also includes a number of special provisions concerning energy taxation. Specifically, the provision of district heating and firewood to residential users and certain other groups (e.g., schools, hospitals, churches, NGOs) is subject to a reduced VAT rate of 5 percent.⁵⁰

Romania has had a history of granting fossil fuel (specifically coal and district heating) subsidies. These subsidies include a mix of direct subsidies, tax incentives and budgetary support (including lending) to State-Owned Enterprises (SOEs)⁵¹. They average just over 0.4 percent of GDP, which is slightly above the EU average of approximately 0.35 percent of GDP (Enerdata, 2021). Especially with regard to coal, in the past, the government has prioritized the direct exemption, or subsidization of selected coal-fired power plants⁵². Despite this, the Romanian government has pledged to fully phase out coal use in its power sector by 2030 (as opposed to its earlier commitment to do so by 2032).⁵³

In response to surging energy prices in the aftermath of COVID-19 and the Russia-Ukraine conflict, Romania has introduced a series of measures impacting the energy sector. To support vulnerable households, the country adopted a series of direct compensation schemes, a reduced VAT rate and price caps on energy products⁵⁴. To finance these measures, Romania has imposed significant temporary windfall taxes on electricity and natural gas traders, and producers of oil, natural gas and coal. All these measures are expected to be temporary⁵⁵ (e.g., the windfall taxes are expected to apply for approximately one year). The analysis in this section does not consider the presence of these measures in its simulations (assuming, instead, that they will have been phased out by the time that the policy scenarios presented in the section take effect).

⁴⁸See: [https://taxation-customs.ec.europa.eu/customs-4/calculation-customs-duties/customs-tariff_en#:~:text=The%20'Common%20Customs%20Tariff'%20\(,and%20where%20they%20come%20from.](https://taxation-customs.ec.europa.eu/customs-4/calculation-customs-duties/customs-tariff_en#:~:text=The%20'Common%20Customs%20Tariff'%20(,and%20where%20they%20come%20from.)

⁴⁹ The EU ETS applies to emissions from power and large industry, with an expected allowance price of just under USD 80/ton CO_{2e}, based on 2023 analyst projections. An important implication, therefore, for Romania, is that an additional price is placed on carbon emissions from fossil fuels like coal. See: <https://www.reuters.com/markets/commodities/analysts-cut-eu-carbon-price-forecasts-weak-economies-increased-supply-2022-11-03/>.

⁵⁰ While the lower 5 percent VAT rate for district heating applies all year round to residential users, it only applies during the winter months for other groups.

⁵¹ See WBG (forthcoming).

⁵² See: <https://meta.eeb.org/2021/04/15/romania-promises-billions-to-coal-polluters-against-eu-state-aid-rules/>

⁵³See: <https://www.enerdata.net/publications/daily-energy-news/romania-aims-phase-out-coal-2030-instead-2032.html>. As part of its NRRP, Romania has committed to the decommissioning of around 2400 megawatts (MW) of coal-fired power plants by 2022 and the addition of around 3000 MW in renewables capacity by 2026.

⁵⁴ See: <https://www.bruegel.org/dataset/national-policies-shield-consumers-rising-energy-prices>

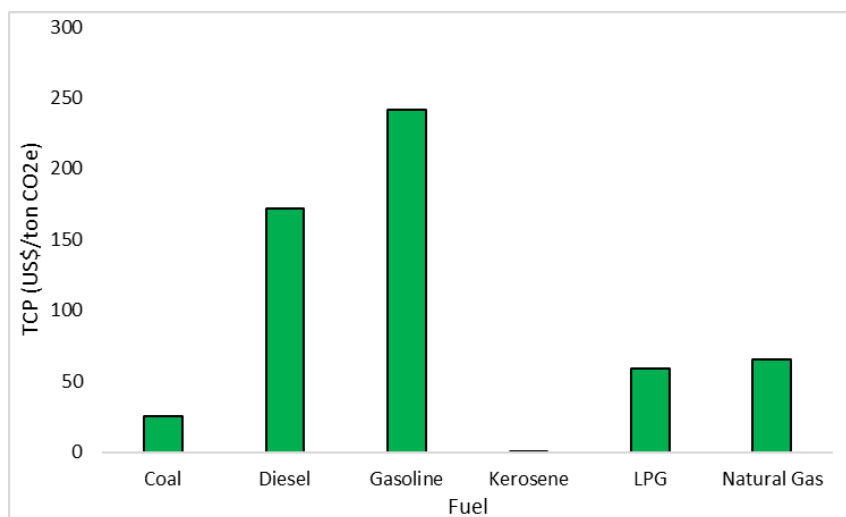
⁵⁵ See also Ari et al. (2022).

3.6.3. Effective Fossil Fuel Taxation in Romania and Abroad

3.6.3.1. Effective Fossil Fuel Taxation in Romania

Transportation fuels are taxed at higher effective rates in Romania, while the opposite is true for other fossil fuels. Figure 20 below illustrates the 2019⁵⁶ total carbon prices⁵⁷ in Romania by fossil fuel. It shows that total carbon prices are at over USD 170 per ton CO₂e for diesel and close to USD 240 per ton CO₂e for gasoline. In contrast to this, the total carbon prices for fuels, such as, for example, coal and natural gas are at around USD 25 and USD 65 per ton CO₂e respectively. This suggests that there is room to increase the effective taxation of these fuels (e.g., via the removal or phase-out of fossil fuel subsidies or direct introduction of taxes). The same would apply to LPG and kerosene (effectively taxed at close to USD 60 and USD 0 per ton CO₂e respectively, likely on equity-related grounds⁵⁸).

Figure 20. Romania: Total Carbon Prices (TCP) by Fossil Fuel, 2019



Source: WB staff estimates based on Agnolucci et al. (forthcoming).

The same pattern is observed within economic sectors. Figure 21 considers available data on indirect carbon prices⁵⁹ by fossil fuel for given sectors (industry, power, the residential sector, services, and transport). Based on this information, gasoline and diesel remain the highest-taxed fossil fuels across all sectors (on average, at USD 190 and USD 268 per ton CO₂e respectively). This is in contrast with natural gas and LPG, on which much lower indirect carbon rates (USD 69 and USD 66 per ton CO₂e, on average) are being levied. Lastly, based on indirect carbon pricing alone, coal is effectively taxed at USD 0 per ton

⁵⁶ The year 2019 is chosen in Figure 20 (and any subsequent Figures in this section) to abstract from structural breaks related to the COVID-19 pandemic.

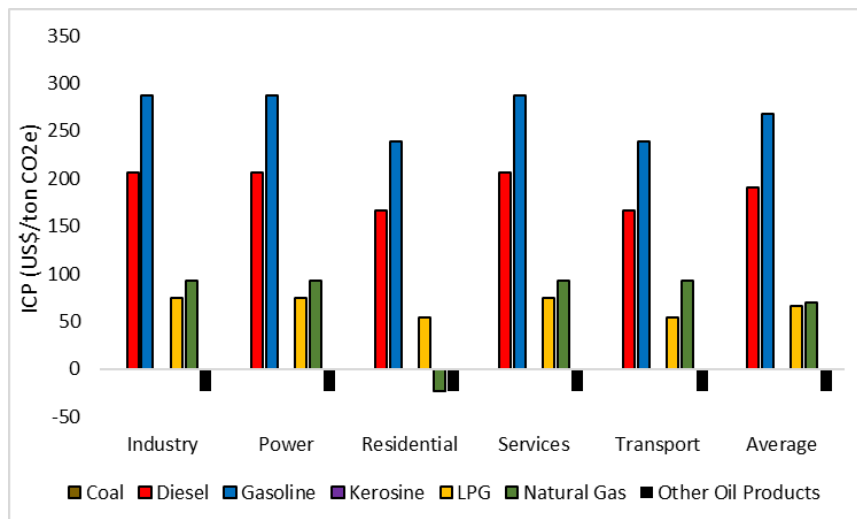
⁵⁷ The “total carbon price” is a metric that consolidates any direct (e.g., carbon taxes, ETSs, etc.) or indirect (e.g., fuel excises, fossil fuel subsidies, tax exemptions, etc.) policies that levy a price on the carbon content of given energy products into a single metric. See Agnolucci et al. (forthcoming) for more details.

⁵⁸ For instance, according to the Romanian 2018 Household Budget Survey (HBS), households in the bottom (top) 10 percent of the consumption distribution spent around 3 (0.3) percent of their entire budget on LPG, meaning that a higher effective rate on LPG would hurt poorer (richer) households relatively more (less), potentially worsening inequality.

⁵⁹ These effective carbon prices are a variant of the total carbon prices presented in Figure 20 above. They only consider indirect fossil fuel taxation, namely consumption taxes (value-added taxes (VAT), excises, etc.) and subsidies (see Agnolucci et al. (forthcoming)). Total carbon prices at the fuel-sector level were not available for Romania at the time this section was written.

CO₂e across all sectors, while non-transport/other (crude) oil products are being effectively subsidized (given that the indirect carbon price is negative). Given the high carbon content of these fuels (in tandem with the messages behind Section 3.5.1 and Figure 20), the case for increasing the effective taxation of coal (as well as that of natural gas and crude oil) is even stronger.

Figure 21. Romania: Indirect Carbon Prices (ICP) by Fossil Fuel, 2019



Source: WB staff estimates based on Agnolucci et al. (forthcoming).

3.6.3.2. International Comparisons of Effective Energy Taxation

Comparing Romania's total and indirect carbon prices at the fuel- and sector-specific levels provides further context on possible candidates for energy price reform. Specifically, this section compares Romanian total (by fuel) and indirect (by sector) carbon prices to those of ten (10) other countries with similar real per-capita GDP (in 2017 PPP\$)⁶⁰ in year 2019⁶¹. Additionally, this section compares Romanian total and indirect carbon prices with the average total and indirect carbon prices of all EU members of the OECD and all countries located in the Europe and Central Asia (ECA) WB region.

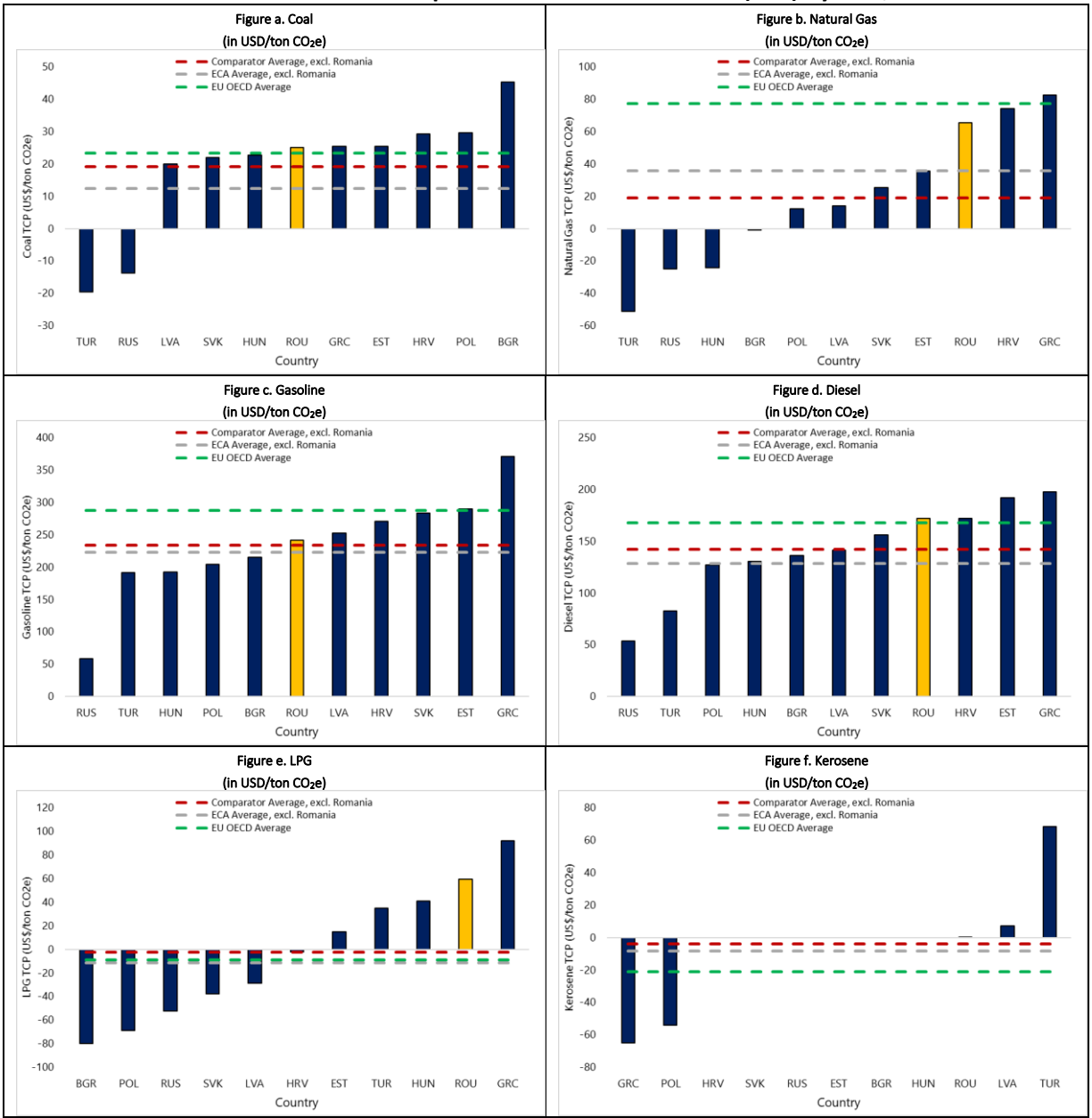
Examining total carbon prices by fuel for Romania and its comparators yields several key findings. Overall, Romania finds itself in the mid-to-upper part of the comparator distribution across fuels (Panel 1). However, its total carbon prices on natural gas (Panel 1, Figure b) and gasoline (Panel 1, Figure c) are still below the EU OECD member average (of USD 77 and USD 287 per ton CO₂e respectively), which may indicate some room for energy price reform in this regard. Finally, coal remains a priority in this respect. This is mostly because the alignment of Romania's total carbon price with those of comparators does not take into account that: i) most EU OECD countries have more ambitious coal phase-out plans; and ii) most developing countries in the ECA region do not tax coal, even though it has the highest carbon content relative to other fossil fuels and, thus, the largest mitigation potential from a carbon pricing policy perspective⁶².

⁶⁰ See: <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD>

⁶¹ These countries are (in alphabetical order): Bulgaria, Croatia, Estonia, Greece, Hungary, Latvia, Poland, Russian Federation, Slovak Republic, and Turkiye.

⁶² See: <https://kleinmanenergy.upenn.edu/research/publications/the-long-goodbye-why-some-nations-cant-kick-the-coal-habit/>

Panel 1. Romania and Comparators: Total Carbon Price (TCP) by Fuel, 2019



Source: WB staff estimates based on data and methods on Agnolucci et al. (forthcoming).

Similar findings emerge from the comparison of indirect carbon prices at the sectoral level (Panel A2 in Appendix 2). Once again, Romania finds itself at the upper part of the comparator distribution. This is particularly the case as far as the industry, power and services sector are concerned. Nevertheless, Romania’s average indirect carbon price across all sectors (USD 85 per ton CO₂e) deviates from the EU OECD average (USD 107 per ton CO₂e). Said deviation is driven by the transport and residential sectors (the former reflecting Romania’s relative under-taxation of gasoline with respect to EU OECD countries, while the latter reflects the presence of district heating subsidies).

3.6.3.3. Actual vs. Optimal Fossil Fuel Pricing

Ultimately, the comparison of Romania’s actual fossil fuel prices to their “optimal”, externality-inclusive levels would inform reform options to an even larger extent. Specifically, the case for fuel subsidy/tax reform is more imperative, given that underpriced fossil fuel consumption is associated with climate damages, higher local air pollution (which deteriorates health outcomes) and, in the case of transport fuels (e.g., diesel, gasoline), exacerbates congestion, road damage, and accidents, due to higher rates of driving.⁶³ From an economic welfare perspective, these (negative) externalities should be accounted for in the price of each fossil fuel, which is not generally the case in Romania (or any of the comparator countries). Panel 2 shows the full, externality-inclusive (“optimal” or “efficient” price) by fuel in Romania and its per-capita GDP comparators in 2019. The fully efficient price (per unit of fuel consumption) consists of the following⁶⁴: i) supply costs; ii) climate change and local (outdoor) air pollution damages; and iii) consumption taxes (e.g., VAT). Overall, petroleum product (e.g., gasoline, diesel, LPG, and kerosene) prices in Romania seem to be fairly aligned with their full, externality-inclusive levels (though the prices of diesel and kerosene could be higher). The opposite seems to be the case for natural gas and coal prices. Specifically, the former does not even cover supply costs (thus indicating the likely presence of subsidies), while the latter is well short of the level associated with local air pollution damages from coal combustion. These patterns are generally observed in most comparator countries, hence indicating the likely need for fossil fuel price reform in other parts of the region as well.

3.6.4. Reform Options

3.6.4.1. Policy Scenario Description

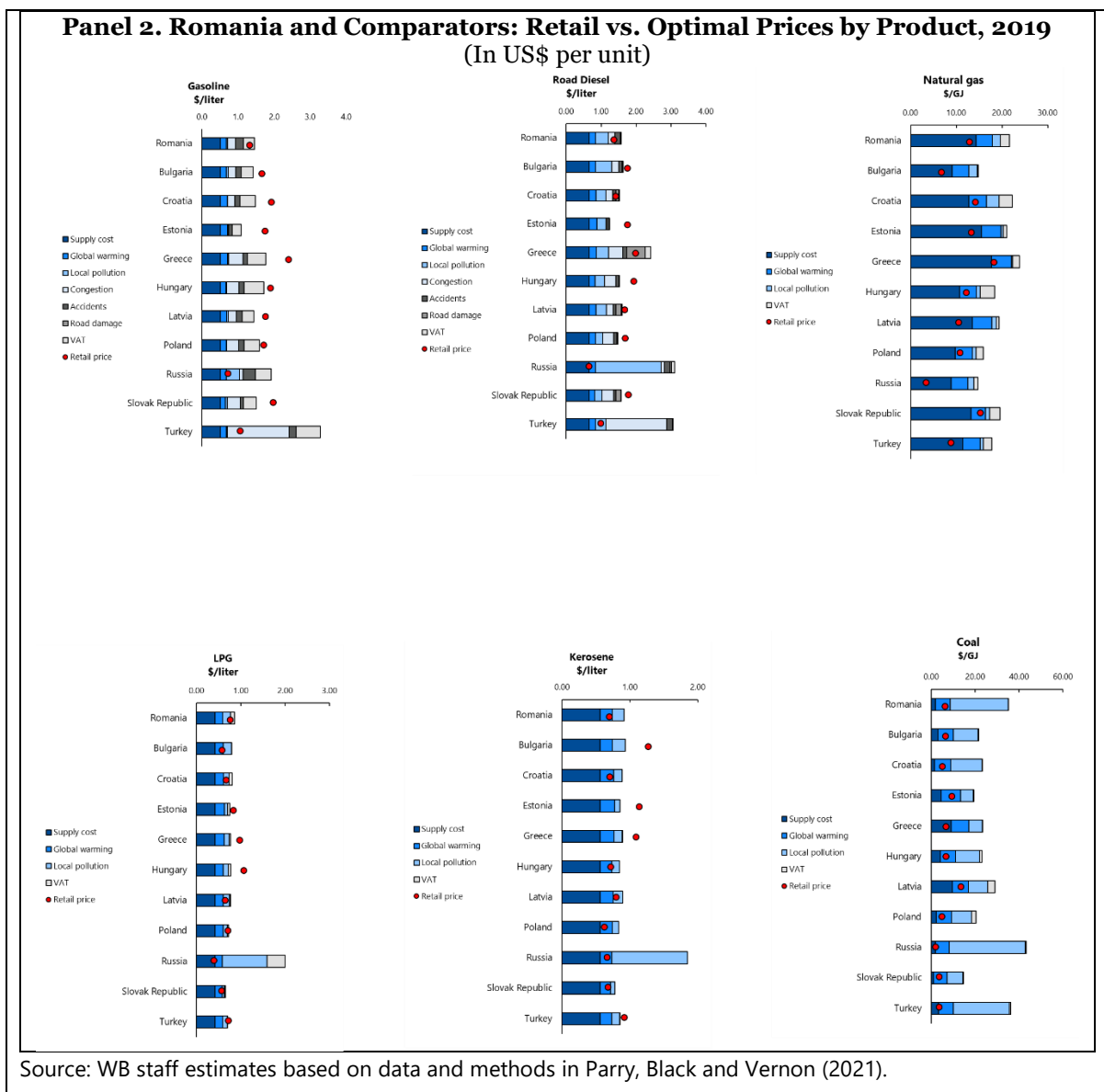
Several preliminary guidelines for energy price reform emerge from the descriptive results of the previous section. First, as a necessary pre-condition to optimal fuel pricing, Romania should plan for and gradually proceed with the elimination of fossil fuel subsidies. Potential candidates for fossil fuel subsidy reform (FFSR) consist of the subsidies for coal, natural gas, and district heating in the residential sector. This would, inevitably, have to involve accurate reporting on the level (and extent) of these subsidies, to inform the evaluation and implementation of any phase-outs (see also WBG, 2022). The World Bank’s Energy Subsidy Reform Assessment Framework (ESRAF) as well as WBG (forthcoming) and Enerdata (2021) could provide further guidance in this respect. Second, Romania could adopt additional carbon pricing, in order to align total carbon prices across fuels and sectors, while ensuring that externalities are reflected in final retail prices, to the extent possible. Third, any reform of the type described here, should be mindful of vulnerable groups (particularly poorer households, which spend a larger share of their budget on energy/fossil fuel products) and aim to compensate them accordingly. The stylized policy scenarios (and accompanying simulation results) of this section take into account these considerations.

This section relies on the CPAT model (see Appendix 3) for the simulation of the environmental, fiscal, macroeconomic, and distributional impacts of energy price reform across a set of stylized policy scenarios that are applicable to the Romanian context. Specifically, the following policy options are chosen for simulation. “Scenario 0” (or S0 below) consists of the full phase-out of all fossil fuel subsidies, exemptions, and price controls. “Scenario 1” (or S1 below) introduces a carbon price that covers all (climate, non-climate) externalities shown in Panel 2. Scenario 2 (or S2 below) introduces a carbon price that covers non-climate externalities (local air pollution, congestion, accidents, and road damage). Finally, scenario 3

⁶³ See Parry et al. (2014).

⁶⁴ See Parry, Black and Vernon (2021) for more details.

(or S3 below) is provided for illustrative purposes. It introduces the Paris Agreement NDC-consistent carbon price (of USD 185 per ton CO₂e in 2030). All policies are assumed to take effect in 2024 (given the current, high-commodity price environment) and be gradually ramped up to 2030. The impact assessment of the reform scenarios (see sub-section below) will, thus, focus on year 2030 (in which the full impact of each policy would be observed).



3.6.4.2. Impact on Fossil Fuel Prices

Expected changes in fossil fuel prices reflect the relative stringency of each reform scenario (Table 5). Specifically, under S0, the only 2030 fossil fuel prices that are expected to increase are those of natural gas (0.04 percent increase) and electricity (14 percent increase). This, likely, reflects the lack of accurate data on fossil fuel subsidies in Romania (Enerdata, 2021) and not the actual impact of FFSR in the

country.^{65,66} Under S1, fossil fuel prices in 2030 are estimated to approximately increase by 113 percent (coal), 62 percent (diesel), 7 percent (electricity), 50 percent (gasoline), 55 percent (kerosene), 34 percent (LPG), 32 percent (natural gas), and 51 percent (other/non-transport oil products) relative to their baseline levels (i.e., absent additional carbon pricing). Under S2, fossil fuel prices in 2030 are estimated to increase by less for each fuel type than under S1 as they only account for non-global warming externalities, although the differences vary considerably across fuel types. Lastly, 2030 fossil fuel price increases are, on average, substantially higher under S3. As noted above, the S3 results are only provided for illustration, with the purpose of quantifying the demanding nature of Romania’s NDC (and that more action should be taken to ensure compliance with this pledge by 2030).⁶⁷

Table 5. Romania: Relative Increases in Baseline Energy Prices by Scenario, 2030
(In percent)

Energy Product Scenario	Full Subsidy Phase-out (S0)	Fully Efficient (Pigouvian) Price (S1)	Non-Climate Externalities Price (S2)	NDC-consistent Price (S3)
Coal	0.00	112.82	28.88	206.64
Diesel	0.00	62.31	45.93	40.34
Electricity	13.98	7.03	2.00	11.48
Gasoline	0.00	49.81	34.92	36.64
Kerosene	0.00	54.53	21.76	80.69
LPG	0.00	33.67	12.70	51.64
Natural gas	0.04	31.72	1.55	74.28
Oil	0.00	51.21	2.59	119.71
Average	1.75	50.39	18.79	77.68

Source: WB staff estimates using CPAT. Note: Policy scenarios are defined as follows. S0: full phase-out of all fossil fuel subsidies, exemptions and price controls; S1: carbon price that covers all (climate, non-climate) externalities; S2: carbon price that covers non-climate externalities only; S3: Paris Agreement NDC-consistent carbon price (of USD 185 per ton CO₂e in 2030). All policies are assumed to take effect in 2024 and be gradually ramped up to 2030. Hence, the analysis in 2030 shows the full impact of each policy.

⁶⁵ The CPAT analysis presented in this section reflects, among other elements, the quality of the underlying (pre- vs. post-tax) energy price data for Romania, which allows for modeling of pre-existing policies, such as, for example, fossil fuel subsidies. Ultimately, better data availability in this respect will provide a more solid basis for subsequent reform by virtue of improving the quality of analyses such as the one conducted in this section (as well as any associated policy recommendations, see WBG (2022)).

⁶⁶ With this in mind, the examination of impacts related to S1 and S2 would be more relevant to the authorities.

⁶⁷ Several aspects of these scenarios may merit further elaboration. Specifically, under S3, the NDC is assumed to be met only via the introduction of a new, economy- (i.e., sector- and fossil fuel-) wide carbon price. Hence, the fossil fuel-specific price changes under S3 may differ in magnitude relative to those of S1 and S2. For instance, the required percent increase in diesel prices is relatively higher under S2 (as compared to S3), reflecting the substantially higher non-climate externalities (local air pollution, as well as road accidents, damage, and congestion) generated from diesel use (and assumed to be fully priced under S2). This is also why, for example, the required percent price increases for natural gas (whose use implies relatively fewer non-climate externalities) under S1 and S2 are lower compared to the corresponding percent price increases for diesel/gasoline under these two scenarios. Additionally, the diesel/gasoline externalities are assumed to (non-linearly) grow over time, along with GDP, population and, in turn, fossil fuel use. This is why the 2030 percent price increases for diesel/gasoline under S1 and S2 (Table 5) are substantial relative to those implicit in 2019 non-climate externality levels relative to 2019 retail prices (Panel 2). Finally, the required percent price increase for coal is much higher under S1 than under S2 in 2030 (Table 5) than it would have been in 2019 (Panel 2). In particular, this is due to the assumption of much larger climate externalities in 2030 of USD 75 per ton CO₂e, assumed to be fully priced under S1 (Table 5), hence implying substantial percent price increases for coal under S1 (as compared to S2, where climate externalities are not priced at all).

3.6.4.3. Impact on GHG Emissions

GHG emissions reductions (relative to the baseline) across scenarios mirror the aforementioned fossil fuel price impacts. Specifically, 2030 emissions reductions are the smallest under S0 (Panel A3, Figure a, in Appendix 2), while they, by definition, fall by the amount consistent with fully meeting Romania's NDC, i.e., 27 million tons CO₂e (Panel A3, Figure d). Emissions under S2 (Panel A3, Figure c) fall by 8 million tons CO₂e relative to the baseline (i.e., 30 percent of the amount required to meet the NDC). Naturally, emissions fall by more under S1 (Panel A3, Figure b), i.e., 19 million tons CO₂e or 70 percent of the amount required to meet the NDC).

3.6.4.4. Impact on Government Revenues

Revenue gains (above baseline revenues due to existing fossil fuel taxes) from the simulated reform scenarios can be substantial. Specifically, in 2030, these range between 0.4 percent of GDP (under S0 – Panel A4, Figure a) and around 2 percent of GDP (under S3 – Panel A4, Figure d). Realistically, revenue gains could be anywhere between 1.3 and 0.9 percent of GDP, depending on whether additional carbon pricing includes climate externalities (Panel A4, Figure b) or not (Panel A4, Figure c).

3.6.4.5. Impact on (Net) Welfare Co-benefits

The reduction of externalities is associated with positive net welfare benefits across scenarios. Monetized health co-benefits (e.g., from reduced local air pollution mortality and morbidity) as well as reduced accidents, congestion, and road damage due to fewer kilometers driven in response to the proposed reforms are positive in net terms⁶⁸. Net welfare co-benefits in 2030 range between just around 0.1 percent of GDP (under S0 – Panel A5, Figure a) and around 0.5 percent of GDP (under S1 and S3 – Panel A5, Figures b and d). If climate externalities are not included in additional carbon pricing, the net co-benefits amount to around 0.3 percent of GDP (under S2 - Panel A5, Figure c). Arguably, these positive, net co-benefits constitute a gain for the entire population – and especially those households that live in more polluted areas (likely to be the more economically vulnerable ones).⁶⁹

3.6.4.6. Impact on GDP Growth

Any negative impacts on real GDP growth rates from higher carbon prices are directly offset by revenue recycling. To the extent that the revenues raised from the different reform scenarios are redirected back into the economy (e.g., in the form of cash transfers – see Panel A6), net real GDP growth is expected to remain positive in 2030 across all scenarios. That said, the negative impact of carbon pricing – typically at under 1 percent - is more pronounced for S1 and S3 – Panel A6, Figures b and d).

3.6.4.7. Distributional Impacts

Impacts in terms of consumption incidence (see Appendix 4) are relatively neutrally distributed across deciles. These impacts range between 0.5 percent of consumption (decile 1 under S0 – Panel A7, Figure a) and just under 4 percent of consumption (deciles 7-10 under S1 – Panel A7, Figure b). The impacts partly reflect greater reliance on given fossil fuels by certain household consumption deciles (e.g., natural gas for deciles 7-10). The impacts illustrated in Panel A7 do not take into account the use of revenues generated by the reform scenarios for the compensation of vulnerable households (see Panels A9 and A11).

⁶⁸ Net of the efficiency costs from introducing carbon pricing and increasing energy prices for consumers.

⁶⁹ This last point implies additional, positive distributional implications that are not captured by the standard consumption incidence-based approach presented in this section (see Appendix 4 and Panels A9-A11).

Distributional impacts differ between urban and rural households. With the exception of S0, the distribution of the incidence between urban vs. rural households points to relatively progressive impacts for the latter (i.e., poorer households in rural areas bear a relatively smaller fraction of the overall burden from higher energy prices). Additionally, with the exception of S0, burdens (in percent of total consumption) seem to be larger for urban households (Panel A8).

Use (“recycling”) of revenues generated from the reform scenarios to compensate vulnerable household groups can lead to progressive outcomes, hence reducing (consumption) inequality. Fully compensating the bottom 40 percent of the distribution for the burden from higher energy prices would require approximately 20 to 25 percent of the annual revenues raised under S1 and S2 respectively in year 2030. Beyond this, revenues can be used such that they generate positive net gains for the poorest segments of the population. Under the assumption of a full (100 percent) allocation of revenues, this section considers revenue recycling in the form of new, targeted cash transfers to the bottom 40 percent of the distribution, which is associated with the first 4 deciles gaining anywhere between 1 to 25 percent of their consumption, depending on the simulated scenario (Panel A9), with the consumption-based Gini (i.e., consumption inequality) falling under all scenarios (Panel A10).

Revenue recycling options are (and should) not be limited to new, targeted cash transfers. Other types of revenue recycling include the full allocation of revenues to scale up existing social safety nets/transfer programs. Illustrative options are provided under S2 in terms of the scale-up of overall: a) social assistance; b) social insurance; or c) labor market programs, the gains from which depend on the baseline distribution of receipts from these benefits in the Romanian population (Panel A11 – Figures a-c). Any combination of the aforementioned revenue allocations (e.g., 50 percent of the revenues allocated to new targeted cash transfers and 50 percent to scaling up all labor market programs) is also possible, with relatively different distributional implications (Panel A11 – Figures d-f).

3.7. Value-added taxation

Another area of policy concern relates to the breadth of the VAT regime. Romania raises significant revenue from the VAT, though less than in many European countries. However, the efficiency of the VAT is low due to both a narrow base and significant non-compliance. As with other European countries, Romania operates a multi-rate VAT system applying reduced VAT rates to a range of goods and services typically to achieve distributional or cultural objectives, in addition to a range of exemptions. However, reduced VAT rates are typically a very poor way of addressing such concerns (Thomas, 2023). As a result, there is significant scope for broadening the tax base, increasing both the efficiency and fairness of the system. The Romanian VAT also suffers from significant weaknesses in VAT compliance (as highlighted in World Bank, 2021), but the discussion in this report is limited to tax policy settings.

3.7.1. The current VAT regime

Romania applies a standard VAT rate of 19% and reduced rates of 5% and 9%. The coverage of these reduced rates is extensive, with the 9% rate applying to food and non-alcoholic beverages, pharmaceuticals, water supply and sewerage, and certain agricultural expenditures (e.g. water for irrigation, fertilizers and pesticides, seeds, plants). The 5% rate applies to a similarly wide range of products, including restaurant food, hotel accommodation, books, newspapers, magazines, museums, zoos, gardens, various parks, firewood⁷⁰ and district heating, amongst others. In addition a number of

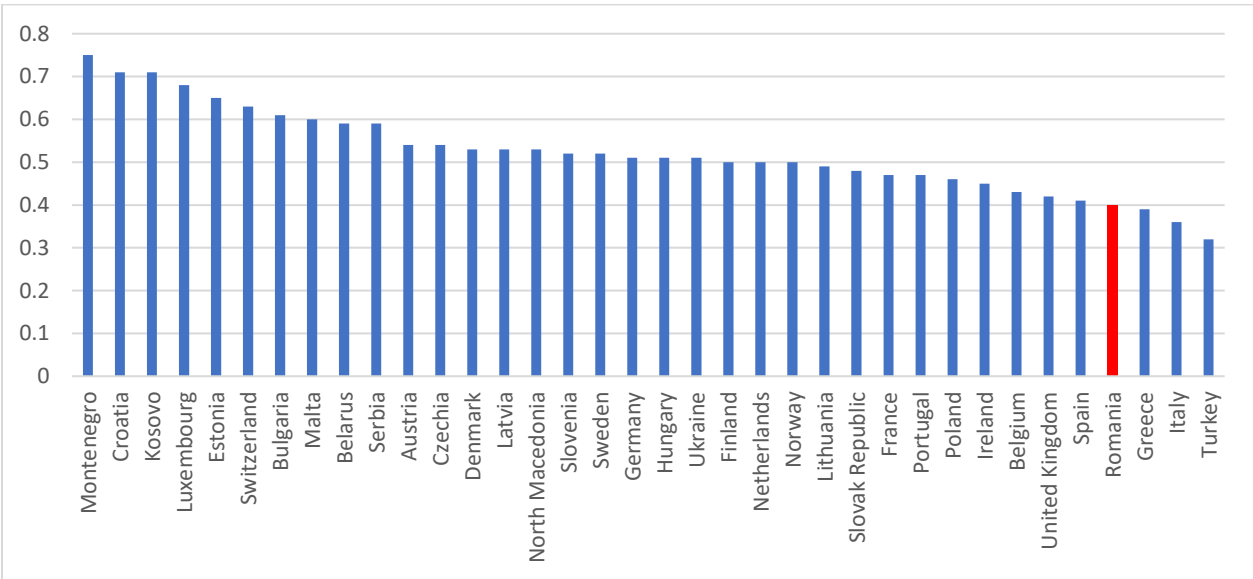
⁷⁰ The application of the 5% rate to firewood was recently extended until 2029.

expenditure categories are exempt from VAT (including financial services and medical and educational expenditure). As of 1 January 2023, restaurant and hotel accommodation will move from the 5% rate to the 9% rate. Additionally, non-alcoholic drinks containing added sugar or other sweetener or flavoring will also move from the 9% to standard rate.

3.7.2. A narrow VAT base and low compliance

The combined effect of the narrowness of Romania’s VAT base together with significant non-compliance is illustrated by the fact that Romania has one of the lowest C-efficiency ratio in the EU (Figure 22). The C-efficiency ratio compares the VAT actually raised to that which would theoretically be raised with perfect compliance if the standard VAT rate was applied to all consumption. As such, it combines both policy and compliance gaps in one metric.

Figure 22. VAT C-efficiency ratios, European countries, 2019



Source: USAID

As previously noted by World Bank (2021), estimates show the VAT compliance gap in Romania to be the largest in the EU at 33.4% in 2019, substantially above the EU average of 11%. Addressing low compliance is therefore a crucial issue. While beyond the scope of this report, it is an essential part of the work being undertaken as part of the NRRP strategy which aims to lower the VAT compliance gap by at least 5 percentage points by 2025.

Nevertheless, there is also significant scope to improve the VAT regime in terms of policy. Table 6 provides estimates of the size of the VAT policy gap, and the potential actionable gap – which excludes exemptions whose removal is typically not considered administratively feasible (such as VAT on financial services where appropriate value-added margins are challenging to determine). Similar to the EU average, Table 6 identifies a potential gap of 16.4% that could feasibly be removed.

Table 6. VAT policy gap estimates

Country	Policy Gap (%)	Rate Gap (%)	Exemption Gap (%)	o/w Imputed Rents (%)	o/w Public Services (%)	o/w Financial Services (%)	Actionable Exemption Gap (C - D - E - F) (%)	Actionable Policy Gap (G + B) (%)
	A	B	C	D	E	F	G	H
Bulgaria	29.74	3.18	26.56	10.13	14.61	1.75	0.06	3.24
Czechia	39.21	5.57	33.64	8.22	17.02	2.10	6.31	11.87
Hungary	45.31	8.01	37.30	7.06	17.91	3.32	9.01	17.02
Poland	48.06	14.91	33.15	3.84	14.49	3.64	11.18	26.09
Romania	36.49	14.23	22.27	8.79	11.21	0.10	2.17	16.40
EU-28	44.24	10.07	34.17	8.08	17.98	2.33	5.77	15.85

Source: World Bank (2021), drawing on CASE (2020)

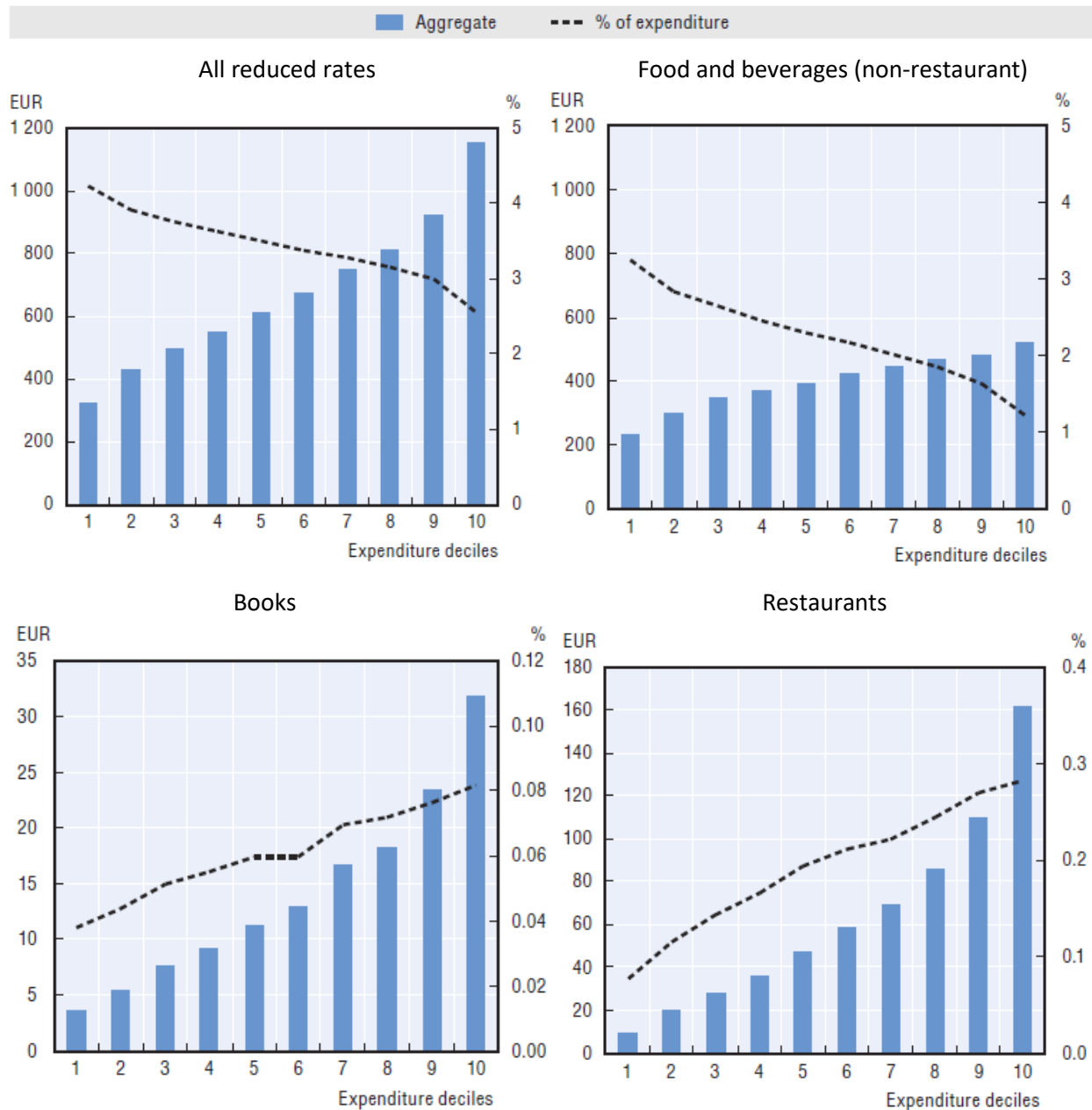
While Romania's narrow base is similar to many other EU countries, this is only reflective of similarly poor VAT policy settings across Europe, and evidence of the political difficulty of getting rid of tax concessions once in place. In most cases, reduced rates are in place to achieve distributional goals (e.g. reduced rates on food to support poorer households), or to achieve social or cultural goals (e.g. reduced rates on books, newspapers, cinema or theatre). However, both theoretical and empirical evidence clearly shows that reduced VAT rates are a highly ineffective means of achieving distributional goals, while reduced rates are also unlikely to be the most effective means of addressing social and cultural objectives (Thomas, 2023). Figure 23 illustrates the poorly targeted nature of reduced VAT rates for a range of OECD countries drawing on household budget survey microdata.

The top left panel in Figure 23 shows that, the overall impact of reduced VAT rates in OECD countries has been to provide greater aggregate support to richer households than to poorer households (blue bar). That said, the reduced rates do provide an overall progressive impact as they provide a higher benefit as a proportion of total expenditure to poorer households than richer households (dotted line). A similar pattern is shown for reduced rates on food. Despite the progressive impact, though, the key concern is that by giving significant benefit to richer households they are a poorly targeted (and expensive) way of providing support to poorer households.⁷¹ Instead, targeted support through the income tax system (such as through increasing the basic allowances in the PIT), or by providing cash transfer payments directly to low-income households, would be far superior targeting mechanisms. The bottom two panels show results for reduced rates on books and on restaurant food. In these cases, the reduced rates provided so much more aggregate benefit to richer households as compared to poor households that they actually have a regressive impact.⁷²

⁷¹ Furthermore, it is by no means certain that reductions in VAT rates are passed on to consumers in the form of lower prices, further restricting their potential effectiveness. For example, some evidence suggests as little as 30% of the benefit of a reduced VAT rate may be passed on in prices (Benedek et al., 2019).

⁷² See OECD/KIPF (2014) for additional detail.

Figure 23. Distributional impact of reduced VAT rates in 20 OECD countries



Source: OECD/KIPF (2014). Note: Panels present the simple average across 20, 15, 17, and 11 countries, respectively, of the average tax expenditure received per household from reduced VAT rates of the specified expenditure categories. Results are presented across equalized expenditure deciles. Simulations assume no behavioral response to a change in VAT rates. See OECD/KIPF (2014) for further methodological details.

3.7.3. Reform options

Romania has announced as of January 2023, that non-alcoholic drinks containing added sugar or other sweetener or flavoring that were subject to the 9% reduced VAT rate will now be subject to the standard VAT rate. In addition, hotel accommodation and restaurant food will now be subject to the 9% rather than 5% rate. These reforms move the system in the right direction, however there is a strong case for further base broadening.

An ideal VAT system would abolish most if not all reduced rates and apply a single rate of VAT on as broad a base as possible. However, such a reform would be politically challenging, at least in the short-term, and certainly in light of the current spikes in food and energy prices. Instead, in the short term, Romania should consider removing reduced rates that have been introduced for non-distributional purposes, such as reduced rates on restaurant food, hotel accommodation, books, newspapers, magazines, museums, zoos, gardens and parks. These reduced rates have a negative distributional impact, distort consumption decisions, cost revenue, and are unlikely to be an effective means of addressing any social or cultural goals.⁷³

In the longer term, and certainly not until after the current food and energy price crisis is over, additional base broadening should be considered in relation to distributionally motivated concessions, including the reduced rate on food, pharmaceuticals, water supply, firewood and district heating. However, to ensure that poor households are not disadvantaged by such reforms, targeted cash transfers should be implemented at the same time to fully compensate the poorest households. The reduced rates on firewood and district heating are inconsistent with environmental goals, and removal of these concessions will also ensure greater coherence with the proposals to remove fossil fuel subsidies and increase the taxation of carbon emissions.

4. A package of tax reforms to support the National Recovery and Resilience Plan

This section builds on the analysis in the preceding sections of this report to propose a package of reforms to Romania's tax policy settings. This report, and the recommendations presented in this section, contribute to Milestone 205 of the NRRP: "Review of the tax framework: Analysis of Romania's tax system with the objective to produce recommendations to ensure that the tax system contributes to promote and preserve sustainable economic growth".

The NRRP specifies that the review should "allow Romania to improve competitiveness, while supporting fiscal sustainability and environmental goals. It should also bring a fairer, more efficient, simpler and more transparent tax system capable of better supporting the economy and facilitating taxpayers' compliance".⁷⁴ Furthermore, the review should: "identify distortions and areas where relevant tax legislation should be adjusted, in particular for corporate income tax, [personal] income tax and social security contributions as well as property taxation, so as to inform decisions for a gradual withdrawal of excessive tax incentives. The review of the tax framework shall also aim at expanding green taxation, including as flanking measure for the sustainable transport and energy components." In addition to the above requirements, the NRRP identifies the following reform objectives:

- improve the structure of tax revenues;
- increase the tax revenue-to-GDP ratio by 0.5 percentage points by 2025 as compared to 2019;

⁷³ Reduced rates on hotels and restaurants are sometimes supported on the basis that they encourage low-skilled employment. However there is no clear empirical evidence to suggest this is the case. In contrast, there is evidence showing that a broader base will be just as effective at encouraging low-skilled employment as selective rate reductions, but without providing such skewed distributional impacts (see Thomas, 2023, for further discussion).

⁷⁴ *Annex to the Council Implementing Decision on the approval of the assessment of the recovery and resilience plan for Romania*, European Commission, approved on 3 November 2021, p230-231.

- eliminate distortions and loopholes in the tax system that allow taxpayers to minimize taxes (undermining the fairness of the system), in particular income tax and social contributions;
- simplify tax rules to facilitate compliance and administration, and elimination of preferential exemptions and treatments;
- achieve a more efficient tax system and a fairer distribution of the tax burden;
- amend property taxation, including in particular by encouraging the free imposition of allowances by local authorities within centrally defined ranges and estimating the tax base as close as possible to the market value of the property.

The timeline of the NRRP specifies that these reforms should be implemented by 31 March 2025.

Regarding revenue goals, while the NRRP stipulates increasing the tax-to-GDP ratio by 0.5 percentage points, the analysis in this report suggests an ability to raise additional revenue. At the same time, it is acknowledged that the goal of tax administration reforms (to be undertaken in parallel with these tax policy reforms) is to raise the tax-to-GDP ratio by 2.5 percentage points. It should be noted, though, that a 3-percentage point increase will still leave Romania in the bottom five EU countries in terms of tax-to-GDP. Depending on the priorities of government, an attainable medium-term goal could be to look to increase revenue further, towards around 35% of GDP – similar to the level of structural peers, Poland and Hungary, though still below the EU average of 41%. Such a reform would require significant revenue increases in areas where Romania is currently underperforming in international comparison, in particular the PIT and CIT, but also regarding additional sources of revenue such as property and energy taxes.

The report proposes the following set of reforms:

Reform the taxation of labor income to increase equity and improve work incentives for low-income workers. A package of reforms to be implemented together is proposed as follows:

- Reassess the merits of the existing PIT rate structure, and consider introducing a progressive PIT rate schedule.
- Remove the PIT exemptions for workers in agriculture, construction and IT sectors.
- Lower the total burden placed on low-income workers due to substantial health and pension contributions, by either:
 - Removing the 10% health contribution (and fully funding healthcare instead through general taxation); or
 - Introducing a refundable earned-income tax credit (EITC) that offsets part of the current health and/or pension contribution burden on low-income workers. If health contributions are maintained, consider broadening the contribution base by, for example, removing the exemption for construction workers and potentially also high-income pensioners.

These reforms aim to improve both equity and efficiency in the taxation of labor income. Applying a progressive PIT schedule will create a more equitable system by ensuring that average tax rates continue to increase across the entire income distribution, as opposed to the current system where the average tax rate for a worker earning the average wage is the same as for the very highest earning worker. Removing the current PIT exemptions for workers in agriculture, construction and IT sectors will improve both equity and efficiency by ensuring all workers earning the same income pay the same tax, irrespective of industry. Introducing an EITC or removing healthcare contributions will improve both equity and

efficiency by lowering the tax burden on low-income workers thereby encouraging greater participation in formal employment.

This reform package could be implemented with various parameter settings that lead to different tax rate profiles across the income distribution. The most appropriate parameter settings – particularly regarding the progressivity of the PIT – will depend in part on the equity preferences of the government, and should be informed by microsimulation modelling which enables assessment of the potential revenue and distributional impacts of different options.

The World Bank has been able to conduct some simplified microsimulation modelling, drawing on a restricted micro-dataset from PIT tax returns for 2021. This simplified modelling shows, for example, that a revenue neutral reform that lowers average tax rates for workers earning less than RON 50,000 by around 6-10 percentage points could be fully funded by an increase in average tax rates of around 3-4 percentage points for taxpayers earning more than RON 100,000, together with removing existing PIT exemptions. An alternate reform that increases the flat PIT rate instead of applying a progressive PIT schedule was also examined. This showed that a 13% flat PIT rate would be sufficient to fund the same EITC targeting support at low-income workers. However, such a flat rate reform was unable to create any progressivity in the top half of the taxpayer income distribution. Prior to implementing the above reform package, the Ministry of Finance should further invest in the development of microsimulation modelling capacity to help determine the exact parameters of the reform package.

In addition to the above reforms, several complementary reforms should also be considered:

- Remove the deductibility of SSC against PIT liability. On movement to a progressive PIT schedule, the deductibility of SSC would provide a greater benefit to taxpayers subject to a higher marginal tax rate. To prevent this regressive impact, deductibility should be removed. Expansion of the income-tested allowances or the proposed EITC can be used to compensate for removal of deductibility of SSC in a way that ensures progressivity.
- Simplify the phase-out of the existing PIT allowance by applying a fixed phase-out rate (e.g., 30%) for every leu earned above a specified income level. The current lock-step phase-out of the allowances unnecessarily results in very high marginal effective tax rates at intermittent points in the income distribution.
- Consider moving from a monthly assessment period to an annual assessment period. On movement to a progressive PIT rate schedule, maintaining a monthly assessment period would potentially disadvantage taxpayers earning variable income levels throughout the year as compared those earning constant income levels.

It is also proposed that the above PIT reforms build off the existing system, so the progressive PIT rate schedule would initially only apply to labor and (unincorporated) personal business income. In the longer term, though, Romania could consider moving from a schedular system to a comprehensive system that applies the marginal PIT rate schedule to all personal income (including capital income).

A number of additional issues will also need to be addressed before implementation is possible. First, as noted above, further investment should occur in microsimulation modelling capacity to inform the exact design of the PIT reform. This will include estimating the revenue impacts of different reform components to ensure a neutral or positive revenue impact of the overall reform package. Second, the redesign and implementation of a progressive PIT rate system, and introduction of an EITC, will require adjustments to the withholding tax and tax return processes that will take time to design and implement. Third, if

healthcare contributions are removed, it will be necessary to ensure that appropriate budgetary processes are put in place for the full financing of healthcare expenditure through general taxation prior to the removal of the healthcare contributions. Finally, as part of the NRRP, a timeline has already been agreed for the gradual reduction of the tax concessions for workers in the construction sector to occur between 2025 and 2028. In light of these factors, it is therefore proposed that the above reform package be announced immediately, but with their coordinated implementation to occur between 1 January 2025 and 1 January 2028.

In light of this delay, as an interim measure, Romania could consider further expanding the size of the existing PIT allowances, as this will immediately increase the progressivity of the PIT system and enhance work incentives for low-income individuals. This interim reform should also be informed by the PIT microsimulation model, so would not be feasible until mid-2023 at the earliest.

Reform the taxation of capital income to increase efficiency and equity. This will require a range of reforms as follows:

- Remove the transaction tax on the sale of residential property, and replace it with a 10% capital gains tax, potentially with a moderate exemption amount for owner-occupied property. While both a transaction tax and a realization-based capital gains tax inefficiently discourage transactions, a capital gains tax will be less distortive to portfolio allocation decisions and better achieve equity goals because it is linked to the investment return. Even if the transaction tax were to be maintained, the capital gains tax should be introduced. The capital gains tax should be implemented on a forward-looking basis, applying only to properties purchased after the date the reform is announced. While reducing revenue, this avoids the need to revalue all properties.
- Maintain the 10% tax rate on capital gains earned through an intermediary (e.g. an investment fund), and do not proceed with the announced concessionary 1%/3% split rate reform. This will maintain neutrality between direct and intermediated investment in shares, whereas the announced reform would result in a significant tax concession being provided for intermediated investment as opposed to direct investment. It would also distort the investment choices by funds, favoring investment in assets returning gains rather than dividends or interest.
- Increase the dividend tax rate to 10% to match the taxation of most other forms of capital income. This will eliminate the current tax preference for dividends over capital gains. An alternative approach that could be considered would be, following the introduction of a progressive PIT schedule, to adjust the dividend tax rate so that the total (CIT plus dividend) tax rate on corporate investment matches the top PIT rate.
- In the longer term, consider moving from a schedular system to a comprehensive system that applies the marginal PIT rate schedule to all personal income (including capital income). This would increase the overall progressivity of the tax system. Concerns regarding capital flight that might otherwise encourage lower taxation of capital than labor income have been reduced as a result of Automatic Exchange of Financial Account Information (AEOI) procedures.

Improve the design of recurrent property taxation. This will require reform to both the buildings tax and land tax, as follows:

- Move from an area-based to a market value-based property tax system in order to improve both equity and efficiency. Consider also merging the land and buildings taxes into a single tax as this would allow market values to more easily be estimated based on market transactions.

- Consider equating the tax rate bands applicable on residential and commercial/industrial property in order to more accurately reflect local service provision. Also consider removing the ability of local authorities to apply different rates to buildings owned by individuals vs legal entities in order to remove arbitrage opportunities.
- Once the move to a market value base has been undertaken, reassess the entire rate structure with the view to increasing total recurrent property tax revenue above its current comparatively low level amongst EU countries.
- Restrict the use of property tax concessions to those targeted at low-income and elderly taxpayers, government buildings, and as limited a range of public benefit organizations as possible. At a minimum, undertake a regular reassessment and cost-benefit analysis of property tax concessions.

The shift to a market value base will require significant work to develop a mass valuation model and related administrative systems, and the timeline for implementation will consequently be dependent on the progress of that work. The World Bank has committed to assisting Romania with the development of the necessary valuation model and related systems, and analysis and advice in this regard will be provided in subsequent reports.

Reform corporate tax incentives to improve effectiveness and transparency.

- Simplify the R&D tax incentive to a single enhanced deduction, removing the current tax holiday for R&D start-ups. Improve the take-up of the R&D enhanced deduction by reviewing and clarifying the definition of eligible R&D expenses.
- Reassess the policy objective and effectiveness of the tax exemption for reinvested profits. If the primary goal is to incentivize investment, then consider implementing an investment tax credit instead. Do not proceed with the announced expansion of the scope of the tax exemption for reinvested profits until the reassessment of the effectiveness of the existing regime has been undertaken.
- Remove the CIT rate reduction available for companies that increase equity. While this measure is only scheduled to be in place between 2021-2025, it is poorly targeted in that the initial 2 percentage point reduction can be received by companies not increasing equity.
- Commit to a regular reassessment of corporate tax incentives, to ensure they continue to cost-effectively meet their objectives, and publish tax expenditure estimates for each concession as part of an annual tax expenditure report.

Improve the design of the microenterprise regime and reduce distortions to business form. This will require reforms to a range of design features in the microenterprise regime as well as to SSC, as follows:

- Lower the threshold for eligibility to the microenterprise regime to equal the VAT threshold (currently EUR 88,500). To give businesses time to adjust, this reform could be implemented in a staged manner, starting with the already-agreed reduction to EUR 500,000 as of 1 January 2023; then to EUR 250,000 as of 1 January 2024, and reaching the (inflation-adjusted) VAT threshold as of 1 January 2025. The microenterprise and VAT registration thresholds should then remain aligned.

- Implement additional rules to prevent the artificial splitting of businesses to access the microenterprise regime. The currently proposed limitation of any individual to an ownership interest in three microenterprises does not go far enough. Romania should consider a “consolidation” approach, where, for the purpose of qualifying for the microenterprise regime, revenue is consolidated for all enterprises controlled by related parties. An enterprise would be considered to be controlled if related parties directly or indirectly own more than a 50 % formal interest in the entity, or are qualified for more than 50% of dividends or payback of capital on liquidation.
- Remove the ability to deduct specified expenses against turnover. This will further simplify the regime and reduce opportunities for tax evasion. If desired, a fixed deduction amount (as a percentage of turnover) could be applied instead.
- Undertake a reassessment of the appropriate turnover tax rate. The proposed 1% rate implies a profit margin of around 6.25%, which is likely to be below the actual profit margin of most microenterprises, resulting in concessionary tax treatment for microenterprises as compared to companies subject to the ordinary CIT regime. If a fixed deduction amount (as a percentage of turnover) is implemented, this would need to be taken into account in determining the appropriate turnover tax rate to best proxy income.
- In the medium term, reassess the need for the turnover tax regime as compared to alternative simplification measures for small businesses. Unlike in many countries, the turnover tax regime only applies to companies, which reduces the degree of simplification provided by the regime, since Romanian companies are also required to meet corporate accounting reporting requirements. This limited degree of simplification may not fully warrant the costs of the microenterprise regime in terms of reduced accuracy and potential distortion of business form.
- Equate the taxation of employees and self-employed workers by removing the SSC ceiling currently applied to self-employed workers. An alternative option would be to apply an SSC ceiling to both employees and self-employed workers – although any implications for pension entitlements would then also need to be assessed. Furthermore, if the latter option was taken, the appropriate ceiling level should be designed in coordination with the move to a progressive PIT schedule to ensure the progressivity of the total tax wedge.

Reform energy taxation to more effectively price emissions and provide greater neutrality across fuel types.

- Expand transparency and public data availability on fossil fuel subsidies. This could build upon current efforts to provide information on fossil fuel subsidies as reflected in Romania’s INECP and follow the recommendations of past studies (e.g., by the World Bank or European Commission) on fossil fuel subsidies in the country. Reporting should be comprehensive and include both direct (e.g., budgetary and price/income support) as well as indirect (e.g., SOE support) measures. Ultimately, better data availability in this respect will provide a more solid basis for subsequent reform by virtue of improving the quality of analyses such as the one conducted in this Report (as well as any associated policy recommendations).
- Plan for and gradually proceed with the elimination of fossil fuel subsidies. A necessary precondition for externality-inclusive energy price reform is the absence of fossil fuel subsidies. Potential candidates for fossil fuel subsidy reform (FFSR) in Romania consist of the subsidies for

coal, natural gas, and district heating. FFSR should be viewed as an ongoing process and package of measures consisting of a cost-benefit analysis of existing subsidies (including an analysis of subsidy beneficiaries and objectives), identification and prioritization of given subsidies for phase-out, extension of support to vulnerable groups, as well as clear and open reporting to/communication with stakeholders regarding the reform process and any benefits thereof. The World Bank's Energy Subsidy Reform Assessment Framework (ESRAF) could provide further guidance in this respect.

- Introduce additional carbon pricing (e.g., via higher excise tax rates) to address the presence of fossil fuel externalities. To account for all externalities, this report estimates that fossil fuel prices in 2030 would need to approximately increase by 50 percent (gasoline), 62 percent (diesel), 34 percent (LPG), 55 percent (kerosene), 51 percent (other/non-transport oil products), 113 percent (coal), 32 percent (natural gas) and 7 percent (electricity) relative to their baseline levels (i.e., absent additional carbon pricing). As an alternative, to account for non-global warming externalities (i.e., considering only those externalities related to local air pollution, congestion, accidents and road damage), this report estimates that fossil fuel prices in 2030 would need to approximately increase by 35 percent (gasoline), 46 percent (diesel), 13 percent (LPG), 22 percent (kerosene), 3 percent (other/non-transport oil products), 29 percent (coal), 2 percent (natural gas) and 2 percent (electricity) relative to their baseline levels.
- Use revenues generated from FFSR and additional carbon pricing to compensate vulnerable groups. For example, fully compensating the bottom 40 percent of the income distribution for the burden from higher energy prices from these reforms would require approximately 20 to 25 percent of the annual revenues raised in year 2030. Beyond this, additional revenues could be used such that they generate positive net gains for the poorest segments of the population. The choice of the revenue recycling mix will, ultimately, depend on the government's objectives and priorities for the type of transfers that it wishes to extend to vulnerable households as compensation for the burden from the proposed reforms.
- Promote the reform as a package of tax and expenditure-based measures that can be designed to achieve progressive outcomes. In communicating the reforms proposed above, authorities should emphasize that, in net terms, FFSR and additional, externality-inclusive carbon pricing can be equity-enhancing, assuming that revenues raised via the reform are appropriately used for compensation of vulnerable households. Importantly, any gains from the use of these revenues does not account for the additional, monetized co-benefits from reductions in air pollution and fewer kilometers driven in response to the proposed reforms (net of the efficiency costs from introducing carbon pricing and increasing energy prices). This report estimates that co-benefits are positive, at approximately 0.3 to 0.5 percent of GDP in year 2030. These positive, net co-benefits would constitute yet another gain for households of all income groups – and especially those households that live in more polluted areas (likely to be the more economically vulnerable ones). These aspects should be incorporated into their reform communication strategy.

These recommendations, both in relation to FFSR as well as the introduction of additional carbon pricing, should take place in a gradual and well-coordinated manner. The fossil fuel subsidy phase-out would, ideally, commence in early 2024 and take place incrementally (i.e., in equal portions of the 2024 subsidy level) such that by a target year (e.g., year 2030) subsidies are completely phased out. Likewise, carbon

pricing should be introduced starting from year 2024 at a fraction of the target carbon price, with the price being progressively ramped up to reach its full level by a target year (e.g., year 2030).

The choice of target year (by which fossil fuel subsidies should be completely phased out and the carbon price should reach its target level) would depend on the government's objectives regarding the pace of the transition process. The analysis provided in this report assumes that the target year is 2030, in line with the year by which, for example, authorities have agreed to the complete phase-out of coal use in the power sector and comply with their Paris Agreement pledge. Opting for an alternative year (e.g., 2035) would slow the transition process, on the one hand, but provide more time for households and firms to adjust to the proposed reforms, on the other. Annual government revenues collected from the gradual phase-out of fossil fuel subsidies and the additional carbon pricing should be used in concomitance with the implementation of these reforms to alleviate pressure on vulnerable groups and ensure a just transition process.

Broaden the VAT base.

- In the short term, Romania should consider removing reduced VAT rates that have been introduced for non-distributional purposes, such as reduced rates on restaurant food, hotel accommodation, books, newspapers, magazines, museums, zoos, gardens and parks. These reduced rates have a negative distributional impact, distort consumption decisions, cost revenue, and are unlikely to be an effective means of addressing any social or cultural goals.
- In the longer term, and certainly not until after the current food and energy price crisis is over, additional base broadening should be considered in relation to reduced VAT rates that were introduced for distributional purposes, including the reduced rates on food, pharmaceuticals, water supply, firewood and district heating. Removing the reduced VAT rates on firewood and district heating will also ensure greater coherence with the proposed removal of fossil fuel subsidies and additional carbon pricing. To ensure that poor households are not disadvantaged by such a reform, the reform would need to be complemented by targeted cash transfers to fully compensate the poorest households. This reform should be informed by a microsimulation model, to identify the needed coverage of cash transfers compared to existing social assistance transfers.

Improve analytical capacity within the Ministry of Finance

- To better implement the proposed reforms regarding the PIT, CIT and VAT, Romania needs to enhance its tax microsimulation modelling capacity. This can help to inform the implementation stage of the reform process. Consideration should also be given to the development of additional analytical tools, such as VAT gap models. The World Bank can provide support to the Ministry of Finance in the development of these analytical tools.
- To ensure these analytical tools are able to be effectively used and maintained, the Ministry of Finance should also be provided with the necessary resources to enable the unit responsible for the models to be fully staffed.

The above recommendations have focused on potential reforms to tax policy settings, whereas consideration of tax administration reforms is beyond the scope of this report. However, it is emphasised again that improvements in tax administration are also required. In particular, as part of the NRRP, a major

investment in the digitalization of the tax administration (ANAF) is currently being undertaken. This digitalization process will enable ANAF to manage its tax collection and tax compliance processes more effectively and efficiently, including improved risk management processes, as well as enabling the provision of online services for taxpayers to ease compliance. It is crucial that this major digitalization process is successfully completed. Moreover, there is also a need for additional investment in tax administration capacity, particularly to address current staff shortages in key areas such as risk management and auditing, as well as additional investment in staff training (for example, through greater use of the Taxation School of ANAF), and taxpayer education programs. The tax policy recommendations in this report have been provided on the basis that these tax administration improvements are also progressed.

REFORM TIMELINE

The proposed reform timeline is outlined below, presenting first the key reforms that can be implemented in the next year, followed by those requiring a staged or deferred implementation. The table also highlights areas where reform may be required following the completion of additional analysis.

Immediate reforms	
PIT: <ul style="list-style-type: none"> • Further increase the basic allowance amounts. • Replace the transaction tax with a capital gains tax on sale of residential property. • Maintain the 10% tax rate on capital gains earned through an intermediary. • Increase the dividend tax rate to 10% to match the taxation of most other forms of capital income. 	2023
CIT: <ul style="list-style-type: none"> • Simplify the R&D tax incentive to a single enhanced deduction. • Review and clarify the definition of “R&D expenses” eligible for the enhanced deduction. • Remove the tax holiday for R&D start-ups. • Remove the CIT rate reduction available for companies that increase equity. 	2023
Microenterprise regime: <ul style="list-style-type: none"> • Implement consolidation rules to prevent the artificial splitting of businesses to access the microenterprise regime. • Remove the ability to deduct expenses against turnover. Small business taxation <ul style="list-style-type: none"> • Remove the SSC ceiling currently applied to self-employed workers. 	2023

VAT: <ul style="list-style-type: none"> Remove reduced VAT rates currently applied for non-distributional purposes. 	2023
--	------

Reforms with a deferred or staged implementation	
PIT: <ul style="list-style-type: none"> Introduce a progressive PIT rate schedule. Remove PIT exemptions for construction, IT and agricultural workers. Remove the healthcare contribution (and fund healthcare through general taxation), and/or introduce a refundable earned income tax credit targeting low-income workers. 	2025-2028
CIT: <ul style="list-style-type: none"> Undertake a review of the effectiveness of the tax exemption for reinvested profits. 	Review in 2023; reform in 2024.
Microenterprise regime <ul style="list-style-type: none"> Lower the threshold for eligibility to the microenterprise regime to equal the VAT registration threshold. Undertake a reassessment of the appropriate turnover tax rate, and adjust the rate if required. 	2023-2025 Review in 2023; reform in 2024.
Energy taxation: <ul style="list-style-type: none"> Increase excise tax rates on fossil fuels. Remove fossil fuel subsidies. 	2024-2030
Property taxation <ul style="list-style-type: none"> Move from area-based to market value-based property tax system Restrict the use of property tax concessions to those targeted at low-income and elderly taxpayers, government buildings, and as limited a range of public benefit organizations as possible. Reassess the entire rate structure with the view to increasing total recurrent property tax revenue above its current comparatively low level amongst EU countries. 	Target 2025, but subject to progress in development of mass valuation model and related administrative systems. Following implementation of market-value based tax.
VAT: <ul style="list-style-type: none"> Remove reduced VAT rates currently applied for distributional purposes and provide compensation for low-income households through cash transfers. 	2025

References

- Agnolucci, P., Fischer, C., Heine, D., Montes de Oca León, M., Patroni, K., Pryor, J. & Hallegatte, S. (forthcoming). Measuring Total Carbon Pricing. Technical Report. World Bank: Washington, DC.
- Aguiar, A., Chepeliev, M., Corong, E. L., McDougall, R., & Van Der Mensbrugge, D. (2019). The GTAP data base: version 10. *Journal of Global Economic Analysis*, 4(1), 1–27.
- Ari, A., Arregui, N., Black, S., Celasun, O., Iakova, D., Mineshima, A., Mylonas, V., Parry, I., Teodoru, I., & Zhunussova, K. (2022). Surging Energy Prices in Europe in the Aftermath of the War: How to Support the Vulnerable and Speed up the Transition Away from Fossil Fuels. IMF Working Papers, 2022(152).
- Barrios, S. V. Ivaškaitė-Tamošiūnė, A. Maftai, E. Narazani and J. Varga (2020), “Progressive tax reforms in flat tax countries”, *Eastern European Economics*, 58(2), 83–107.
- Benedek, D., R. De Mooij, M. Keen and P. Wingender (2019), “Varieties of VAT Pass Through”, *International Tax and Public Finance*, 27, 890-930.
- Boadway, R., E. Chamberlain and C. Emmerson (2010), “Taxation of Wealth and Wealth Transfers”, in J. Mirrlees et al. (eds.), *Dimensions of Tax Design: The Mirrlees Review*, Oxford University Press, Oxford.
- Brys, B., S. Perret, A. Thomas and P. O’Reilly (2016), “Tax Design for Inclusive Economic Growth”, OECD Taxation Working Papers No. 26.
- Coady, David and David Newhouse (2006), “Ghana: Evaluating the Fiscal and Social Costs of Increase in Domestic Fuel Prices.” In *Poverty and Social Impact Analysis of Reform*, edited by A. Coudouel, A. Dani, and S. Paternostro. Poverty and World Bank: Washington, DC.
- Diamond, P. and E. Saez (2011), “The Case for a Progressive Tax: From Basic Research to Policy Recommendations”, *Journal of Economic Perspectives*, 25(4), 165–90.
- Enerdata (2021), Study on energy subsidies and other government interventions in the European Union. Technical Report. Available at : <https://op.europa.eu/en/publication-detail/-/publication/be5268ba-3609-11ec-bd8e-01aa75ed71a1/language-en>
- European Commission (2021), “Proposal for a Council Implementing Decision on the approval of the assessment of the recovery and resilience plan for Romania”, (Annex), European Commission, 27/09/2021, p230-231.
- European Commission (2015), “Patent boxes design, patents location and local R&D”, IPTS Working Papers on Corporate R&D and Innovation, No. 6/2015.
- Fiscal Council, Romania (2022), “Budget Consolidation And Higher Fiscal Revenues - A Vital Need For Romania's Stability And Economic Security”, Report of Working Group, May 2022.
- González Cabral, A., S. Appelt and T. Hanappi (2021), “Corporate effective tax rates for R&D: The case of expenditure-based R&D tax incentives”, OECD Taxation Working Papers, No. 54, OECD Publishing, Paris.

- IMF (2022a), “Technical assistance report on reforming the personal income tax”, IMF Country Report No. 22/199.
- IMF (2022b), “Technical assistance report on improving revenues from the recurrent property tax”, IMF Country Report No. 22/198.
- IMF (2019a), *Fiscal Policies for Paris Climate Strategies—From Principle to Practice*. Washington, DC: International Monetary Fund.
- IMF (2019b), *Fiscal Monitor: How to Mitigate Climate Change*. Washington, DC: International Monetary Fund.
- IMF, OECD, World Bank, and United Nations (2015), “Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment.” Study and Background Paper Prepared for the G20 Development Working Group. Washington.
- IEA (2021), *World Energy Outlook 2021*, IEA, Paris. Available at: <https://www.oecd-ilibrary.org/docserver/14fcb638-en.pdf?expires=1638931847&id=id&accname=ocid84004878&checksum=8A9FFACBB67859942FD20622D1F417E7>
- Ivanova, A., M. Keen and A. Klemm (2005), “The Russian ‘Flat Tax’ Reform”, *Economic Policy*, 20(43), 399–444.
- James, S. (2013), “Effectiveness of Tax and Non-Tax Incentives and Investments: Evidence and Policy Implications”, World Bank.
- Johansson, Å., et al. (2008), “Taxation and Economic Growth”, OECD Economics Department Working Papers, No. 620, OECD Publishing, Paris.
- Keen, M., Y. Kim and R. Varsano (2008), “The ‘flat tax(es)’: Principles and experience”, *International Tax and Public Finance*, 15(6), 712–751.
- Kutzin, J., W. Yip and C. Cashin (2016), “Alternative financing strategies for universal health coverage. In: R. Scheffler (ed.) *World Scientific handbook of global health economics and public policy*. World Scientific Publishing, Hackensack, New Jersey, 267–309.
- Marino, M., Lhuillery, S., Parrotta, P. and Sala, D. (2016), “Additionality or crowding-out? An overall evaluation of public R&D subsidy on private R&D expenditure”, *Research Policy*, 45(9), pp.1715-1730.
- Mercer-Blackman, V., Milivojevic, L., Mylonas, V., & Li, Y. (2022). *Charting the Course to a New Normal. In South Asia Economic Focus: Reshaping Norms: A New Way Forward*. World Bank Group.
- OECD (2022a), *Taxing Wages*, OECD Publishing, Paris.
- OECD (2022b), *Tax Incentives and the Global Minimum Corporate Tax: Reconsidering Tax Incentives after the GloBE Rules*, OECD Publishing, Paris.

- OECD (2021a), *Aligning Short-Term Recovery Measures with Longer-Term Climate and Environmental Objectives in Eastern Europe, Caucasus and Central Asia*, ENV/EPOC/EAP(2021)4, OECD GREEN Action Task Force Discussion Paper, Paris. Available at: [https://www.oecd.org/environment/outreach/ENVEPOCEAP\(2021\)4-GreenRecoveryEECCA.pdf](https://www.oecd.org/environment/outreach/ENVEPOCEAP(2021)4-GreenRecoveryEECCA.pdf)
- OECD (2021b), *Fossil-Fuel Subsidies in the EU's Eastern Partner Countries: Estimates and Recent Policy Developments*, OECD, Paris. Available at: <https://www.oecd.org/fr/environnement/fossil-fuel-subsidies-in-the-eu-s-eastern-partnership-countries-38d3a4b5-en.htm>
- OECD (2021c), *Taxing Energy Use for Sustainable Development: Opportunities for Energy Tax and Subsidy Reform in Selected Developing and Emerging Economies*, OECD, Paris. Available at: <https://www.oecd.org/tax/tax-policy/taxing-energy-use-for-sustainable-development.pdf>
- OECD (2021d), *OECD R&D tax incentives database*, 2021 edition, OECD, Paris. Available at: <https://www.oecd.org/sti/rd-tax-stats-database.pdf>
- OECD (2021e), "Romania", in *Peer Review of the Automatic Exchange of Financial Account Information 2021*, OECD Publishing, Paris.
- OECD (2018), *Taxation of Household Savings*, OECD Tax Policy Studies, No. 25, OECD Publishing, Paris.
- OECD (2015a), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities*, OECD Publishing, Paris.
- OECD (2015b), *Taxation of SMEs in OECD and G20 Countries*, OECD Tax Policy Studies, No. 23, OECD Publishing, Paris.
- OECD/KIPF (2014), *The Distributional Effects of Consumption Taxes in OECD Countries*, OECD Tax Policy Studies, No. 22, OECD Publishing, Paris.
- OECD (2011), *Taxation and Employment*, OECD Tax Policy Studies, No. 21, OECD Publishing, Paris.
- OECD (2006), *Taxation of Capital Gains of Individuals*, OECD Tax Policy Studies, No. 14, OECD Publishing, Paris.
- Parry, Ian, and Kenneth Small (2005), "Does Britain or the United States Have the Right Gasoline Tax?" *American Economic Review*, 95 (4): 1276-1289.
- Parry, Ian, Dirk Heine, Eliza Lis, and Shanjun Li (2014), *Getting Energy Prices Right: From Principle to Practice*, Washington, DC: International Monetary Fund.
- Parry, Ian, Victor Mylonas, and Nate Vernon (2019), "Reforming Energy Policy in India: Assessing the Options." In *Handbook on Green Growth*, edited by Roger Fouquet, 361-403. Cheltenham, UK: Edward Elgan Publishing.
- Parry, Ian, Simon Black, and James Roaf (2021), "Proposal for an International Carbon Price Floor Among Large Emitters." IMF Staff Climate Note 2021/001. International Monetary Fund, Washington, DC.

- Parry, Ian, Simon Black, and Nate Vernon (2021), “Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies.” IMF Working Paper 21/236, International Monetary Fund, Washington, DC.
- Parry, Ian, Victor Mylonas, and Nate Vernon (2021), “Mitigation Policies for the Paris Agreement: An Assessment for G20 Countries.” *Journal of the Association of Environmental and Resource Economists* 8 (4): 797-823.
- Parry, Ian, Simon Black, and Karlygash Zhunussova (2022), “Carbon Taxes or Emissions Trading Systems? Instrument Choice and Design.” IMF Staff Climate Notes No 2022/006.
- Sabirianova Peter, K., S. Buttrick and D. Duncan (2010), “Global reform of personal income taxation, 1981–2005: Evidence from 189 countries”, *National Tax Journal*, 63(3), 447–478.
- Saez, E., J. Slemrod and S. Giertz (2012), “The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review”, *Journal of Economic Literature*, 50(1), 3–50
- Shang, B. (2021), “The Poverty and Distributional Impacts of Carbon Pricing: Channels and Policy Implications,” IMF Working Papers 2021/172, Washington, DC: International Monetary Fund.
- Thomas, A. (2023), “VAT rate structures in theory and practice”, OECD Taxation Working Papers (forthcoming).
- Thomas, A. (2021), “Reforming the taxation of housing in Israel”, OECD Taxation Working Papers, No. 53.
- World Bank Group (forthcoming). Analysis of government support to fossil fuels in Romania. Technical Report. Washington, DC: World Bank.
- World Bank Group (2022), Green Fiscal Reforms: Part Two of Strengthening Inclusion and Facilitating the Green Transition. EU Regular Economic Report 7. Washington, DC: World Bank.
- World Bank Group and International Monetary Fund (2022), The Climate Policy Assessment Tool, Washington, DC: World Bank and International Monetary Fund.
- World Bank Group (2021), “Romania: policies in support of a fiscally sustainable recovery”, World Bank.
- World Bank Group (2020), *Property Tax Diagnostic Manual*, Washington, DC: World Bank.
- Yazbeck, A., W. Savedoff, W. Hsiao, J. Kutzin, A. Soucat, A. Tandon, A. Wagstaff and W. Chi-Man Yip (2020), “The Case Against Labor-Tax- Financed Social Health Insurance For Low- And Low-Middle-Income Countries”, *Health Affairs*, 39(5), 892-897.
- Zodrow, G. (2007), “The property tax as a capital tax: a room with three views”, James A. Baker III Institute for Public Policy, Rice University.

Appendix 1. R&D tax incentives

Table A1. Main features of R&D tax incentives in OECD, EU and OECD partner economies, 2021

Expenditure-based R&D tax incentives			
Tax relief redeemable against CIT			Tax relief redeemable against payroll withholding tax or social security contributions
R&D tax credit		R&D tax allowance	
Volume	Incremental/hybrid		
<i>Taxable:</i> Canada, Chile, United Kingdom (large firms) <i>Non-taxable:</i> Austria, Belgium (incompatible with allowance), Colombia (general and SME only tax credits), Denmark (deficit only), France, Germany, Hungary, Iceland, Ireland, Italy, Japan (volume and special R&D), Korea (investment), Malta, New Zealand (general and deficit only tax credit), Norway	<i>Taxable:</i> Australia, United States (credit on fixed, indexed base and incremental for simplified credit) <i>Non-taxable:</i> Japan (high R&D intensity), Korea, Mexico, Portugal, Spain	<i>Non-taxable:</i> Belgium, Brazil, China, Croatia, Czech Republic (hybrid), Denmark, Finland, Greece, Hungary, Latvia, Lithuania, Poland (R&D tax allowance, deduction for R&D Centres), Romania, Russian Federation, Slovak Republic (hybrid and volume-based), Slovenia, South Africa, Switzerland (cantonal level - optional), Thailand, Turkey (incremental), United Kingdom (SMEs)	<i>Taxable:</i> Belgium, Finland, France, Hungary (exemption and credit, incompatible in use), Netherlands, Spain, Sweden, Turkey
Treatment of unused claims			
Refund option			
Australia (SMEs), Austria, Belgium (after five years), Canada (CCPCs), Colombia (SMEs), Denmark, France, Germany, Iceland, Ireland, Italy, New Zealand (general and deficit only tax credit), Norway, United Kingdom (large companies)	Spain (reduced, payable credit optional), United States (payroll tax offset for certain start-ups)	Poland (R&D tax allowance - start-ups), United Kingdom (SMEs)	Automatic refund through wage system (limited to PWHT and SSC liability)
Carry-forward option			
Australia, Belgium, Canada, Chile, Colombia, France, Hungary, Ireland, Malta, New Zealand (general tax credit), United Kingdom	Korea, Portugal, Spain (unreduced, non-payable credit), United States	Belgium, China, Croatia, Czech Republic, Denmark, Greece, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovak Republic, Slovenia, South Africa, Turkey, United Kingdom	Not applicable
Preferential tax incentive provisions or more favourable terms			
SMEs			
Australia, Canada (CCPCs), Colombia, France, Japan (volume), Malta, Norway	Korea, Portugal (start-ups), United States (qualified small business, certain start-ups)	Belgium, Croatia, Poland (R&D tax allowance - start-ups), United Kingdom (SMEs)	Belgium (young innovative firms), France (JEI/JEU), Netherlands (start-ups), Spain (innovative SMEs)
Collaboration			
France	Iceland, Japan	Hungary	Belgium
Limitation of R&D tax relief			
Threshold-dependent credit rates			
Canada (CCPCs), France			Netherlands
Ceilings on amount of eligible R&D expenditure or value of R&D tax relief			
<i>R&D expenditure:</i> Australia, Austria (subcontracted R&D), Chile, Colombia, Denmark, France (subcontracted R&D), Germany, Iceland, Ireland (subcontracted R&D), Norway <i>R&D tax relief:</i> Colombia, Hungary, Italy, Japan (volume and special R&D), Malta, New Zealand (general and deficit only tax credit)	<i>R&D expenditure:</i> Portugal (incremental) <i>R&D tax relief:</i> Japan (incremental and high R&D intensity), Korea (large firms), Spain, United States	<i>R&D expenditure:</i> China (subcontracted R&D), Croatia, Turkey (subcontracted R&D), Switzerland (cantonal level - optional) <i>R&D tax relief:</i> Hungary (R&D collaboration), United Kingdom (SMEs) <i>R&D expenditure and tax relief:</i> Finland, Slovak Republic (volume-based tax allowance)	Belgium, France, Hungary (exemption and credit, incompatible in use), Spain, Sweden, Turkey
Accelerated depreciation provisions for R&D capital			
Belgium, Brazil, Chile, China, Denmark, France, Ireland, Israel (non R&D specific), Lithuania, Poland, Romania, Russian Federation, Spain, Thailand, Turkey, United Kingdom			
No expenditure-based R&D tax incentives			
Bulgaria, Cyprus, Costa Rica, Estonia, Latvia, Luxembourg			

Source: OECD (2021d)

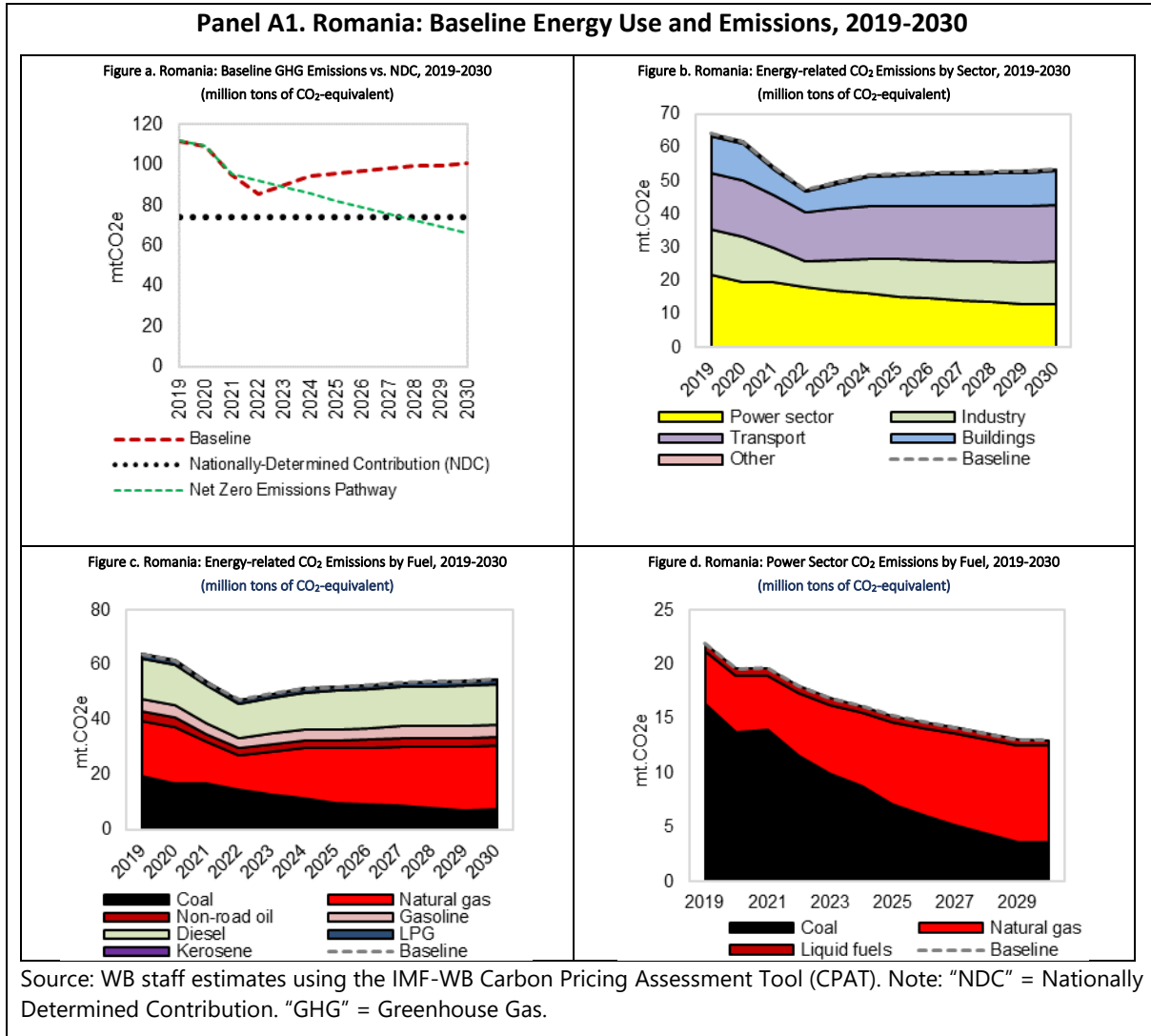
Table A2. Eligible R&D expenses in select countries

Country	Eligible expenses	Exclusions
UK	Must be part of a specific project to make an advance in science or technology; To get R&D relief, the business needs to explain how a project looked for an advance in science and technology, had to overcome uncertainty, tried to overcome this uncertainty, could not be easily worked out by a professional in the field	It cannot be an advance within a social science, like economics, or a theoretical field, such as pure maths.
US	Qualified research means research for which expenses may be treated as section 174 expenses. This research must be undertaken for discovering information that is technological in nature, and its application must be intended for use in developing a new or improved business component of the taxpayer. In addition, substantially all of the activities of the research must be elements of a process of experimentation relating to a new or improved function, performance, reliability, or quality. All of the research activities must be applied separately with respect to each business component of the taxpayer.	<ul style="list-style-type: none"> • Research conducted after the beginning of commercial production. • Research adapting an existing product or process to a particular customer's need. • Duplication of an existing product or process. • Surveys or studies. • Research relating to certain internal-use computer software. • Research conducted outside the United States, Puerto Rico, or a U.S. possession. • Research in the social sciences, arts, or humanities. • Research funded by another person (or governmental entity).
France	Scientific or technical research eligible for the scheme includes fundamental and applied research, as well as experimental development.	•
Croatia	In principle, the deduction is available to beneficiaries in all activity sectors and all scientific and technological areas. In particular, research and development activities under one or more of the following categories qualify: fundamental research, industrial research, experimental development, and feasibility studies for R&D project.	•
Czech Republic	The basic criteria that distinguish R&D from other activities are the presence of a measurable element of novelty and clarification of research or technical uncertainties. These must be present even if the subject of the research is known in the industry, as long as the taxpayer can prove that it is materially or economically inaccessible to it, or unusable for another material or economic reason, or taxpayer had no information on its existence at the time the project was undertaken. The criteria for qualified research are similar to the definition of R&D in the OECD Frascati Manual. Qualified activities include the introduction of new or improved technology, systems or services, and the production of new or improved materials, products and equipment, design and verification of prototypes, pilots or demonstration equipment.	•
Germany	R&D activities are eligible for subsidy under the FZulG if they have been initiated after January 1st, 2020 and which are attributable to at least one of the following categories - <ul style="list-style-type: none"> • Fundamental research: Experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without any direct commercial application or use in view. • Industrial research: Planned research or critical investigation aimed at the 	The mere use of already known products, processes or procedures is generally not eligible for subsidy under the FZulG. This in particular applies to recurring and routine changes to existing products and processes as well as (quality) controls Furthermore, the development of management systems and developments in which the solution approaches are based on business (non-technological) concepts are non-eligible. Examples for non-eligible activities are as follows: <ul style="list-style-type: none"> • Market research;

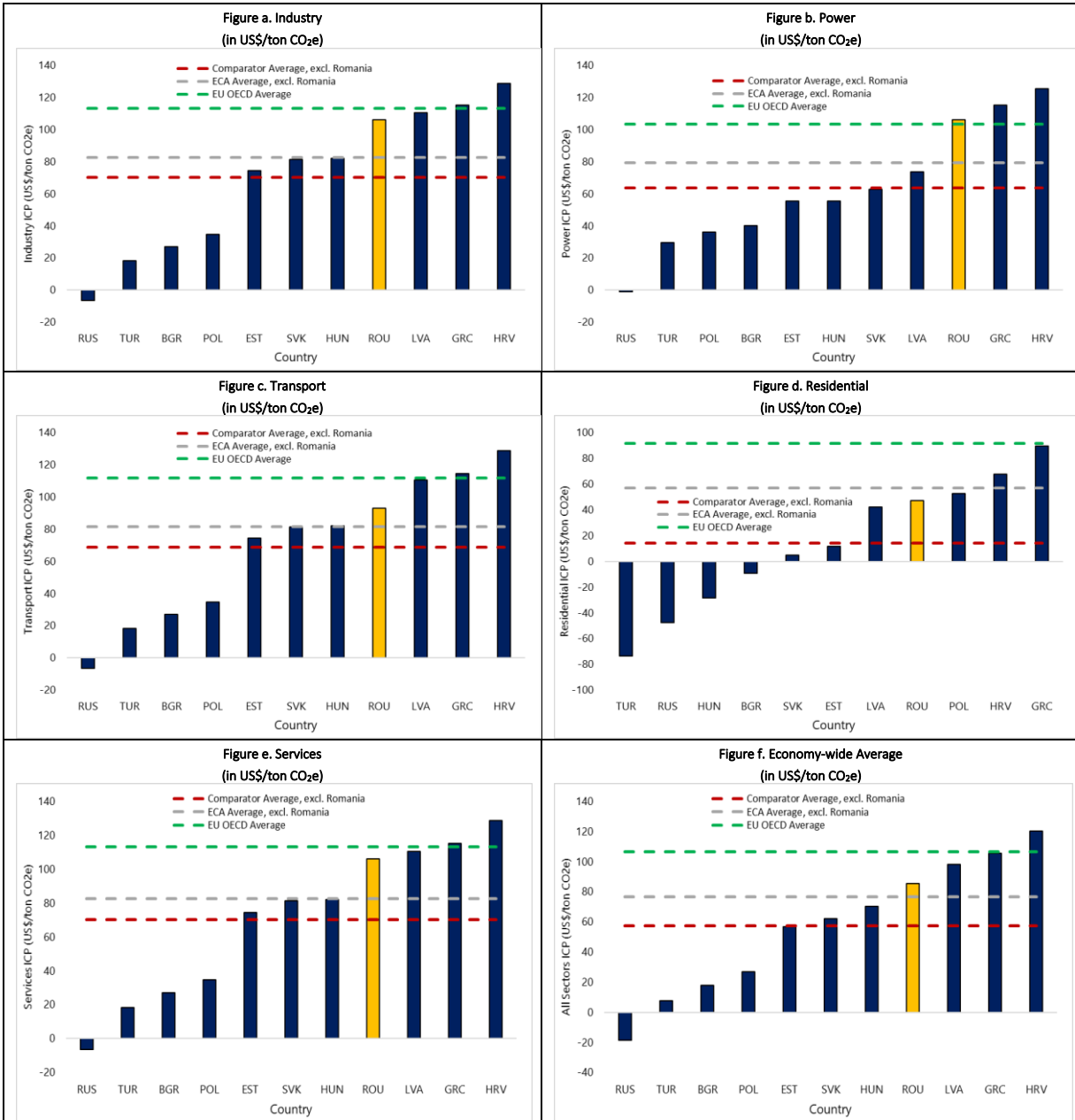
	<p>acquisition of new knowledge and skills for developing new products, processes, or services or for bringing about a significant improvement in existing products, processes or services.</p> <ul style="list-style-type: none"> • Experimental development: Acquiring, combining, shaping and using existing scientific, technological, business and other relevant knowledge and skills with the aim of developing new or improved products, processes or services. 	<ul style="list-style-type: none"> • Market development, i.e. activities related to the development and manufacture of market-readiness and smooth functioning of a certain product or process; • Client acquisition; • Development of production manuals and quality assurance guidelines; • Support, sales, customer training / testing; • Certain administrative and legal patent and licensing work which is not directly related to R&D projects
Italy	<p>Taxpayers have to incur costs for one (or more) of the R&D qualifying activities, consisting in fundamental research, industrial research and experimental development. In particular, the eligible expenses are those incurred for:</p> <ul style="list-style-type: none"> • workers involved in the above-mentioned R&D activities; • depreciation charges related to the assets employed to carry out the activities/projects; • R&D “extra-muros”, i.e. activities carried out jointly with universities, research institutes and equivalent bodies and other enterprises; technical expertise, industrial and biotechnological patents. 	

Source: World Bank staff

Appendix 2. Detailed Results of the Mitigation Policy Analysis

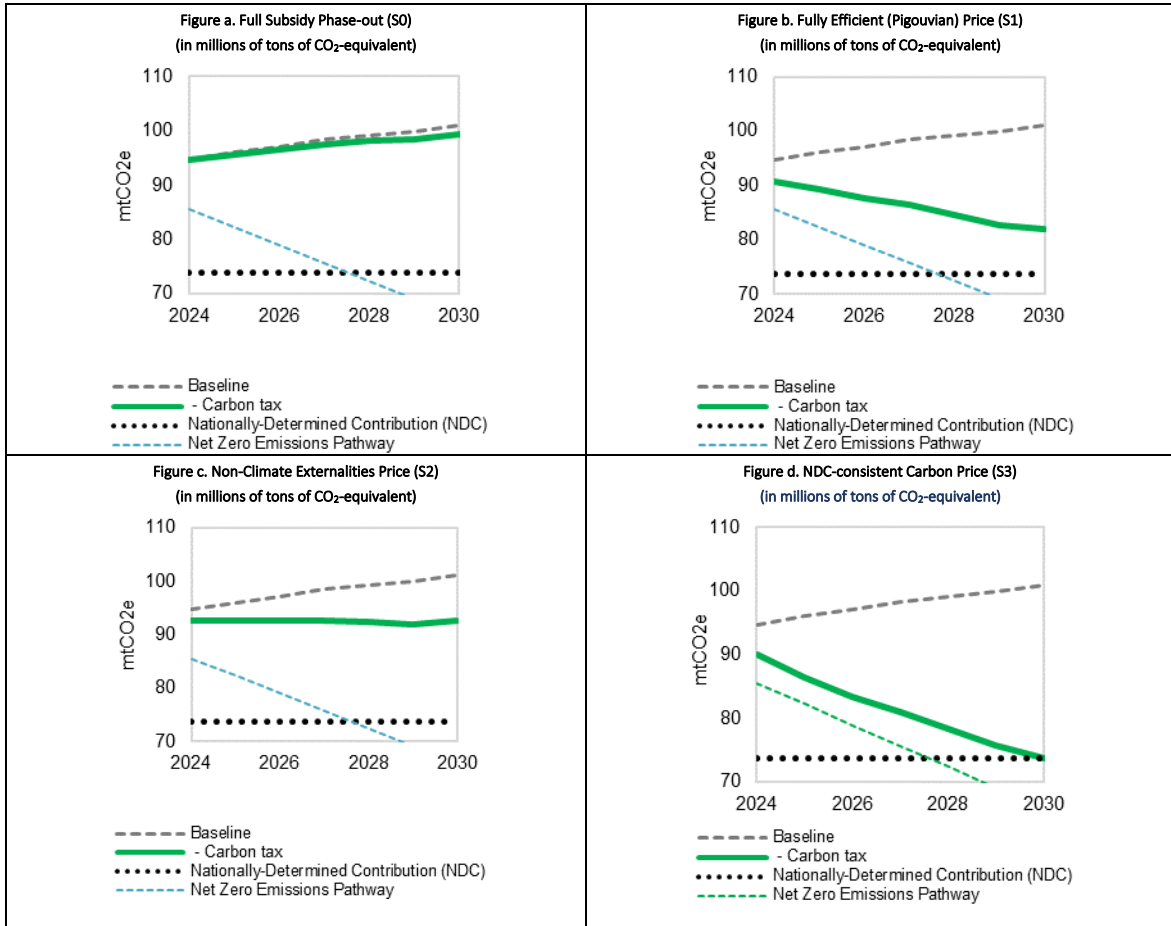


Panel A2. Romania and Comparators: Indirect Carbon Price (ICP) by Sector, 2019



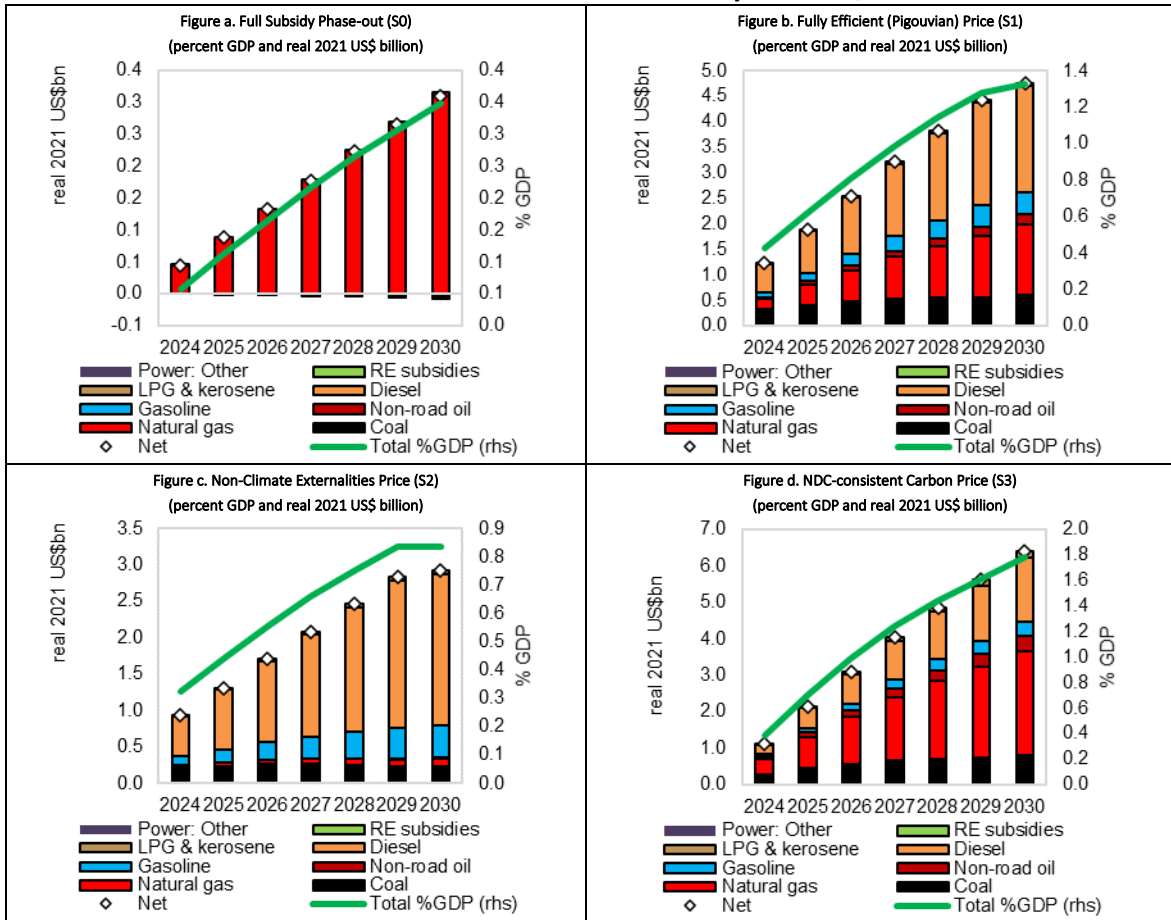
Source: WB staff estimates based on data and methods on Agnolucci et al. (forthcoming). Note: Bars represent fuel use-weighted averages by sector.

Panel A3. Romania: Total Greenhouse Gas Emissions by Scenario, 2024-2030



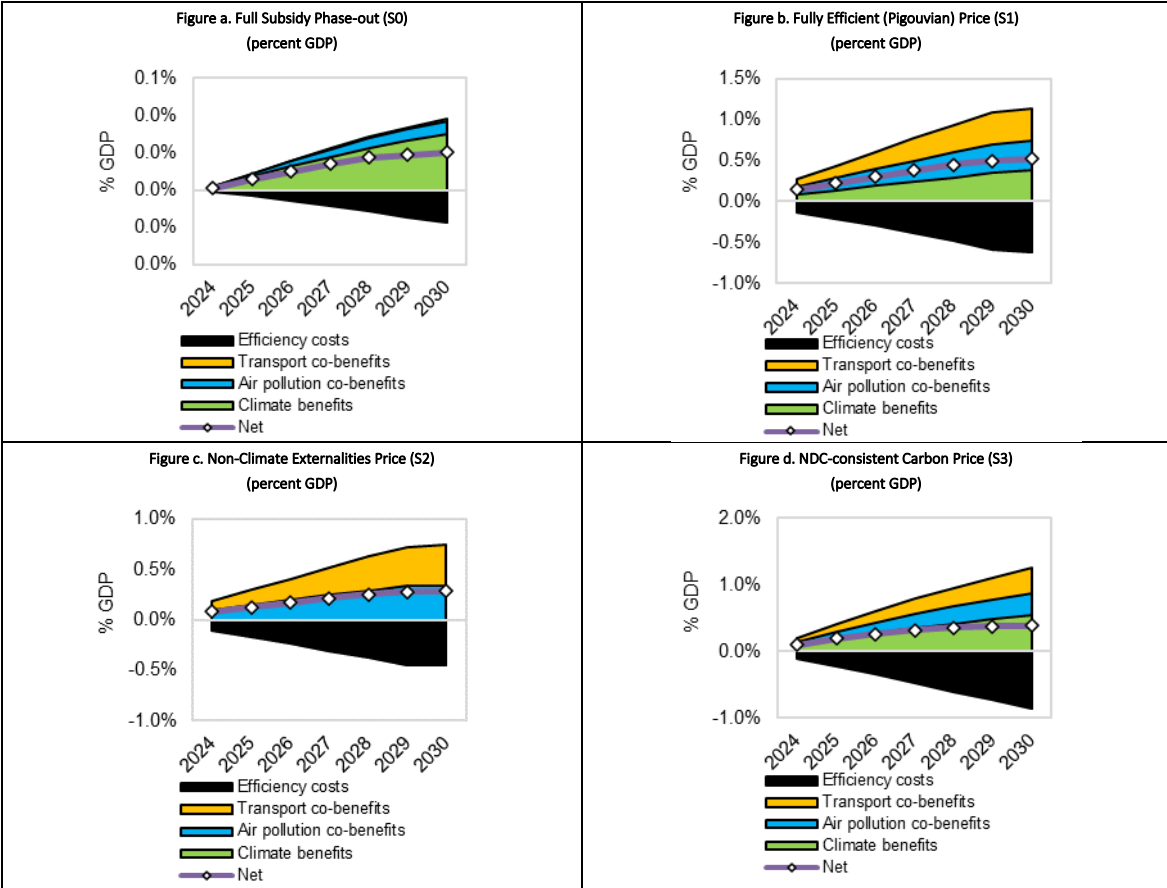
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT). Note: "NDC" = Nationally Determined Contribution. "GHG" = Greenhouse Gases.

Panel A4. Romania: Total Revenues Raised by Scenario, 2024-2030



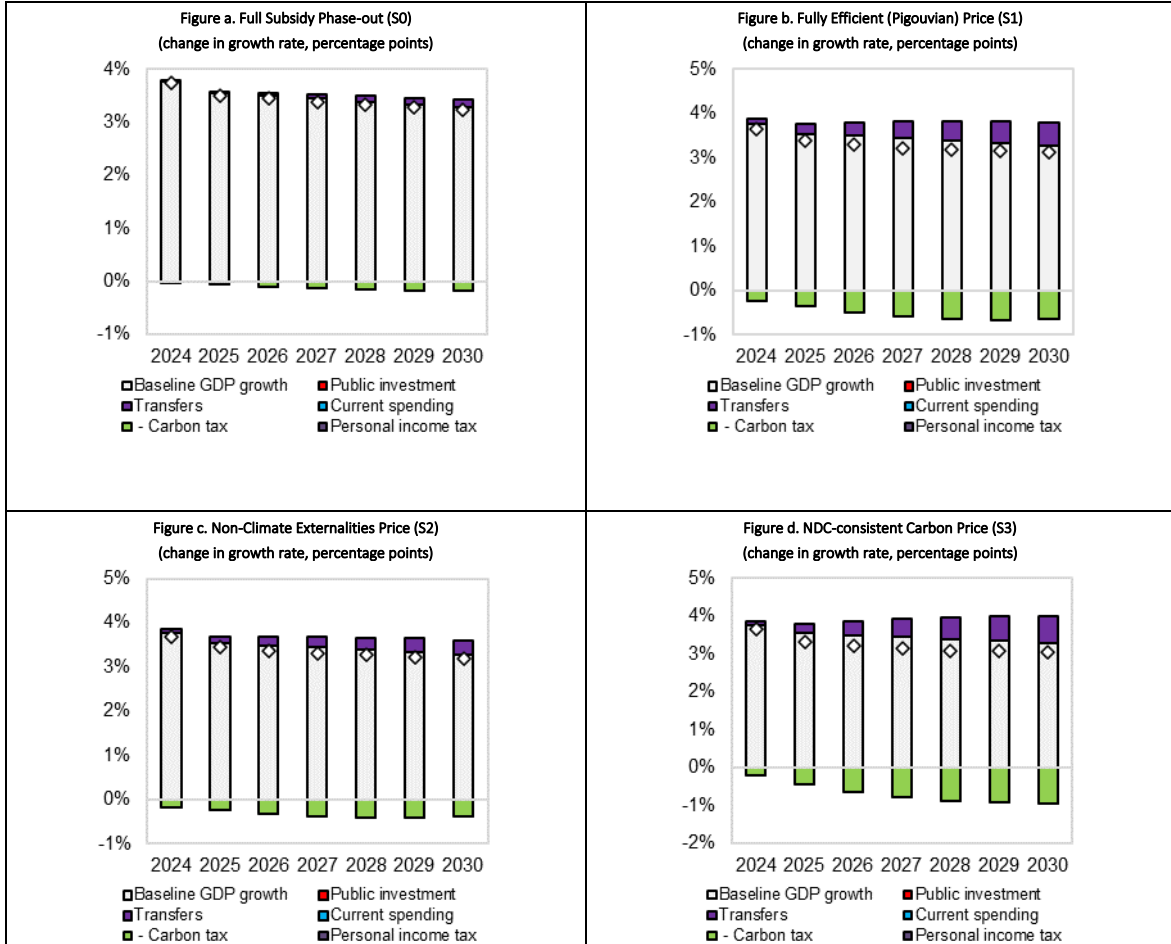
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT).

Panel A5. Romania: Co-benefits and Economic Costs by Scenario, 2024-2030



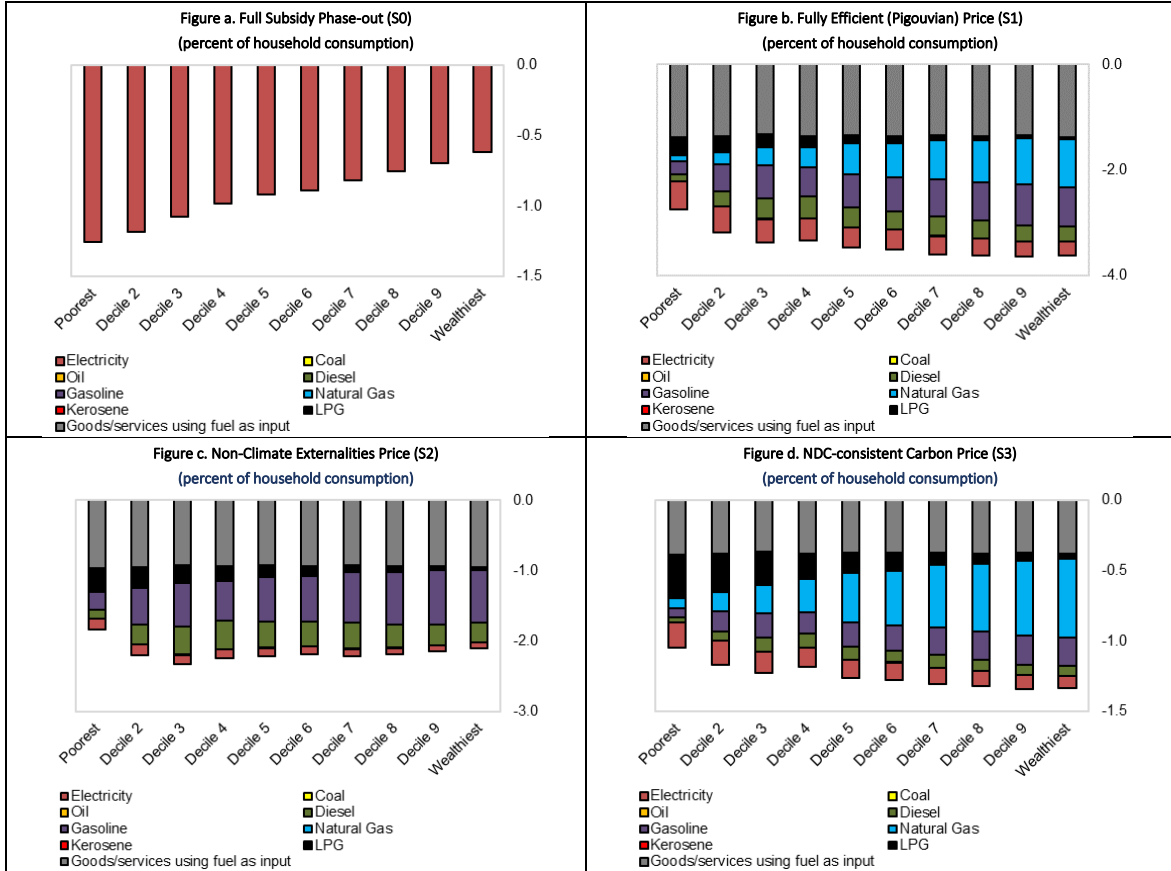
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT).

Panel A6. Romania: Impacts on GDP by Scenario, 2024-2030



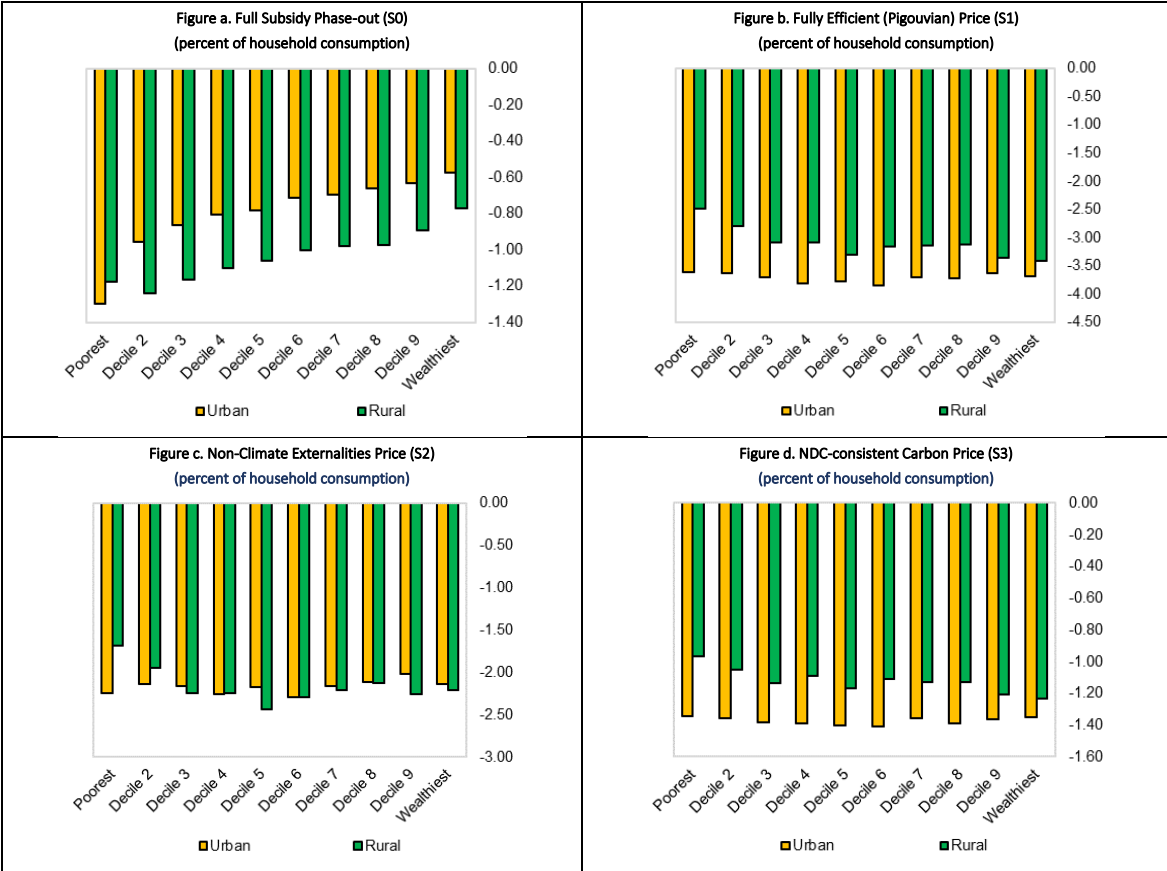
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT). All revenues are assumed to be recycled into new cash transfers, targeted at the bottom 40 percent of the consumption distribution.

Panel A7. Romania: Mean Direct vs. Indirect Incidence by Scenario, 2030



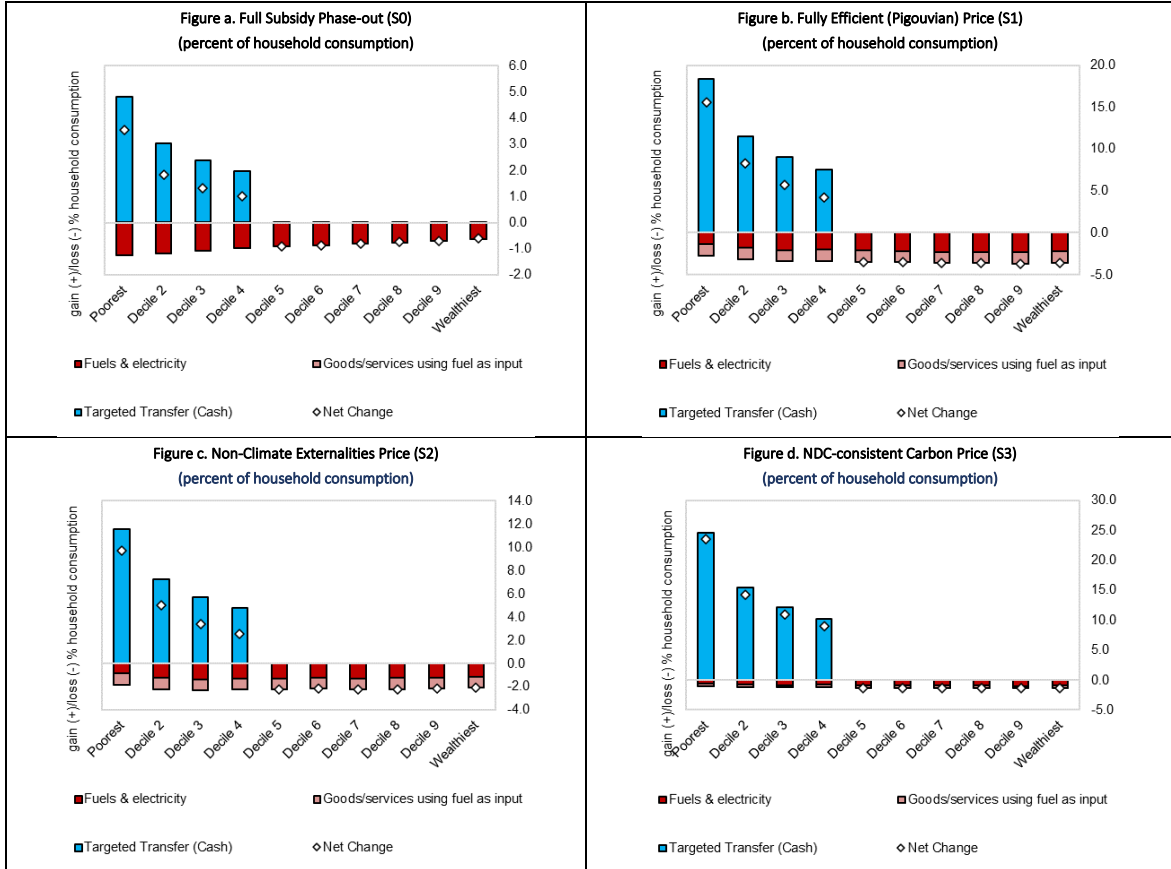
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT).

Panel A8. Romania: Mean Overall Incidence by Sub-Sample and Scenario, 2030



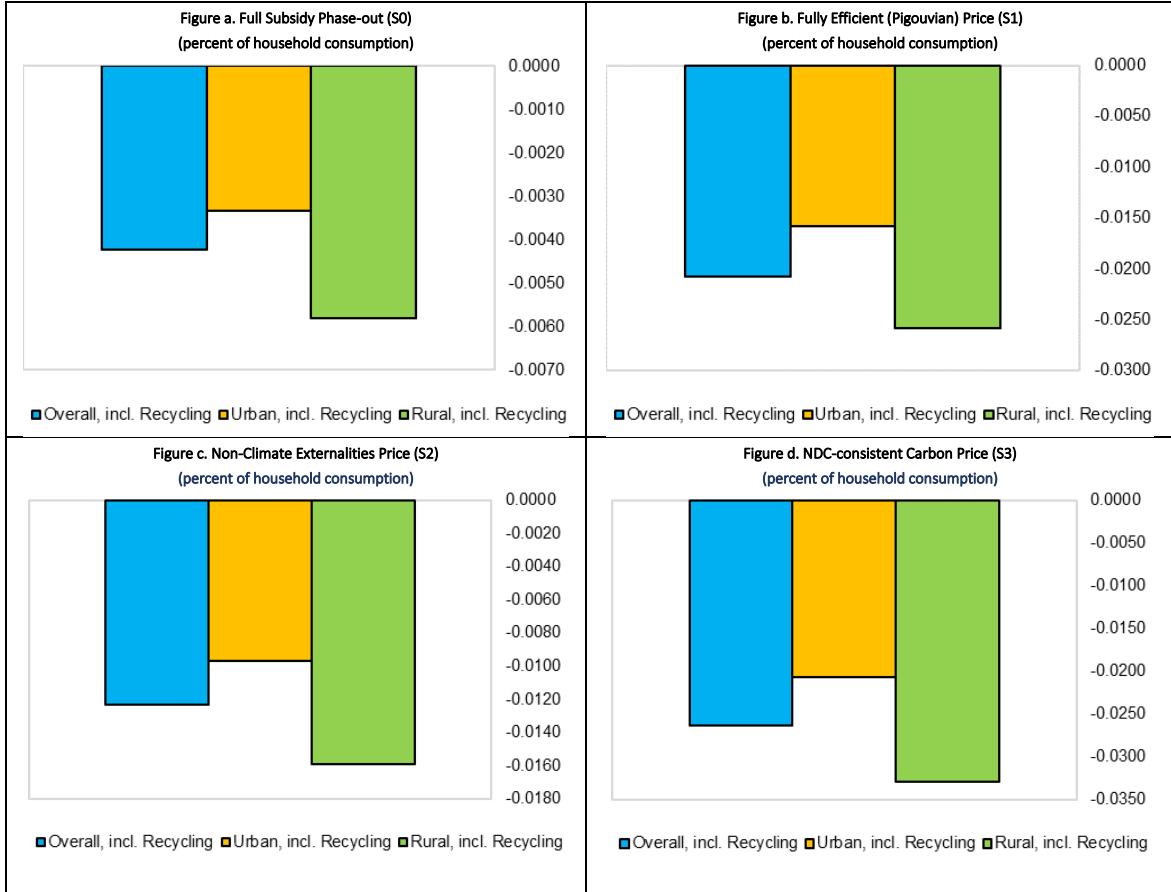
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT).

Panel A9. Romania: Mean Net Incidence Post-Revenue Recycling by Scenario, 2030



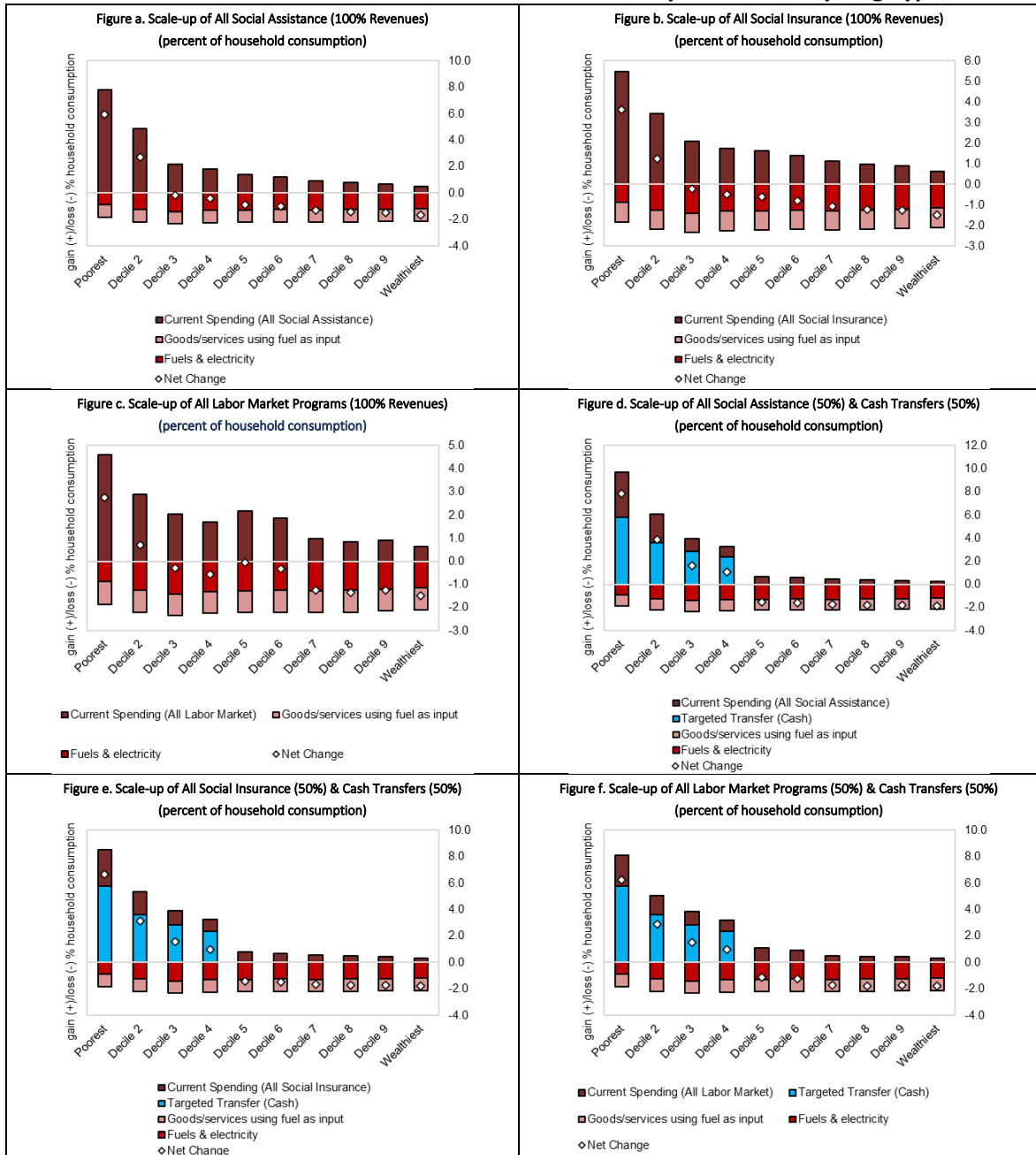
Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT). Note: All revenues are assumed to be recycled into new cash transfers, targeted at the bottom 40 percent of the consumption distribution. Positive (negative) values represent gains (losses) in percent of total consumption.

Panel A10. Romania: Change in Gini Coefficient Post-Revenue Recycling by Scenario, 2030



Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT). Note: All revenues are assumed to be recycled into new cash transfers, targeted at the bottom 40 percent of the consumption distribution. Figures show absolute changes in the consumption-based Gini Coefficient.

Panel A11. Romania: Mean Net Incidence for Scenario 2 by Revenue Recycling Type, 2030



Source: WB staff estimates using the IMF-WB Carbon Pricing Assessment Tool (CPAT). Note: Positive (negative) values represent gains (losses) in percent of total consumption. Calculations for the scale-up of existing social programs (social assistance, social insurance and labor market) are based on data from the WB Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE) database.

Appendix 3. Overview of the Climate Policy Assessment Tool (CPAT)

The model provides country-specific projections of fossil fuel CO₂ emissions and assessments of the emissions, fiscal, economic, public health/other externality and distributional impacts of carbon pricing and other mitigation policies for over 150 countries.

It decomposes fossil/other fuel use into the power, industrial, transport, and residential sectors projecting it forward via: i) GDP forecasts; ii) assumptions about the income and own-price elasticity of demand for fuels; iii) assumptions about the rate of technological change affecting energy efficiency; and iv) changes in international energy prices, with pre-existing fuel taxes/levies being held constant in real terms.

The impacts of mitigation policies on fuel use and emissions depend on: i) their effect on future energy prices; ii) fuel switching within the power generation sector; and iii) price elasticities of electricity/other fuel demand across sectors.

The tool is parameterized using 2019 fuel use and emissions factors by country/sector from the International Energy Agency (IEA). Data on energy taxes/subsidies and prices by product and country is obtained from the IMF⁷⁵. Prices are projected forward using this data in tandem with an average of IEA, US Energy Information Administration (EIA), IMF World Economic Outlook (WEO) and World Bank forecasts of international energy prices. Fuel price responsiveness is broadly consistent with empirical/energy model results. See Appendix III in IMF (2019a) for an analytical exposition of the model and its parameters.⁷⁶

The analysis within CPAT is subject to a series of limitations and caveats. First, the model does not explicitly incorporate gradual turnover of energy capital. This assumption limits the short-term responsiveness of fuel use to carbon pricing but is reasonable, given the focus on longer-term scenario simulations (e.g., in 2030), which are assumed to be gradually introduced. Second, CPAT abstracts from the possibility of additional mitigation actions (beyond those implicit in current country-level price data) in the “baseline” or business-as-usual (BAU) scenario. Specifically, the BAU scenario is used as a “benchmark” against which the performance of any modeled mitigation instruments is measured (a standard approach in the literature). On this note, capturing the full set of intricacies and tailored approaches of domestic mitigation policies is challenging and may require further modeling than what

⁷⁵ See, for example: <https://www.imf.org/en/Topics/climate-change/energy-subsidies>

⁷⁶ CPAT also uses multiple other data sources including: the Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE), Climate Watch, Copernicus Atmospheric Monitoring Service (CAMS), Enerdata, Global Burden of Disease (GBD), Global Trade Analysis Project (GTAP), Institute for Health Metrics and Evaluation (IHME), International Institute for Applied Systems Analysis (IIASA’s) GAINS model, International Labour Organization (ILO), Organisation for Economic Co-operation and Development (OECD), United Nations Framework Convention on Climate Change (UNFCCC), United States Department of Agriculture (USDA), World Bank Group Carbon Pricing Dashboard, World Health Organization (WHO), World Bank Development Indicators (WDI), World Road Statistics (WRS), World Resources Institute (WRI) CAIT.

is currently available in CPAT. Third, the fuel price response parameters in the model are plausible for small, incremental price changes. In other words, model elasticities may not apply under drastic price hikes that could cause major technological developments or non-linear adoption of technologies. Fourth, the model assumes flat (perfectly elastic) supply curves, absence of general equilibrium effects, and no changes in international fuel prices that might result from multiple countries introducing mitigation policies at the same time. See also further discussion of these issues in IMF (2019b) and Parry, Mylonas and Vernon (2021).

Appendix 4. Methodology for the Distributional Analysis of Climate Mitigation Policies in CPAT⁷⁷

The burden on household consumption deciles $d = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ from higher end-user prices following the introduction of the policies modeled under scenarios 0, 1, 2, and 3 is calculated as:

$$(A) \quad \sum_g \pi_t^{dg} \cdot \rho_t^{dg}$$

where g stands for the main categories of goods/services consumed by households, π_t^{dg} is the share of decile d 's total consumption spent on good/service g at time t , and ρ_t^{dg} is the relative price increase for good/service g caused by the carbon tax. For example, for a good with a budget share of 2 percent of total household consumption, expression (A) implies that a 5 percent increase in said good's price will reduce decile d 's consumption by 0.1 percentage points.

Data on household budget shares for Romania is obtained from the 2018 Household Budget Survey (HBS). After the data is aggregated into CPAT-compatible good/service categories⁷⁸, households are grouped into population-weighted, per-capita consumption deciles and budget shares are computed by dividing total consumption expenditure on each CPAT good/service category by each household's total consumption expenditure across all goods/services.

Sector-specific percent price increases from the simulated scenarios are obtained directly from CPAT for each fossil fuel. Calculating (A) above in terms of the fossil fuel-specific price changes and budget shares yields an estimate of the loss in consumer surplus from price increases of fossil fuels (e.g., electricity, gasoline/diesel, natural gas, etc.) following the introduction of a carbon tax (i.e., the "direct" incidence effect).

Price increases for other consumer goods (due to higher energy/fossil fuel input prices) are calculated, assuming full pass-through of producer fossil fuel/energy cost increases onto consumer prices domestically (i.e., flat/perfectly elastic supply curves). In particular, non-fuel sector price increases are obtained as the sum-product of: i) each sector's input intensity in each fossil fuel; and ii) the price increase of each fossil fuel induced by the carbon tax. Sectoral fossil fuel intensities are generally obtained from input-output/direct requirements matrices. For Romania, these matrices are

⁷⁷ The methodology described here is primarily based on Coady and Newhouse (2006) and applied within several other studies (e.g., Parry, Mylonas and Vernon (2019), Mercer-Blackman, Milivojevic and Mylonas (2022), and IMF (2019b)).

⁷⁸ To facilitate relative cross-country comparability of results, CPAT uses a standardized classification of goods and services across all countries, distinguishing among 8 fuel (coal, electricity, natural gas, oil, gasoline, diesel, kerosene, LPG) and 14 non-fuel (appliances, chemicals, clothing, communications, education, food, health services, housing, other, paper, pharmaceuticals, recreation and tourism, transportation equipment, public transportation) good/service categories. This classification is, in part, informed by the implicit carbon intensity of non-fuel goods/services (i.e., goods/services with similar carbon intensities are classified under the same category).

sourced from the GTAP-10 database⁷⁹, which includes 2014 data for 65 sectors⁸⁰ that are, in turn, mapped to the CPAT non-fuel consumption good/service categories mentioned above to re-estimate equation (A)⁸¹. Summing the estimates across all non-fuel goods/services yields a measure of the loss in consumer surplus from price increases of non-fossil fuel products (e.g., food, clothing, housing, etc.) following the introduction of a carbon tax (i.e., the “indirect” incidence effect).

Adding up the direct and indirect effects yields an estimate of the total incidence effect. All incidence effects are scaled by household consumption decile (and consumption item)-specific price elasticities of demand (assuming a Constant Elasticity of Substitution (CES) utility function for households) based on USDA data⁸². The application of these elasticities implicitly adjusts the estimated incidence effects for household behavioral responses to higher energy prices as a result of climate mitigation policy.

For the modeling of different types of revenue recycling, the total amount of revenues (adjusted by the proportion chosen to be recycled) was used as a proxy for the gross (monetary) household gain. For the modeling of new, targeted cash transfers, recycled revenues were divided by the population of the targeted deciles (e.g., first four deciles for targeting of the bottom 40 percent of the distribution, assuming no leakage or under-coverage) and, subsequently, expressed in percent of decile-specific household per-capita consumption. A slightly different approach is followed when modeling the scale-up of existing social transfer programs (all social assistance, social insurance and labor market programs). In this case, the distribution across deciles of the benefits (in percent of household consumption) from the existing program⁸³ is scaled up by the ratio of the total amount of revenues (adjusted by the proportion chosen to be recycled) to the total amount of the benefit (pre-revenue recycling).

The analysis described above is subject to several shortcomings. First, in projecting the distributional analysis forward to 2030, the fossil fuel intensities (as given by the input-output matrices) and decile-specific household budget shares are assumed to remain constant. This means that the use of input-output matrices likely overstates consumer price changes for non-fuel goods/services, since the fossil fuel intensity of production would likely decrease due to higher energy prices. Second, some of the incidence of carbon taxation could be passed backwards into lower producer prices, assuming upward-sloping supply curves in the medium-to-long run. If this results in lower capital returns, some of the incidence could be borne by capital owners or even workers (e.g., in the form of lower wages). See also additional commentary in Parry, Mylonas and Vernon (2019).

⁷⁹ See Aguiar et al. (2019) and: <https://www.gtap.agecon.purdue.edu/databases/v10/index.aspx>

⁸⁰ These cover the following five fossil fuels: coal (“coa”), electricity (“ely”), oil (“oil”), natural gas (“gas”, “gdt”) and petroleum products (“p_c”).

⁸¹ Prior to this estimation, the GTAP-10 input-output matrix is scaled such that the implied government revenues from climate mitigation policies generated from it are consistent with the revenues obtained from CPAT (based on IEA (2021) data).

⁸² See: <https://data.ers.usda.gov/reports.aspx?ID=17825>

⁸³ As this is reflected in the WB Atlas of Social Protection Indicators of Resilience and Equity (ASPIRE) database.