

Rethinking Municipal Finance

Bulgaria Subnational
Public Finance Review



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Acronyms

AVM	Automated Valuation Model
CEE	Central and Eastern Europe
DEA	Data Envelopment Analysis
EEA	European Environmental Agency
EU	European Union
FTT	Future Technology Transformations
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GRP	Gross Regional Product
HDI	Human Development Index
IAAO	International Association of Assessing Officers
IISCPR	Integrated Information System for the Cadastre and Property Register
IME	Institute for Market Economics
LGU	Local Government Unit
MoF	Ministry of Finance
MTEF	Medium-Term Expenditure Framework
NAMRB	National Association of Municipalities in the Republic of Bulgaria
NSI	National Statistical Institute
PFR	Public Finance Review
PIP	Public Investment Program
PIT	Personal Income Tax
PPP	Public-Private Partnership
PVTS	Passenger Vehicles Taxation Scheme
RES	Representative Expenditure System
RRS	Representative Revenue System
VAT	Value Added Tax
WLTP	Worldwide Harmonized Light Vehicle Test Procedure

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1. Bulgaria: An Assessment of the Efficiency and Equity of the Intergovernmental Fiscal Transfers System and Options for Reform, by Jorge Martinez-Vazquez (Consultant) and Desislava Nikolova (Senior Economist, EECM2)
2. Passenger Vehicle Taxation at Sub-National Level in Bulgaria: A Proposed Revised Taxation Scheme Based on Vehicles' Carbon Dioxide Emissions, by Leonardo Garrido (Consultant)
3. Preliminary Test Models for Mass Valuation Modeling Feasibility in Bulgaria, by Paul Bidan-set (Consultant)
4. Analysis of revenue shortfall in local budgets in Bulgaria from lagging tax assessments and policy recommendations for improvements in the tax base-setting framework, by Petar Ganey (Consultant)
5. Municipal Expenditure – framework, drivers, unit costs, by Petya Georgieva (Consultant)
6. Bulgaria spending efficiency at the municipal level, by Juan Bedoya (Consultant)

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1 BOOST Open Budget Portal: Facilitating Access and Use of Micro Fiscal Data (<https://www.worldbank.org/en/programs/boost-portal>)

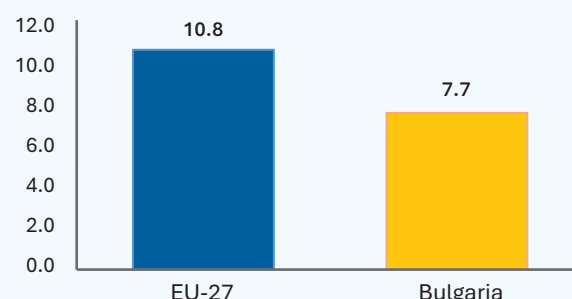
Executive Summary

While municipalities in Bulgaria play a key role in local governance and administration, the fiscal system remains highly centralized. Municipalities are the primary administrative and territorial units responsible for essential public services such as education, health care, and social protection. However, Bulgaria's fiscal system is highly centralized with total municipal expenditures accounting for about one-fifth of general government spending. Similarly, local government revenue, including grants and European Union (EU) funds, amounts to approximately 8 percent of gross domestic product (GDP) (2023), compared to the EU-27 average of about 11 percent. Local tax revenues are less than 1 percent of GDP in Bulgaria, compared to almost 4 percent for the EU-27, highlighting the limited revenue autonomy of Bulgarian municipalities. About 95 percent of local tax revenue comes from three taxes—recurrent real estate tax, vehicle ownership tax, and property acquisition tax—while other local taxes generate negligible revenue.

Despite past efforts toward greater fiscal decentralization, Bulgaria's municipalities rely heavily on transfers from the central government. Given limited own-source revenues, most municipal spending is funded through central government transfers. Transfers account for approximately 69 percent of total municipal revenue, with the largest share—54 percent in 2023—being transfers for so-called delegated activities or activities delegated from the central to local governments. Equalization transfers account for about 4 percent of total municipal revenue, and transfers for capital expenditure constitute another 4 percent.

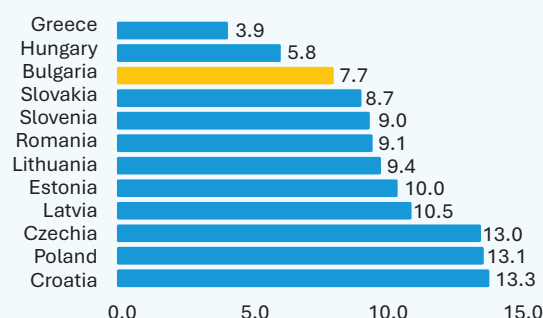
Over half of municipal spending is allocated to delegated activities, funded by conditional transfers, over which municipalities have little autonomy. Municipalities have minimal control over the use of these funds and are merely required to pass them to the ultimate beneficiaries such as schools and clinics. They also carry out local activities, including solid waste management, local street maintenance, certain social services, and various administrative and regulatory functions. These functions are financed through a combination of local own-source revenues and other central government transfers.

Figure ES1. Local government revenues in Bulgaria and EU-27 (% of GDP, 2023)



Source: Eurostat

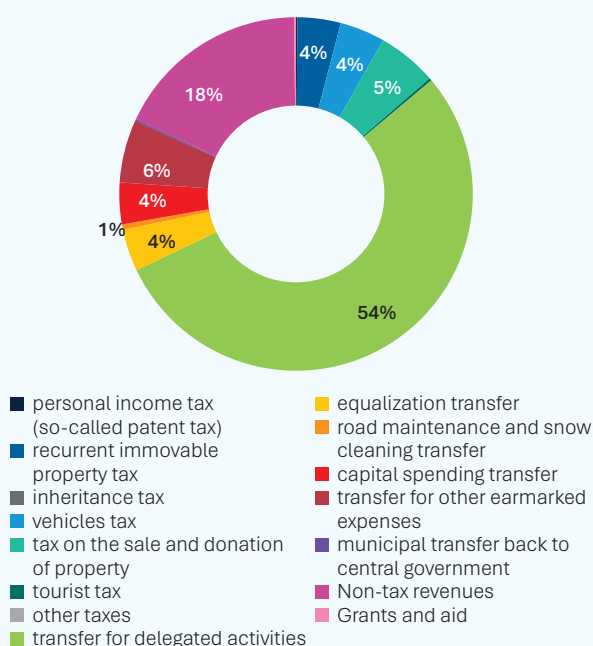
Figure ES2. Local government revenues in CEE countries (% of GDP, 2023)



Source: Eurostat

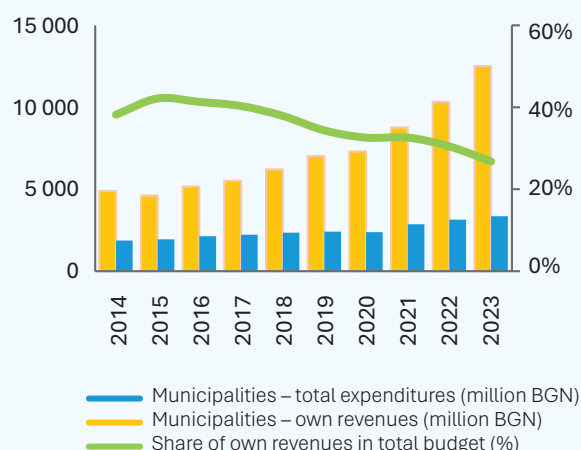
Note: CEE = Central and Eastern Europe

Figure ES3. Municipal revenues, % of total



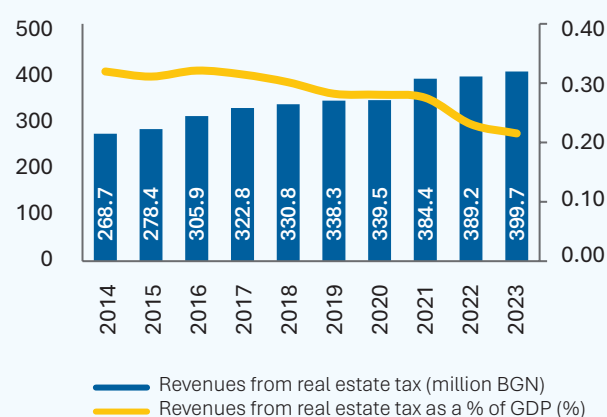
Source: MoF, 2023 Budget Execution Report

Figure ES4. Financial independence of local governments in Bulgaria (2014–2023)



Source: Institute for Market Economics (IME) based on Ministry of Finance (MoF) (Bulgaria)

Figure ES5. Local revenues from recurrent real estate tax in Bulgaria (BGN millions and % of GDP, 2014–2023)



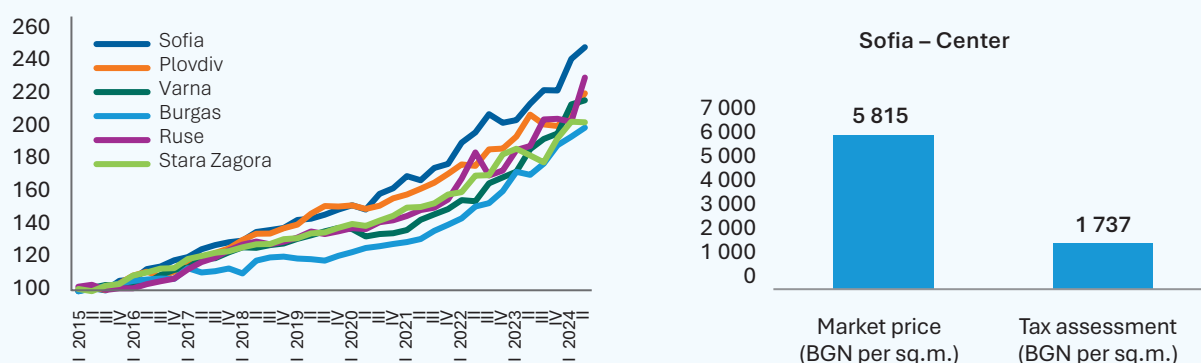
Source: IME based on National Statistical Institute (NSI) and MoF (Bulgaria)

The regulatory frame limits both the number of taxes and the tax rates that municipalities can impose. The Act on Local Taxes and Fees assigns eight taxes to local governments: (i) recurrent tax on immovable property; (ii) inheritance tax; (iii) donations tax; (iv) tax on the purchase of immovable property; (v) vehicle tax; (vi) patent tax; (vii) tourist tax; (viii) tax on taxi transport of passengers. The recurrent tax on immovable property, the tax on purchase of immovable property and the vehicles tax together generate some 95% of all tax revenue for municipalities. Noteworthy, Bulgarian municipalities do not collect a share of income taxes, unlike other EU countries like Poland, Croatia and Latvia. In addition, municipalities cannot impose any new tax unless related legal amendments are passed through parliament. The fiscal autonomy of municipalities is further restrained by legally binding upper and lower bounds for tax rates. Municipalities also collect fees for various services, but only the waste collection fee generates non-negligible revenues.

In addition to the relatively low weight of own-source revenue in municipal budgets, the tax base for real estate taxes has gradually eroded over the years, undermining municipalities' fiscal capacity. Over the past 15 years, the real estate property tax base has eroded due to an administrative approach to tax assessments that decouples the tax base from market trends. The property tax assessment is based on a formula that includes a fixed base tax value per square meter depending on the structure and type of the building, a location coefficient based on territorial zoning, and other coefficients for infrastructure, individual characteristics, building height, and weathering. None of these components have been updated since 2009,² resulting in a significant gap between tax assessments and market prices of real estate. The latter have doubled across most of the country from 2015 to 2024, while in Sofia they increased 2.4 times.

² One of the few material changes in the Law on Local Taxes and Fees affecting the recurrent real estate tax since 2009 was a legal amendment stipulating that the tax assessment of properties owned by legal entities is the higher value between their book value and their tax assessment (2011).

Figure ES6. House price dynamics in big cities and gap between tax assessments and market prices in Sofia



Source: IME based on NSI (Bulgaria)

The gap between market prices and tax assessments of real estate averages 2.5–3 times, highlighting the urgent need to reform the current tax base-setting mechanism. In Sofia, where the real estate market is most dynamic, market prices exceed tax assessments 3.5–4.5 times, with the gap widening to 5–6 times in trendy areas with outdated location coefficients. While the gap in Sofia is the largest, other cities also show a substantial disparity, averaging 2.5–3 times and similarly widening in recent years. Real estate transactions involving mortgage-backed bank loans report higher average transaction prices, likely due to tax evasion in the absence of creditor scrutiny. In Sofia, for instance, the average value of mortgage-backed transactions is 3.5 times higher than tax assessments and 2.8 times higher for non-mortgage-backed deals. This suggests that the actual gap between market prices and tax assessments is most likely higher due to underreporting of transaction prices for tax evasion purposes.

Given the importance of recurrent property taxation for municipal revenue, the widening gap between tax bases and market prices calls for reform of the tax base setting mechanism. One approach would be to update certain elements in the existing tax assessment formula, particularly the tax base value and the outdated territorial zoning, which have not been updated for more than 15 years. Thereafter, a mechanism for regular update of those elements should be integrated into the legislation. Another option would be a more comprehensive reform that aligns the tax base with current

market values through a mass valuation system. Such a reform would not only increase local revenue but also promote fairness by ensuring that property taxes reflect true asset values.

The test models for mass market valuation in Bulgaria demonstrate significant potential for reliable and accurate valuation systems, although their performance varies by data source. This report presents the results of test mass valuation models for Bulgaria, using different data sources for market prices of real estate. The tested mass valuation model based on Registry Agency data performed poorly in identifying the determinants of property prices, likely due to potential data inaccuracies. In contrast, mass valuation modeling based on property asking prices appears to perform better. These models confirm the adequacy of coefficients in the current tax assessment formula, such as those for building material, infrastructure, and individual characteristics, as they satisfactorily reflect price differences in the current market. However, two policy challenges are evident from the tested mass valuation regressions: the tax base is significantly lower than actual market values, and zoning in several areas is outdated, failing to accurately reflect the current real estate market. If Bulgaria considers employing mass valuation models for tax assessments, this will require prior efforts to improve data collection, ensure quality control, and build a robust data infrastructure.

Vehicle taxation, another key source of municipal revenue, could be reformed to enhance revenue

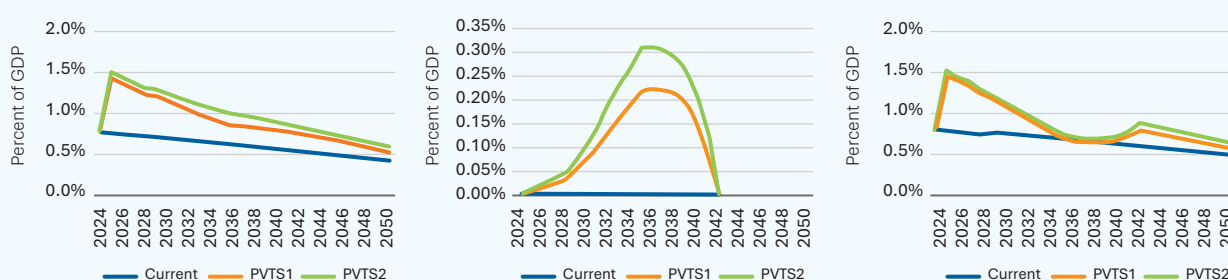
while enforcing the polluter-pays principle. Bulgaria ranks last in the EU in terms of average age of passenger vehicles (20 years) and is among the EU countries with the worst air quality and highest CO₂ emissions, with transport being a major contributor. The current vehicle tax system includes an environmental coefficient, but its range is too narrow to discourage the ownership of highly polluting vehicles. Moreover, the vehicle age factor in the tax formula rewards the oldest and most polluting cars, as its value is smallest for the oldest cars.

Introducing CO₂-based vehicle taxation would incentivize reducing emissions and modernizing Bulgaria's aging vehicle fleet while generating more revenue for municipalities. CO₂ emissions are used as a basis for vehicle taxation in 17 EU countries, with applicable CO₂ emission levels computed based on car specifications from manufacturers. This report explores transitioning to a CO₂-based scheme using two alternative model simulations that incentivize a shift to lower-emission vehicles, while also generating higher municipal revenue. The proposed taxation schemes involve a two-tier system, with a fixed environmental fee at vehicle acquisition and an annual ownership tax based on CO₂ emissions per kilometer. The sim-

ulations show that tax collection would improve under both schemes compared to the current scheme, starting in 2025 and remaining higher through 2050, even with increased tax incentives for e-vehicles and hybrids. Thus, such a vehicle tax system would generate additional revenue for local governments while contributing to national and EU environmental goals by encouraging the adoption of cleaner vehicles.

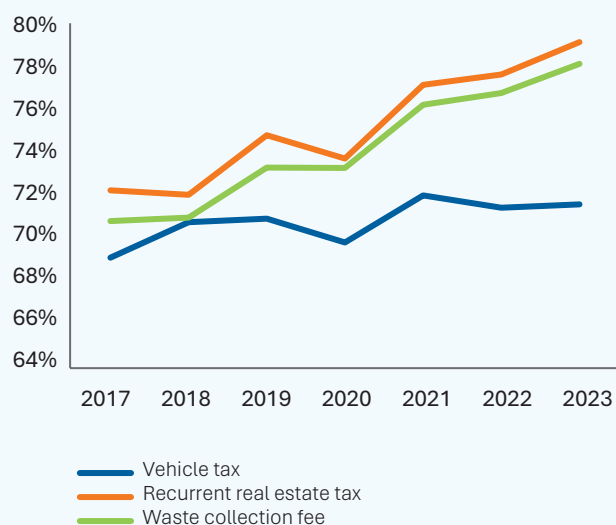
Local tax and fee collection could also be enhanced to strengthen own-source revenue. Despite a steady increase in average rates over the past decade, the average recurrent tax on immovable property remains less than half the maximum value of 4.5 per mil. Local authorities remain cautious about raising local taxes due to political considerations and the lack of 'incentives' in state transfers to increase rates. In addition to setting the incentives for local tax policy correctly, collection rates for key local taxes could be further improved. Even if collection has increased since 2017, there is notable consistency among good and bad municipal performers in terms of collection rates, which suggests that local circumstances—including administrative capacity and leadership—could also be at play.

Figure ES7. Potential CO₂-based schemes for passenger vehicle taxation for Bulgaria – gross tax revenues (left), tax expenditures from incentives (center), and net tax collection (right) on ownership across scenarios, 2024–2050



Source: Based on the results of the FTT Model Bulgaria

Figure ES8. Average collection rates for key local taxes and fees, %



Source: MoF

In parallel with strengthening municipalities' own-source revenues, the intergovernmental fiscal system could be optimized for greater equity and efficiency. A review of Bulgaria's transfer system suggests that the country has reached a stage where more fiscal autonomy could be considered. Increased revenue autonomy can be achieved through revenue sharing of a central government tax such as the personal income tax (PIT) and/or by allowing local authorities to impose a local PIT on top of the existing central government tax. To avoid compromising the tax effort on existing local taxes, higher revenue autonomy could be granted only to municipalities with tax effort above a certain threshold.

Bulgaria could also consider consolidating some of the current transfers to municipalities into a single, unconditional equalization transfer to streamline the transfer system. This consolidated transfer could be used for current spending and other needs, such as snow removal or some of the current delegated functions, such as culture, at the discretion of each local authority. Such a reform would provide municipalities with increased spending discretion, enabling them to allocate funds according to their priorities and needs. A simplified equalization transfer could be based on the fiscal gap approach, which nets expenditure needs and fiscal capacity. For this approach to work effectively, it is crucial that expenditure needs are estima-

ted objectively and comprehensively, while fiscal capacity is calculated in a way that does not disincentivize tax effort. In addition, the pool of budget resources for equalization should be based on a fixed formula, such as a share of central government revenue or selected taxes, ensuring predictability for municipalities.

Unplanned ad hoc grants can lead to inefficiencies and should be discontinued. These transfers, usually at the discretion of the central government, create a soft budget constraint and could lead to waste of resources. Therefore, they should be discontinued. Devolution, supported by an effective intergovernmental transfer system, should be able to cover all regular expenditure needs of municipalities, controlling for their fiscal capacity. Unexpected adverse events, including natural calamities, should be covered by the existing budget mechanism for disasters and accidents.

Large-scale capital investment programs for municipalities should be accompanied by robust selection, monitoring, and evaluation processes. If not designed well, large-scale investment programs, like the one launched in 2024, could lead to inefficient spending and low value for money. An effective municipal capital program should include a robust selection process with feasibility screening, as well as efficient monitoring and evaluation that go beyond financial reporting and technical documentation. In addition, a 'fairness' allocation criterion, such as a uniform funding ceiling based on municipal size, is recommended to avoid political favoritism of local authorities.

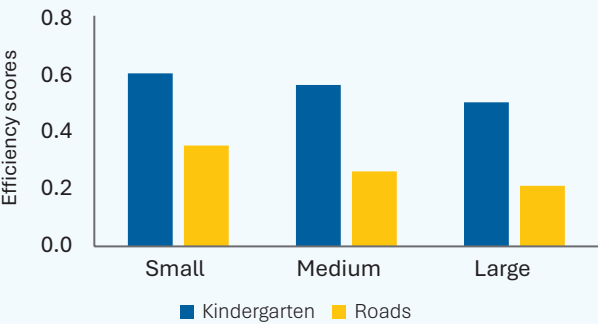
If existing transfers for delegated activities are to be retained, it is recommended to link them to performance metrics to ensure minimum standards of service quality and accessibility. Currently, these transfers are based solely on input measures, known as 'standards', which is entirely a cost-based approach. Although this approach aims to cover the estimated costs of service provision, it does not incentivize achieving value for money or maintaining minimum standards of quality and accessibility. Linking the amount of transfers to changes in objectively measured outcome or output indicators could help create the right incentives and ensure a minimum acceptable quality of public services.

The need for nationwide quality standards and performance-based financing is supported by the large variability in spending efficiency and suboptimal municipal service delivery. For example, in 2022, 58 percent of municipal roads were in poor condition, and one-third of municipalities reported an average grade of below 3 (‘fail’) in the standardized Bulgarian language test for seventh graders. The absence of nationwide service quality standards further exacerbates disparities across municipalities.

The unit costs for municipal services such as kindergarten care, waste management, and roads vary markedly, indicating scope for improving value for money in municipal spending. Larger municipalities benefit from economies of scale in waste management, while smaller ones face higher per-ton costs. Kindergarten costs are influenced by factors such as the number of children, with smaller municipalities spending more per child due to varying regional coefficients depending on the municipality’s group. Road maintenance costs also differ, with larger municipalities generally performing better at project planning and implementation. The unit cost analysis indicates significant scope for improving value for money in municipal expenditures, possibly through shared services—where municipalities collaborate for the provision of a service—or administrative agglomeration.

Efficiency analysis of municipal spending on kindergarten care and roads further confirms the

Figure ES9. Efficiency of spending per capita and municipal size

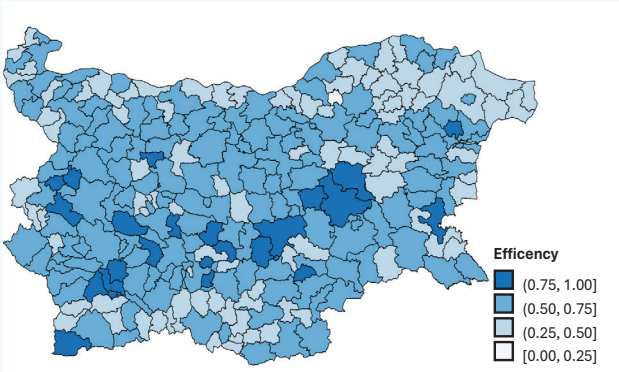


Source: Based on the World Bank’s BOOST fiscal database and NSI data

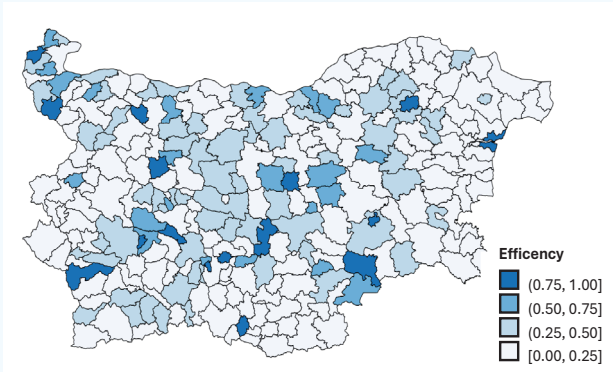
substantial room for improving spending efficiency. Data Envelopment Analysis (DEA) shows an average efficiency of around 56 percent for kindergarten spending, with larger municipalities like Plovdiv, Burgas, and Stara Zagora featuring higher efficiency, likely due to economies of scale. Aging populations and fewer kindergarten-age children correlate with lower efficiency. Road spending efficiency at the municipal level was estimated at an average of only 27 percent, indicating substantial room for improvement. Smaller municipalities generally show higher efficiency, but larger ones like Plovdiv and Varna also score well, suggesting that size is not the only factor for road spending efficiency. Regression analysis highlights that, in addition to population size, density and expenditure growth are linked with better efficiency.

Figure ES10. The efficiency of municipal spending on kindergarten care and roads

a. Geographical distribution of efficiency scores for municipalities: kindergarten care



b. Geographical distribution of technical efficiency at municipal level: roads



Source: Own estimates based on data from BOOST and NSI

Overall, a successful reform of local public finances would enhance local revenue autonomy while also optimizing the transfer system and improving spending efficiency. Municipal finances in Bulgaria can benefit from strengthening own-source revenue to enhance revenue autonomy while optimizing the intergovernmental fiscal transfer system for greater efficiency and equity. Real estate and vehicle taxation require reform of tax bases and environmental components, respectively, to help increase local revenue while also promoting the polluter-pays principle. A streamlined fiscal transfer system could consist of a consolidated equalization transfer based on the fiscal gap approach,

supplemented by a capital transfer to fund long-term infrastructure needs, and transfers for delegated activities tied to performance indicators. Capital transfers could be replaced by a well-designed capital investment program for municipalities, featuring robust project selection, monitoring, and evaluation mechanisms. Finally, spending efficiency should be encouraged by performance-based transfers, data-driven budgeting, public-private partnerships (PPPs), and improved cooperation among municipalities, such as shared services. Further decentralization can also boost efficiency, but it would require strong accountability structures, effective reporting systems, and horizontal control mechanisms.

Introduction

Municipalities in Bulgaria play a crucial role in local governance, public service delivery, and local development initiatives. The 265 local governments, governed by directly elected mayors and municipal councils for a four-year term, have self-governing powers, including the authority to manage their own budgets and make decisions on local matters. Municipalities are also responsible for implementing national policies at the local level and ensuring the well-being of their communities.

However, negative demographic trends have resulted in rapid depopulation of many municipalities. The number of municipalities whose population has fallen below the formal threshold for establishing a municipality—6,000 people—has grown rapidly, reaching 81 out of the 265 municipalities in 2023, or almost one-third of all municipalities. The main factor behind the rapid loss of population is internal migration to economically vibrant areas, as well as outward migration to more developed countries. This unwelcome trend has resulted in growing fragmentation and loss of fiscal and administrative capacity at the municipal level, which prevents many municipalities from successfully performing their designated functions and providing quality services.

Despite past efforts toward greater fiscal decentralization, Bulgaria's fiscal system remains highly centralized. The country's municipalities rely heavily on central government transfers due to limited revenue autonomy. Local revenues and grants make up 5–6 percent of general government revenue and grants, while local taxes account for about 3 percent of total tax revenue. At the same time, municipalities have significant expenditure responsibilities, as their expenses typically account for about 20 percent of general government spending. Given limited own-source revenues, most municipal spending is funded through central government transfers.

Over half of municipal spending goes to delegated activities—such as education, healthcare, and social assistance—funded by conditional transfers, over which municipalities have little autonomy or management control. Municipalities have minimal control over the use of these funds and are merely

required to pass them to the ultimate beneficiaries, such as schools and clinics. They also carry out local activities, including solid waste management, local street maintenance, certain social services, and various administrative and regulatory functions. These functions are financed through a combination of local own-source revenues and other central government transfers.

Financing constraints and capacity issues impede public service delivery, causing disparities in access and quality across municipalities. For instance, in 2022, 58 percent of municipal roads were in poor condition, while in June 2023, one-third of municipalities reported average scores below a passing grade in the national seventh-grade exam in Bulgarian language. These variations in outcomes are due not only to socioeconomic factors and horizontal systematic issues but also reflect structural fiscal constraints faced by smaller, less developed municipalities.

Against this backdrop, the report provides a comprehensive analysis of Bulgaria's local public finances, focusing on key challenges faced by municipalities and potential reforms. The report's goal is to provide a better understanding of local fiscal capacity, the system of intergovernmental fiscal transfers, and municipal spending and discusses possible policy options that can help strengthen municipal finances. More specifically, it seeks answers to the following key questions: How can municipalities boost their own-source revenue—with a focus on property taxes—to generate more resources for better and more equitable local service delivery? Is there scope to optimize the intergovernmental fiscal transfer system, particularly equalization transfers, to enhance efficiency and equity based on global best practices? How can local spending efficiency and effectiveness be improved to achieve value for money in municipal services?

In answering these questions, the analysis uses ample data, available at the municipal level. The data include granular municipal-level budget data, collected and kindly shared by the Ministry of Finance (MoF), statistical series compiled by the National Sta-

tistical Institute, other official data provided by state institutions (such as the Ministry of Interior and the Registry Agency), and scraped real estate offers from major online portals. As a municipal-level analysis in Bulgaria faces bigger data constraints compared to national-level studies, the scope of work had to adapt to these boundaries. These constraints were particularly stringent with regard to the spending efficiency analysis, where the limited availability of outcome or output indicators at the municipal level resulted in deep dives and Data Envelopment Analysis (DEA) on kindergarten care and road maintenance spending only.

The report develops novel simulations for potential reform of recurrent real estate and vehicle taxes that could serve as a stepping stone for future analytical and policy deliberations. Specifically, the report presents the results of two simulations—on real estate tax assessments and vehicle tax design—that yield promising results and could serve as the basis for future consideration by policy makers. For the former, a potential mass valuation model based on property offers and transaction data is simulated for setting tax assessments to closely track market trends. More specifically, the methodology employed a log-linear (multiplicative) regression model for each geographic test area to estimate relationships between property characteristics and sale price. For the latter, the simulations introduce a CO₂-based component in both the recurrent vehicle tax and the vehicle acquisition tax. The simulations were performed with the help of the Future Technology Transformations (FTT) model, which provides a framework for the diffusion of innovations and technological competition in markets.³ The simulations demonstrate that municipal revenue from vehicle taxation could be increased while also pursuing environmental goals by discouraging the acquisition and ownership of highly polluting cars and preserving tax benefits for e-vehicles.

This analysis follows in the steps of a national-level Public Finance Review (PFR) for Bulgaria. The na-

tional-level PFR, published in December 2023, provided a critical assessment of recent fiscal policy trends at the general government level and discussed possible measures for enhancing tax collection, improving the efficiency and effectiveness of spending, and ensuring long-term fiscal and debt sustainability. In this context, the Subnational PFR, launched in 2024, came as a natural follow-up analysis that used a magnifying glass on local public finances with the ultimate aim of better understanding the challenges that municipalities faced and how these could be addressed.

However, it is often difficult to disentangle local fiscal constraints from administrative capacity weaknesses, as the two can reinforce each other and render similar outcomes. Given that, analytical work on the Subnational PFR has been paralleled by a pilot World Bank Assessment of Municipal Capacities in Bulgaria, which uses administrative and survey-based data to present an impartial and in-depth diagnostic of local capabilities in key municipal functions: human resource management, revenue administration, and public investment. The pilot assessment of municipal capacities will be released shortly after the Subnational PFR, allowing for complementarities between the two analytical pieces and providing additional evidence for potential reform actions.

The report is structured around three chapters. Chapter 1 analyzes municipal revenues and fiscal capacity, with deep dives into real estate and vehicle taxation as key sources of local own-source revenue. Chapter 2 discusses intergovernmental fiscal relations, highlighting the main issues surrounding the overall architecture and the different types of transfers through the lens of good international practice. Finally, Chapter 3 provides an overview of municipal spending, with a focus on unit cost variability and spending efficiency across municipalities. All chapters put forward reform options that could help reduce horizontal fiscal imbalances, put local revenue on a sustainable footing, and make intergovernmental fiscal transfers more efficient.

³ FTT covers sectors such as power generation, road transport, and household energy consumption by sources. The FTT transport model, in particular, considers the heterogeneity of consumers in the vehicle market, which results in differences across countries in the choice of vehicles by size, fuel types, and other characteristics. The FTT model can represent the nonlinear behavior that characterizes the adoption of new products and technologies and the shifts in market demand and shares by types of products. Adoption rates in FTT transport (for example, the substitution of old for new cars) reflect evolving patterns of consumer behavior and are influenced by policies, including regulation and pricing, which, in turn, reflect the impacts of taxes and incentives such as those proposed in this document for Bulgaria. For more details, see World Bank. 2025. *Passenger Vehicle Taxation at Sub-National Level in Bulgaria: A Proposed Revised Taxation on Acquisition and Ownership Schemes Based on Vehicles' Carbon Dioxide Emissions*.

Chapter 1.

Municipal Revenue



1.1. Local fiscal capacity

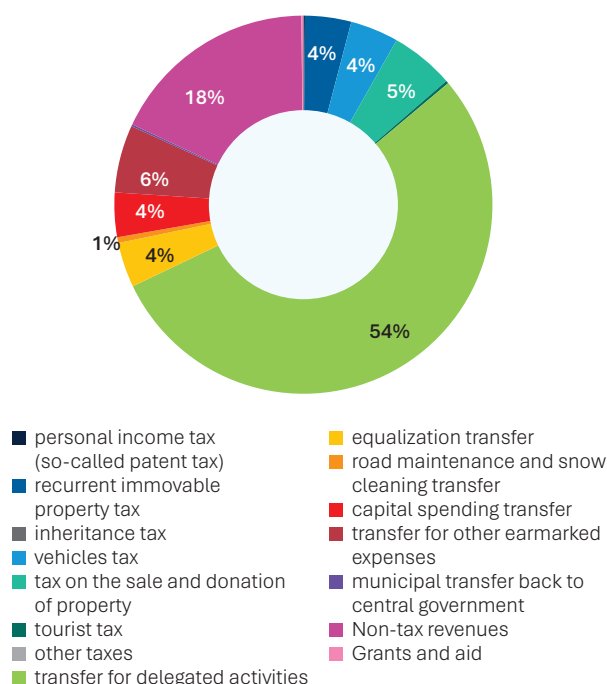
1. Bulgarian municipalities have limited revenue autonomy, with own-source revenue accounting for less than a third of local revenue.

The breakdown of municipal revenues shows that the biggest part of local revenue (54 percent in 2023) comes from central government transfers for delegated activities. These are public services delegated from central to local governments, but the state transfers all or most of the financing for them. Another 15 percent of local government revenue comes through other types of transfers from the central government, including equalization, capital spending, snow removal, and other earmarked expenses. Thus, a total of about 69 percent of local revenue is sourced from the central government via grants, limiting the revenue autonomy of local authorities. The remaining 31 percent is own-source revenue, with nontax revenue, including a waste collection fee, holding a dominant share. Tax revenue accounts for the rest, but only three taxes generate non-negligible revenue: a recurrent real estate tax (4 percent), a real estate transaction tax (5 percent), and a recurrent vehicle tax (4 percent).

2. Municipalities have become increasingly dependent on central government transfers in the last decade. Municipal expenditure has been on a stable upward trend over the past 10 years (2014–2023). At the same time, own-source revenues of municipalities have grown only marginally during this period, leading to their shrinking share in total municipal revenue (Figure 2). This suggests that local governments have gradually become more dependent on central government transfers to meet their expenditure needs and responsibilities.

3. The discretionary revenue of municipalities averages less than 40 percent of their budgets, limiting their spending flexibility. In 2023, discretionary revenues, including tax revenue, nontax revenues, equalization, and capital spending transfers, accounted for just 39 percent of total municipal revenue. Of this, 18 percentage points are

Figure 1. Municipal revenues, % of total



Source: MoF, 2023 Budget Execution Report

own-source nontax revenues (mainly the quasi-tax waste collection fee⁴), and 13 percentage points are tax revenue, making total own-source revenue about 31 percent of all local government revenue. Central government transfers for delegated functions make up more than half of municipal revenues (54 percent in 2023). The remaining seven percent comes from transfers for earmarked expenses and snow plowing.

4. Tourist and mining municipalities exhibit stronger fiscal capacity and autonomy. Even if on average, municipalities in Bulgaria exhibit limited revenue autonomy, own-source revenues are relatively high in tourist and mining jurisdictions. The highest shares of own revenue are reported in the seaside tourist municipalities of Nessebar (71 percent in 2023) and Sozopol (56.9 percent) as well as in the mining town of Chelopech (67.4 percent). This

⁴ It is perceived as a quasi-tax because it is based on the tax base percentage, not the actual cost of waste collection and management.

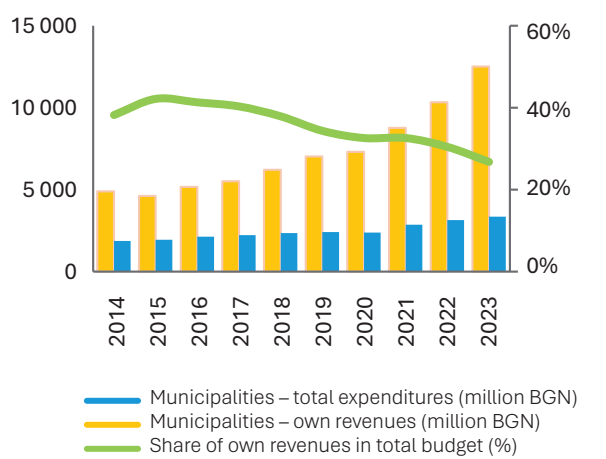
reflects a more active real estate market in tourist municipalities, which leads to higher proceeds from real estate transaction taxes and concession revenues in mining regions. Major economic centers like Sofia (42.2 percent), Varna (37.6 percent), and Burgas (33.5 percent) also generate substantial own revenues. These municipalities have high local own-source revenue-to-expenditure ratios, indicating strong fiscal autonomy. Nationally, 74 percent of local activities were funded by municipalities' own revenues, with some jurisdictions covering over 100 percent of local expenditures, such as Sofia (111.6 percent), Pleven (111.5 percent), and Chelopech (109.5 percent).

5. Municipalities’ own-source revenues are dominated by nontax revenues, with the waste collection fee accounting for 40 percent of all non-tax revenues. The share of tax revenues fell from 46 percent in 2021 to 42 percent in 2023, reflecting a faster rise in nontax revenues and the limited potential for tax revenue growth, despite the property market boom. Municipal tax revenues grew by 2–4 percent in 2022 and 2023. More significant

growth occurred in 2021, driven by the recovery from the pandemic and an increase in property acquisition taxes in many municipalities, including Sofia.

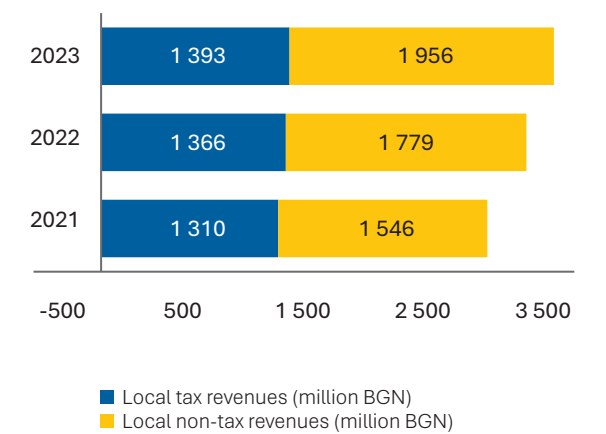
6. Over 95 percent of municipalities’ own-source tax revenue comes from real estate tax, transport vehicle tax, and property acquisition tax. The importance of the real estate tax has steadily diminished in recent years due to a disconnect between its tax base and market trends. As a result, revenues from recurrent property taxation now lag significantly behind those from property acquisition and vehicle taxation. The strong growth in property acquisition tax revenue in recent years was driven by tax rises and a booming property market, particularly in the capital. This tax is linked to the contractual sales price, while real estate tax is based on a static administrative tax assessment, lacking market-linked or automatically indexed elements. The modest growth in recurrent real estate tax revenues can generally be attributed to regulatory weaknesses.

Figure 2. Financial independence of local governments in Bulgaria (2014–2023)



Source: IME based on MoF (Bulgaria)

Figure 3. Tax and nontax revenues in local budgets (BGN millions, 2021–2023)



Source: MoF

1.2. Bulgaria's local revenue in a regional perspective

7. Bulgaria's local public sector is relatively small compared to the European Union (EU) average. In 2023, local government revenues, including state transfers and EU funds, were 7.7 percent of gross domestic product (GDP), compared to the EU-27 average of 10.8 percent. Bulgaria trails behind most Central and Eastern European (CEE) countries; for instance, in the Czech Republic, Poland, and Croatia, local government revenues reached 13 percent of GDP in 2023. Only Greece (3.9 percent) and Hungary (5.8 percent) ranked lower. Bulgaria's highest share was 9.4 percent in 2015, driven by the absorption of EU funds and record-high local capital investments at the end of the EU 2007–2013 programming period.⁵

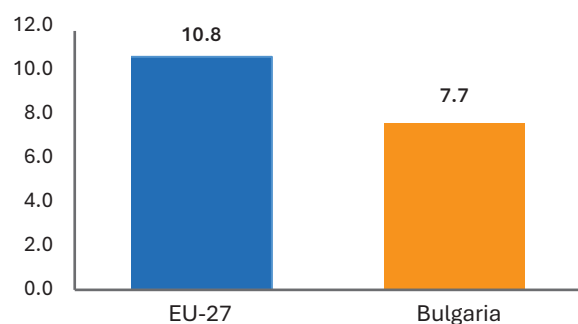
8. Bulgaria's fiscal system remains highly centralized on the revenue side. In 2023, local government revenues accounted for 21 percent of total government revenues, compared to 23.8 percent for the EU-27 and between 25 and 33 percent for CEE countries. Only Greece and Hungary rank substantially below Bulgaria. The data highlight Bulgaria's lower fiscal space at the local level compared to both the EU average and most CEE countries. Despite past efforts toward fiscal decentralization, Bulgaria's municipalities (classified as NUTS-4 level by Eurostat) remain financially dependent on the central government, with the majority of local revenues coming from state transfers for delegated activities, while tax receipts represent a tiny fraction of the local budget.

9. Local government units (LGUs) have limited fiscal autonomy in comparative perspective. Local tax revenues stood at 0.8 percent of GDP in 2023, compared to 3.7 percent for the EU-27. Over the past decade, local tax revenues have consistently remained below 1 percent of GDP. The tax bases for key sources of local tax revenue, such as recurrent real estate and vehicle taxes, are not market based and hence not influenced by increases in prices. Regionally, Bulgaria lags behind countries like Latvia, Croatia, Poland, and Hungary, where local tax revenues range from 2 to 6 percent of GDP, but it is on par with Greece and Romania (0.7–0.9 percent of GDP).

10. Taxes on immovable property generate less revenue in Bulgaria than the CEE average, but local governments are more dependent on them. In Bulgaria, revenues from taxes on land, buildings, and other structures represent 0.22 percent of GDP versus 0.77 percent for EU-27. Within CEE, revenues from these taxes range from 0.1 to 0.7 percent of GDP, with Poland, Latvia, and Croatia at 0.6–0.7 percent. Bulgaria's LGUs appear more dependent on these taxes than those in the average CEE country. They account for 28.7 percent of local tax revenue, higher than the EU-27 average of 20.5 percent. In CEE, this dependency ranges from 10–12 percent in Latvia and Croatia to around 70 percent in Slovenia and Slovakia.

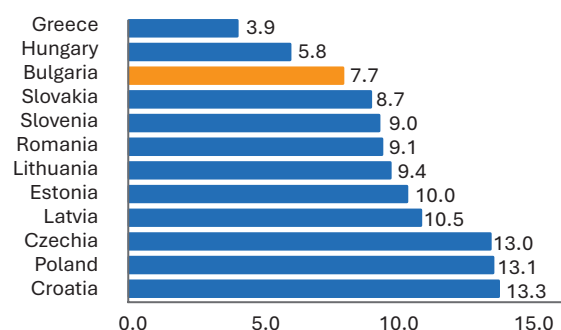
⁵ This is primarily due to the N+2 rule, which allows payments up to two years after a programming period ends, so funds from 2013 could be paid until 2015. Due to Bulgaria's delays in absorbing EU funds, most payments occurred late, mainly in 2015.

Figure 4. Local government revenues in Bulgaria and EU-27 (% of GDP, 2023)



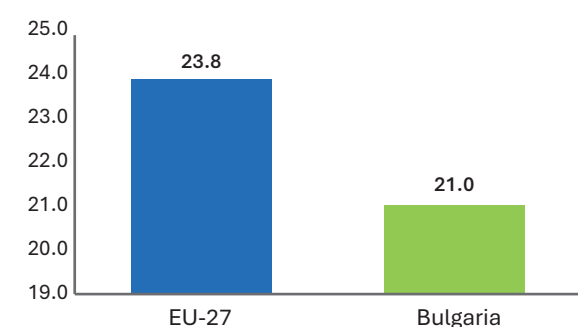
Source: Eurostat

Figure 5. Local government revenues in CEE countries (% of GDP, 2023)



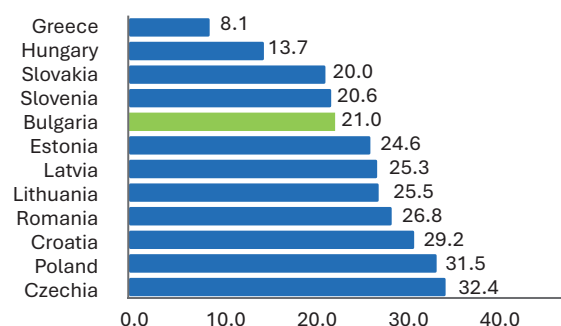
Source: Eurostat

Figure 6. Local government revenues in Bulgaria and EU-27 (% of total general government revenues, 2023)



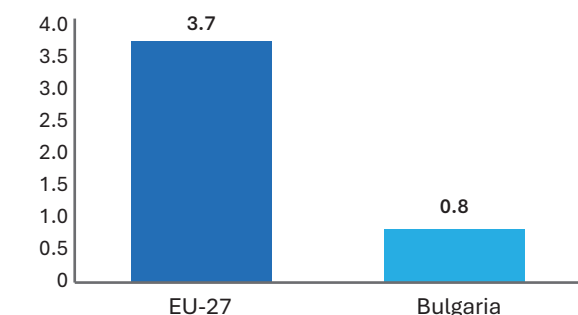
Source: Eurostat

Figure 7. Local government revenues in CEE countries (% of total government revenues, 2023)



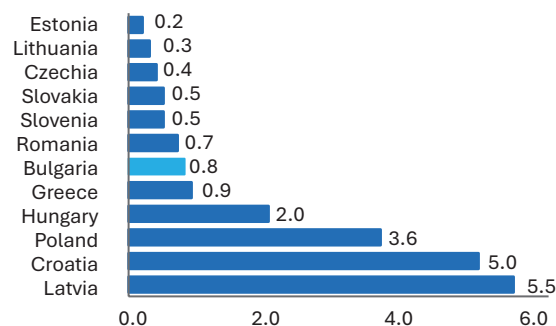
Source: Eurostat

Figure 8. Local government total tax receipts in Bulgaria and EU-27 (% of GDP, 2023)



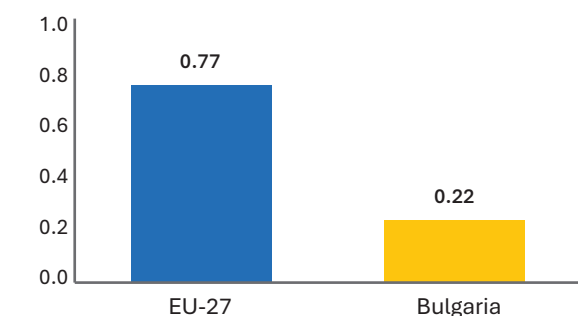
Source: Eurostat

Figure 9. Local government total tax receipts in CEE countries (% of GDP, 2023)



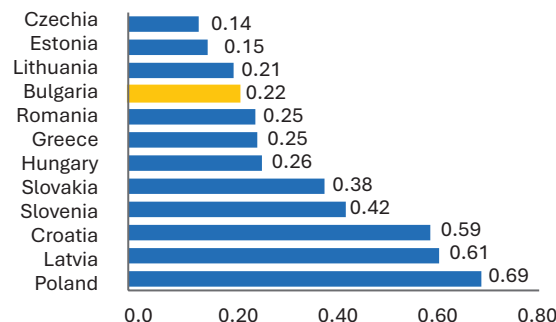
Source: Eurostat

Figure 10. Revenues from taxes on land, buildings and other structures in Bulgaria and EU-27 (% GDP, 2023)



Source: Eurostat

Figure 11. Revenues from taxes on land, buildings and other structures in CEE countries (% GDP, 2023)



Source: Eurostat

1.3. Regulation of local taxes and fees in Bulgaria

11. The Local Taxes and Fees Act assigns eight taxes to municipalities. Local governments collect the following taxes: (i) recurrent tax on immovable property; (ii) inheritance tax; (iii) donations tax; (iv) tax on the purchase of immovable property; (v) vehicle tax; (vi) patent tax; (vii) tourist tax; (viii) tax on taxi transport of passengers. Bulgarian municipalities do not collect a share of income taxes, unlike other EU countries such as Poland, Croatia, and Latvia. The act allows for the imposition of other taxes beyond those explicitly mentioned, but new legal texts need to pass through parliament for this to happen. Moreover, the act limits the range of tax rates that municipalities can impose.⁶ However, only three of the eight taxes generate non-negligible revenue: recurrent property tax, property transfer tax, and vehicle tax, each contributing about 3–5 percent of total municipal revenues in 2023. The other taxes yield marginal revenues due to low rates and substantial evasion. For instance, the tourist tax is low at BGN 0.2 to 3 per night, and many establishments evade it by not registering as tourist accommodations or not reporting all guest stays.

12. Municipalities also collect fees, but only the waste collection fee contributes significantly to revenues. According to the law, municipalities may charge fees for services such as waste collection, social care homes, camping sites, the use of markets, administrative services, quarry extraction, and the purchase of graveyard plots. Local councils set the rates for these fees, but only the waste collection fee generates non-negligible revenue.

13. The waste collection fee in Bulgaria does not fully adhere to the ‘polluter pays’ principle. In most municipalities, it functions as a quasi-tax, set as a percentage of the property’s tax value, regardless of whether the property is occupied or the amount of waste it generates. Legal entities can voluntarily pay the fee based on waste volume and the frequency of waste collection. However, there are no statistics on how many opt for this mechanism or the proportion of fees collected based on real estate tax assessment versus volume. In Sofia, a significant number of companies have opted for the volume-based fee, with around 5,000 companies having chosen this option by November 21, 2024, for 2025. Companies can also procure waste collection/recycling services directly from private operators, in which case they do not owe a waste collection fee to the municipality.

14. A new EU-compliant methodology for setting waste collection fees, based on the ‘polluter pays’ principle, is expected to take effect from the start of 2026. This methodology was initially set to replace the current fee-setting approach in 2025 but was postponed by the parliament due to concerns about the increased burden on households. According to survey information collected by the Association of Municipalities in Bulgaria for 2024⁷, about 58 percent of the revenues from the waste collection fee are paid by legal persons, with the rest generated by households. The new methodology is anticipated to shift this toward a higher contribution from households.⁸

⁶ For instance, the recurrent tax on immovable property can be between 0.1 and 4.5 per mil of the property tax value. Similarly, the inheritance tax can be set between 0.4 and 0.8 per mil for next of kin, and between 3.3 and 6.6 per mil for more distant relatives. The tax on the purchase of immovable property can vary between 0.1 and 3 per mil of the tax value of the property.

⁷ <https://www.namrb.org/bg/aktualno/us-na-nsorb-obsadi-traditsionniya-analiz-na-stavkite-na-mestnite-danatsi-i-taksi-za-2025-g-17357>.

⁸ Under the new legislation, municipalities can choose one of three approaches to setting the fee base from 2026: (1) based on individual, pre-purchased garbage bags of fixed volume; (2) based on the volume of garbage cans; or (3) based on the number of users of the property.

1.4. Key local tax rates and fees: trends and collection

15. Over the last decade, local tax rates have gradually but steadily increased.⁹ For example, the average tax on real estate property owned by legal entities increased from 1.80 per mil in 2015 to 2.15 per mil in 2024. Despite this trend, both the average and mean local recurrent tax on immovable property remain less than half the maximum value of 4.5 per mil. In 2024, the average tax on properties of legal entities was 2.15 per mil, while the mean

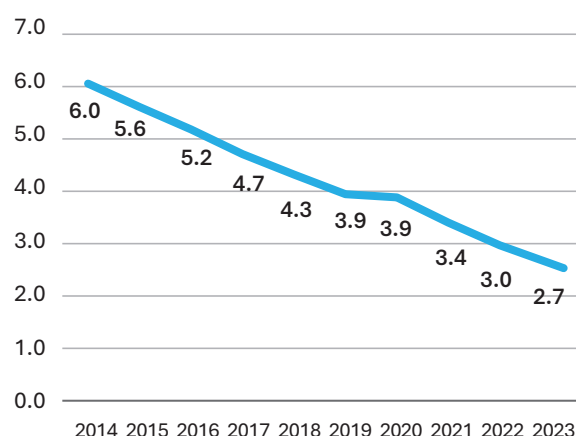
was 2.20 per mil. Only eight municipalities have increased the tax rate to the maximum, mostly tourist or industrial municipalities. Moreover, only 66 out of 265 municipalities have set rates in the higher range of 3 per mil and above.¹⁰ Local authorities are cautious about raising local taxes due to concerns about the tax burden on local populations and the lack of ‘incentives’ in state transfers to increase rates.

Figure 12. Dynamics of tax rates of key local taxes, 2015–2024



Source: Local tax database at Regional Profiles: Indicators of Development, Institute for Market Economics

Figure 13. Share of local tax revenues as percent of total general government tax revenue, %



Source: MoF, consolidated budget statistics

16. Despite these increases, local taxes account for a declining share of total tax revenues. In 2023, municipal tax revenues accounted for 2.7 percent of total general government revenue, less than half their share in 2014. This decline is due to the invariable tax bases of key local taxes, such as the recurrent real estate tax and vehicle taxes, resulting in a gradual erosion of the role of local taxes in state revenue collection and shrinking local fiscal capacity.

17. However, local tax collection has shown improvement in recent years. The collection rates for the annual vehicle tax, recurrent immovable property

tax, and waste collection fee have increased since 2017. This improvement is more notable for the real estate tax and the quasi-tax waste collection fee, which often share a common tax/fee base. The collection rate of the real estate tax rose from 72 percent in 2017 to 79 percent in 2023, while the waste collection fee grew from 71 to 78 percent. The annual vehicle tax collection rate also improved modestly over the same period. The waste collection fee uses the tax assessment of the property as its base for the entire household sector and companies that have not opted for a trash can (quantity) base of the fee.

⁹ Mean values are typically close to the averages for the four key local taxes—recurrent real estate tax, patent tax, vehicle tax, and real estate transactions tax—and show a similarly consistent upward trend.

¹⁰ See 265obshtini.com.

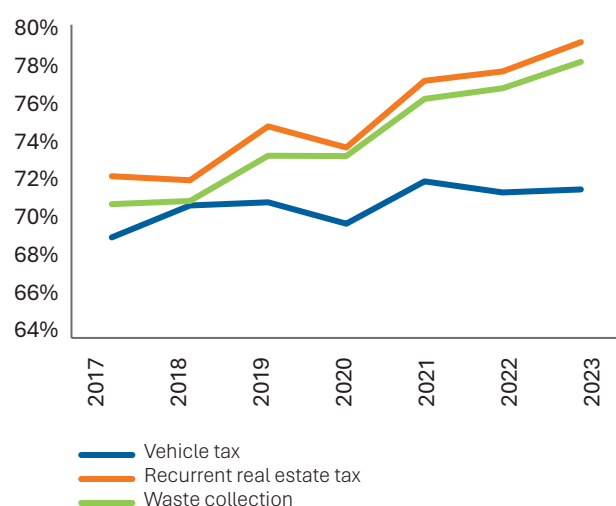
18. Local real income growth, technological upgrades, and increased efforts by local administrations have contributed to higher collection rates (Figure 14). The stable increase in real incomes over the period made real estate taxes and waste collection fees more affordable due to the nominally unchanged tax base. Conversations with representatives from high-collection municipalities (Krichim, Stara Zagora, Veliko Turnovo) revealed additional factors: (i) automatic emailing of real estate transaction updates and new owner information from the Registry Agency and notaries to local authorities, introduced as legal requirements since 2015 and 2019, respectively; (ii) access to the Cadaster Agency's data on heirs of real estate property; (iii) increased use of (reportedly) efficient private bailiffs for collecting tax and fee liabilities.

19. Insolvent companies and the cost of collection that exceeds tax collectibles are key reasons for below-average collection rates. Interviews with municipalities featuring below-average collection rates (for example, Lovech) and the National Association of Municipalities in the Republic of Bulgaria (NAMRB) indicate two main issues: insolvent companies registered in the municipality, where insolvency procedures are incomplete, and numerous small liabilities that are not cost-effective to collect as the

cost of collection exceeds the tax due. The latter issue is particularly relevant in small, less developed settlements with low property tax assessments, resulting in minimal tax values. Furthermore, the collection of small dues is hindered by the difficulty in locating many heirs, especially if they are living abroad.

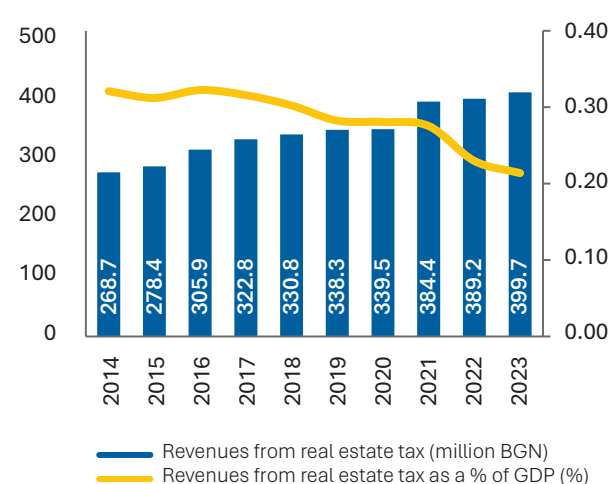
20. There is notable consistency among good and bad performers in terms of collection rates for the real estate tax, the vehicle tax, and the waste collection fee. Municipalities with high collection rates for one revenue source tend to have high rates for the others as well. Collection rates for each tax or fee remain within a narrow range annually. For example, Tsar Kaloyan, a poor performer, had vehicle tax collection rates between 29.5 and 43.7 percent and ranked 9th from the bottom with its average collection rate for the waste management fee during 2017–2023. Factors such as insolvency, numerous small tax arrears, and administrative capabilities contribute to these patterns.¹¹ Among the 20 worst performers for each revenue source, five municipalities¹², all small and located in the underdeveloped Northwest region, consistently rank in the bottom 20 for all three sources. Conversely, some others, like Krichim and Stara Zagora, perform well across multiple revenue sources.

Figure 14. Average collection rates for key local taxes and fees, %



Source: MoF

Figure 15. Local revenues from recurrent real estate tax in Bulgaria (BGN millions and % of GDP, 2014–2023)



Source: IME based on NSI and MoF (Bulgaria)

¹¹ Administrative capabilities at the municipal level are the subject of a separate dedicated World Bank study on Bulgaria.

¹² The five municipalities are Boychinovtsi (1,421 people), Ruzhintsi (798), Brusartsi (995), Yakimovo (1,695), and Makresh (445).

21. Collection rates could be influenced by local circumstances, administrative capacity, and local proactivity. The strong correlation between real estate tax and waste collection fee collection rates is expected due to their shared tax base. However, the correlation with vehicle taxes suggests other factors at play, such as economic conditions

(income levels, job opportunities), administrative capacity, and local proactivity, including innovative tax collection methods. Local authorities' proactive measures, such as employing forced collection through bailiffs and writing off arrears after the 10-year statute of limitations, also contribute to variations in collection rates.

1.5. Special focus: Real estate and vehicle environmental taxation

1.5.1. Recurrent real estate property tax: key challenges and reform areas

22. Local revenues from recurrent real estate tax reached BGN 400 million or 0.22 percent of GDP in 2023. While revenues have been growing in nominal terms, as a result of expanding real estate market and higher taxation, they have been declining as a share of the economy and local property taxes. Real estate tax fell from 0.32 to 0.22 percent of GDP between 2014 and 2023, and its share in total property tax revenues dropped from 38.9 to 29.5 percent. This trend is likely to continue without policy changes, due to regulatory limitations related to tax assessments and faster growth in property acquisition tax revenue as a consequence of market dynamics.

23. Property tax yields are notably low, especially in smaller municipalities. This appears to be mostly due to the legislation governing the tax, particularly the method for setting tax bases. According to the law, property tax is imposed on land and buildings within urban areas of each municipality. Property owned by enterprises is assessed based on either its book value or its tax assessment—whichever is higher. For residential buildings, assessments are based on a formula that sets a basic amount per square meter (in lev) with adjustments for construction materials, age, condition, and amenities. The law also includes numerous exemptions and reductions, such as taxing the main residence of owner-occupied properties at 50 percent of its assessed value and exempting residential properties that have a tax assessment of up to BGN 1,680 (EUR 859). All these shrink the tax base and lead to foregone revenue for municipalities.¹³

¹³ According to a survey conducted by the National Association of Municipalities in the Republic of Bulgaria in early 2024, the total amount of lost revenue from recurrent real estate taxes for municipalities in 2023 due to various tax deductions, preferences, and exemptions was, on average, 29 percent of the revenue collected by the respondents. For more information, see <https://www.namrb.org/bg/aktualno/nad-110-mln-leva-danatchni-oblektcheniya-i-otstapki-sa-predostavili-obshтините-prez-2023-g>.

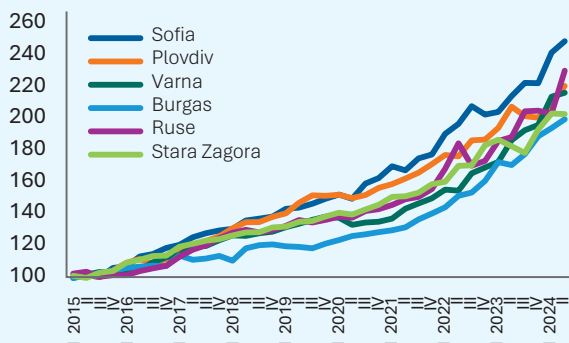
Box 1. Housing market dynamics in Bulgaria

In recent years, real estate prices in Bulgaria have steadily increased. By 2024, house price indexes in the six leading cities reached between 200 and 240 (2015 = 100). Prices doubled across most of the country from 2015 to 2024, while in Sofia, prices increased 2.4 times. This rise in prices, including significant growth post-pandemic, is not reflected in property tax assessments, which are based on purely administrative indicators.

As of Q2 2024, the average market price for housing in Sofia reached BGN 3,854 (EUR 1,970.5) per

m². This estimate is based on NSI data on market prices of properties in Sofia and indexes of house prices from 2015–2024. While it took 7–8 years for the real estate market to recover from the 2008–2009 crisis, market prices in Sofia have risen significantly since 2015, especially post-pandemic. However, tax assessments of apartments in Sofia have not changed since 2009, lagging substantially behind market prices. IME estimates show that the highest tax assessment in Sofia is BGN 1737 per m², half the average market price in 2024.

Figure 16. House price indexes in the top six cities in Bulgaria (2015–2023)



Source: IME based on NSI (Bulgaria)

Figure 17. Average housing market prices in Sofia (BGN per m²)



Source: IME based on NSI (Bulgaria)

24. Average revenues from recurrent real estate taxes are BGN 62 (EUR 31.7) per person, but these figures vary widely across municipalities. For instance, Nessebar generates BGN 502 per person, while Satovcha only BGN 3.9 per person. Over half of the municipalities (142) have revenues between BGN 20 and BGN 100 per person, and 106 municipalities have below BGN 20, mostly those with populations under 20,000. Seventeen municipalities, mainly resorts or industrial areas, reported revenues above BGN 100.

25. Tax assessments are generally much lower than the actual market value of real estate. Tax bases have remained unchanged since 2009, resulting in a substantial divergence between book values and market values. This gap has widened considerably during periods of real estate market booms, as the tax base has not been updated to reflect current market conditions (see Box 1).

Box 2. Property tax assessment: status quo

The property tax assessment under the law is entirely an administrative process. It depends on the area of the property and is based on (1) a fixed base tax value determined per square meter depending on the structure and type of the building; (2) a location coefficient determined for various tax zones in every municipality—zoning is decided at the local level; and (3) other coefficients for infrastructure, individual characteristics, height of the building, and weathering. The assessed value of any building or part of a building is calculated using the base tax value per square meter, various adjustment coefficients, and the area of the building or part thereof under the following formula:

$$AV = BV * Cl * Ci * Cc * Ch * Cw * S$$

where:

AV is the assessed value in leva;

BV is the base tax value per 1 m² in BGN;

Cl is a location coefficient;

Ci is a coefficient for infrastructure;

Cc is a coefficient for individual characteristics;

Ch is a coefficient for height;

Cw is a coefficient for wear and tear;

S is the area of the building or part thereof in m².

The value of the tax assessment mainly depends on the BV component, the base tax value, and the location coefficient. The location coefficient plays a crucial role, as it differentiates the tax base among different municipalities and among the various tax zones within municipalities (zoning is decided at the local level). A key limitation of this model is that it lacks a dynamic component linked to the real estate market. With all the components being fixed in the law, tax assessments are static and have not changed for decades. The current formula does not allow for automatic adjustment or indexing of components, meaning that a change in the tax assessment requires a change in the law or potentially in the zoning at the local level.

26. The gap between market prices and tax assessments of properties is substantial, estimated to be 3.5–4.5 times on average in Sofia. The analysis in this section is based on data on current market price offerings and tax base assessments of various properties in Bulgaria (see Annex 1 for details). This gap has widened rapidly in recent years. For high-end properties in the same zone, the market price is typically 4.0–4.5 times higher than the tax assessment, while less expensive areas show a difference of around 3.5 times. The gap could rise to 5–6 times in ‘trendy’ market areas, which fall in zones with lower tax assessments (like Mladost 3 in Sofia, which falls in Zone 4).

27. The comparison between market prices and tax assessments in other Bulgarian cities also reveals significant differences. While the gap in Sofia is the largest, other cities show a substantial disparity as well, averaging 2.5–3 times and similarly widening in recent years. In Varna and Stara Zagora, the difference is closer to 2–2.5 times, whereas in Burgas and Plovdiv, it is higher at 3–3.5 times. This discrepancy could be explained by the outdated ranking of the four biggest cities (after

Sofia) in their tax assessments, not accounting for recent developments and property market booms in lower-ranking regions. In tourist areas by the seaside, like Tsarevo, the gap can be as high as four times due to a less favorable location coefficient.

28. An alternative approach to estimating the gap largely confirms these findings. Using official data from the Registry Agency (July 2022–September 2024), it was observed that market values significantly exceed tax assessments. Notably, real estate transactions involving mortgages report higher average prices, likely due to tax evasion in the absence of creditor scrutiny. In Sofia, the average value of mortgage-backed transactions (6-month moving average for April–September 2024) is, on average, 3.5 times higher than tax assessments and 2.8 times higher for non-mortgage deals. In Varna and Plovdiv, the gap was 3.2–3.3 times for mortgage-backed deals and 2.5–2.8 times for non-mortgage deals. Stara Zagora shows a smaller difference of 1.7–2.2 times, consistent with earlier findings due to its relatively high but outdated location coefficient.

29. A tested mass valuation model based on Registry Agency data performed poorly in identifying the determinants of property prices. Preliminary regression analyses were conducted using the full Registry Agency transaction data from 2022 and 2023, along with price listings, to explain the variation in sales prices with certain property characteristics. This exercise explored the feasibility of a mass market valuation in Bulgaria to replace the current administratively set tax assessments. Despite a comprehensive dataset, the models explained only 5–30 percent of sales price variations. This limited explanatory power may be attributed to several factors, including potential data inaccuracies or lack of key variables that could reflect property price determinants.

30. In contrast, mass valuation modeling based on property asking prices performs better and confirms the adequacy of coefficients in the current tax assessment formula. Residential property listing data was collected from various websites, representing asking prices rather than final transaction prices, yet still offering valuable insights into the overall feasibility of modeling Bulgarian real estate prices.¹⁴ Regression-based results indicate that most coefficients in the current tax assessment model—such as those for building material, infrastructure, and individual characteristics—are mostly adequate for reflecting price differences in the current market. In addition, the location coefficient allows municipalities to properly differentiate tax assessments. However, two policy challenges are evident from the mass valuation regressions: the tax base is significantly lower than actual market values, causing tax assessments to lag, and zoning in some areas, such as Sofia, is outdated, failing to accurately reflect the current real estate market.

31. The test models for mass market valuation demonstrate significant potential for reliable and accurate valuation systems, although their performance varies by data source. Improving data collection, quality control, and applying best practices—such as automated valuation models (AVMs), geographic information systems (GIS), and advanced modeling techniques—can enhance model performance. Establishing a dedicated team for data quality management and building a robust data infrastructure are essential for a reliable mass valuation system.

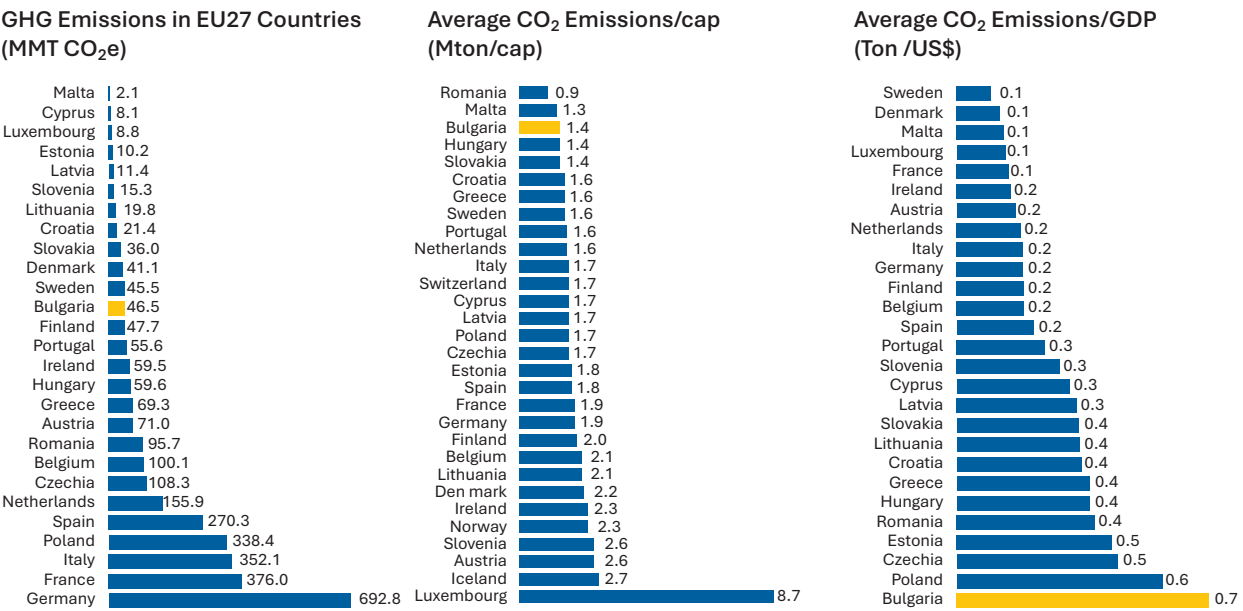
1.5.2. Environmental taxation at the local level

32. Recurrent vehicle taxation plays an important environmental role beyond its fiscal impact. It is a key source of own-source revenue for municipalities and includes an environmental component aimed at broader national environmental goals, as transport is a major emitter of greenhouse gases (GHGs). With transport emissions on the rise, this report explores options for optimizing vehicle taxation to generate more local revenue and strengthen the ‘polluter-pays’ principle.

33. Bulgaria’s vehicle taxation consists of property and environmental components. The recurrent vehicle property tax includes a property component and an environmental coefficient, which adjusts the property component to determine the total vehicle tax due. For passenger cars and small cargo vehicles (up to 3.5 tons), the environmental coefficient ranges from 0.4–0.6 for Euro 6 standards to 1.1–1.4 for Euro 1 or 2 standards (or no recorded standards). Vehicle taxes on motorbikes, buses, and large cargo vehicles (above 3.5 tons) are reduced by 20–60 percent for higher Euro standards (Euro 4 and above). Electric vehicles are exempt from vehicle taxes.

¹⁴ See Annex 2 for details on data and methodology.

Figure 18. GHG emissions in Bulgaria and the EU, total, per capita, and per unit of GDP, 2022



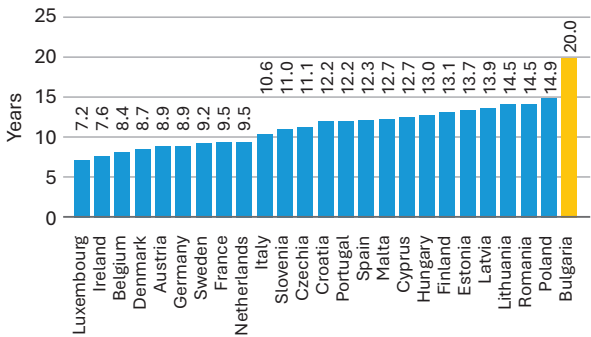
Source: GHG emissions are from Climate watch (CAIT) dataset; Transport and fuel emissions are from Eurostat; Population data are from World Bank, World Development Indicators.

34. The current design of the car-age coefficient in the vehicle tax's property component undermines environmental objectives. By law, this coefficient—which multiplies the property component of the vehicle tax—ranges from 1.1 for the oldest vehicles (20 years) to 2.3 for those less than 5 years old, effectively rewarding older, more polluting cars. This approach aims to make the tax burden socially bear-

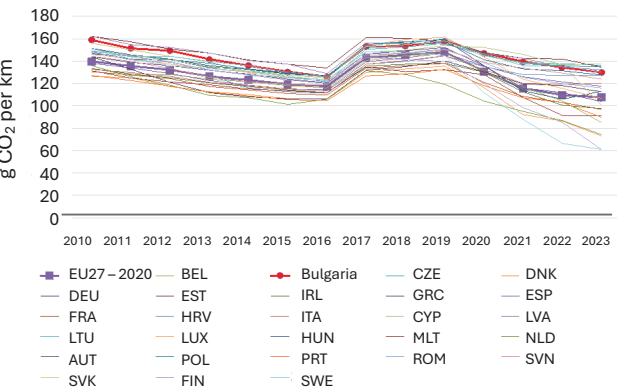
able, allowing less affluent individuals to afford older, cheaper cars. Yet, if environmental goals are prioritized, the age-linked coefficient could be removed or modified to incentivize ownership of newer, cleaner cars. Alternatively, local authorities could be empowered to set age coefficient rates based on local circumstances, such as potentially higher rates for older cars in high-pollution areas like the city of Sofia.

Figure 19. EU-27: Average age of vehicle stock (2022) and average CO₂ emissions in the EU

Average Age of Vehicle Stock, 2022



Average CO₂ Emissions, 2010-2023



Source: Based on European Environmental Agency (EEA)

35. The environmental component of the recurrent vehicle tax can be enhanced to better enforce the polluter-pays principle. With rising transport emissions and Bulgaria's passenger vehicle fleet being the oldest in the EU (averaging 20 years), there is potential to strengthen green taxation at the local level. Given the country's poor environmental outcomes—in terms of industrial carbonization, energy intensity, air pollution, and pollution-related premature deaths—such a policy could incentivize pollution reduction and promote a greener transport fleet. Furthermore, stronger green taxation could generate essential revenue for local authorities to invest in development goals.

36. A possible path forward for Bulgaria is to implement vehicle environmental taxation based on CO₂ emissions. This approach would align with the EU-27's GHG mitigation commitments and offer several benefits. Empirical studies indicate that carbon market-based mechanisms in the transport sector create price signals that encourage a shift to lower emission systems (Mercure et al. 2021¹⁵). A CO₂-based environmental component in vehicle taxation would help Bulgaria contribute to EU mitigation goals and increase municipalities' own financing resources.

37. CO₂ emissions are used as a basis for vehicle taxation in many EU countries. Seventeen EU member states use CO₂ emissions for vehicle taxation. Applicable CO₂ emission levels are computed based on car specifications from manufacturers, which are influenced by vehicle weight. The Worldwide Harmonized Light Vehicle Test Procedure (WLTP) laboratory test, as defined by EU law, is used to measure fuel consumption, CO₂ emissions, and pollutant emissions.

38. A potential CO₂-linked tax in Bulgaria needs to be consistent with the country's socioeconomic fundamentals and create incentives for transport decarbonization. The report explores transitioning to a CO₂-based scheme using model simulations. The revised scheme should not lead to a reduction in tax collection from passenger vehicles or involve any intervention that decreases net tax collection at

any government level. It needs to incentivize a shift to lower-emission vehicles by establishing a differential tax on vehicles linked to CO₂ emissions. Furthermore, it should encourage the removal of old vehicles and the acquisition of newer, lower-emission ones. Finally, the scheme should not create incentives that disproportionately favor higher-income individuals.

39. Two possible vehicle tax systems linked to CO₂ emissions are simulated for Bulgaria. Passenger Vehicles Taxation Scheme 1 (PVTs1) includes a tax on acquisition with a fixed environmental fee (EUR 200 or BGN 392.15) plus EUR 20 (BGN 39.21) per gram of CO₂ emissions per km above 95 grams CO₂ per km, based on WLTP standards. This tax is paid at purchase and is separate from value added tax (VAT). PVTs1 also includes a tax on ownership, combining the current system (linked to power, age, and European emission standards) with an additional rate based on CO₂ emissions per km of the car. An alternative, slightly more ambitious Passenger Vehicles Taxation Scheme 2 (PVTs2), increases the rates from PVTs1 by 50 percent. The fixed acquisition tax is EUR 300 (BGN 588.23) and the rate per gram of CO₂ per km above 95 grams per km is EUR 30 (BGN 58.82). Ownership tax rates linked to CO₂ are 50 percent higher than PVTs1. Both schemes incentivize the acquisition of lower-emission cars and the removal of old ones.¹⁶

40. CO₂-linked vehicle taxation could almost double tax proceeds in the first year of its potential application. The simulations show that tax collection would improve under both PVTs1 and PVTs2 by around 89 percent and 97 percent, respectively, compared to the current scheme, starting in 2025 and remaining higher through 2050. In contrast, the current scheme's tax revenues are expected to decline from 0.8 percent of GDP in 2024 to 0.47 percent in 2050 as old vehicles are replaced by newer ones with higher European emission standards. Net tax collection would stay higher through 2050 under PVTs1 and PVTs2, even with increased tax incentives for e-vehicles and hybrids. Without changes, lower-emission vehicles are expected to make up one-third of the passenger vehicle stock by 2050. This share would

15 Mercure, J.-F., et al., 2021. Reframing Incentives for Climate Policy Action. *Nature Energy*, 6: 1133–1143

16 See the background note titled Passenger Vehicle Taxation at Sub-National Level in Bulgaria: A Proposed Revised Taxation on Acquisition and Ownership Schemes Based on Vehicles' Carbon Dioxide Emissions, prepared by Leonardo Garrido (Consultant) with inputs from Desislava Nikolova (Senior Economist, World Bank) and Fiseha Haile (Senior Economist, World Bank) for the needs of the Bulgaria Subnational PFR.

rise to over 63 percent under PVTs1 and over 66 percent under PVTs2. Additionally, increased tax collection would be accompanied by curbing an important negative externality from air pollution, which is not addressed by existing pricing mechanisms on emissions (low excise taxes on fuels and non-existing carbon prices) but affects health and labor productivity outcomes of Bulgarians.

41. Linking vehicle taxation to CO₂ can help generate more revenue while addressing air pollu-

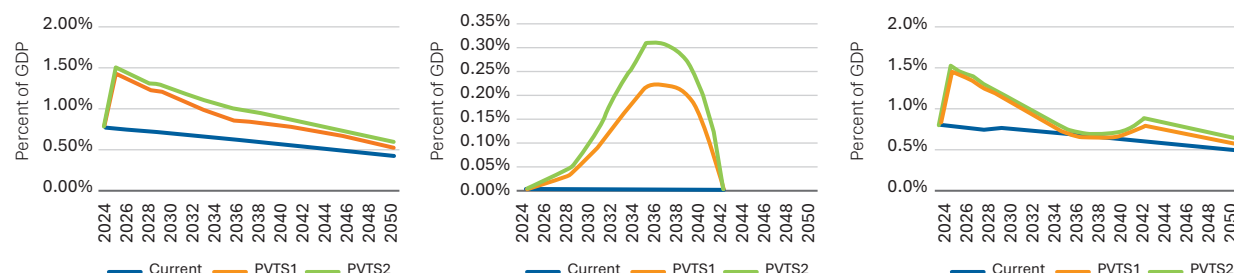
tion. Bulgaria stands to gain multiple benefits from applying a PVT on acquisition and ownership linked to CO₂. Increased tax collection would curb negative externality from air pollution, which is not currently addressed by existing pricing mechanisms on emissions (low excise taxes on fuels and non-existing carbon prices). This would have a positive impact on health and labor productivity outcomes in the country and help meet Bulgaria's environmental commitments as an EU member.

Table 1. Immediate (2025) fiscal impacts of current and proposed PVT schemes on ownership

	Current Scheme		PVTs1		PVTs2	
	Euro	% of GDP	Euro	% of GDP	Euro	% of GDP
Tax on acquisition	3,810,322	0.00%	66,623,684	0.07%	99,935,526	0.10%
Tax on ownership	726,568,438	0.76%	1,318,062,144	1.37%	1,341,345,833	1.40%
Incentives	0	0.00%	10,312,315	0.01%	14,227,239	0.01%
Net Tax on ownership	730,378,759	0.76%	1,374,373,513	1.43%	1,427,054,120	1.49%

Source: Estimates of passenger vehicle fleet and new car purchases derived from historical data. Assumes scheme in place effective January 1, 2025.

Figure 20. FTT model for Bulgaria - gross tax revenues (left), tax expenditures from incentives (center), and net tax collection (right) on ownership across scenarios, 2024–2050



Source: Based on the results of an FTT model simulation for Bulgaria

1.6. Policy recommendations

Short to medium run

42. The gradual erosion of the tax base for the recurrent real estate tax could be addressed promptly by updating certain components in the current tax assessment formula. Specifically, this could be achieved through a one-time adjustment of the fixed base tax value to compensate for the accumulated

gap with market prices. A parallel update of the existing zones, which determine local coefficients, would also be necessary. To prevent future discrepancies with market prices, regular updates of the fixed base tax value and zoning are advisable. These updates could be facilitated through automatic indexing at a fixed frequency (for example, annually), based on

some observable and regularly published statistic such as a real estate price index.

43. Reforming vehicle taxation could strengthen the fiscal capacity of local authorities. This can be achieved by reinforcing the polluter-pays principle through the introduction of CO₂-linked taxes. Specifically, linking the environmental component of the recurrent vehicle tax to CO₂ emissions, along with introducing a CO₂-based tax on acquisition, would not only increase municipal revenues but also support environmental objectives. Removing or modifying the vehicle age factor would further promote the polluter-pays principle.

44. Capacity building and technical assistance for local administrations, particularly revenue-collecting units, could be instrumental in boosting revenue collection. This could be accomplished through dedicated training sessions, including peer-to-peer learning. The upcoming World Bank study on

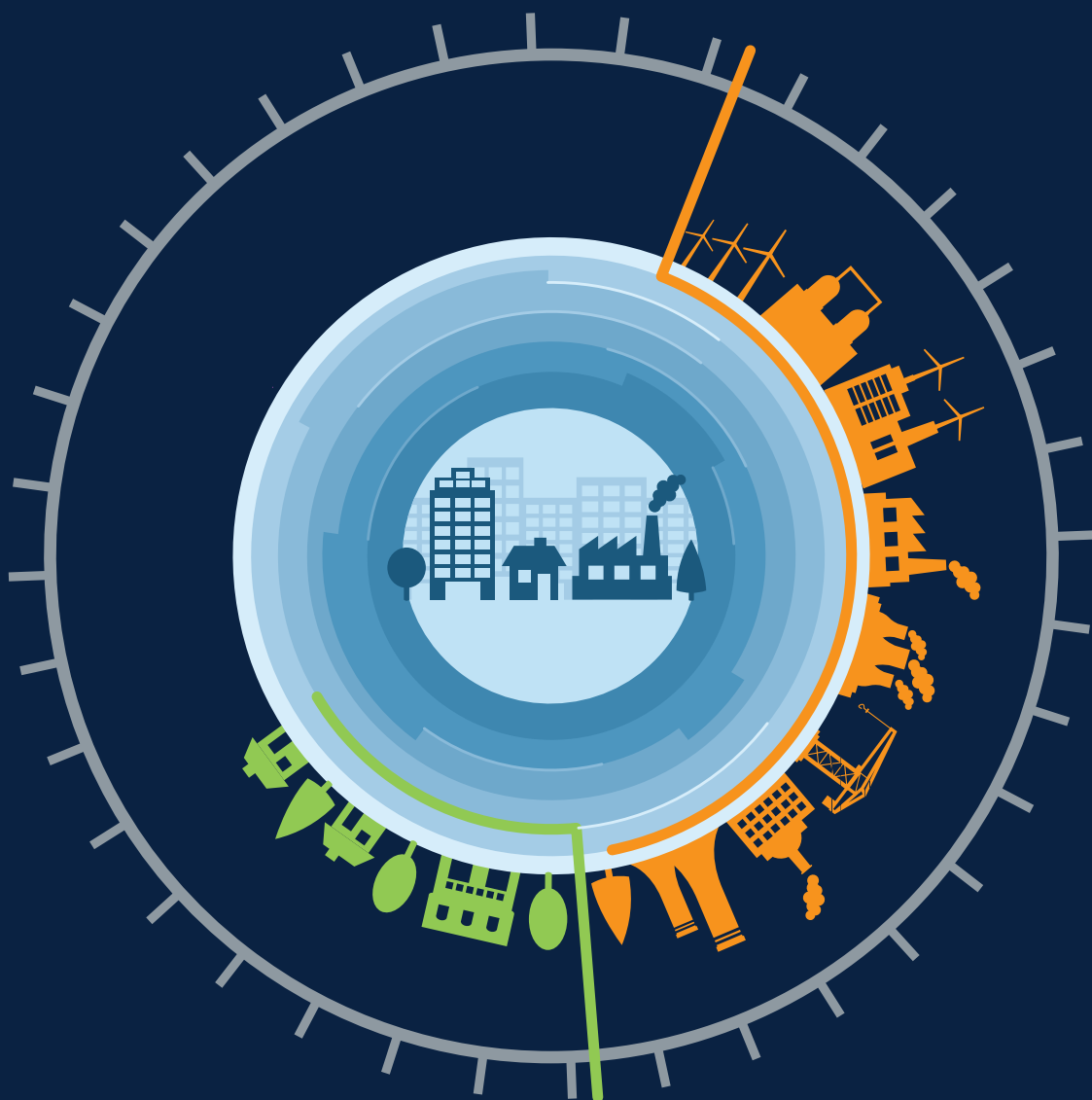
municipal capacities in Bulgaria, which is expected to shed light on the factors behind varying performance, could be very useful in the design of capacity-building programs.

Long run

45. A more radical reform that would bring real estate tax assessments close to market prices could be the adoption of a mass valuation model. Test models for mass market valuation in Bulgaria demonstrate significant potential for reliable and accurate valuation systems. Improving data collection and quality control as well as using AVMs, GIS, and advanced modeling techniques can pave the way toward transitioning to a reliable mass valuation system in Bulgaria. However, this transition would minimally require a dedicated team for data quality management and the establishment of a robust data infrastructure.

Chapter 2.

Intergovernmental Fiscal Relations



2.1. Types of transfers from central to local governments

1. Fiscal decentralization was launched shortly after the start of Bulgaria's transition to a democratic state and market economy in 1989. The country embarked on a path toward administrative and fiscal decentralization, emphasizing subsidiarity and local autonomy. The process of decentralization was spurred by a 2001 agreement between the then government and the National Association of Municipalities in the Republic of Bulgaria (NAMRB), which served as a basis for a Concept for Financial Decentralization and a program for its implementation until 2005 (see Box 3). The program led to the devolution of expenditure responsibilities between the state and municipalities. Another important landmark was the 2007 constitutional amendment, which empowered municipalities to set local tax rates, while other legislative changes defined the role of central government transfers to municipalities. Over the years, some types of transfers have appeared and disappeared, but the main transfers—for delegated activities, equalization, and capital spending—have remained in place since 2003¹⁷.

2. The current system of central government transfers to municipalities comprises five instruments: conditional spending grants for delegated activities, earmarked capital spending transfers, equalization transfers, snow removal and winter

road maintenance transfers, and other earmarked transfers, including for local activities. The specific costing 'standards' for delegated activities are determined by the Council of Ministers, with the funds to be distributed specified in the annual budget. Municipal spending is subject to internal controls and audits by central government authorities.

3. Transfers for delegated activities are calculated as the sum of all estimated costs for activities that the state delegates to municipalities.

These cost estimates, known as expenditure standards, are derived from a detailed list of service need indicators, totaling 177, which include the number of service institutions, subgroups, and individual clients covered by the service. The values of these indicators are updated annually. Service delivery costs are estimated by considering local factors such as population size and density or level of development. The earmarked transfers aim to cover the full and differentiated costs of each local government providing these services. By setting detailed and differentiated expenditure standards, the earmarked transfers aim to cover the standardized expenditure needs and the equalization of differences in the costs of service provision. They represent the largest share of state transfers to municipalities (88.7 percent in 2024).

¹⁷ For more details on the history of financial decentralization and the different types of central government transfers to municipalities, see Национално сдружение на общините в Република България, „Анализ на механизмите за разпределение на гържавните трансфери по общини“, 2021

Box 3. Bulgaria's path toward decentralization

Following its transition to a democratic state and market economy in 1989, Bulgaria embarked on a path toward administrative and fiscal decentralization, emphasizing subsidiarity and local autonomy. Between 1991 and 2025, the following stages of this process can be distinguished:

1991–2000: Following the adoption of a new Constitution in 1991, the country also adopted the European Charter of Local Self-Government in 1995. Key legislative acts such as the Law on Local Self-Government and Local Administration, the Law on Municipal Property, the Municipal Budget Law, and the Law on Local Taxes and Fees were passed after 1995, setting the framework for local competences and responsibilities. In 1991, municipalities received 100 percent of the collected personal income tax (PIT); starting from 1992, they received 70 percent of it. Municipalities were also entitled to a municipal tax on corporate profits (1991–2002), which was initially set at 10 percent but later decreased to 6.5 percent.

2001–2006: In 2001, the government signed a co-operation agreement with the NAMRB, which set the goal of financial decentralization and stronger municipal autonomy. A Concept for Financial Decentralization and a program for its implementation (2002–2005) followed. The program led to the devolution of expenditure responsibilities between the state and municipalities and the development of so-called spending standards (costing formulas) for central government transfers for delegated activities. Municipalities were also granted powers to set local fees.

Starting from 2004, municipalities were given back 50 percent of the PIT. This practice was discontinued in 2008 with the transition to a flat income tax. Also in 2003, municipalities started receiving equalization subsidies, which were allocated to all municipalities, regardless of their fiscal capacity, until 2019. With changes in the allocation formula in 2019, municipalities with stronger fiscal capacity were excluded from the equalization trans-

fer pool. Between 2003 and 2011, municipalities were granted earmarked transfers for ecological sites and projects. Between 2005 and 2007, municipalities received another transfer meant to compensate for the abolished road tax previously collected by them.

2006–2015: At the end of 2005, a new agreement on further decentralization reforms was signed between the government of Bulgaria and NAMRB. As a result, in 2006, the government adopted a new Decentralization Strategy for 2006–2015. Among others, its main objectives were to accelerate the devolution of powers and resources from the central to local governments and strengthen local self-government. However, as only 39 percent of the planned measures have been implemented, the government assesses the strategy's implementation as unsatisfactory.

Yet, key achievements of the strategy include a 2007 constitutional change granting municipalities powers to set local tax rates within predefined bounds, the transfer of the patent tax (paid by some small businesses and freelancers) as a municipal own revenue, and increased municipal revenue from concession contracts.

Regarding the transfer system, starting from 2007, municipalities started receiving an earmarked transfer for snow removal and winter maintenance of roads. Between 2007 and 2015, there was also a earmarked transfer for the construction and repair of municipal roads that was later integrated into the overall capital transfer.

2016–present: A new Decentralization Strategy (2016–2025) was passed in 2016 with the goal of further delegation of powers and functions from central to local authorities, a more adequate allocation of resources between central and local governments, increased effectiveness of local self-government, and improved local public services. Despite this, progress on the decentralization agenda has been limited in this period.

4. Equalization transfers aim to address disparities in local own revenue and, to some extent, differences in expenditure needs. These grants are distributed using a formula that includes five components or criteria, which primarily emphasize local own-source revenue disparities but also capture disparities in expenditure needs to some extent.

- i. *Municipal revenue equalization*, which compensates for the difference between permanent tax revenue per resident in a municipality and 120 percent of the national average. The transfer amount is calculated as the difference between the two ratios multiplied by the municipality's population. This component represents nearly three-fourths of the equalization funds for 2024, as per the Law on the State Budget for 2024 (based on reported tax revenue for 2022).
- ii. *Municipal current expenditure equalization*, which captures disparities in spending needs based on several indicators, with weights determined by the actual structure of costs for local activities. The indicators and their weights are number of children up to 5 years old (3 percent); number of children ages 6–14 (1 percent); number of adults ages 65 and over (5 percent); area size (26 percent); length of municipal roads (13 percent); and population (52 percent). This component represents 20.2 percent of the equalization funds.
- iii. *Minimum guaranteed municipal own revenue subsidy*, which is provided to municipalities whose own revenue relative to total revenues is below the 25 percent threshold. It is a much smaller component of the equalization grant, accounting for 3.8 percent of the distributed funds.
- iv. *'Hold-harmless' supplementary subsidy*, ensuring there is no decrease in the first three components between fiscal years. It is provided to municipalities where the sum of the first three components is lower than the total equalization transfer received in the previous year, covering the difference. This component makes up 2.7 percent of the general equalization transfers.
- v. *Revenue incentivizing subsidy*, which is provided to local governments that achieve a tax effort above the national average. The tax effort is computed for the recurrent real estate tax, property

acquisition tax, and vehicle tax. The subsidy is determined by the relative share of the difference above the average and distributes a tiny share of the equalization funds (0.2 percent).

5. Not all municipalities qualify to receive equalization transfers. The general qualification criterion for equalization grants in 2024 was that a municipality must have 'permanent tax revenues'¹⁸ per capita (for 2022) lower than 120 percent of the country average per capita. In 2024, 247 municipalities qualified to receive equalization transfers. The remaining 18 were mostly tourist municipalities (both seaside and ski resorts); municipalities with large-scale industrial companies on their territory such as Elin Pelin, Kozloduy, and Bozhurishte; and the capital city of Sofia.

6. The third type of transfer is the annual transfer for municipal winter maintenance and snow removal. This earmarked transfer finances winter road maintenance and snow removal and accounts for a small share (0.6 percent in 2024) of all transfers. It is based on a formula with three indicators: length of municipal roads (weighing 85 percent), which considers mountain, plain, and frequent icing locations; the number of inhabited places (10 percent); and population (5 percent).

7. The fourth type of transfer, the capital spending transfer, funds municipal investment projects and is structured into two components: a general component and an additional component for smaller municipalities. The general component is allocated based on the following indicators (with their weights in parentheses): the number of settlements, excluding those with fewer than 10 people (45 percent); length of municipal roads (25 percent); population (25 percent); and territory (5 percent). This transfer made up 5.5 percent of the total central government transfers to municipalities in 2024.

8. The fifth type of annual transfer to municipalities is the earmarked transfers for other expenditures. These transfers have funded specific local projects or activities approved by the Council of Ministers. In 2024, they accounted for 0.8 percent of all municipal revenue. Past transfers have funded projects like the Sofia metro construction; construction of nurseries, kindergartens, and schools; local city transport; disaster recovery; and election costs.

18 Permanent tax revenues include revenues from the tax on real estate property, vehicle tax, tourist tax, patent tax, and tax on passenger taxi transport.

9. The government may also allocate additional extraordinary transfers to municipalities as the fiscal year ends. These allocations are not formally categorized as transfers. In practice, if budget execution permits, municipalities may request additional funds, and the Council of Ministers determines the redistribution of unspent funds. These funds are typically used to address unmet local infrastructure needs. The allocation criteria lack transparency, and the process is often described as an ‘end-of-year budget gap-filling transfer’.

10. Starting from 2024, the government has decided to allocate substantial resources for municipal capital investment projects. The annual investment

program for municipalities is included in the annual budget law, ensuring predictability and transparency. However, the criteria for allocation are formal, with the key one being a maximum amount of annual allocation per municipality, determined by its size. Municipalities can submit applications for multiple projects, but disbursements from the central government cannot exceed the annual allocation ceiling. This funding resembles an additional capital expenditure transfer due to its relaxed criteria. However, the formal monitoring and evaluation process—based on technical documentary compliance and submission of regular financial reports—poses a significant risk of inefficiencies and low value for money.

2.2. Main issues surrounding the different types of transfers

2.2.1. Transfers for delegated activities

11. Transfers for delegated activities reinforce municipal dependence on the central government. While these transfers effectively guarantee a minimum level of services in every municipality, they limit local governments’ budgetary autonomy. The significant role of delegated functions in local budgets, combined with strict controls on the use of funds, leaves municipalities reliant on central government decisions. This contrasts with decentralized fiscal relations that involve meaningful devolution, allowing the matching of local needs and enhancing allocative efficiency.

12. Delegated transfers may have un-equalizing effects. Although designed to promote equity and meant to be sufficient for funding delegated services, local governments often need to supplement these funds with their own revenues and unconditional grants. According to a report by the National Association of Municipalities in the Republic of Bulgaria on budget execution, 2 percent of total municipal spending in 2021 was directed toward co-financing delegated activities, mainly municipal administration (64 percent of the total co-financing), education (17 percent), and culture (9 percent). Since allocation formulas do not account for local fiscal capacity,

supplementing delegated transfers from own-source revenue puts municipalities on a different footing and may lead to significant horizontal fiscal disparities. The current intergovernmental fiscal system does not address these gaps, as the equalization transfer does not consider expenditure needs for delegated functions. However, the standards for delegated function transfers help mitigate this risk.

13. The ability to carry over unspent subsidies to the next fiscal year creates perverse incentives for underspending. While there is little flexibility in using funds during regular budget execution, local governments can use unspent funds from targeted transfers more flexibly in the following fiscal year. This compensates for the lack of flexibility but also incentivizes local governments to end fiscal years with unspent surpluses, harming budget execution efficiency.

2.2.2. General equalization transfer

14. The equalization grant relies on a small resource pool and a suboptimal allocation formula. Representing only 5–6 percent of total allocated grants from the central government, the resources available for equalization are too small to significantly affect local budgets and service delivery.

The allocation mechanism is quite complex, with a patched structure of five components that often overlap in their objectives and, in many cases, introduce perverse incentives, particularly discouraging local governments' tax collection efforts.

15. The allocation formula discourages tax effort. The first component discourages tax effort by using actual revenues instead of fiscal capacity, incentivizing local governments to keep revenue collections low to receive more transfer funds. The third component, the 'minimum guaranteed municipal own revenue' subsidy, reinforces these perverse incentives. Although the fifth component, the revenue incentivizing subsidy, aims to address these negative incentives, it is likely ineffective as it represented only 0.8 percent of the equalization funds in 2024.

16. The 'hold-harmless' component is suitable only for reform-related transition periods. The fourth component, the 'supplementary subsidy', which ensures there is no decrease in the equalization transfer between fiscal years, is a permanent 'hold-harmless' clause that effectively undoes the necessary adjustments in transferred funds in response to changing local conditions. While such clauses have been used during significant transfer reforms in other countries, they are typically temporary and not used for annual adjustments due to the changes in local conditions. Holding to historical results amid changing municipal conditions can lead to comparative inequities.

17. Variables and weights in the 'expenditure needs' component could be optimized. The second component of the equalization transfer formula, which addresses disparities in expenditure needs, should yield progressive equalizing results. Moreover, since it uses indicators that cannot be directly manipulated by local governments, it provides the right incentives for local government spending. Yet, as long as all delegated functions are already funded by the targeted transfers for delegated activities, it would seem logical for the general equalization transfer to focus on equalizing differences in expenditure needs for local functions. Thus, optimizing the variables and their weights could better capture the distinction between delegated and local activities.

2.2.3. Transfer for municipal winter maintenance and snow removal

18. The transfer for snow removal aims to address varying expenditure needs but overlooks local fiscal capacity. Although this transfer is somewhat uncommon in global practice, it is generally justified because snow and ice storms create additional financial burden on some local governments. Although the allocation formula seems to address differing expenditure needs, it disregards the fiscal capacity of local governments to address these needs using their own resources.

2.2.4. Capital expenditure transfer

19. The capital spending transfer does not differentiate between maintenance costs and new capital investment needs. Municipalities with more infrastructure have higher maintenance expenditure needs, but this does not necessarily mean they have greater needs for new capital infrastructure or replacement of existing assets. For example, assigning a weight of 25 percent in the allocation formula to the length of municipal roads implies that municipalities with more roads also need more roads. While they may require more maintenance funds, they do not necessarily need more new infrastructure. In other words, municipalities that benefited more from infrastructure-related funding in the past will continue to benefit more in the future, which may not be equitable.

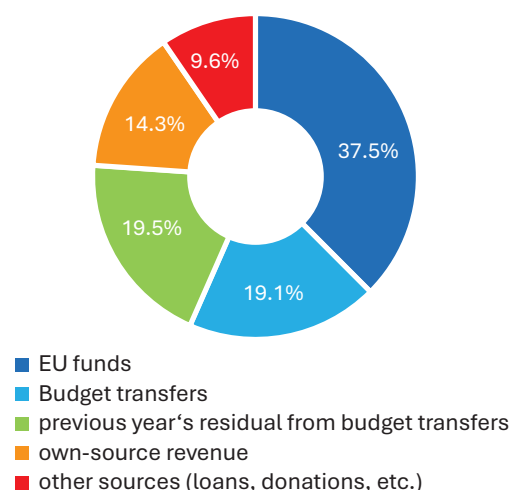
20. This transfer could be revamped to differentiate between maintenance and capital spending needs. Maintenance expenses, like wages and salaries, are recurrent, while capital expenditures are lump sum and long term. Most budget practices recognize this distinction. Recurrent expenditure needs for maintenance could be included in the general equalization grant, leaving capital expenditure transfers for long-term infrastructure needs. This transfer should focus on closing historical infrastructure gaps and addressing ongoing needs for new and replacement infrastructure. The current allocation formula seems to overemphasize the number of settlements rather than more relevant factors such as population density.

21. The formula component on additional funds to smaller municipalities, even if equi-

table, may complicate the design of the transfer. The second component of the current capital expenditure transfer provides additional funds to support smaller municipalities (4th and 5th category). This feature likely makes the transfer more progressive and redistributive, but it also complicates its design and implementation. A well-designed capital transfer, with an allocation formula that considers the fiscal capacity of local governments and capital infrastructure needs (historical backlog and ongoing), may render this second component unnecessary.

22. The adequacy of the capital transfer requires consideration, as current funds cover only about a third of municipalities' capital spending needs. During 2021–2023, central government transfers, including unused residuals from previous years, covered about 39 percent of municipal capital spending needs. However, same-year capital spending transfers accounted for only 14.5 percent, a modest amount compared to other funding sources like EU funds, which covered 38 percent of capital expenditures. At the same time, expenditure needs appear to be significant. For example, according to a 2022 assessment by NAMRB, 57.61 percent of municipal roads are in poor condition, needing repair or reconstruction. Other types of infrastructure, such as residential homes for elderly care or daycare centers for people with disabilities, are said to remain substantially underfinanced as well.

Figure 21. Municipal capital expenditure by source of funding, average for 2021–2023



Source: MoF, World Bank estimates

2.2.5. Unplanned transfers to municipalities

23. Unplanned transfers undermine fiscal discipline by creating soft budget constraints for municipalities. The practice of extraordinary ad hoc transfers, often occurring toward the end of the fiscal year, poses significant challenges to budgetary discipline among local governments. This approach effectively creates a soft budget constraint, reminiscent of the 'gap-filling' approach used in intergovernmental transfers under the old command-economy budgeting system.

2.3. Lessons from international best practices

24. International practice offers useful lessons for reforming Bulgaria's intergovernmental transfer system. Transfers play a critical role in addressing vertical and horizontal imbalances that arise from inadequate or unequal own resources of subnational governments. It is essential to design these transfers as an integral part of the overall local government financing scheme. In this context, transfers, including revenue sharing, should never be seen as a substitute but rather as a well-calibrated complement of own subnational tax and nontax revenues.

2.3.1. Revenue sharing

25. Revenue sharing, currently absent in Bulgaria's intergovernmental transfer system, can help address vertical fiscal imbalances. It is typically implemented on a derivation basis, returning funds to the location where they were collected, thereby supporting the objective of devolution. Revenue sharing mainly helps close existing vertical fiscal imbalances once the assignment of subnational own tax revenues is determined. Most OECD countries implement some form of revenue sharing. By

allowing some of the centrally collected revenues to remain where they were generated, revenue sharing provides incentives for the further development of dynamic regional economies.

26. Personal income tax (PIT) and VAT are the most commonly shared large taxes, with some excise taxes also shared on a derivation basis. PIT is preferred for its transparency and ease of determining the tax source based on the taxpayer's residence. However, VAT allocation on a pure derivation basis is challenging due to its debit and credit processes occurring in different regions, making it hard to establish where value is added. As a result, many countries use allocation formulas based on population or regional consumption to distribute VAT revenues. Other taxes, like corporate income tax, are much less suitable for revenue sharing, as they are often allocated at company headquarters despite being generated nationwide. These revenues also fluctuate substantially with business cycles, undermining their suitability for predictable local government budgeting.

27. Revenue sharing disproportionately benefits economically dynamic regions, but equalization transfers can offset this impact. Revenue sharing aligned with devolution tends to favor growth engines within a country. However, the resulting inequality or horizontal fiscal imbalances can be addressed with strong general equalization transfers. Well-designed equalization grants account for revenue sharing in their allocation formulas, recognizing them as part of the fiscal capacity of subnational governments. This reduces, if not eliminates, the equalization funds these regions eventually receive.

2.3.2. Conditional transfers

28. Conditional transfers can be classified by the nature and timing of their conditions, but there is no universal type that fits all situations. Some transfers, like block and specific-purpose transfers, use ex ante conditions, while others, such as performance-based transfers, apply ex post conditions. In addition, these transfers may include a matching clause requiring contributions from subnational governments. The key principle in designing conditional transfers is to identify the most suitable instrument to achieve the desired goal, as no single type of transfer is usually superior.

29. However, all conditional transfers tend to limit local autonomy to a certain degree. Some instruments (for example, specific-purpose transfers) impose more significant restrictions than others (for example, block transfers). If one starts with the premise that decentralization offers the advantage of more efficient resource allocation by allowing local governments to exercise discretion, it is advisable to implement transfers that are less limiting of subnational autonomy.

30. One of the most difficult choices involves financing delegated functions to subnational governments. Delegated functions imply that the central government retains responsibility for some basic aspects of services while partnering with subnational governments for their provision and delivery. Delegation in this sense covers a range of possibilities. At one end, subnational governments act as 'pass-through' agencies for central governments with cost reimbursement through specific-purpose transfers. At the other end, subnational governments are primarily responsible for service delivery, financed by flexible block grants or performance-based types of transfers. The choice of financing instrument depends on the level of control central authorities wish to retain, the administrative capacity of subnational governments, and how much confidence central authorities have in their capacity to deliver the services without a high degree of control or oversight.

31. The choices Bulgaria faces are not unique. Globally, many central governments have overused conditional specific grants to address various issues, at times unnecessarily. This has led to a multitude of specific-purpose conditional grants, many of which are too small and costly to administer, imposing high compliance and reporting costs on local governments. Recent trends aim to simplify transfer systems to grant subnational governments more autonomy. This includes increasing the share of unconditional grants and, within conditional grants, favoring general-purpose block grants over specific-purpose ones. The shift toward block grants aims to enhance subnational autonomy, reduce administrative burdens, and lower monitoring costs. Block transfers come with general conditionality, such as requiring funds to be spent on broad categories like primary education rather than specific items such as books or school heating. However, the central government may still use specific transfers for essential

services such as vaccination programs, to ensure minimum-level provision of national merit goods, thereby prioritizing specific spending over broader subnational budgetary autonomy.

32. Block grants are more effective with fewer conditions, assuming there is sufficient local administrative capacity and accountability. Block grants are typically implemented on a 'capitation basis' (for example, per student, per inhabitant), adjusted for costs or need differences. Fewer conditions allow local authorities to exercise greater autonomy in setting spending priorities and selecting efficient service delivery methods. However, block transfers can cause conflicts between central and subnational governments due to differing expenditure priorities.¹⁹ Introducing matching-fund clauses, where local governments contribute a percentage, can help address these conflicts. The effective use of block conditional grants relies on subnational administrative capacity, fiscal autonomy, and accountability to residents and voters. Deficiencies in these areas may challenge the reliance on block grants over specific grants.²⁰

33. Performance-based grants are an alternative that provides incentives along with ex post monitoring and assessment. These transfers link subnational government performance and service delivery in predetermined areas to both access to funding and the amount of funding provided by the central government. The idea behind this type of transfer is to move away from the ex ante conditionality of conditional block and specific grants to a system that provides performance incentives coupled with ex post monitoring and assessments, based on agreed-upon performance measures. Essentially, incentives are provided in three ways: (i) by granting access to a type of transfer based on performance; (ii) adjusting the grant amount based on performance; (iii) allowing greater discretion in the use of grant resources based on performance improvements.

34. Performance measures need to be linked to actions and programs that subnational governments can control and are responsible for. Performance conditions are more easily met when the performance indicators are related to institutional dimensions such as revenue collection, planning, budget execution, accountability, financial management, or other governance issues. Performance may also refer to service delivery as measured by a variety of outputs and outcomes. However, in these cases genuine control and responsibility by subnational governments is generally not guaranteed since final outputs and outcomes may also depend on external circumstances like residents' education or income levels. This limitation restricts the use of performance-based transfers as a general substitute for targeted (conditional) transfers for delegated functions.

2.3.3. Equalization transfers

35. Most countries introduce equalization grant systems to address horizontal fiscal disparities. These disparities arise from differences in expenditure needs and fiscal capacity due to varying size and composition of populations, service delivery costs, and economic activity.²¹ If left unaddressed, these disparities can lead to inequitable access to basic services among citizens and economic inefficiencies, such as undesirable fiscal migration due to differences in public service provision rather than economic migrations for job opportunities. For these reasons, most countries have implemented equalization grant systems at the regional and local levels. In general, an effective design of equalization grants requires clear objectives, a defined pool of funds to finance the equalization transfers, and an allocation formula for distributing funds across jurisdictions.

19 Block grants can lead to the so-called 'blame game' between the central and subnational governments, with the former being blamed for providing insufficient funding and the latter blamed for the wrong spending priorities and low tax effort. This situation has led some central governments to revert to using specific grants instead of block grants.

20 Specific earmarked grants may also be necessary when the central government has little information on cost and expenditure need differences or where there is a greater need for intergovernmental coordination and overall cost containment.

21 Note that simply comparing actual revenues and actual expenditures per capita across jurisdictions can be a misleading way to measure horizontal fiscal disparities. For example, revenues per capita may be higher in a relatively poorer region or locality due to greater effort in enforcing and collecting taxes. Similarly, expenditures per capita may be higher in a particular region or locality because of higher expenditure needs in those jurisdictions, represented by vulnerable groups such as under-age or retired populations, the unemployed, or simply higher costs of provision because of weather, prices, or communications.

36. These transfers aim to ensure equitable access to services across all local jurisdictions. The objective is to allow local governments to provide comparable access to a standard package of public services, assuming they exert an average effort in raising their own revenues. Importantly, the goal is not to equalize income per capita or the level of economic development across jurisdictions.

37. There are two main approaches to determining the pool of funds for equalization transfers. The first involves an ad hoc determination within the national budget. The second, more common approach, uses a fixed-rule formula to provide a more stable determination of available funds each year. This formula may allocate a share of specific central government revenues, such as 100 percent of VAT revenues in Australia, or a share of the entire central government revenue pool, as seen in Canada, Germany, Switzerland, and most Nordic countries. A fixed formula increases revenue predictability while hardening a potential soft budget constraint for local governments, which can otherwise maneuver for increases in the pool of funds while lowering their own tax efforts.

38. The fiscal gap approach, which calculates the difference between expenditure needs and fiscal capacity of subnational governments, has become increasingly popular in the design of equalization transfers. An increasing number of countries have adopted this methodology.²² Other nations use similar approaches. Canada uses fiscal capacity per capita for equalization, while Germany, Poland, and Spain use another variation of the methodology by equalizing fiscal capacity per adjusted population (instead of simply per capita), where adjustments to the actual population are made to reflect differences in expenditure needs. Some other countries utilize a weighted index formula approach containing variables that proxy needs and, much less frequently, fiscal capacity. This latter approach is still common among Latin American countries, and it is also, as we have seen, the current approach followed by Bulgaria.

39. There are several methodologies to apply the fiscal gap—the difference between spending needs and fiscal capacity—to distribute equal-

ization funds among local governments. More sophisticated methods for calculating fiscal capacity estimate the potential revenues from tax bases assigned to subnational governments, assuming an average or maximum level of revenue collection effort. Fiscal capacity measurement includes potential revenues from own taxes, revenue sharing funds, and other unconditional transfers. For the latter sources, actual quantities or revenues can be used to add to total fiscal capacity, as only the central government controls their amounts. The most common methods for estimating tax capacity include (i) the Representative Revenue System (RRS), used in Canada and the US, based on tax base information and average collection effort; (ii) stochastic frontier estimation of potential maximum revenues, which assumes subnational governments deviate from the optimal collection levels because of lower administration collection efforts; and (iii) statistical analysis with basic proxies for the local ability to tax such as per capita personal income. Other simpler methods, such as lagged own revenue collections or averages of past collection ratios, are less reliable and can easily introduce negative incentive problems.

40. Estimating expenditure needs involves determining the funding required to cover all expenditure responsibilities assigned to subnational governments at a common standard level of service provision. This estimation typically is restricted to current expenditure needs and excludes capital expenditure needs. The reason is that capital needs tend to be more complex, lumpy, and discontinuous and are generally better addressed separately through capital investment grants.

41. International practice offers several methodologies for estimating expenditure needs. One approach is ‘per client (top-down) financial expenditure norms’, which specify expenditure standards per client. These are specified either from a normative viewpoint or from a historical and affordability viewpoint (for example, derived by dividing the aggregate level of expenditure across all local governments in each functional area by the number of clients or users of that function at the national level). Another method

²² Among developed OECD countries, we find Australia, Canada for the Northern Territories, Italy, Japan, the Republic of Korea, the United Kingdom, and many US states; among countries in transition, China, Latvia, the Russian Federation, Ukraine, and Viet Nam; and among developing countries, Indonesia, Peru, and Uganda.

is ‘bottom-up costing of baskets of standardized inputs’, which involves costing standardized baskets of state government services by functional area. A third, more complex and also desirable methodology is the ‘regression-based representative expenditure system (RES)’. The regression analysis employs data on expenditure per function and drivers of those expenditures; the results can be interpreted as the amount of money that a subnational government would have spent on a particular function to provide a standard level of service.²³

42. The computed fiscal gap serves as the basis for allocating equalization funds. After estimating expenditure needs and fiscal capacity, the fiscal gap is calculated for each subnational government. The available pool of equalization funds can be distributed among eligible jurisdictions, proportionally to the fiscal gap or through another method. Subnational governments with fiscal capacity exceeding their expenditure needs do not qualify for the equalization grant. The degree of equalization is essentially a political decision, limited by the resources available for equalization.

2.3.4. Capital grants

43. Capital transfers are typically handled separately from other types of transfers. They are used to support subnational governments in building public capital infrastructure. Due to their ‘lumpiness’ and non-recurrent nature, capital infra-

structure needs cannot be adequately addressed through recurrent equalization transfers or ordinary conditional grants. Recent advances in public budget management call for integrating all expenditures into a single budget to compare priorities and make efficient allocation decisions. However, when supporting subnational governments with their capital expenditure needs, it is generally necessary to rely on separate instruments for the reasons mentioned above.

44. Capital transfers aim to improve infrastructure endowments, support local development objectives, and address externalities. They are generally designed to assist subnational governments with financing constraints for capital, which may be due to different access to capital markets or varying capacity to generate own-source revenue. Two common policy biases include the belief that capital expenditures are always more efficient than recurrent expenditures and a disregard for the maintenance of existing subnational government infrastructure. To address the latter, matching-grant arrangements are often used to incentivize subnational governments to take ownership of capital infrastructure projects and become more involved in properly maintaining existing infrastructure. Capital transfers should not be seen as the main funding source for capital infrastructure but should complement surplus funds and prudent borrowing policies under the ‘golden rule’ (that borrowed funds finance capital investment only).

2.4. Potential reforms for the optimization of Bulgaria’s transfer system

45. An optimal reform of the intergovernmental transfer system should be holistic, as various elements of the system are interconnected and contribute differently to achieving greater equity and efficiency in the allocation of transfers. Potential reforms will lead to a more modern and complex transfer system with more demanding institutional

requirements. Achieving this requires active cooperation from municipalities and relevant ministries in technical preparations, as well as strengthening political coordination mechanisms. Successful reforms require the gradual introduction of changes, guided by a well-defined roadmap for the entire reform package.

²³ Less accurate methodologies include ‘weighted indexes of expenditure need proxies’, ‘lagged expenditure values’, based on past spending, and ‘equal per capita expenditure norms’, which are easy to compute but difficult to justify.

2.4.1. Revenue sharing

46. The government could consider revenue sharing for PITs based on the residence of taxpayers.

This approach would help address vertical fiscal imbalances and promote the devolution objective. Alternatively, instead of pure revenue sharing or complementarily to it, the central government may grant local governments the authority to introduce a piggyback subnational PIT. This would be paid and collected with the national PIT, providing local governments with autonomy to set the tax rate within legally defined limits. The piggyback PIT offers greater autonomy compared to straightforward revenue sharing based on residence. Since both approaches will increase horizontal fiscal disparities, it will be important to include these revenues in the estimation of fiscal capacity as a component of the reformed equalization grant based on the fiscal gap methodology.

2.4.2. Targeted conditional transfers for delegated functions

47. **Bulgaria could transition from specific grants for delegated activities to block grants or increased reliance on municipalities' own-source revenue.** This shift would involve moving away from targeted specific grant allocations toward more general transfers, achieving more unified local budgets, where the distinction between 'own' and 'delegated' functions is evened out. One option is to convert targeted specific grants into block grants, providing local governments more autonomy and incorporating equalization in the allocation formula. Another option is to eliminate specific transfers altogether, replacing them with a system that relies more on municipalities' own tax revenue, general revenue sharing or piggybacking of the PIT, and a stronger equalization grant. The latter means that the pool of funds for equalization transfers is larger, while the allocation formula considers local expenditure needs and fiscal capacity.

48. **Block grants could be allocated based on indicators of service needs, with the central government monitoring the quality and quantity of services.** The allocation formula for block grants could

be based on general indicators of service needs, such as the number of clients (for example, school-age children). The general pool of funds for each sector could match or exceed current funding levels for targeted specific grants. Statistical or econometric methods could help identify the main drivers of expenditure needs. With increased autonomy and flexibility for subnational governments to deliver (some of the) delegated services, the central government would need to monitor the quality and quantity of these services. This monitoring should be based on explicit benchmarking systems that set basic national standards, ideally related to performance outputs and outcomes.

49. **Transitioning to block grants requires strong administrative capacities at the local level.** Greater autonomy for subnational governments through block grants will require significant investment in enhancing administrative capacity in many municipalities. In the past, central authorities justified the controls embedded in the targeted specific transfers because of the insufficient administrative and managerial capacities of some municipalities. Yet, this resembles a chicken-and-egg dilemma since the lack of autonomy itself has been one of the major obstacles to the development of administrative and managerial capacity at the local level.

2.4.3. The equalization grant

50. **The fiscal gap approach helps quantify and bridge horizontal budget imbalances.** It provides a useful framework to quantify the horizontal budget imbalances generated in a decentralized system of government and how these imbalances can be closed via an equalization grant.²⁴ The fiscal gap can be defined as the difference between expenditure needs and fiscal capacity for each local jurisdiction, represented arithmetically: $FG_i = EN_i - FC_i$, where FG_i represents the fiscal gap of the local government i , EN_i its expenditure needs and FC_i its fiscal capacity. Expenditure needs refer to the funds required to cover all expenditure responsibilities assigned to the government at a 'standard' level of service provision. Fiscal capacity is defined as the potential revenues or

24 This section builds on the approach elaborated in Word Bank and European Commission (2023).

the general ability of the local government to collect revenues from its own tax and nontax sources, exerting a 'standard' level of tax effort. Importantly, the fiscal gap does not arise because of the behavior of local governments; it is determined by the difference between assigned expenditure responsibilities and revenue-raising ability. Therefore, local governments cannot affect their estimated fiscal gaps by spending more or collecting less revenues (see Annex 3).

51. The fiscal gap approach is simple and transparent while ensuring predictability of equalization grants. The attractiveness of the 'fiscal gap' approach lies in how well it complies with the desired principles of equalization transfer design. This formula can be stable over time, promoting revenue predictability among local governments. The fiscal gap approach is relatively simple, intuitive to understand, and transparent to all stakeholders. The basic methodology is impermeable to political manipulation or negotiation in either design or implementation. It also provides the right incentives for revenue mobilization and spending efficiency by local governments.

52. A formula-based approach is recommended for determining the pool of funds for equalization. Moving away from ad hoc annual determinations to a formula-based approach provides predictability and stability, sets the right incentives for local governments' revenue efforts, and avoids a soft budget constraint environment. The simplest and most effective rule is to set the funding for equalization as a percentage of central government revenues. This percentage could be applied to the previous year's revenues or the average of the last three years, for instance.

53. The estimation of expenditure needs should focus on recurrent expenditure requirements and exclude capital infrastructure needs.²⁵ The latter could be partly financed with separate capital transfers. The goal is to determine the funding necessary to cover all expenditure responsibilities assigned to the local government at a common, standard level of service provision.

54. The selection of expenditure functions for equalization can be guided by either the 'inclusion' or 'exclusion' principle. First, it is essential to determine which expenditure functions should be consid-

ered for equalization so that they are included in the estimation of needs. Certain spending categories may be excluded from expenditure needs in the equalization grant, for example, because they are exclusively financed with conditional grants, as is the case with the delegated functions in Bulgaria. The exclusion principle means that once certain expenditures are excluded from the calculation of expenditure needs, the corresponding exclusion is applied symmetrically to the revenue or financing side. Thus, if the expenditure needs for delegated functions are excluded from the expenditure side, the funds from the delegated transfers must also be excluded from the fiscal capacity side. Conversely, if such expenditures are included in the need assessment for equalization because, for example, they are not financed with targeted grants, then the 'inclusion principle' will require accounting for the targeted transfers in the measurement of fiscal capacity.

55. The inclusion or exclusion of delegated activities in the estimation of expenditure needs depends on the overall reform plan for the system of transfers. The final decision on the inclusion or exclusion of 'delegated' functions will depend on the type of reforms to be potentially undertaken for the current targeted transfers. If these are discontinued, then it will be necessary to include all delegated functions. Alternatively, if targeted transfers are converted into conditional block grants, then either the exclusion or inclusion principles could be followed. However, since there is no guarantee that the conditional block grants would cover all the expenditure needs of the delegated functions, it would be more prudent to apply the inclusion principle. Accordingly, the estimation of spending needs for the fiscal gap would include those for delegated functions, and the measurement of fiscal capacity would include the funds received under the conditional block grants.

56. The first step in estimating expenditure needs is determining their overall budgetary envelope, based on the most recent historical values. In practice, when estimating expenditure needs, it is essential to establish this overall envelope to ensure that the estimated needs remain within the constraints of the existing budget. Thus, it can be assumed that the total expenditure requirements for local governments will

²⁵ The reason is that capital needs tend to be more complex, lumpy, and discontinuous and are generally better addressed separately via the utilization of capital investment grants.

not exceed their budget. In addition, it is reasonable to assume that the expenditure need for each functional category is the historical aggregate expenditure on that function across all local governments in that tier. This historical approach ensures affordability and avoids external judgments on the importance of functions. Adjustments to this assumption can be made in future periods by government authorities.

57. The next step is selecting functions for separate spending estimation, focusing on significant items. Major functions are identified by calculating their shares within total spending for local governments. All other functions can be grouped together in an ‘all other’ category. Selecting a threshold level of importance involves some practical considerations, including data availability.

58. The third step is identifying demand-side drivers of spending variation. These drivers must meet certain criteria, including (a) focusing on the demand side of the spending responsibility, meaning they should be ‘client based’ rather than capacity or supply based; (b) reflecting an economic rationale between service provision and users and linking with specific local government functions; (c) being resilient to political manipulation—ideally, they would be rigorously collected by an independent statistical office and

made publicly available and subject to quality evaluation; (d) being universal, that is, available for all local governments; and (e) updated regularly.

59. The fourth step is conducting regression analysis to predict expenditure needs for each local service. The expenditure needs associated with each local service may have one or more drivers. Selecting the right number of drivers requires the best possible model specification, which maximizes the adjusted R². The results need to be validated with data on local government spending patterns and economic judgment. The estimated coefficients will reflect a stable relationship between expenditures and their drivers and are, therefore, not likely to change abruptly from one year to another if there are no major changes in the assignments of expenditure responsibilities. Nonetheless, it will be necessary to regularly update the estimates, for instance, every 3 to 5 years.

60. The fifth step is computing the expenditure needs for each main function and their total. This is done by using the result predicted by the multilinear regression formula, calculating the relative size of each local government in total predicted values, and multiplying it by the value of a national target for expenditure on the respective local service. This step can be represented by the following equation:

$$Estimated\ Expenditure\ Needs\ LG(i) = \frac{Predicted\ Expenditure\ Needs\ LG(i)}{\sum_{i=1}^n Predicted\ Expenditure\ Needs} \times National\ Target\ Expenditures,$$

where

- Expenditure needs are for any of the local services selected for inclusion in the fiscal gap approach.
- LG (i) refers to any of the local governments in the respective tier.
- Predicted expenditure needs refer to the estimate resulting from the multilinear regression analysis for the respective local service.
- National target expenditure(s) is the indicative forecast established by the MoF for the respective local service in the reference year.

One can then obtain the total expenditure needs to be considered in the fiscal gap equation as equal to

the sum of all separate expenditure needs for all the qualifying local services:

$$Estimated\ Expenditure\ Needs\ LG\ (i) = \sum_{s=1}^n Estimated\ Expenditure\ Needs\ LG\ (i),$$

where

- Expenditure needs LG (i) are the aggregate estimates of expenditure needs for a given local government.
- Expenditure needs are for every category of local services selected for inclusion in the fiscal gap approach.
- LG (i) refers to any of the local governments in the respective tier.

61. The measurement of fiscal capacity includes own-source revenue and possibly conditional transfers. Fiscal capacity includes potential revenues from own taxes, revenue sharing, and conditional transfers. For conditional transfers, actual amounts can be used since central governments control their collection. If delegated functions are included in the equalization grant, then block or conditional grants would also be added to the fiscal capacity estimate.

62. The first step in fiscal capacity estimation is determining the type of revenue subject to equalization. Several principles influence which local revenues should be subject to equalization. First, fiscal equalization covers only current (not capital) revenues because it is related to current spending needs. Second, the calculation of fiscal capacity requires the application of the symmetric principles of inclusion or exclusion. If certain expenditures are excluded from the calculation of needs, a corresponding exclusion is applied to the revenue side linked to this spending activity.

63. Potential own-source revenues include only those over which local governments exert collection effort. The different degrees of effort depend on (i) the administration's work to register, audit, and collect taxes and (ii) the applied tax rates and exemptions as allowed by law. Own revenues should include all local taxes and nontax revenues such as charges and fees, with the former typically easier to estimate. If potential nontax revenues are too difficult to estimate, they can be left out of the fiscal capacity calculation. Shared tax revenues, if available, can be taken directly as part of the fiscal capacity because of the assumption that local governments cannot change their amounts by changing their behavior. The only unconditional transfer that should not be part of the fiscal capacity measure is the equalization grant itself.

64. The estimation of fiscal capacity should be guided by several principles. The first principle is that the method of calculating the revenue potential should be simple but accurate, allowing for the

best capture of the entire income potential and not leaving room for discretion. The right incentives also need to be preserved; that is, the revenue potential should not punish those that make more effort and collect more revenues. Finally, the results should not be subject to manipulation and should be based on available and verifiable data.

65. The RRS approach to fiscal capacity estimation seems more appropriate for Bulgaria given data availability. This approach applies the national average tax rate for each tax component to the respective local tax base. The estimated revenues show what each local government would collect with average fiscal effort. When information on local tax bases and effective tax rates is lacking, regression analysis can help predict potential revenue using proxy variables instead of actual tax bases. For example, in the case of property taxes, one can run a regression with actual property tax revenues in each jurisdiction as the dependent variable and assessed property values as the explanatory variable, with coefficients constituting the revenue potential for each local government and for each tax.

66. Regression parameters estimated for the tax base proxy represent an 'average' level of tax effort, reflecting all the decisions local governments make regarding tax policy choices and the effectiveness of tax administration. This has the advantage of not penalizing those local governments that exert an above-average level of effort.

67. The last practical step requires measuring the horizontal fiscal gap and calculating the final equalization transfer amounts. The fiscal gap is computed as the difference between fiscal capacity and expenditure needs, with positive-gap jurisdictions not qualifying for equalization grants. Then, the 'relative fiscal gap' for those qualifying for the grant is computed as the share of each local government's fiscal gap in the aggregate fiscal gap. The final step is the assignment of equalization transfers, which can be done by multiplying the relative fiscal gap of each local government by the total pool for equalization (Table 2).

Table 2. Steps to implementing the fiscal gap approach

Step 1.	Define Fiscal Imbalance
	Fiscal Gap = Fiscal Capacity – Expenditure Needs = Own Revenue Potential + Shared Revenues + Other Transfers (that need to be included) – Expenditure Needs
	For every region that has a positive fiscal gap, set: Fiscal Gap = 0
Step 2.	Define Relative Fiscal Imbalance
	The relative fiscal gap is the relative size of each local government’s fiscal gap as a share of the aggregate fiscal gaps of all pre-qualified local governments. Relative Fiscal Gap i = Fiscal Gap i / $\sum_i$ Fiscal Gap i
Step 3.	Assign equalization transfer
	Define the equalization transfer to local government i as: Transfer to Local Government i = Relative Fiscal Gap i x Overall Equalization Funds Available

2.4.4. Capital transfers

68. Capital transfers could help bridge historical gaps in infrastructure while addressing local needs for new infrastructure and replacement.

Local needs will depend primarily on the population and territory size as well as differences in local ability to raise financing for investment through borrowing and budget surpluses.

69. Capital transfers must consider existing differences in the territorial distribution of public infrastructure. To address relative historical inequities in the territorial distribution of public infrastructure with the help of capital transfers, one can apply the following formula:

$$TRH_i = \alpha CTRF \left[\frac{CSD_i}{\sum_{i=1}^n CSD_i} \right]$$

where TRH_i is the capital transfer to close historical gaps in municipality i , CSD_i is the capital stock deficit estimate of municipality i (for example, compared to a normative standard for the entire country), and α is the percentage of available resources (the capital transfer fund, $CTRF$) that will be devoted each year to closing regional historical disparities in the dis-

tribution of capital stock. To ensure the affordability of this transfer, α should allow offsetting part of the total deficit of public capital infrastructure stock each year. Erasing all existing historical differences in the availability of public capital stock in one period would likely be an impossible goal to achieve. Realistically, it will take a long time. However, after a certain period, there will be no need for this component of the capital transfers as the existing historical disparities are erased. One implication of implementing this component, α , is that it may allow the elimination of the current formula component providing additional funds in support of smaller municipalities. The second, main and permanent, component of capital transfers should aim at helping municipalities cover their present and future needs for new capital infrastructure and the replacement of obsolete stock.

70. The design of capital transfers could vary by the degree of flexibility in their use. Capital transfers can be specific project-based grants that are closely administered by line ministries or block capital grants that give subnational governments more flexibility. These two approaches are recommended to exist side by side depending on the objectives of the central government and the nature of the projects.²⁶ In some cases, local governments could

²⁶ In terms of the institutional setup, it will be desirable to define the capital transfers program as a Public Investment Program (PIP) integrated into a Medium-Term Expenditure Framework (MTEF) or multiyear budget that covers the entire budget system.

be required to contribute matching funds to the capital transfer, depending on their fiscal capacity. Separately, the design of capital transfers must not create the expectation that they will be the only source of local capital investment. Instead, capital grants should complement local budget surpluses and prudent borrowing policies under the ‘golden rule’ (that borrowed funds can only be used for capital investment).

71. Distribution of capital transfer funds should not be ad hoc but based on pre-established formulas. The government could also allow for a competitive process with clear application procedures.²⁷ There are various formulas, but generally, they use

indicators that closely represent needs, such as client base, territory, fiscal capacity, or general ability to finance capital projects from own or borrowed resources. These indicators are then combined in a weighted index formula, similar to the approach in Bulgaria, with the relative weights representing the importance given to each indicator. An alternative approach is to use a ‘point system’, as used in Viet Nam, for example. In this case, points are awarded to different indicators such as population, land area, or level of development, and then the points across all local governments are summed up. Each local government is allocated a share of the capital transfer pool based on its points.

Box 4. International practices and examples in the design of capital transfers

International experience with the design of capital transfers shows that a wide variety of approaches are used. Most countries use some form of capital transfers to support subnational governments for specific sectoral expenditure areas such as roads, water and sewerage treatment plants, transportation, housing, education, and health. Country experiences vary along several dimensions. Regarding the mechanism used to allocate capital transfers, country experiences vary from ad hoc allocation decisions to formalized approaches using pre-established formulas. Similarly, in terms of the degree of flexibility in the use of capital grants, country experiences vary from the least flexible ‘project-based grants’ to unconstrained funds provided as part of general revenue transfer.

The variety of approaches makes it difficult to generalize and extract lessons useful for any country trying to improve its system of capital transfers. Typically, a country has various capital transfers financed with earmarked funds within specific capital expenditure categories in the national budget, requiring some level of matching funds from subnational governments. The funds are allocated either by an objective formula or on a specific project basis based on qualifying proposals.

In **Australia**, specific transfers for capital purposes cover many areas including education, health, social security and welfare, housing, and roads. These transfers are usually administered by the relevant ministry of the federal government, and their design typically includes a formula for the distribution of funds and an application process to pre-qualify. For example, capital transfers for education are administered by the Department of Education and those for roads by the Department of Transport and Regional Services. In the case of education, capital grants are destined to “government schools” and “non-government schools”. In the government sector, the Commonwealth’s capital funds are pooled with those of the state, and the attribution of Commonwealth funding to individual projects is largely nominal. In the non-government sector, the allocation of Commonwealth funds is based on project assessment. The fund allocation among states for government schools is based on each state’s/territory’s share of government school enrollments. In nongovernment schools, the allocation is based on the number of nongovernment students enrolled in each state or territory. For capital grants for road construction, one main program administered by

²⁷ The downside of using competitive processes is that they may effectively exclude local governments with lower administrative capacity to prepare proposals and bid for funds. Therefore, if competitive processes are used, it is imperative to provide the means and technical assistance for poorer local governments to compete fairly.

the Department of Transport and Regional Services (the Black Spot Program) provides financial assistance to improve the physical condition or management of locations noted for a high incidence of crashes involving death or serious injury, and it is run on the basis of individual project selection. The second program, which is formula driven, provides capital transfers for road construction to state and local governments. The formulas include various factors such as population and road lengths.

In **Canada**, capital transfers have been relatively small compared to overall transfers, which include the health and social transfer, the equalization transfer, and territorial formula financing. Traditionally, some capital transfers are included in the federal budget to share the costs of provincial and local infrastructure projects, such as highway construction by Transport Canada, the department of transport in the Federal Government of Canada. The Canadian Parliament also supports infrastructure financing through the Strategic Infrastructure Foundation, which matches private and public funding for large infrastructure projects. There is also funding available to provinces and territories to support affordable housing for low- and middle-income inhabitants. The Green Municipal Enabling Fund and the Green Municipal Investment Fund also support energy and water efficiency projects. Funding is generally agreed upon on a

multiyear basis, most often for five years, through bilateral agreements between federal, provincial, and territorial governments.

In **Mexico**, the main capital transfer is the Contributions to Social Infrastructure Fund (FAIS), which is divided into two sub-funds between state and local levels. Capital transfers are provided for projects in drinking water, sewerage, drainage, and latrines; electricity in rural areas; basic health infrastructure; basic educational infrastructure; housing; rural roads; and productive infrastructure. Resources are distributed according to the relative share of each state in the extent and depth of poverty at the national level, measured by the global poverty rate, which is the weighted sum of five indicators: income per capita, educational level, living space, drainage, and availability of electricity for cooking.

In **Brazil**, the key capital transfer is the State Investment Fund (FINEST), which aims to reduce regional inequalities by encouraging states with Human Development Index (HDI) below the national average to invest in physical infrastructure for transport, energy, communications, and sanitation. The Fund for the Development and Maintenance of Basic Education (FUNDEB) is distributed among the states according to their share of students, and 40 percent of the funds can be used for the construction and maintenance of schools and equipment.

2.4.5. The municipal winter maintenance and snow removal transfer

72. The transfer system could be streamlined by eliminating the snow removal transfer and subsuming these expenditure needs in the general equalization transfer. Doing so would not only simplify the current system but also allow full consideration of the fiscal capacity of different local governments to address these expenditure needs. If the transfer were to be maintained, it would be important to account for differences in fiscal capacity; otherwise, all Bulgarian citizens would subsidize those in rich municipalities for snow and ice removal during the winter.

2.4.6. Unplanned transfers

73. Unplanned discretionary transfers introduce a soft budget constraint and should be discontinued. Unplanned transfers to local authorities typically serve two goals and thus consist of two components: emergency aid following natural disasters and ‘gap-filling’ discretionary financing. The component of emergency aid to municipalities for recovery following natural disasters should be structured as a formal, permanent component of the transfer system. This could be done by clearly stating the procedures for how local governments qualify for disaster relief and how the funds would be disbursed. However, the second component, consisting of ‘gap-filling’ discretionary transfers fol-

lowing requests for additional funds from local governments, should be discontinued. This practice, reminiscent of the old Soviet budgeting system, introduces a soft budget constraint for local gov-

ernments, creating an array of perverse incentives such as reducing efforts to collect own revenue or harming spending efficiency and fiscal discipline.

2.5. Policy recommendations for optimization of Bulgaria's transfer system

Short to medium run

74. Bulgaria could consider consolidating some of the current transfers into a single, unconditional equalization transfer. This transfer could be used for current spending and other needs such as snow removal. It could also be used for capital expenditure needs, although it would be preferable to have a separate capital transfer with its own allocation criteria, given the different nature of recurrent expenditures and capital infrastructure needs. Such reforms would provide municipalities with increased discretion to direct their spending streams to where their policy priorities and pressing needs are.

75. A simplified equalization transfer for current needs could be based on the fiscal gap approach that nets expenditure needs and fiscal capacity. It is important that expenditure needs are estimated as objectively and comprehensively as possible, while fiscal capacity calculation does not create disincentives for local tax effort. Also, the pool of budget resources for equalization should not be decided arbitrarily but be based on a fixed formula such as a share of central government revenue or selected central government taxes.

76. If existing transfers for delegated activities are to remain in place, they should be tied to measures of effectiveness. These could be key performance indicators and output/outcome measures that create incentives for municipalities and end-user service providers to pursue value for money and provide a minimum standard of quality and accessibility for each service. The choice of such performance indicators and specific metrics should be made carefully, as they should be directly influenced

by policies and decisions within the control of municipalities.

77. Unplanned ad hoc grants are a source of soft budget constraints and should be discontinued. Unplanned grants represent a poor practice that carries a high risk of inefficiencies and waste of scarce budget resources. With a well-designed transfer system in place and a reserve fund for natural calamities, such as the one functioning in Bulgaria, these ad hoc grants would not be needed.

78. Large-scale capital spending programs for municipalities, such as the one launched in 2024, require robust selection and monitoring processes. The existing 3-year investment program for municipalities would benefit from strengthening its selection, monitoring, and evaluation processes, which add to the current financial reporting requirements and review of technical documentation. Such programs should also ensure they do not encourage substitution away from EU grants, straining the national budget.

Long run

79. Going forward, more fiscal autonomy for municipalities could be considered. This could be achieved either by revenue sharing for one of the central government taxes, such as PIT, or by giving local authorities the power to impose a local personal tax on top of the existing central government tax.²⁸ To avoid compromising local tax effort, higher revenue autonomy could be made accessible only for those municipalities where the tax effort (including both tax rates and tax collection) is above a threshold.

²⁸ Local authorities should, however, consider the risk of tax arbitrage among jurisdictions that a piggyback PIT could create, due to the higher labor tax burden in municipalities that potentially opt for it.

Chapter 3.

Municipal Expenditure



3.1. Municipal responsibilities and spending decentralization

1. Bulgaria features low decentralization on the expenditure side.²⁹ Municipal spending averaged 20 percent of general government expenditures (or 7 percent of GDP) over the past decade, which is below the EU average. Despite various decentralization strategies, the share of municipal spending in total public spending has not increased significantly. Municipal spending has experienced fluctuations, peaking in the mid-2010s due to the influx of EU funds and dipping during economic downturns, including COVID-19 and Russia's invasion of Ukraine.

2. Municipal spending responsibilities fall into two main categories: delegated and local (Box 5). Delegated functions include key services where the state retains policy-making authority, such as educa-

tion, health care, and social protection, and aims to ensure a minimum service standard for all citizens. In contrast, local activities are services that municipalities choose to provide based on their own resources, local circumstances, and priorities. These include housing, community amenities, environmental protection, and cultural and religious activities. Municipalities can also co-finance any delegated activity using their own revenue. The proportion of delegated activities in total municipal spending rose from 48 percent in 2014 to 62 percent in 2023, reflecting a growing reliance on central government transfers. Bulgaria's municipalities have limited spending autonomy, with only 10–15 percent of revenues available for local investments.

Box 5. Delegated and decentralized public services

The delegated activities that the central government finances fall within the following government functions:

- General public service (that is, salaries of mayors, municipal councilors, and other local administrative officials)
- Education (staff at kindergartens and primary and secondary schools)
- Social protection, assistance, and care (day centers for the disabled, asylums, crisis centers, protected homes for mothers with babies and people with disabilities, family-type homes for children, and so on)
- Health care (nursery staff, physicians in schools, health mediators, drug prevention work, and so on)
- Defense and security (police inspectors, human-trafficking committees, work with minor delinquents)
- Culture, sports, recreation, and religion (staff at museums, art galleries, cultural establishments, and community centers).

On the other hand, a wide range of public services are decentralized to municipalities:

- Organization and development of municipal territory, communal activities: cleaning services,

maintenance of municipal property in urbanized areas (for example, parks and green areas), construction and reconstruction of plumbing systems in urbanized areas, organization of parking and traffic safety, video surveillance systems)

- Municipal road and street network: construction, maintenance, repair, and reconstruction of road networks and all streets and their adjacent surface and underground infrastructure in populated areas
- Social services: homes for adults with disabilities or the elderly, community day care centers, residential services, home assistance
- Culture: management and financing of cultural institutes (museums, theaters, libraries), community centers
- Recreation, sports, and tourism facilities
- Protection of the environment and rational use of natural resources
- Disaster protection
- Municipal property management, municipal enterprises
- Municipal financial administration
- Economic activities and services: markets, public transportation, business parks.

Source: Decision of the Council of Ministers on the Approval of Standards for Delegated Activities with Natural and Value-Based Indicators for 2024; NAMRB 2023.

²⁹ The EU measures the degree of expenditure decentralization by the proportion of subnational expenditures in total government expenditure: high (35–100 percent), medium (27–34 percent), low (20–26 percent), and very low/quasi-no decentralization (0–19 percent).

3. Delegated services are financed through earmarked transfers from the state, leaving municipalities with limited discretion over these funds. This subsidy is set annually in the state budget based on uniform financing standards and various indicators. These resources finance current expenditures on education, health, social services, municipal administration, defense and security, and economic activities. Education spending dominates, representing 70 percent of total transfers in the 2024 budget. Transfers for delegated activities are earmarked and cannot be used for other services. Municipalities have limited discretion over the exact amounts to be transferred

to their second-line spending units (for example, schools, social homes, cultural establishments).

4. The law sets several fiscal rules for municipal budget balances, expenditure, and debt that are aligned with headline general government rules and overall fiscal discipline. More specifically, the Public Finance Law provides for medium-term balancing of municipal budgets, prudent growth of expenditure, sustainable municipal debt, and a reasonable debt service burden (see Box 6). The aim of these rules is to provide checks and balances for municipalities' fiscal autonomy so that their performance does not threaten overall fiscal stability.

Box 6. Municipal fiscal rules (Public Finance Act)

1. The medium-term objective for the municipal budget is a balanced budget on a cash basis.
2. The average growth rate of expenditures for local activities in municipal budgets for the projected medium-term period should not exceed the average growth rate of reported expenditures for local activities over the past four years. A higher growth rate of expenditures is allowed only if compensated by additional measures leading to an increase in budget revenues. The additional measures should lead to a sustainable increase in the municipality's own revenues and should not be of a one-time nature.
3. Measures that lead to a permanent decrease in municipal budget revenues must be compensated by measures for a permanent reduction in expenditures.
4. The annual municipal debt service for each municipality cannot exceed 15 percent of the average amount of the municipality's own revenues and the equalization subsidy for the past three years.
5. The nominal value of municipal debt guarantees cannot exceed 5 percent of the total amount of revenues and equalization transfer as per the most recent budget execution report of the municipality.
6. When an upcoming payment on existing debt subject to refinancing is due before the date of taking on the refinancing debt, the municipality is required to set aside a cash reserve for the upcoming payment on the existing debt.
 - (i) The restriction under paragraph 1 does not include municipal debt from temporary interest-free loans and loans provided by other entities from the 'general government' sector.
 - (ii) The law on the state budget for the respective year may define a maximum amount of debt that may be assumed by the municipality during the budget year, beyond the limits in paragraph 1 and outside the cases in paragraph 5, for the advance financing of payments on projects funded with resources from the European Union.

3.2. Overall trends in municipal spending³⁰

5. Over the past decade, total municipal spending has fluctuated between 17 and 21 percent of total general government spending. In 2023, municipal spending accounted for 20 percent of Bulgaria's general government expenditures (equivalent to 7.7 percent of GDP), somewhat higher than pre-pandemic levels (Figures 22.a and 22.b). Municipal spending peaked in the mid-2010s due to the absorption of EU funds toward the end of the 2007–2013 program period, and it has risen steadily in recent years (Figure 22.b). In the last decade, small municipalities experienced an average annual spending growth of 8.8 percent, compared to 10.9 percent for large municipalities (Figure 22.c),³¹ reflecting population increases and the associated higher demand for public goods.

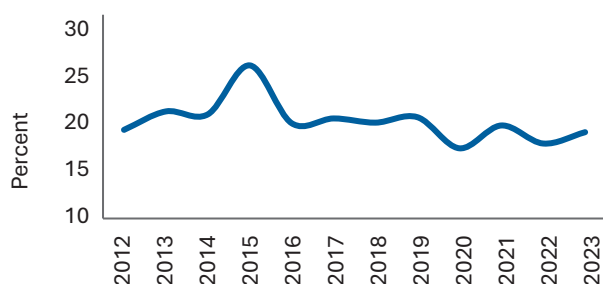
6. Non-discretionary expenditures, particularly employee compensation, dominate municipal spending. In 2023, municipalities allocated about 50 percent of their budgets to wages and salaries, 23 percent to goods and services, and 19 percent to capital spending. Employee compensation increased from 2.8 percent of GDP in 2013 to 3.9 percent in 2023, largely reflecting government policies that raised salaries in public sectors such as education, healthcare, and security. In contrast, the cen-

tral government allocated 46 percent of its budget to transfers and subsidies, 22 percent to employee compensation, and 16 percent to capital expenditures. Personnel expenditures have grown faster at the municipal level than at the central level (Figure 23.f). Annual increases in the minimum wage contributed to this trend, as around 20 percent of local government employees earn the minimum wage.³² The growth of capital expenditures is typically sporadic and heavily dependent on factors such as the presence of active infrastructure projects, their progress, alternative financing opportunities (such as EU funds), and government priorities.

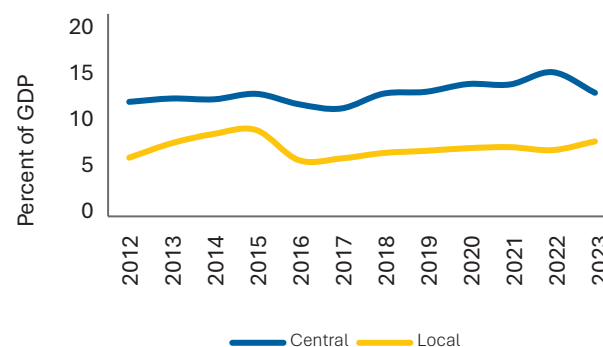
7. Bulgaria's municipalities spend more on employee compensation and less on local capital projects compared to their EU counterparts. In 2023, salaries and intermediate consumption represented nearly 80 percent of municipal spending (Figure 23.b), higher than the EU average of 53 percent. While Bulgaria's municipal current spending is comparable to the EU average, municipalities in other EU nations allocate more to some current expenditures like social benefits. Capital spending in Bulgaria's municipalities is higher than the average for EU municipalities, but it is lower than those for municipalities in Romania, Greece, and Hungary (Figure 23.e).

Figure 22. Municipal spending trends

a. Municipal expenditures (% of general government expenditures)



b. Central and municipal spending (% of GDP)

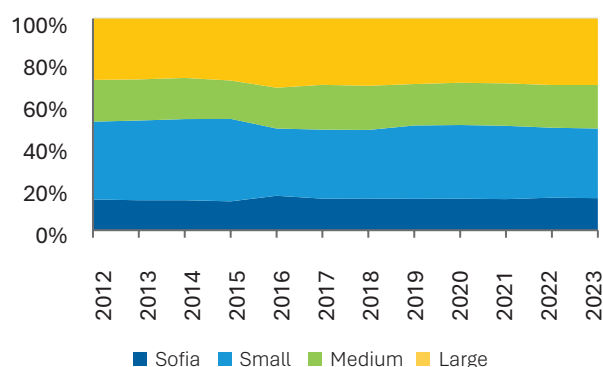


³⁰ This chapter uses a comprehensive BOOST dataset, compiled for this study using data from Bulgaria's MoF.

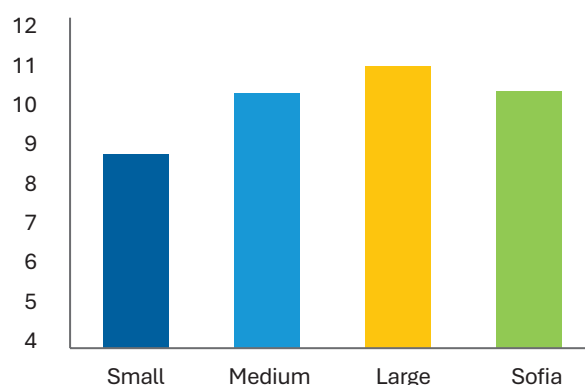
³¹ Bulgaria's 265 municipalities are categorized into three groups based on population size: small (below 30,000), medium (30,000–100,000), and large (more than 100,000). The latter category comprises eight large municipalities, which are analyzed individually.

³² https://www.capital.bg/politika_i_ikonomika/pazar-na-truda/2024/10/23/4692465_okonchatelno_minimalnata_zaplata_stava_1077_lv_ot/

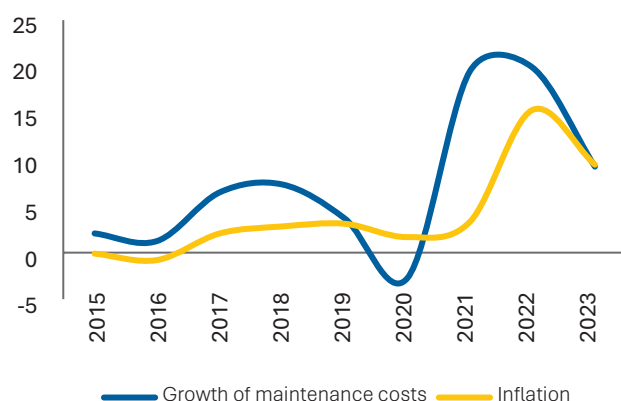
c. Public spending share by municipality size (% of total)



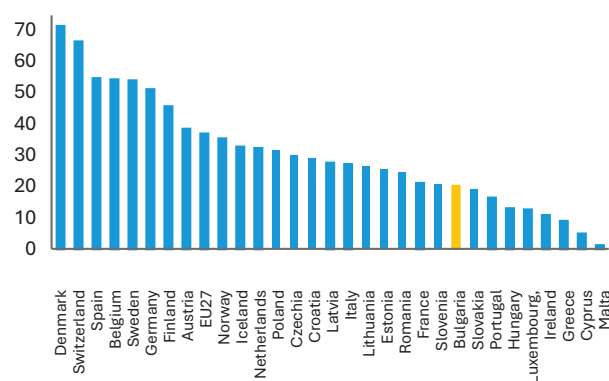
d. Municipal spending: Average annual expenditure growth (2013–2023)



e. Annual growth of maintenance costs and CPI inflation, %



f. Subnational spending (% of general government expenditures) in the EU, 2023



Source: World Bank's BOOST fiscal database, Eurostat and NSI

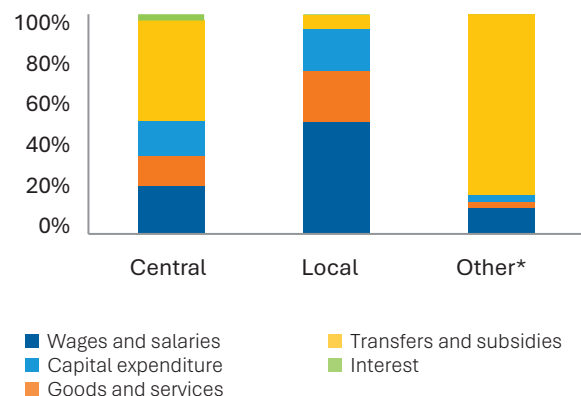
Note: Bulgaria's 265 municipalities are categorized into three groups based on population size: small (below 30,000), medium (30,000–100,000), and large (more than 100,000)

8. Over the past decade, small municipalities allocated a higher share of their budgets to capital spending than medium and large ones. Sliven municipality had the lowest (and declining) share of capital spending. Most municipalities spend about half of their budgets on salaries, with Sofia municipality spending the least on salaries (36

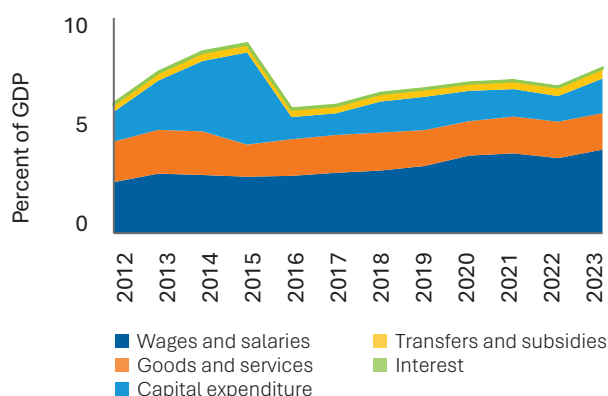
percent) but the most on transfers and subsidies (15 percent) among large communes. While salary spending has uniformly increased, annual capital spending growth varies significantly, ranging from 14.1 percent in large municipalities to 10.3 percent in medium-size municipalities, and under 6 percent in small ones.

Figure 23. Municipal spending by economic classification

a. Central and municipal spending by economic classification, 2023, % of total



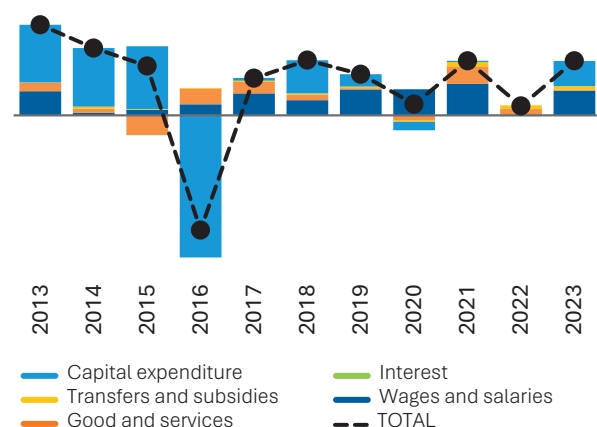
b. Municipal expenditures by economic classification (% of GDP)



Source: BOOST, World Bank, and NSI

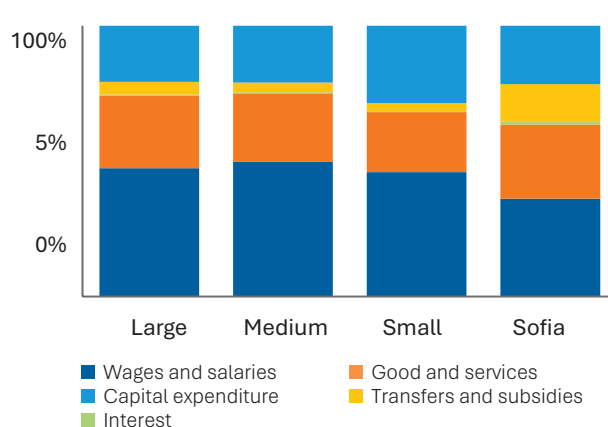
Note: * Other includes social security institutions and funds and defense-related spending

c. Contribution to real public spending growth, 2013–2023



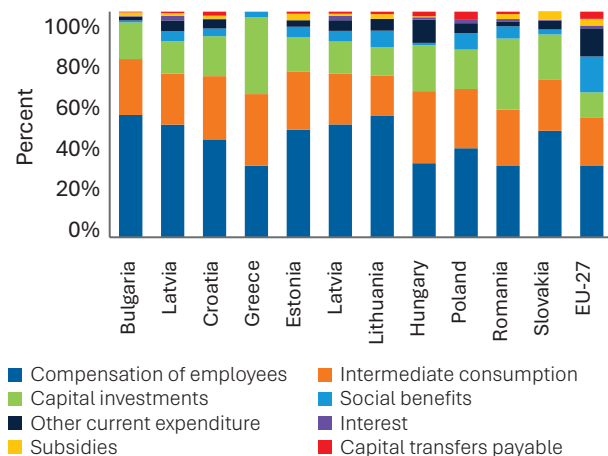
Source: Eurostat

d. Municipal spending by economic classification, 2013–2023 avg, % of total



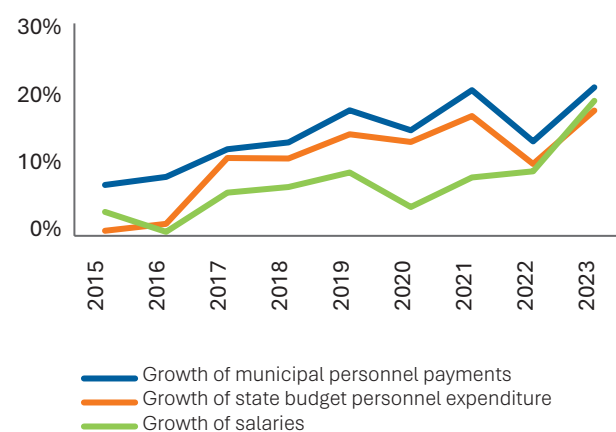
Source: BOOST, World Bank

e. The composition of municipal spending in Bulgaria and EU peers, 2023 (% of total)



Source: BOOST, World Bank

f. Growth of personnel expenditure compared to salary growth, 2013–2023, %



Source: MoF, NSI

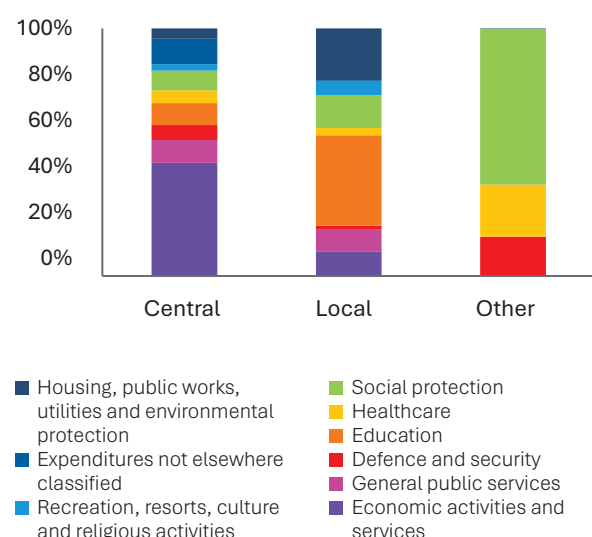
9. Capital spending at the local level acts as a budgetary adjustment variable, driven by transfers from the central government and the EU. Variations in local spending are mainly driven by capital spending (Figure 23.c). However, between 2019 and 2022, spending growth was primarily due to increased current expenditures, reflecting pandemic and cost-of-living crisis measures. Inflation drives municipal maintenance spending, with rising costs often leading to increased transfers to municipalities. Except for 2020, when expenditures declined due to COVID-19, maintenance spending and inflation have largely followed a similar trajectory (Figure 22.e).

10. Disaggregating spending by function shows that education accounted for 37 percent of total

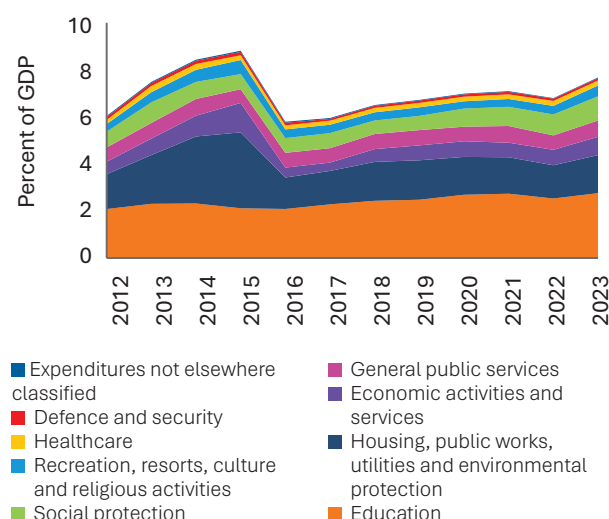
municipal expenditures in 2023 (Figure 24). Expenditures on housing, public works, utilities, and environmental protection (21 percent), social protection (13 percent), and economic services (10 percent) were the next largest spending categories. Education, social protection, and economic activities together accounted for 80 percent of municipal spending growth over the past decade. Bulgarian municipalities allocate more to education but less to health and social protection than their EU counterparts.³³ Health and social protection spending in Bulgaria's municipalities were 10 and 12 percent, respectively, compared to the EU-27 averages of 15 and 22 percent, respectively. Strict state regulations limit municipal control over health and social services in Bulgaria.

Figure 24. Municipal spending by function

a. Central and municipal spending by functional classification, 2023, % of total



b. Municipal spending by function, 2013–2023, % of GDP



Source: World Bank's BOOST fiscal database

11. Small and medium municipalities allocate a higher proportion of their budgets to general public services and social protection, while larger municipalities spend relatively more on education and economic activities. For example, Sofia allocates 15 percent of its budget to economic services, which is higher than the 9 percent average in other large municipalities. Plovdiv spends 9 percent on culture, exceeding the 5.5 percent average. Sliv-

en allocates 44 percent to education, compared to the 37 percent average, which could be attributed to its demographic profile, particularly the relatively large share of the school-age population. Social protection expenditures have grown significantly, with Pleven seeing a 19.5 percent increase. Education spending varies annually, and expenditures on housing, public works, and environmental protection are rising modestly.

³³ However, this largely reflects differences in the division of spending responsibilities across different levels of government across countries.

12. Several local public services lack sufficient funding, although measuring the financing gap is challenging without clear benchmarks for service quantity and quality. According to a 2022 assessment by the Ministry of Regional Development and Public Works, 57.6 percent of municipal roads (19,560 km) were in poor condition.³⁴ Other services, like elderly care homes and disability daycare centers, also seem underfunded. The NAMRB notes that underfinancing affects not only road maintenance but also basic operational costs like water and electricity. Low funding partly reflects local choices, such as maintaining low tax rates.

13. Other potentially underfunded services include new municipal obligations mandated by legislation without additional funding and delegated activities with municipal co-financing. The main areas with significant municipal co-financing include culture, local administration, security, and education. Cultural co-financing averages 4 percent, reaching 20 percent for museums and galleries (Annex 4). Municipalities largely finance residential construction, utility services, and environmental protection, with over 80 percent of economic activities and 63 percent of cultural services locally funded.

3.3. Determinants of capital spending at the municipal level

14. On average, capital expenditure is relatively higher in smaller municipalities, indicating an inverse relationship between municipal size and per capita spending (Table 3). The analysis in this section uses the categorization of municipalities by the Ministry of Regional Development and Public Works, which classifies municipalities into five groups, with Sofia designated as a separate category.³⁵ The smallest municipalities spend about 2.5 times more per capita than larger ones. Spending variability increases with municipal size, with category 1 municipalities showing the least variability. Smaller municipalities also face higher fixed costs.

15. Beyond size, terrain influences capital spending. Municipalities in mountainous regions require higher capital spending, notably for road infrastructure and repairs. For example, among the largest municipalities, Smolyan has the highest capital spending per capita due to its mountainous terrain and dispersed population. By contrast, Sliven, located in a flat region with a concentrated population, has the least expenditure. Other mountainous municipalities with high spending include Bansko, Madan, Lucki, and Borino. On the other hand, municipalities in flat regions such as Brezovo, Elin Pelin, and Nova Zagora have lower expenditures.

Table 3. Descriptive statistics of municipal capital spending by categories

	Number of municipalities	Average capital spending per capita, BGN	Min	Max	Standard deviation
Category 1	26	226.7	Sliven	Smolyan	62.34
Category 2	26	293.5	Kazanlak	Nessebar	84.00
Category 3	80	378.0	Dulovo	Ivaylovgrad	197.18
Category 4	86	408.3	Ruen	Madzharovo	227.97
Category 5	46	573.3	Boboshevo	Chelopech	308.07

Source: MoF, own calculation
 Note: Municipal capital expenditure is averaged over 2016–2023, spanning two mayoral terms, to smooth investment cycles and enable meaningful per capita comparisons

34 <https://www.namrb.org/en/topical-information/analiz-na-eksplotatsionnoto-sastoyanie-na-obshtinskite-patishta-2021-2022-g>
 35 The criteria for categorizing municipalities include demographics, urbanization, infrastructure and transport, environment, communication, social, socioeconomic, and territorial factors. These criteria are used to classify municipalities into five categories, plus Sofia. Category 1 encompasses large municipalities such as Plovdiv, Varna, and Burgas, while medium and smaller municipalities fall into categories 3 and 4. The smallest 46 municipalities in Bulgaria are part of category 5. A complete list of all ordinances and orders from the Ministry of Regional Development and Public Works can be accessed at <https://www.mrrb.bg/bg/kategorizaciya-na-administrativno-teritorialnite-i-teritorialnite-edinici/>.

16. Capital expenditure also depends on population distribution within municipal settlements.

Scattered municipalities like Pazardzhik, Maritsa, and Dobrichka require numerous smaller investments, while concentrated settlements like Plovdiv and Dobrich have different expenditure patterns. Large companies in small municipalities can contribute to the increase in municipal capital spending, as seen in Chelopech, Krumovgrad, and Kozloduy. Further, smaller municipalities with strong revenue bases, especially in tourist regions, show high investment spending per capita, such as Nessebar, Primorsko, and Bansko.

17. Further, more developed municipalities tend to have lower capital spending.

For example, in category 1, two of the poorest municipalities, Vidin and Vratsa, allocate more funds to capital projects in per capita terms compared to some of the wealthiest municipalities in the same category, such as Stara Zagora, Ruse, and Plovdiv. This disparity arises because poorer regions continue to depend significantly on public investment for infrastructure projects and have more substantial infrastructure gaps and unmet investment needs.

3.4. Municipal spending efficiency

3.4.1. Unit costs for selected municipal services

18. Unit costs for municipal services can vary significantly across municipalities due to factors such as local population size and density, terrain, public procurement practices, monitoring and control processes, and differences in local administrative capacity. This section analyzes three key services—general kindergartens, waste management, and road maintenance, repair, and construction—which are representative of municipal expenditure management. Kindergartens are primarily funded through central government transfers, while waste management and road infrastructure are mostly financed by local revenues.

19. Differences in local financing and capacity cause substantial variations in service quality and access. The lack of nationwide service quality standards and the use of cost-based central government transfer formulas—without links to outcomes or quality benchmarks—contribute to these variations in spending.

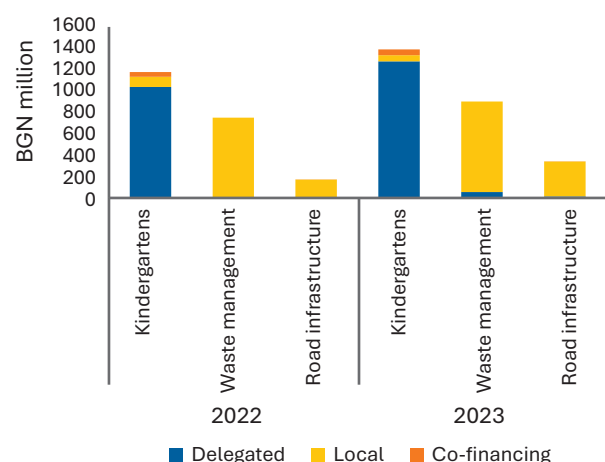
Waste management

20. Waste management is a key responsibility of municipalities, involving the transportation of waste to treatment plants for recycling or disposal. To finance these activities, municipalities collect an annual fee from property owners, which accounts for a significant portion of the municipal budget, ranging from 24 to 27 percent of total own revenue.

21. An analysis of unit costs reveals no clear pattern between the size of a municipality and average spending per ton of waste. Most municipalities, except for the largest cities, spend between BGN 278 and 307 per ton of waste. The largest municipalities, such as Sofia, benefit from economies of scale. Around 21 municipalities spend less than BGN 100 per ton, while 9 municipalities spend over BGN 1,000 per ton. The largest municipalities (category 1) show significant variations in waste and cleaning spending. For instance, Razgrad spends the least at BGN 87 per ton, while Blagoevgrad spends nearly 700. Blagoevgrad's high spending is attributed to its diverse terrain and proximity to tourist attractions. Bourgas, the second-highest spender, spends 60 percent less than Blagoevgrad but still has high expenditures, likely due to its touristic nature. Razgrad's low per ton spending can be largely explained by its high waste per capita.

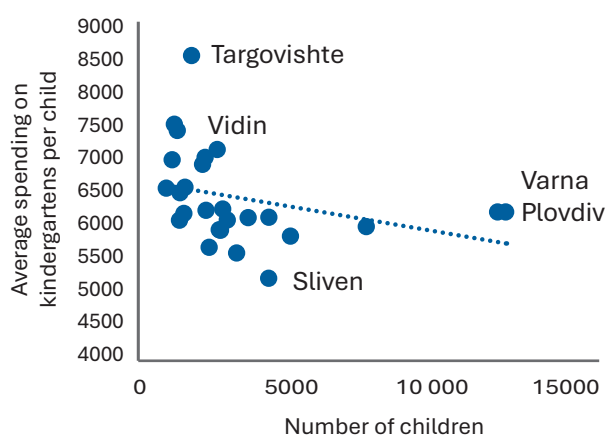
Figure 25. Municipal spending on kindergartens, waste management, and road infrastructure

a. Total spending on kindergartens, waste management, and roads, 2022–23, BGN million



Source: MoF

b. Distribution of municipalities in category 1 against the number of children



Source: MoF

22. Waste management spending varies widely across municipalities. In category 2, Botevgrad (BGN 137 per ton), Svilengrad, and Karlovo have the lowest costs, while Sandanski, Radnevo, and Kozloduy have the highest. Kozloduy and Radnevo benefit from power plant revenues, and Nessebar’s tourism keeps its spending average. Categories 3 and 4 also

show disparities. In category 3, Oryahovo spends the most (BGN 1,550 per ton), while Tundzha, Ivaylovgrad, and Kubrat spend the least. In category 4, Dospat has the highest cost (BGN 2,762 per ton) due to challenging terrain, while Ivanovo has the lowest. The smallest 46 municipalities in category 5 also show uneven spending.

Table 4. Descriptive statistics of waste management unit costs by categories

	Number of municipalities	Average spending per ton of waste, BGN	Min	Max	Standard deviation
Category 1	26	178.0	Razgrad	Blagoevgrad	115.5
Category 2	26	284.3	Botevgrad	Sandanski	140.2
Category 3	80	287.5	Tundzha	Oryahovo	268.0
Category 4	86	306.7	Ivanovo	Dospat	409.4
Category 5	46	277.6	Stambolovo	Novo Selo	259.7

Source: MoF, NSI, own calculations

Kindergarten care

23. Kindergarten care is a delegated service³⁶ mainly funded by the state budget, with optional municipal co-financing. Municipalities view kindergarten funding as a state responsibility and are less inclined to allocate additional local resources. In

2023, about 8 percent of total kindergarten spending was co-financed by local resources. The analysis uses two indicators: total annual municipal expenditure on kindergartens and the number of children attending kindergarten at the municipal level, using data for 2023 (Fig. 25).

³⁶ The unified standards determine the annual municipal budget for kindergartens, setting a basic per-child amount and coefficients for each municipality. They include adjustments for factors like the number of groups and children with special education needs, aiming to cover all expenses. Kindergartens can also receive additional funding from sources like municipalities, parents, and donor organizations.

24. The largest municipalities show the smallest spending deviations. Municipalities with fewer children, such as Targovishte, Silistra, and Vidin, are high spenders. Plovdiv and Varna, the largest municipalities, have average expenditures per child close to the group average. Sliven has the lowest per-child expenditure, while Targovishte has the highest, due to demographic differences (many kindergarten-age children in Sliven and few in aging Targovishte). Vidin, Silistra, and Smolyan, with demographic challenges, also have high spending per child. Lovech is an exception, with few children but high per-child spending.

25. The unit cost for kindergarten services depends on the ability to concentrate children in groups and kindergartens. In category 2, the highest-spending municipalities are seaside resorts Nessebar and Pomorie, each with just under 1,000 children. Samokov and Dupnitsa spend almost half of what Nessebar does. Assenovgrad, with the largest number of children in this group, spends close to BGN 8,000 per child. In category 3, Chepelare and Omurtag spend over BGN 10,000 per child owing to scattered small kindergartens in several villages. Ihtiman has the lowest kindergarten spending in the country for nearly 600 children. Shabla, with the fewest children, spends BGN 7,701 per child, while Maritsa, with the most children, spends around the group average.

Table 5. Descriptive statistics of municipal kindergarten unit costs by categories

	Number of municipalities	Average spending per child per year, BGN	Min	Max	Standard deviation
Category 1	26	6,402.0	Sliven	Targovishte	698.2
Category 2	26	6,985.4	Samokov	Nassebar	954.9
Category 3	80	7,332.7	Ihtiman	Omurtag	1,246.6
Category 4	86	7,793.5	Belitsa	Tsar Kaloyan	2,135.8
Category 5 ^a	45	8,494.8	Lesichovo	Makresh	2,300.4

Source: MoF, NSI, own calculations

Note: a. Treklyano municipality which is in category 5 is excluded due to the lack of children enrolled in kindergartens

26. The number of kindergarten-age children is a significant factor contributing to higher spending. In the smallest municipalities with aging populations, average kindergarten spending per child is the highest in the country. Makresh spends BGN 15,510 per child for a total of 22 children, while Lesichevo spends about one-third of that amount—BGN 5,014 for 98 children. The smallest number of children in kindergartens is in Georgi Damyanovo, with a single kindergarten group.

27. The key factors affecting the unit cost for kindergarten services are the financial model, the kindergarten-age population, and co-financing practices. The financial model spreads fixed costs over the number of children, leading to higher per capita spending in smaller municipalities. Aging municipalities with fewer children also spend more per capita.

Road maintenance and capital investment³⁷

28. Municipalities are primarily responsible for the construction and maintenance of local roads, using their own revenue sources, leading to significant cost variations.³⁸ The results show differences in cost per kilometer across municipalities, which can be explained by variations in access to financing, project planning, municipal investment capabilities, and local conditions. The average cost per kilometer of road increases across the first four categories but decreases in the smallest municipalities in category 5. This is likely due to the limited opportunities for small municipalities to invest in new road construction or major repairs, leaving smaller repairs and maintenance of existing roads as the main cost drivers.

³⁷ Municipal roads are roads outside of the state/republican road infrastructure, whose construction and maintenance are the responsibility of municipalities, as stipulated in the Roads Act.

³⁸ Unit costs are calculated based on municipal spending on road maintenance and investment, and the length of municipal roads.

Table 6. Descriptive statistics of road infrastructure unit costs by categories

	Number of municipalities	Average spending on road investment per km, BGN	Min	Max	Standard deviation
Category 1	26	8,700.4	Dobrich	Bourgas	13,898.1
Category 2	26	13,030.3	Svilengrad	Kozloduy	22,486.7
Category 3	80	13,717.6	Oryahovo	Bansko	12,843.3
Category 4	86	15,774.9	Letnitsa	Dolna Banya	16,296.0
Category 5	46	13,657.6	Pordim	Sarnitsa	14,842.6

Source: MoF, NAMRB, own calculations

29. Local road investment varies due to project availability and municipal readiness, with larger municipalities generally performing better at planning and executing projects. Bourgas spends over BGN 74,000 per km, higher than Varna, likely due to extensive road work. Bansko also spends high amounts, while Devin and Smolyan spend much less. High investment often correlates with significant municipal revenues, as seen in Kozloduy, which spends BGN 118,816 per km due to its nuclear plant. Conversely, Svilengrad, Dupnitsa, and Botevgrad spend much less. A larger road network usually means lower average maintenance spending due to limited resources, with exceptions like Krumovgrad. In the smallest municipalities, spending also differs, with Pordim spending the least and Sarnitsa the most. Average spending in the category with the smallest municipalities is similar to those categories with medium-size ones, indicating limited resources.

3.4.2. Spending efficiency

30. Analyzing spending efficiency is key to identifying options to improve value for money and resource allocation. This requires examining selected output or outcome indicators in relation to spending,

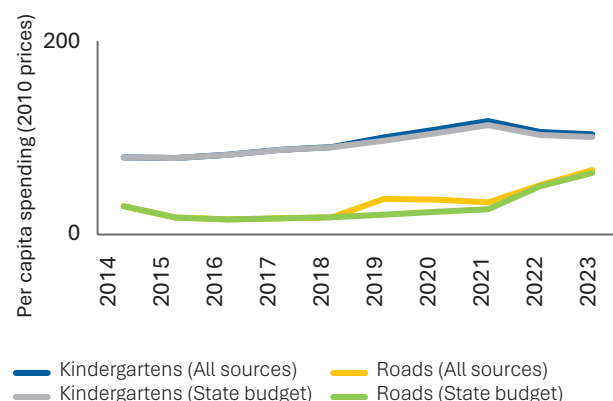
beyond just unit costs. The analysis below examines municipal expenditures on kindergarten care and roads, for which data are available for output indicators. The output indicators for kindergartens include the number of kindergartens per municipality, the number of children served, and the number of staff (both pedagogical and non-pedagogical). Regarding roads, data for 2023 include the total road length in each municipality and the proportion requiring repair.

31. The analysis indicates significant potential to improve the efficiency of spending on kindergartens and roads. Results from a traditional DEA³⁹ are presented in Figure 27. Figures 27.a and 27.b present the corresponding geographical distributions, categorized into four equal-size groups within the interval [0,1]. The results suggest that the average efficiency of kindergarten spending is 56 percent, indicating substantial room for efficiency improvements. Municipalities with the highest efficiency are located near the center of the country, while those with the lowest efficiency are concentrated in the northeast. This spatial variation highlights the potential for targeted policy interventions in underperforming regions.

39 To measure efficiency empirically, the literature considers two approaches: parametric (stochastic frontier) and non-parametric (DEA). DEA assesses relative efficiency by comparing production units with similar input levels. It constructs production possibilities using observable data and has key advantages: no need for distributional assumptions or functional forms, and the ability to handle multiple products through linear programming. However, DEA is fully deterministic and sensitive to outliers and measurement errors, and its non-parametric nature limits statistical testing.

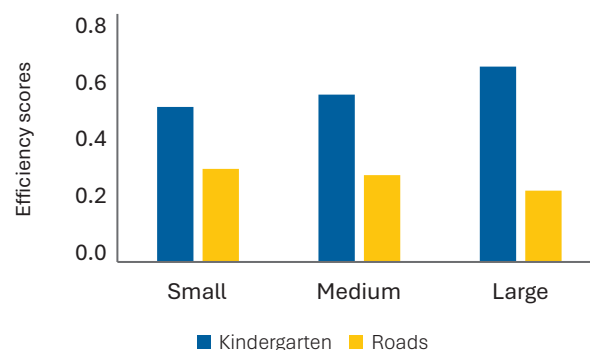
Figure 26. Spending efficiency and municipal characteristics

a. Spending per capita: Kindergarten and roads



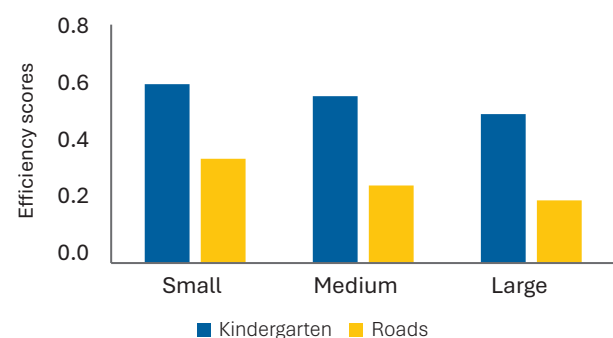
Source: Own estimates based on data from BOOST and NSI

b. Average efficiency scores by population size



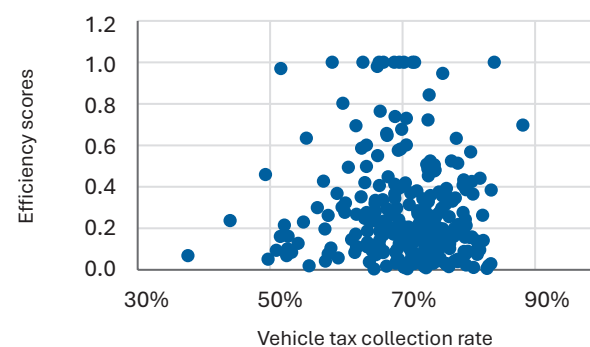
Source: Own estimates based on BOOST and NSI data

c. Average efficiency scores against spending per capita



Source: Own estimates based on BOOST and NSI data

d. Vehicle tax collection rates and the efficiency of road spending



Source: Own estimates based on BOOST and NSI data

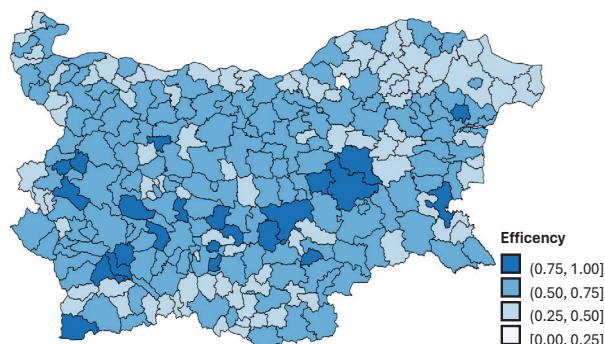
32. For kindergartens, large municipalities generally show higher spending efficiency, while efficiency tends to decline as per capita expenditures rise (Figure 26). Larger municipalities such as Plovdiv, Burgas, and Stara Zagora have higher spending efficiency, likely reflecting greater economies of scale. In contrast, municipalities with lower per capita spending, such as Sliven, achieve higher efficiency, whereas higher spenders like Targovishte, Silistra, and Vidin show lower scores. Efficiency also correlates with demographics—municipalities with more residents holding higher education degrees tend to manage kindergarten spending more efficiently. Areas with aging populations and fewer kindergarten-age children, like Makresh and Georgi Damyanovo, exhibit lower efficiency.

33. The analysis of road spending indicates low average efficiency, with no clear geographical patterns. The average efficiency score of 27 percent highlights substantial room for improvement. While smaller municipalities generally perform better, larger cities like Plovdiv and Varna also score well. Higher per capita spending tends to correlate with greater efficiency, although some high spenders, such as Bourgas and Varna, still show low efficiency scores. However, the sensitivity of the DEA methodology to outliers and the uneven distribution of per capita road expenditures may have influenced these results. Furthermore, there is no strong correlation between spending efficiency and tax collection rates (Figure 26.d).⁴⁰

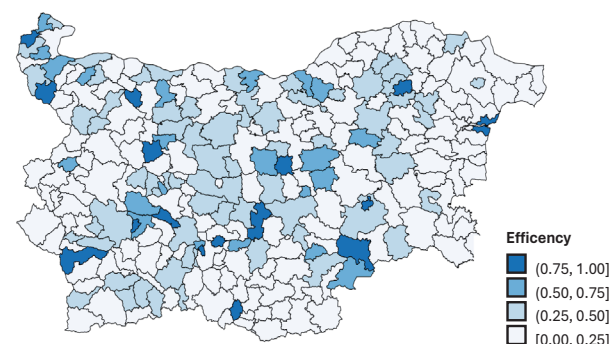
⁴⁰ Measures aimed at improving tax compliance and collection capabilities can also enhance the efficiency of public spending. These efficiency gains are more pronounced in subnational units that benefit from economies of scale and possess robust administrative capabilities, which are often linked to more effective tax collection mechanisms. Furthermore, the composition of taxes (for example, carbon taxes versus income taxes) can influence fiscal multipliers and, as a result, the efficiency of public expenditure.

Figure 27. The efficiency of municipal spending on kindergarten care and roads

a. Geographical distribution of efficiency scores for municipalities: kindergarten care



b. Geographical distribution of technical efficiency at municipal level: roads



Source: Own estimates using data from BOOST and NSI

34. Further, regression analysis reveals that population size, density, and spending growth impact spending efficiency. Table A1 and Table A2 present multiple regression results, using municipal efficiency scores as the dependent variable and factors like population size, density, socioeconomic characteristics, and expenditure growth as independent vari-

ables. For kindergarten care, larger population size and higher annual growth in spending per capita are positively associated with greater efficiency. In the roads category, only population density showed a significant positive correlation with efficiency. Other variables and annual expenditure growth do not show a significant relationship with efficiency.

3.5. Policy recommendations

Short to medium run

35. The government could consider introducing performance-based grants tied to specific output or outcome indicators to supplement or replace some of the existing transfers (see Chapter 2). Current funding mechanisms for delegated services, like education, consider municipal differences but remain too input-oriented, hindering service improvement and spending efficiency.

Long run

36. Strengthening local budgeting practices can help improve spending efficiency. This can be done by systematically collecting and analyzing budget data as well as data on performance indicators and public satisfaction. Such analysis can help municipalities make more informed spending decisions, including downsizing or abolishing spending streams that fail to deliver on their goals. A bigger role for citizens in bud-

getary processes (including planning, prioritizing projects, and monitoring and controlling budget spending) could also help improve efficiency by enhancing transparency and accountability.

37. Municipal fiscal and capacity constraints can be addressed through improved cooperation, including municipal associations for specific services. Small municipalities often lack the capacity for efficient spending and complex project management, as illustrated by the relatively large unit costs in smaller municipalities for road infrastructure spending and kindergarten care. This has been partially addressed in waste management and water and sewerage services through multi-municipality enterprises or other partnerships; a similar approach could be explored in other sectors. In addition to economies of scale, such partnerships—including municipal associations—could bring about more efficient spending and quality controls.

38. Public-private partnerships (PPPs) can help improve service delivery while reducing costs. Local governments may explore opportunities to leverage private sector expertise and investment in areas like water and sewerage, local roads, and other infrastructure.

39. While decentralization can boost spending efficiency, it requires strong accountabili-

ty structures, effective reporting systems, and horizontal control mechanisms (for example, judiciary oversight) to prevent infringements. Digitalization can further streamline administrative processes and improve efficiency. Municipalities should be encouraged to adopt digital technologies, supported by targeted central government programs.

Annexes



Annex 1:

House Prices and Tax Assessment Comparisons

To compare market prices and tax assessments of properties in Bulgaria, we separately analyze (i) public data on real estate offerings in various cities and neighborhoods in 2024 and (ii) data from the Registry Agency for all real estate deals from July 2022 to September 2024. Then, we compare these to our estimates of the tax assessments in the same cities and zones. The zoning of tax assessments in Bulgaria is based on the location coefficient, which varies across municipalities and determines multiple options for tax zones in each. The main zones within a city are zones 1 to 5, followed by a zone ‘within construction areas’ and ‘outside construction areas’ as well as two categories of ‘villa zones’.

A.1.1. Analysis based on public offerings

The presentation of the data on real estate offers does not claim to be completely accurate and comprehensive, but it provides a fairly good idea of the discrepancy between market prices and tax assessments. We separately analyze the data for the capital city of Sofia and for some other municipalities in the country. For Sofia, we analyze various cases in the first four zones, while in the other municipalities, we analyze cases in the most central zone.

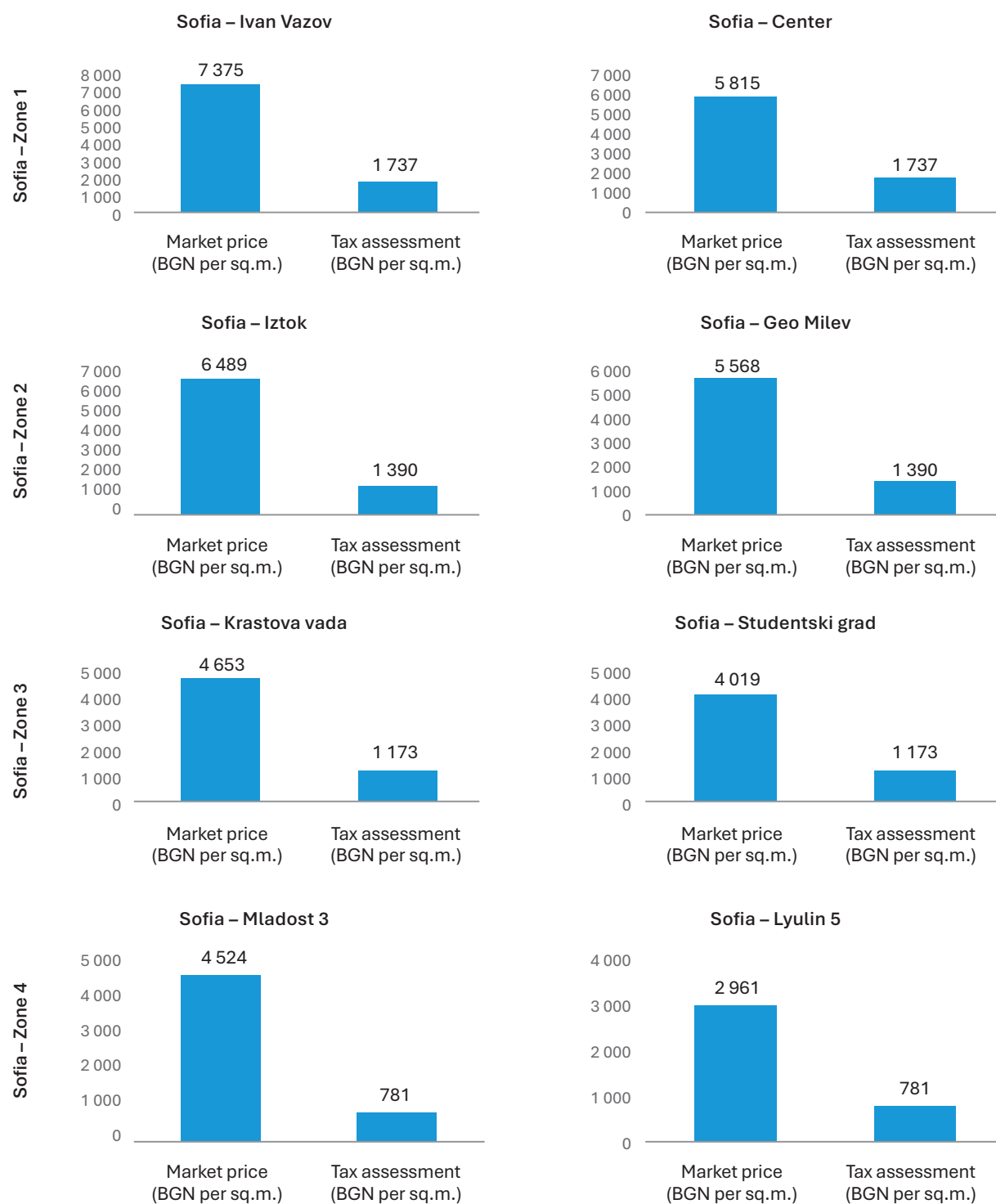
A.1.1.1. Comparisons in Sofia – Zone 1, 2, 3, and 4

The vast number of properties listed in Sofia allows for a detailed analysis of the differences between real estate price offers and tax based assessments in various neighborhoods. To perform the analysis, we choose two different neighborhoods in each of the four main zones, such that they fall in different price ranges within the same zone.

The data are taken from the web page with the most real estate offerings in Bulgaria (imot.bg) on November 11, 2024. The data cover all offers for residential apartments, including 1- to 4-bedroom flats and larger apartments, but exclude maisonettes, studios, and lofts due to their specific characteristics. The data represent an average price for the selected neighborhoods. These are all neighborhoods with more than 100 offers, with Ivan Vazov being an exception as a rather small but prestigious neighborhood with fewer than 100 offers.

- **Zone 1:** We choose Ivan Vazov (35 offers) and Sofia Center (1,000+ offers). Both are in the same zone, but the market price difference between them can easily reach up to 20–25 percent, with Ivan Vazov being at the upper end. The average market price in Ivan Vazov is 4.2 times higher than the tax assessment, while in Sofia Center, it is 3.3 times higher (November 2024).
- **Zone 2:** We choose Iztok (110 offers) and Geo Milev (126 offers), where Iztok is the higher-end neighborhood. The average market price in Iztok is 4.7 times higher than the tax assessment, while in Geo Milev, it is 4.0 times higher (November 2024).
- **Zone 3:** We choose Studentski grad (522 offers) and Krastova Vada (1,000+ offers), where Krastova Vada is the upper-end neighborhood. The average market price in Krastova Vada is 4.0 times higher than the tax assessment, while in Studentski grad, it is 3.4 times higher (November 2024).
- **Zone 4:** We choose Mladost 3 (130 offers) and Lyulin 5 (152 offers), where Mladost 3 is the higher-end neighborhood. The average market price in Mladost 3 is 5.8 times higher than the tax assessment, while in Lyulin 5, it is 3.8 times higher (November 2024).

Figure A1. House prices and tax assessments comparisons in Sofia (BGN, November 2024)



Source: IME based on offerings of real estate in Bulgaria (imot.bg) on November 11, 2024

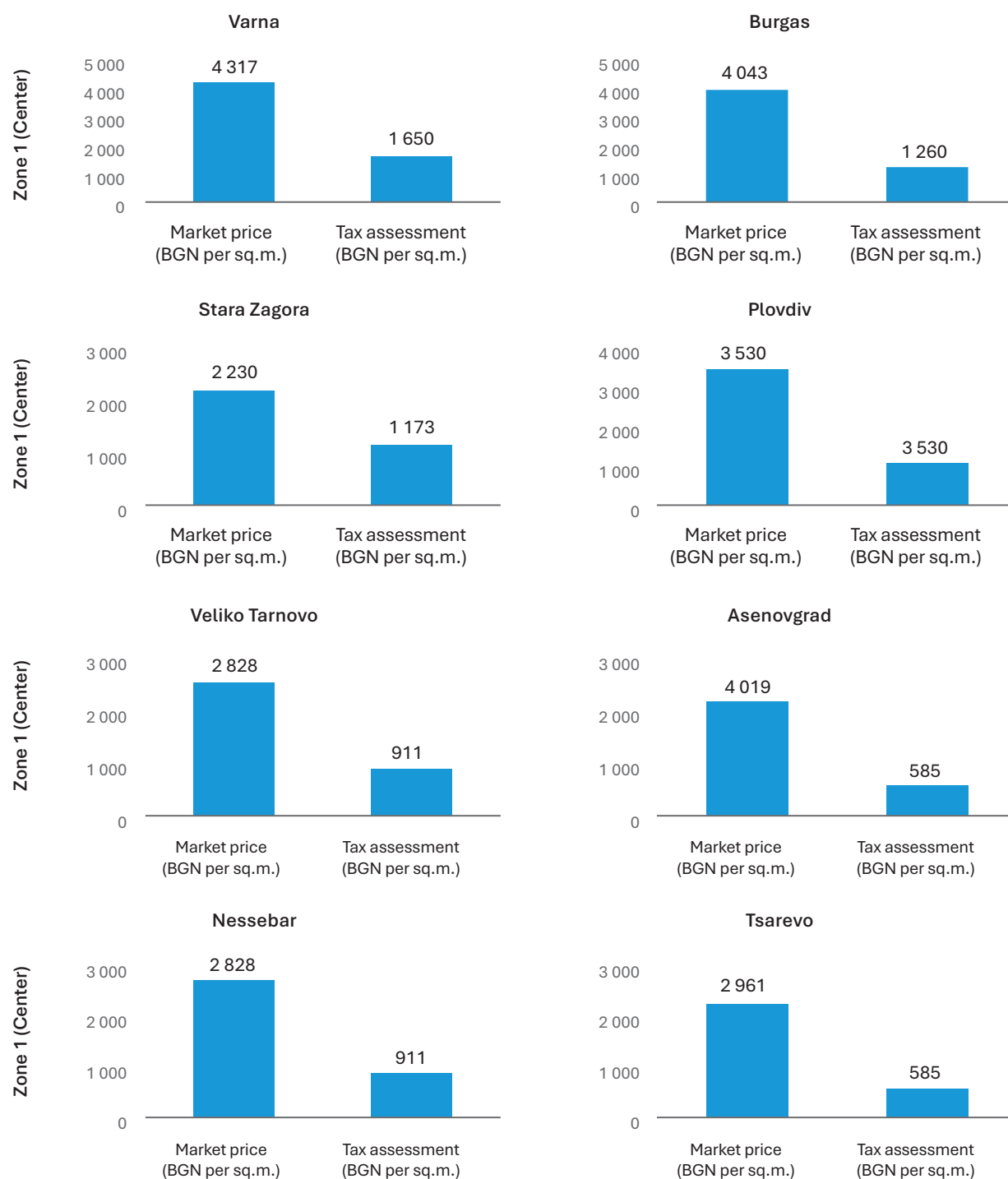
A.1.1.2. Comparisons in Bulgaria - Eight different cities

The broader analysis of real estate prices (price offers) and tax assessments for the whole of Bulgaria covers eight different cities: Varna, Burgas, Stara Zagora, and Plovdiv (each with separate categories and different zoning in the law) and four other cities that fall in the next two general categories.

The data are sourced from the web page with the most real estate offerings in Bulgaria (imot.bg) on November 11, 2024. The data cover all offers for residential apartments (from 1 to 4 bedrooms and large apartments), excluding maisonettes, studios, and lofts. The data represent an average price of real estate for the city center in those municipalities.

- **Varna (538 offers):** Varna has the second-highest tax assessment after Sofia. As the location coefficient is close to that in Sofia (90–95 percent depending on the various tax zones) and the market price difference is much higher, it is expected that the tax assessment will be closer to the market (compared to Sofia). The average market price in Varna center is 2.6 times higher than the tax assessment (November 2024). The average market price in Varna center is around 30 percent less than the price in Sofia Center, while the difference in the tax assessment is around 5 percent.
- **Burgas (149 offers):** Burgas has the third-highest tax assessment. The location coefficient is much lower than that in Varna (20–25 percent difference depending on the various tax zones), while the difference in the price (especially in the city center) is not that substantial. The average market price in Burgas center is 3.2 times higher than the tax assessment (November 2024).
- **Stara Zagora (673 offers) and Plovdiv (1,000+ offers):** Real estate prices in Plovdiv are higher than those in Stara Zagora. However, tax assessments in Stara Zagora, on average, are higher (due to a higher location coefficient), illustrating a substantial divergence between market dynamics and tax treatment of real estate. Thus, average market prices in Plovdiv are 3.3 times higher than the tax assessment, while in Stara Zagora, the difference is 1.9 times (November 2024).
- **Veliko Tarnovo (547 offers) versus Nessebar (636 offers) and Asenovgrad (286 offers) versus Tsarevo (318 offers):** These pairings consist of municipalities in the same category, with one being at the seaside and thus having higher market prices for real estate. In both cases, the difference with the tax assessment is higher in the tourist municipality (Nessebar and Tsarevo, respectively), reaching 4 times in Tsarevo (November 2024).

Figure A2. House prices and tax assessments comparisons in Bulgaria (BGN, November 2024)



Source: IME based on offerings of real estate in Bulgaria (imot.bg) on November 11, 2024

A.1.1.3. Main takeaways from public offerings

The data on current market price offerings and tax base assessments of various properties in Bulgaria lead to several observations and conclusions.

Based on the analysis for the capital Sofia:

- First, the gap between tax base assessments and average market prices in Sofia is substantial (3.5–4.5 times on average) and has increased rapidly in recent years.
- Second, in more expensive areas within the same zone, the market price is usually 4.0–4.5 times higher than the tax assessment, while in less expensive areas, the difference is around 3.5 times.
- Third, there is a higher differential (up to 5–6 times) in ‘trendy’ market areas, which fall in zones with lower tax assessments, such as Mladost 3 in zone 4.

Based on the analysis for other cities:

- First, the gap between tax assessments and average market prices in other cities in Bulgaria is not as large as in Sofia but is still significant (2.5–3 times on average) and has been widening in recent years.
- Second, as the ranking of the four biggest cities (after Sofia) with respect to their tax assessments is outdated, there are inequalities due to recent market dynamics and the faster development of some cities compared to others. Tax assessments in Varna and Stara Zagora are closer to the market price (with 2–2.5 times difference), while in Burgas and Plovdiv, the difference is higher—3–3.5 times.
- Third, there is a higher differential (up to 4 times) in tourist areas by the seaside, like Tsarevo, which are not properly accounted for in the location coefficient.

A.1.2. Second approach based on Registry Agency data

The second approach is based on official data on real estate purchases and sales provided by the Registry Agency in Bulgaria. In 2009, the Integrated Information System for the Cadastre and Property Register (IIS-CPR) was implemented at the Registry Agency across all 113 Registry Offices. In 2022, an upgrade of the IIS-CPR was carried out, and effective from July 1, 2022,

a new functionality of the information system was introduced. This upgrade included the entry of the tax assessment value concerning immovable properties subject to transactions, as well as the indication of the value of each transaction, with the fields ‘tax assessment’ and ‘material interest’ added for this purpose.

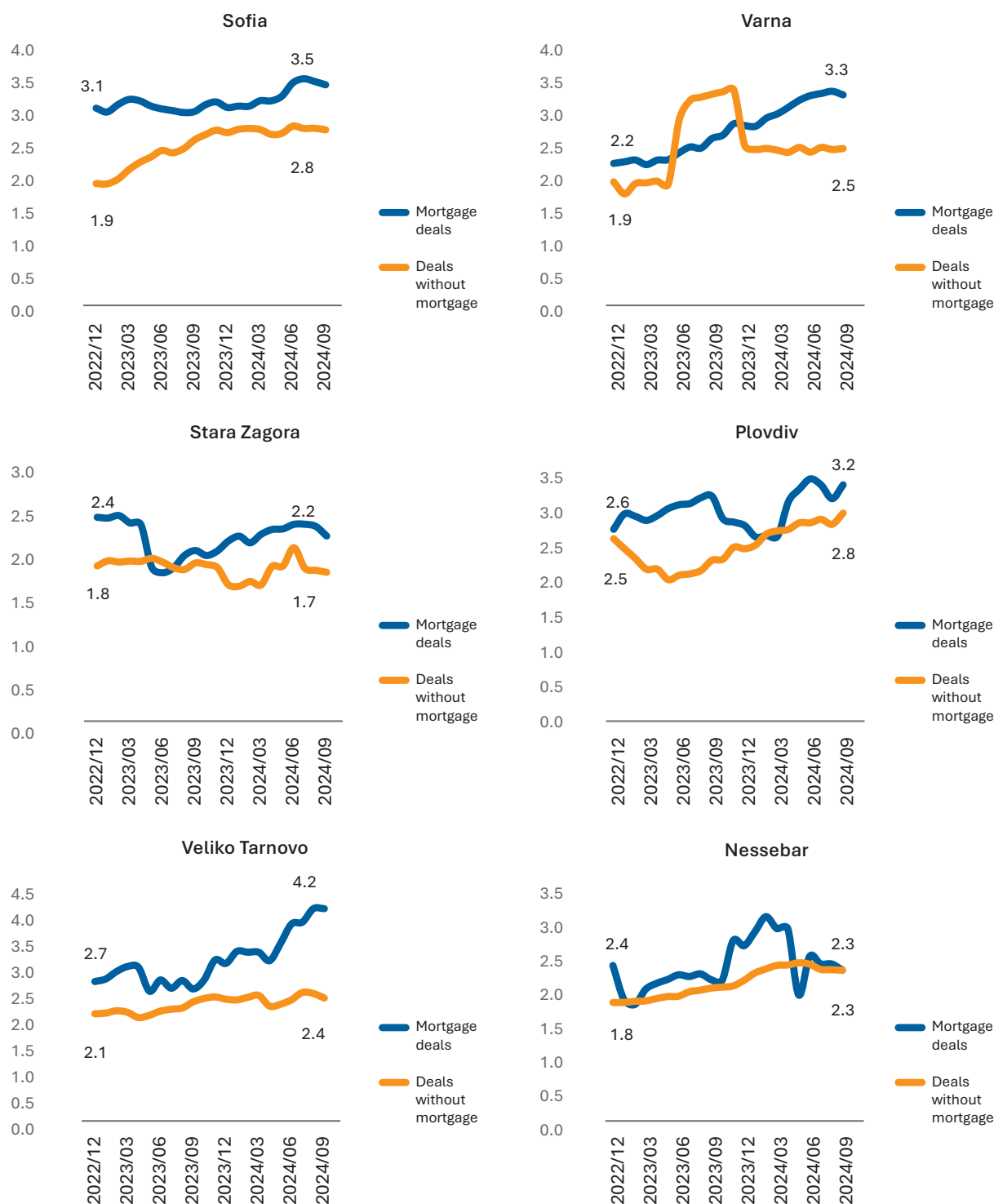
Using these data, we can calculate the difference between the average value of the material interest (market value of the transaction) and the average value of the official tax assessment for each month from July 2022 to September 2024, as per the registrations at all Registry Offices.

- The data clearly indicate the difference between market values of real estate in Bulgaria and tax assessments in the last two years.
- In addition, there is a notable difference between market prices of real estate acquired without a mortgage and those with mortgages. Mortgage-backed deals report higher average prices, resulting in a greater difference with the tax assessment. Deals without a mortgage, meaning no banking institution is involved, report a lower average market price but still show a difference with the tax assessment; a possible explanation for this could be underreporting of actual market prices for tax evasion purposes.
- In most cases, there has been a clear widening of the gap between market prices and tax assessments in the last two years. This is the direct result of increasing real estate prices in Bulgaria and the lack of dynamic components in tax assessments.
- The data support the earlier findings based on real estate offerings—the average value of real estate transactions in Sofia (6-month moving average covering April to September 2024) is 3.5 times higher than tax assessments in mortgage-based transactions, on average, and 2.8 times higher in cases without a mortgage. There has been a significant increase in the difference in the last two years.
- In Varna and Plovdiv, the difference is 3.2–3.3 times for deals with a mortgage and 2.5–2.8 times for deals without a mortgage (6-month moving average covering April to September 2024). In Stara Zagora, the difference is smaller—1.7–2.2 times (6-month moving average covering April to September 2024), which supports the earlier findings based on the higher location coefficient of Stara Zagora.

- In Nessebar, at the seaside, the difference is smaller than expected—2.3 times (6-month moving average covering April to September 2024), indicating that there may be a larger discrepancy between

price offerings and prices at which actual deals are concluded. This will be investigated in more detail by examining other examples at the seaside.

Figure A3. Difference in times between the average value of transactions and the average value of tax assessments in various cities (6-month moving average, 12/2022–09/2024)



Source: IIME based on data from the Registry Agency (July 2022–September 2024)

Note: The spike in Varna in 2023 is explained by reported dubious data for high-average 'Material Interest' in mortgage-free deals from June 2023, which affects the 6-month moving average. Such particularities exist in the Registry Agency data (especially in tourist locations), but the general trend and the main conclusions are not affected.

Annex 2:

Preliminary Test Models for Mass Valuation Modeling Feasibility in Bulgaria

A.2.1. Introduction

This note provides an initial evaluation of the capability of Bulgaria's real estate market data to support the development of reliable mass valuation models that align with international standards. The objective of this analysis is to assess the effectiveness of the available data and modeling approaches, identify potential challenges, and outline strategic recommendations for enhancing mass valuation practices in the short, medium, and long term.

It is important to recognize that this assessment offers a preliminary understanding of the strengths and limitations of the current data and modeling frameworks. Implementing fully developed models for property taxation and mass valuation, which comply with international standards, typically requires a significant investment of time—ranging from six months to five years. This timeline is influenced by various factors, including the quality of existing data, technological infrastructure, market dynamics, human resources, and ongoing support mechanisms.

The models presented in this report are intended for testing only and should not be used for actual property taxation. Any models developed for this purpose must undergo thorough development and quality control in accordance with established international mass valuation standards, such as the International Association of Assessing Officers (IAAO) Standard on Automated Valuation Models and Standard on Ratio Studies. This report aims to establish a foundation for future efforts by identifying key areas that require improvement and investment, thereby facilitating the creation of a robust and defensible mass valuation system in Bulgaria.

A.2.2. Data and methodology

A series of preliminary regression models were conducted to explain the variation in sales prices using certain property characteristics. The methodolo-

gy employed a log-linear/multiplicative regression model for each geographic test area to estimate relationships between property characteristics and sale price. Only statistically significant variables at approximately the 95% confidence level or above (that is, t-statistics with an absolute value of at least 2) were reported.

Initially, the models were run using the full Registry Agency transaction data from 2022 and 2023. Despite the large volume of transactions, relevant fields, and a high level of completeness in the dataset, the models performed poorly, explaining only 5–30 percent of the variation in sales prices. This limited explanatory power may be attributed to several factors, including potential inaccuracies in the data and the absence of key variables that could better capture the determinants of property prices. It is likely that both factors contribute to the low model performance, a common issue in real estate data analysis.

To provide a comparative analysis, residential property listing data was collected from various websites. It is important to note that the dataset represents asking prices rather than final transaction prices. Despite this limitation, the listing data can still offer valuable insights into the characteristics and overall feasibility of modeling Bulgarian real estate prices. Furthermore, it serves as a practical example for stakeholders to understand the potential of alternative data sources in real estate valuation. The results of the regression models based on this listing data also provide valuable insights into the key coefficients in the current purely administrative tax assessment model.

A.2.3. Key findings for current tax assessments

Based on the statistically significant variables in the test modeling for 2,263 listings in Sofia, we can compare the effect of various variables to the current coefficients in the tax assessments.

- The test model shows a difference in price based on the area and property type. The coefficient of Type2-Bedroom is approximately 0.1507, indicating that a 2-bedroom apartment is expected to have a sale price approximately 15.07 percent higher than a 1-bedroom apartment, holding other variables constant. These variables are not accounted for in the current tax assessment model, as the tax assessment per square meter is not dependent on the area or property type (1- or 2-bedroom apartment in this case).
- The test model shows a difference in price based on the material of the property. The coefficient of material/wooden is approximately -0.2591, indicating that a property made of wooden material is expected to have a sale price approximately 25.91 percent lower than a property made of brick, holding other variables constant. The material variable is accounted for in the current tax assessment model (in the base tax value), as properties with wooden material have a tax base 18 percent to 35 percent lower than a property with solid infrastructure.
- The test model shows a difference in price based on various amenities of the property:
 - The coefficient of central/heating is approximately 0.0623, indicating that a property with central heating is expected to have a sale price approximately 6.23 percent higher than a property without central heating, holding other variables constant. The central heating variable is accounted for in the current tax assessment model (in the coefficient for infrastructure), as properties with central heating have a tax base 6 percent higher than a property with no central heating.
 - The coefficient of elevator is approximately 0.0428, indicating that a property with an elevator is expected to have a sale price approximately 4.28 percent higher than a property without an elevator, holding other variables constant. The elevator is accounted for in the current tax assessment model (in the coefficient for individual characteristics), as flats located on the sixth or upper floor in a building without an elevator have a tax base 3 percent lower than a property in a building with an elevator.
- The test model shows a difference in price based on the floor of the property:
 - The coefficient of ground/floor is approximately -0.0928, indicating that a property on the ground floor is expected to have a sale price approximately 9.28 percent lower than a property not on the ground floor, holding other variables constant. The ground floor variable is accounted for in the current tax assessment model (in the coefficient for individual characteristics), as flats on the first floor have a tax base 5–8 percent lower than a flat on an upper floor.
 - The coefficient of top/floor is approximately -0.0616, suggesting that a property on the top floor is expected to have a sale price approximately 6.16 percent lower than a property not on the top floor, holding other variables constant. The top floor variable is accounted for in the current tax assessment model (in the coefficient for individual characteristics), as flats on the top floor have a tax base 5 percent lower than a flat on a regular floor.
- The test model shows, as expected, a significant **difference in price based on the location of the property in Sofia:**
 - The coefficient of location can reach up to -0.5/-0.7, indicating that a property in some locations is expected to have a sale price 50–70 percent lower than a property in the city center in Sofia. The location variable is accounted for in the current tax assessment model (in the location coefficient), as flats in the main five zones in Sofia can have a difference in the tax base up to 55–70 percent (Zone 4 and Zone 5 compared to Zone 1).
 - While the location coefficient allows municipalities to accurately differentiate the tax base across various zones, the data for Sofia show that there are districts where the location coefficient in the current model does not adequately reflect the actual market. This is mostly the case for neighborhoods where the property market is booming but are not in the city center (mostly in Zone 3 and Zone 4). However, this is a policy challenge for municipalities, as they are free to change the zoning for tax assessments at any time.

The data suggest that most of the coefficients in the current tax assessment model—base tax differences based on the material of the building, coefficient for

infrastructure, and coefficient for individual characteristics —are mostly adequate to the price differences in the current real estate market. In addition, the location coefficient provides enough flexibility for municipalities to properly differentiate tax assessments. Nevertheless, two major policy challenges are clearly visible.

First, **the tax base itself is significantly lower than the actual market**, causing tax assessments to generally lag behind. Second, **the zoning in some cases is outdated** (Sofia) and does not properly reflect the real estate market.

A.2.4. Test model conclusions and the prospect of mass valuation modeling

The various test models conducted for mass market valuation in Bulgaria demonstrate significant potential for establishing reliable and accurate valuation systems. However, the performance of these models varied significantly depending on the data source used. With additional effort in data collection, quality control, and the application of valuation best practices—such as those involving AVMs, GIS, and

advanced modeling techniques—the performance of these models can likely be improved further. Establishing a dedicated team to manage data quality and integrating these best practices into the modeling process will be crucial. Numerous international case studies and established best practices outline effective strategies for implementing these improvements, providing a roadmap for achieving a reliable and defensible valuation system.

Moving forward, it is critical to enhance data collection processes and engage in comprehensive standardization efforts. Collaboration between valuation professionals and technical experts, including GIS and data science specialists, will be key to refining model accuracy and performance. Given the variability in data quality and market dynamics across different regions, a phased and strategic approach to implementation is necessary. The next steps should focus on developing formalized feasibility models that incorporate more comprehensive data collection and involve discussions with key stakeholders such as notaries, private firms, and local cadasters. Establishing a robust data infrastructure with dedicated resources will be essential for building a reliable valuation system.

Annex 3:

Implementing a Fiscal Gap Approach to Equalization Grants⁴¹

The fiscal gap methodology for designing equalization grants is based on the simple notion that available equalization funds should be distributed among deserving subnational governments according to the size of their fiscal gap. This gap is defined as the difference between the expenditure needs and the fiscal capacity of each subnational government. This appendix provides an overview of the different approaches used to measure and quantify both expenditure needs and fiscal capacity. It also outlines how the funds can be allocated among subnational governments once the fiscal gap size is determined.

A.3.1. Measuring fiscal capacity

Several methodologies can be used to estimate tax capacity across states. The advantage of using tax capacity instead of actual revenues is that it prevents the introduction of perverse incentives to collect less.⁴²

The fiscal capacity of a subnational government is generally defined as the potential revenues that can be obtained from the tax bases assigned to the subnational government (when they exercise an average level of collection effort) plus any other available revenues, including revenue sharing and possibly other unconditional transfers. The main reason to measure revenue potential is to avoid negative incentives to tax effort when actual revenues are used instead.⁴³

From the perspective of incentives, it is clear that there is only a need to estimate capacity for those types of subnational revenues for which local authorities can exert some discretion, thus affecting final revenue outcomes. This is clearly the case for own tax revenues and fees assigned to subnational

governments. In the case of other subnational revenues from revenue sharing and other unconditional transfers, there is no need to estimate revenue potential. In this case, actual and potential revenues coincide. Transfers, including tax sharing, are controlled by national authorities and do not change. Here are some of the methodologies:

RRS: The basic idea underlying the RRS is to calculate the amount of revenue a state would collect if it exerted average fiscal effort. This is done by collecting data on revenue collections and tax bases for each tax under consideration in each state. Based on information on all tax bases for every state, as well as the national average fiscal effort for each tax, one can compute the amount of revenue each jurisdiction would collect under average fiscal effort. This amount is then used to quantify the fiscal capacity of each jurisdiction. The RRS has been used in Canada and the US. When information on tax bases is lacking, it is necessary to utilize a ‘modified, regression-based, RRS’. The solution lies in using suitable proxies for those tax bases. For example, if the local tax base is (expected to be) highly correlated with the proxy variable, the regressions of tax collections (as the dependent variable) on the proxy variable (as the explanatory variable) provide estimated equations that can reliably predict potential revenues for each jurisdiction. By using the estimated regression coefficients implicitly, an average tax effort approach is employed.

Stochastic frontier estimation of potential maximum revenues: The most significant difference between the RRS approach at the subnational level and the stochastic frontier approach is that, in the latter, jurisdictions are assumed to deviate from optimal

⁴¹ See Martinez-Vazquez (2019).

⁴² Using capacity instead of actual revenues reduces any incentive to grow the economy less. However, it is unlikely that states will sacrifice their growth rates for a chance to increase their devolution shares.

⁴³ Although using measures of fiscal capacity or revenue potential should be enough to avoid perverse negative incentives to collect less, there is a deeper aspect involving incentives that are much harder to avoid. Subnational governments may react to the use of fiscal capacity by attempting to lower their actual tax bases. This type of behavior is possible but highly unlikely given the large collateral damages that would be implied for their local economies.

collections by underperforming in their tax administration collection effort or in other discretionary areas. In contrast, in the RRS approach, jurisdictions can deviate from the expected average by both overperforming or underperforming. The stochastic frontier approach determines the gap between actual collections and potential maximum collections, as shown by the best performers. Among a group, the jurisdiction that raises the highest level of decentralized revenue relative to regional GDP sets the revenue potential for that group of jurisdictions. The best-performing jurisdictions for given characteristics lie on an ‘efficiency frontier’. Less efficient jurisdictions can be seen as falling short of the frontier, and the larger the distance to the frontier, the greater the degree of inefficiency. Therefore, efficiency (maximum capacity) and inefficiency (actual revenues less than potential maximum revenues) are relative to the best performers.

Using basic proxies for the local ability to tax: A different approach to estimating the fiscal capacity of subnational governments is to consider proxies or variables that theoretically should be highly correlated with their ability to collect revenues. A widely used variable is the per capita level of personal income. The source of revenue for subnational governments, either directly or indirectly, is the income of their tax-paying residents. As a result, the per capita level of personal income becomes an obvious measure of fiscal capacity. The main advantage of using per capita personal income as a measure of fiscal capacity is its simplicity and availability, at least at the regional level. Another commonly used variable is the gross regional product (GRP).

Lagged own revenue collections: The lagged or historical level of revenue collections provides a simple way to define the fiscal capacity of the jurisdictions. Unfortunately, using past collections does not satisfactorily address the problem of negative incentives, because subnational governments can easily ‘learn’ that higher collections translate into lower transfers and consequently reduce their tax effort to take advantage of the transfer system.

Average of past collection ratios: To reduce the negative incentives problem associated with using lagged own revenue collections in estimating fiscal capacity, some slight manipulations of historical collections can provide straightforward and somewhat effective solutions. This methodology involves

computing the ratio between local per capita revenues and per capita revenues at the national level for several years and then obtaining an average of these ratios for each jurisdiction. This average indicates the relative size of local per capita collections compared to the national standard over several years. Thus, a single estimator of relative fiscal capacity is obtained for each jurisdiction, considering only historical collection data indirectly.

A.3.2. Measuring expenditure needs

The expenditure needs of a jurisdiction can be defined as the funding necessary to cover all expenditure responsibilities assigned to the subnational government at a standard level of service provision. In practice, there are several options for measuring differences in expenditure needs across subnational governments. The following discussion describes six methodologies, presented in order of complexity from the simplest to the most complex. There are alternative approaches to measuring expenditure needs in international experience.

Per client (top-down) financial expenditure norms:

This methodology uses detailed information about the expenditure functions assigned to the state governments. The procedure can be summarized as follows: First, the aggregate level of expenditure needs per function assigned to the state government is estimated based on adjusted historical data or budget forecasts. The functional budget forecast can incorporate adjustments responding to changes in expenditure priorities. The second step is to compute the per client expenditure norm for each function by dividing the aggregate level of expenditure needs by the number of clients or users of that function at a national level. For instance, for state expenditures in secondary education, the number of secondary students in the country becomes the number of clients. The third step is to multiply the per client expenditure norm for each function by any needed adjustment cost factor. Fourth, the expenditure need for each function in a state is obtained by multiplying the adjusted per client norm by the number of clients in the state. The total expenditure needs of the state are the sum of those for all functions.

Bottom-up costing of baskets of standardized inputs: This methodology exhaustively costs standard-

ized baskets of state government services. In addition to determining standard levels of public services (national averages or minimum requirements), this approach requires detailed quantification of the inputs, information about their costs or prices, a description of the production process for all local public goods and services, and explicit procedures for how to cost all aspects of the expenditure responsibilities of subnational governments. The expenditure needs for each local government are obtained by simply adding up all the costs of delivering the targeted standards associated with the subnational services within the jurisdiction.

Regression-based RES: This methodology is more complex and data intensive, requiring several steps. First, select the expenditure responsibilities of states that will be subject to equalization. Second, identify the main factors, other than input prices, that determine the cost of providing local services for each of the selected functions. This can be done through a regression analysis, where the explained or dependent variables are the actual expenditures incurred in each function, and the explanatory or independent variables are those that explain differences in the cost of providing public services across jurisdictions. The relevant factors are those that are statistically significant and have a substantial impact on the costs of public service provision. Third, compute the per capita representative expenditures for each function and locality using the coefficients obtained from the regression analysis. The representative expenditure is interpreted as the amount of money a local government would have spent in a category if it had provided the standard level of service, which can be adjusted by differences in input prices. Finally, the sum of the adjusted representative expenditures of all functions is the estimated expenditure needs of the state.

Weighted indexes of expenditure need proxies: This approach involves creating a composite index of expenditure need proxies, which are assigned intuitive relative weights to capture their influence on the overall cost of service provision. This method has strong similarities with the approach currently used in India. The list of criteria entering the index and the weights used need to be carefully assessed. The choices of factors and weights capturing the variation in expenditure needs can be made using statistical techniques.

Lagged expenditure values: An uncomplicated way to define the expenditure needs of a jurisdiction is to rely on historical expenditure patterns. Specifically, the available information on expenditure data from the last year(s), adjusted for inflation, could be assumed to represent the expenditure needs for each jurisdiction. If local governments have significant discretion in deciding the amount spent during a period, this method offers a reasonably realistic estimation of expenditure needs, with advantages like simplicity and minimal information requirements. Unfortunately, using historical data could also provide perverse incentives to local authorities, because they may eventually 'learn' that increasing expenditures in the present will result in higher equalization transfers in the future.

Equal per capita expenditure norm: The simplest way to estimate per capita expenditure needs is to take the average of historical expenditures per capita at a national level. To compute this average, it is first necessary to determine the aggregate level of subnational expenditure needs, which can be based on adjusted historical data or budget forecasts, and then divide this amount by the national population. This simple procedure is advantageous when there is no detailed information about the differences in per capita needs or the cost of providing local public services across jurisdictions, or when those differences are negligible.

A.3.3. Implementing the Fiscal Gap Equalization mechanism

After estimating the expenditure needs and fiscal capacity for each state, the 'fiscal gap' for each can be computed. This stage of the methodology can be summarized in three simple steps. First, define the fiscal gap as the difference between expenditure needs and fiscal capacity. States without a positive fiscal gap—that is, those where potential available resources (fiscal capacity) exceed expenditure needs—become ineligible for an equalization transfer and are dropped from the process entirely. The second step is to define the 'relative fiscal gap' for each state that is eligible for an equalization grant. The relative fiscal gap is the size of each state's fiscal gap as a share of the aggregate fiscal gap (totaled over all states with a positive fiscal gap). The third step is the assignment of equalization transfers pro-

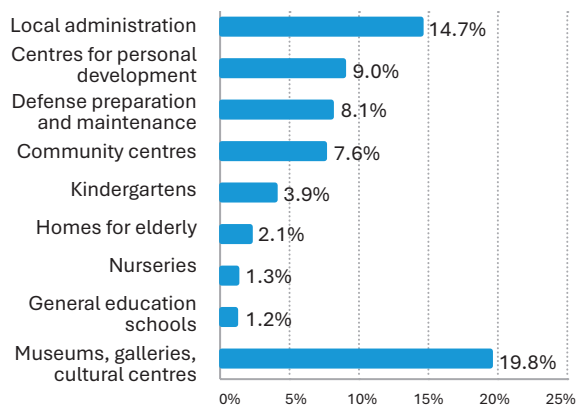
portionally to each state's relative fiscal gap by multiplying the relative fiscal gap by the total pool of funds available for equalization. As mentioned above, the pool of funds can be provided by the central government and/or contributions from better-off states, where fiscal capacity exceeds expenditure needs. Fi-

nally, there are other approaches to dividing the pool of funds in relation to fiscal gaps. For example, one alternative is to minimize the maximum fiscal gap among the states. Also, Robin Hood contributions from richer states, if they exist, can be designed in several ways—proportional, progressive, and so on.

Annex 4:

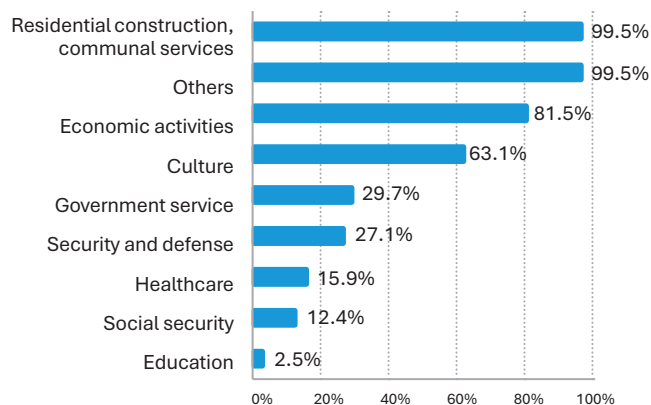
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Figure A4. Services with the highest level of co-financing (2023), %



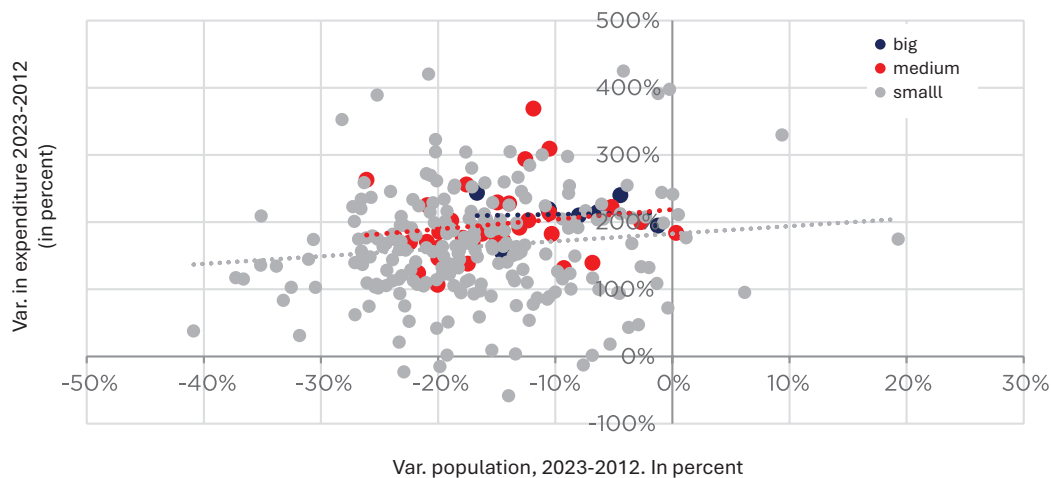
Source: MoF

Figure A5. Share of local financing in total municipal expenditure by government functions (2023), %



Source: MoF

Figure A6. Evolution of population versus public expenditure (2023–2012), %



Source: World Bank analysis based on the BOOST, World Bank, and NSI

Table A1. Determinants of municipal efficiency scores: Kindergarten spending

	(1) Technical efficiency for kindergartens spending	(2) Technical efficiency for kindergartens spending
Ln total population (2014–2023)	0.047*** (0.009)	0.058*** (0.012)
Population density (2023)	–0.027 (0.026)	–0.028 (0.024)
Percentage of population with higher education	0.004** (0.002)	0.003 (0.002)
Unemployment rate (2021)	0.001 (0.001)	0.002* (0.001)
Average annual growth of kindergartens spending (2014–2023)	0.662*** (0.192)	0.592*** (0.185)
Constant	0.010 (0.085)	–0.016 (0.112)
Observations	262	262
R-squared	0.206	0.395
Province fixed effects	No	Yes

Note: Robust standard errors in parentheses

***p < 0.01, **p < 0.05, *p < 0.1.

Table A2. Determinants of municipal efficiency scores: Road spending

	(1) Technical efficiency for roads spending	(2) Technical efficiency for roads spending
Ln total population (2014–2023)	–0.047*** (0.017)	–0.027 (0.019)
Population density (2023)	0.364*** (0.071)	0.383*** (0.102)
Percentage of population with higher education (2021)	0.001 (0.004)	–0.002 (0.005)
Unemployment rate (2021)	0.003 (0.002)	0.002 (0.003)
Percentage of employees commuting (2021)	–0.001 (0.001)	–0.001 (0.001)
Average annual growth of roads spending (2014–2023)	0.002 (0.014)	0.004 (0.015)
Constant	0.653*** (0.209)	0.502** (0.208)
Observations	258	258
R-squared	0.111	0.227
Province fixed effects	No	Yes

Note: Robust standard errors in parentheses

***p < 0.01, **p < 0.05, *p < 0.1.

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