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Long-Term Spending Pressures in Europe

Prepared by Stephanie Eble (lead), Alexander Pitt (co-lead), Irina Bunda (co-lead), Oyun Erdene Adilbish, Nina Budina, Gee Hee Hong, Moheb Malak, Sabiha Mohona, Alla Myrvoda, and Keyra Primus

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Executive Summary

European countries face high, rising, and long-lasting spending pressures, underscoring the need for a renewed focus on fiscal policy and comprehensive structural reforms to prepare their economies for the next decades. On top of the existing fiscal burden—reflected in high deficits and debt ratios in several countries, exacerbated by recent shocks and the need for fiscal consolidation—spending pressures in five key areas are imminent and growing in Europe: pensions and health care/long-term care spending driven by population aging, the costs of the climate transition, increased defense spending, and higher government borrowing costs.

Some pressures are immediate, whereas others will build up over time. Using data from European Union (EU) institutions, other sources, and own calculations, additional expenditures in these areas are estimated to amount to 5.75 percent of GDP per year by 2050 in Advanced Europe and 8 percent of GDP per year by 2050 in Central, Eastern, and Southeastern Europe. Making matters more complex, fiscal paths need to account for consolidation needs while incorporating these large and increasing long-term spending pressures.

Addressing these pressures will require large-scale and comprehensive efforts—including building institutional capacity and implementing deep structural reforms—to contain spending, ensure adequate revenue, and meet environmental, social, and security objectives. Also, reforms have distributional consequences within and across countries, as well as across generations, and policymakers will need to address them, in particular by protecting the most vulnerable households.

Given the scale and time span of these pressures, a broad reform agenda will be needed. The optimal policy mix and sequencing will vary based on each country's circumstances, the overall amount and types of fiscal pressures, and social preferences. Because structural reforms take time to yield results, urgent action is needed despite the long-term nature of the challenges. In many countries, this will entail reforms to ensure the long-term sustainability of pension systems. Fighting climate change requires fiscal instruments, both taxation and spending. In particular, carbon pricing should be part of the policy mix, to promote energy conservation and encourage the shift to clean energy, with fiscal revenues recycled to compensate vulnerable households.

Increased revenue mobilization also needs to be considered, especially in Central, Eastern, and Southeastern Europe where tax rates and fiscal revenue are still relatively low. Moreover, it is essential to reduce inefficient spending, such as on energy subsidies, to create room for higher priority spending. Fiscal space, where available and appropriate could be used to temporarily finance higher spending needs and investments that will improve potential growth and benefit future generations. At the European level, strengthening the EU's fiscal capacity in key areas to expand the provision of common public goods, such as climate, defense, energy security, and research and development, could help realize efficiency gains and support member states that face particularly high spending pressures in some areas. Finally, structural reforms to boost Europe's growth potential—for example, completing the European single market and the banking and capital markets union, harmonizing rules and regulations, and reducing red tape and inefficiencies—would help all countries increase fiscal room for maneuver.

Raising awareness of the problem and implementing this agenda will not be an easy task. Well-designed fiscal frameworks that incorporate long-term spending pressures, supported by comprehensive analysis and data, can help inform and shape the public debate that will be needed to evaluate trade-offs and support actions to ensure that spending pressures are adequately addressed. The reformed EU fiscal governance framework is a step in the right direction in terms of explicitly accounting for spending pressures from the

aging population, but spending on the green transition and defense will need to be integrated. Moreover, estimates of spending pressures need to be effectively integrated into member states' fiscal frameworks to underpin national decision making.

These are demanding times for policymakers. The challenges are immense, and the solutions are not easy. But taking no action is not an option because this would risk fiscal sustainability or mean that priority spending needs are unmet. Or both.

Acronyms and Abbreviations

Advanced Europe	Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom (excludes CESEE)
CESEE	Central, Eastern, and Southeastern Europe (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Montenegro, North Macedonia, Poland, Romania, Serbia, Slovakia, Slovenia).
CIT	Corporate income tax
DSA	Debt sustainability analysis
EC	European Commission
EIB	European Investment Bank
ETS	Emissions trading system
EU	European Union
GHG	Greenhouse gas
MTFF	Medium-term fiscal framework
NATO	North Atlantic Treaty Organization
NGEU	Next Generation EU
OECD	Organisation for Economic Co-operation and Development
PIT	Personal income tax
R&D	Research and development
VAT	Value-added tax
WEO	World Economic Outlook

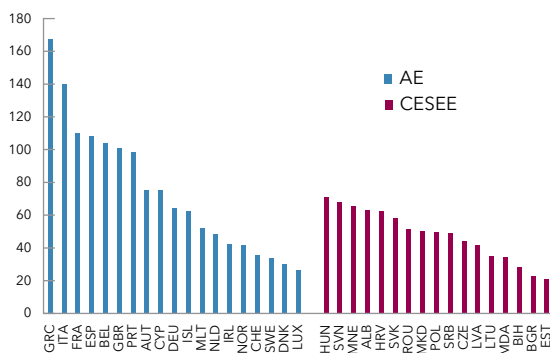
1. Introduction

European economies face significant strains on their public finances. The pandemic and subsequent policy interventions to support economies and protect livelihoods in the face of the energy shock added a heavy fiscal burden to the already-high levels of deficits and public debt in many European economies (Figure 1). Fiscal consolidation is needed in many countries—and mandated for European Union (EU) member states by new fiscal rules—to ensure fiscal sustainability and rebuild fiscal buffers.

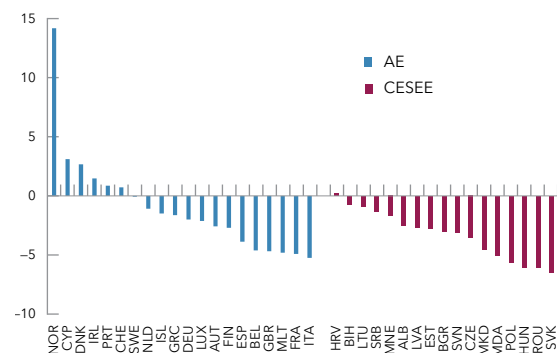
At the same time, additional spending pressures arising from aging societies, geopolitical shifts, and the need to combat climate change are imminent and growing: pensions, health care, and long-term care spending; increased defense spending; investments in the green transition; and higher government borrowing costs because interest rates have normalized. The burden of these costs, combined with the need for consolidation, will be felt in the near term and increase considerably over time. Given their scale, as well as the macroeconomic environment of low productivity growth in Europe, meeting these spending pressures will be challenging.

Figure 1. Europe: Fiscal Position

1. Public Debt, 2023
(Percent of GDP)



2. Fiscal Balance, 2023
(Percent of GDP)



Sources: WEO; and IMF staff calculations.

Note: AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

Spending pressures are different from fiscal risks. Spending pressures—such as those described in previous passages—relate to predictable expenditures required to fulfill public policy goals and meet societal demands. There is uncertainty around the estimates of these pressures—especially related to climate mitigation investments—and there may be cascading or feedback effects (for example, population aging might affect capital formation and productivity and thus GDP, exacerbating pressures). Still, it is already known today that these spending needs will occur and that the needs will be large. In contrast, fiscal risks arise from unforeseen shocks or the materialization of contingent liabilities that could cause fiscal outturns to deviate from anticipated trajectories and affect a government's financial position.

Although significant spending pressures are common across Europe, their scale is different across countries, as are their starting positions. Although most countries have little fiscal space, some have more room to absorb at least some pressures, especially for investments. Some countries can also afford higher deficits for extended periods. Most advanced European countries have already-very-high public expenditure-to-GDP

ratios, but in most Central, Eastern, and Southeastern Europe (CESEE) countries, spending (and revenue) is well below the levels in advanced European economies. Finally, a few countries are relatively well prepared institutionally, with long-term fiscal projections taking into account the future spending needs under different scenarios and institutions holding policymakers accountable. Others produce projections only a few years out based on current trends. Also, some countries may have already budgeted for some of the spending pressures in their medium-term fiscal frameworks (MTFFs).

This paper seeks to stimulate public debate over these issues. To this end, it aims to quantify these long-term spending pressures through 2050—using a consistent methodology across countries—and understand key drivers behind the heterogeneous trends in Europe.¹ It also discusses the institutional preparedness of European countries and the trade-offs of different policy options for addressing these long-term spending pressures. It does not place the spending needs into a formal macroeconomic context, for example, estimating the growth effects of eventual fiscal adjustment actions—revenue increases or spending cuts—undertaken to address the needs or effects from higher public debt if the spending pressures are not offset in other ways. It discusses these effects and channels qualitatively and provides some estimates from other sources. Further work and estimates will be needed at the country level.

The paper also does not cover the cost of industrial policy beyond climate-related spending (for example, renewable energy grids or railways). Also, it does not cover large non-climate-related infrastructure spending needs related to Europe’s aging infrastructure or closing infrastructure gaps in CESEE to support economic convergence.² At the same time, offsetting spending pressures (for example, reduced education spending as fewer children are born or lower unemployment benefits with a shrinking labor force) are not taken into account because these amounts are estimated to be relatively small. Also, an important caveat is the large uncertainty surrounding these quantifications, especially for spending on climate mitigation and, more broadly, data gaps for some non-EU emerging market countries.

The structure of the paper is as follows: The second section reviews the current literature attempting to quantify long-term spending pressures. The key pressures and the driving forces behind them across countries, as well as the additional channels that will strain public finances in the long term, are analyzed in the third section. The central role of fiscal institutions to address long-term spending pressures, including the new EU fiscal framework being rolled out in 2024, is presented in the fourth section. The fifth section discusses a range of policies to manage spending pressures, including deep fiscal structural reforms, and their implications. The sixth section concludes.

¹ Because of these data limitations, the paper does not cover Andorra, Belarus, Israel, Kosovo, Liechtenstein, Russia, San Marino, Türkiye, and Ukraine.

² Closing 50 percent of the physical infrastructure gaps in CESEE, in terms of quantity, relative to the EU15 by 2030 could cost 3 to 8 percent of GDP annually, and it could cost even more to make the infrastructure stock climate resilient, green, and of EU15 quality (Anil and others 2020).

2. Literature Review

Several recent cross-country studies have aimed to quantify long-term spending pressures in Europe. However, they often lack comprehensive coverage of all sources of spending needs, do not cover policy options, or focus on a relatively short time horizon. Estimates of spending pressures are highly uncertain and vary significantly across studies, but they are all large.

The IMF's April 2024 Fiscal Monitor focuses on a shorter horizon—through 2030—and not only covers European countries but also quantifies a comprehensive list of pressures on public spending for advanced economies, emerging markets, and low-income and developing countries worldwide. The study warns that potential additional pressures could be very large and are not fully incorporated into medium-term fiscal and financing plans. The authors estimate that, by 2030, advanced economies could face spending needs amounting to an additional 6.0 to 7.4 percentage points of GDP (IMF 2024a).

Examples of studies focusing on Europe in the medium term and excluding aging-related spending pressures are Zettelmeyer and others (2023) and Bouabdallah and others (2024). Specifically, Zettelmeyer and others (2023) look at a time horizon of 5 to 10 years. Because fiscal pressures—namely those connected with higher debt levels, higher expected real interest rates, and higher public investment needs—increased substantially after the pandemic and shocks related to Russia's war in Ukraine, the authors quantify the fiscal adjustment needed to put debt on a continuously declining path. Their results suggest that the steady-state primary balances required to stabilize the debt have risen by 0.8 percent of GDP on average relative to pre-pandemic levels. The authors also highlight additional spending needs on defense and climate and digital transitions, which they note may run well above 1 percent of GDP per year. Bouabdallah and others (2024) also quantify spending on the green transition, digitalization, and strengthening military defense in Europe. These require massive investments, estimated at some € 5.4 trillion (about 3.75 percent of EU GDP) over the next seven years. The authors call for a coordinated, holistic, and multipronged approach to deal with the fiscal pressures.

Other studies (for example, KPMG 2023) take a longer-term approach but do not include emerging spending pressures, such as climate mitigation and defense. Guillemette and Turner (2021) quantify long-term fiscal challenges and vulnerabilities for Organisation for Economic Co-operation and Development (OECD) countries over 2021–60 and conclude that without policy changes, maintaining current public service standards and benefits would increase fiscal pressures in the median OECD countries by nearly 8 percentage points of GDP. The EC (2024a) provides detailed economic and budgetary projections for the EU member states and Norway up to 2070 based on common assumptions and methodologies. Budgetary projections cover four large spending categories: public spending on pensions, health care, long-term care, and education, together accounting for almost 25 percent of GDP on average in 2022 for the EU. The report also provides a number of scenarios and stress tests. Finally, for some countries, independent bodies produce forecasts of their own long-term spending needs (aging, climate) as part of their fiscal sustainability reports and discuss their effects on public finances (for example, the Netherlands, Switzerland, United Kingdom).

This study contributes to the literature by applying a consistent framework to compile and provide long-term estimates for a comprehensive set of spending pressures across Advanced Europe and CESEE countries and by analyzing the trade-offs of different policy options to deal with them.

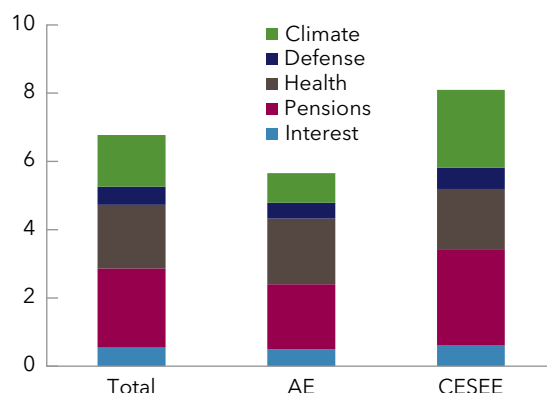
3. Spending Pressures

A. Direct Pressures

Spending pressures in Europe are projected to be substantial (Figure 2). Spending needs on pensions, health care, and long-term care; defense; climate; and public borrowing costs for 2025 are already significant, averaging 2.5 percent of GDP across Europe in 2025 and are expected to more than double by 2050, reaching 6.75 percent of GDP (for the methodology, see Box 1 and Annex 1). Climate and defense dominate spending pressures in the near term, accounting for 70 percent of estimated pressures for 2025, given the urgency of tackling climate change and bolstering European security. Over the medium to long term, pensions and health increasingly become the key drivers of spending pressures as European populations age and, in some cases, also shrink. In addition, risks to the estimates are tilted to the upside and stem from the assumption of no-policy-change baseline projections which may be socially unacceptable and from the possible reversals of already adopted reforms.³

Spending pressures are expected to be larger in CESEE (8 percent of GDP per year in 2050) than in Advanced Europe (5.75 percent annually).⁴ This is to a large extent because of higher pressures arising from the need to meet climate policy targets (2.25 percent of GDP annually in CESEE versus just below 1 percent in Advanced Europe) and to a lesser extent because of larger increases in defense spending. Pension spending pressures in CESEE are also higher than in Advanced Europe from the mid-2030s onward. On the other hand, health expenditures (for both health care and long-term care) are projected to rise more rapidly in Advanced Europe, whereas higher interest payments are similar across Europe. Spending pressures in Advanced Europe are highest in Portugal, Spain, Switzerland, and United Kingdom (all above 8 percent of GDP by 2050) and in CESEE, especially in North Macedonia, Slovenia, Bosnia and Herzegovina, and Poland (all above 10 percent of GDP) (Annex Figure 2.1).

Figure 2. Europe: Spending Pressures in 2050¹
(Percent of annual GDP)



Sources: EC; EIB; WEO; and IMF staff estimates and projections.

Note: Total excludes AND, BLR, ISR, KOS, LIE, RUS, SMR, TUR, and UKR. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

¹Annual spending pressures beyond baseline.

³ In some cases, a no-policy change scenario implies a significant reduction in pension benefits or increases in the retirement age (benefit ratio effect). Where available, the projections use a scenario where the loss in the benefit ratio is limited.

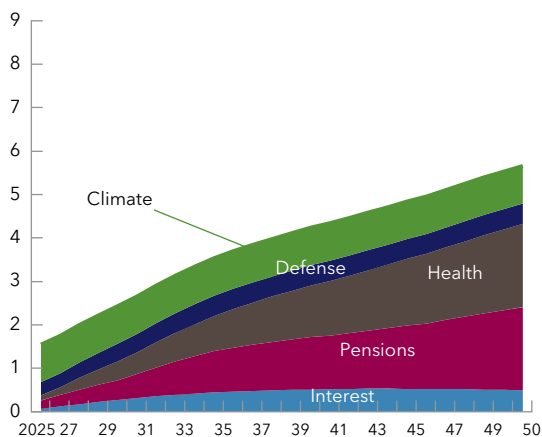
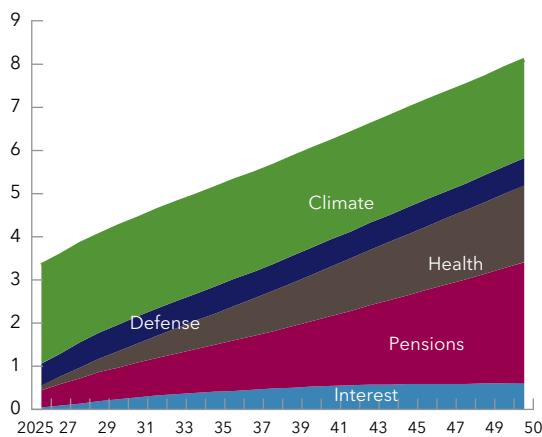
⁴ Advanced Europe and CESEE averages are unweighted. The results when using GDP-weighted averages are very similar.

Box 1. The Methodology for Estimating Spending Pressures

Spending pressures are defined as the deviation of projected spending needs from a baseline. For health care, long-term care, and pension spending, the baseline is set at the level (in percent of GDP) of 2023; for defense, it is at the level of 2021 or 2022, whichever is higher (that is, before Russia's invasion of Ukraine, which prompted most countries in Europe to revise plans for medium-term defense expenditure); and for interest expenditure, it is set as a constant fraction of the preceding year's debt stock (which evolves in line with our fiscal projections in the long term—see Annex 1). For spending on climate transition, the baseline is set at 45 percent of total spending needs estimated by the European Commission (EC), excluding transport, that is, the level considered by the European Investment Bank (EIB) to be already taking place (based on estimates for 2011–20).

The pressures are then the difference between estimated total annual costs and the baseline. Estimates for **pensions, health care, and long-term care** are from the EC (2024a).¹ For countries not covered by the Ageing Report, we project pension costs based on the projected population aged 65 and older (which in turn is derived from United Nations population projections), and pension levels relative to GDP per capita over the past five years. We use projections from the IMF's Fiscal Monitor (updated as of March 2024) for health care and long-term care outside the EU. **Defense spending** projections are based on announced commitments by individual countries relative to current levels. For most North Atlantic Treaty Organization members, this amounts to 2 percent of GDP, though some North Atlantic Treaty Organization members have announced significantly higher targets (or are already spending more). The estimated total costs of the **green transition** for EU member states are derived from estimates by the EC and EIB, adjusted by spending already taking place, and the estimated share of the public sector. These adjustments are based on the EIB's 2020/21 Investment Report, which outlines estimates for the costs of the green transition. For non-EU countries, we have used as an approximation estimates of the IMF-World Bank Climate Policy Assessment Tool (CPAT) model (Black and others (2023b)) of the carbon taxes required to achieve an assumed 25 percent reduction target in greenhouse gas emissions (because these countries are not bound by EU targets) and the accompanying erosion of the tax base. We have also assumed that the costs of the green transition are distributed evenly over time. For **interest costs**, the projections assume that the average interest rate is rising gradually to the neutral rate, approximated by the nominal GDP growth rate.

¹ The Ageing Report considers a number of scenarios. We have used the baseline scenarios, except where the EC also presents, in the case of pension spending, a scenario with a constant benefit ratio. This is calculated for some countries where current legislation would imply a reduction of pensions by 10 percent relative to the base year and stabilizes the benefit ratio from that point onward.

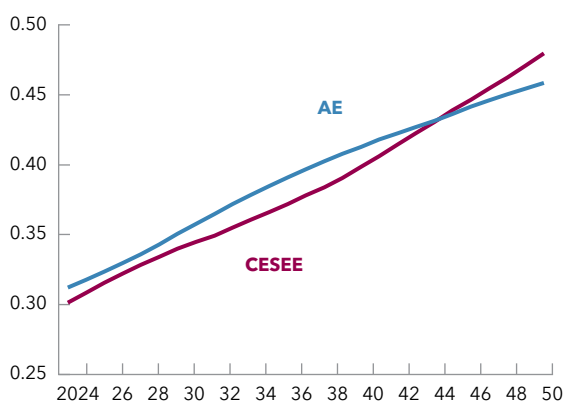
Figure 3. Europe: Spending Pressures 2025-50¹**1. Advanced Europe***(Percent of annual GDP)***2. Central, Eastern, and Southeastern Europe***(Percent of annual GDP)*

Sources: EC; EIB; WEO; and IMF staff estimates and projections.

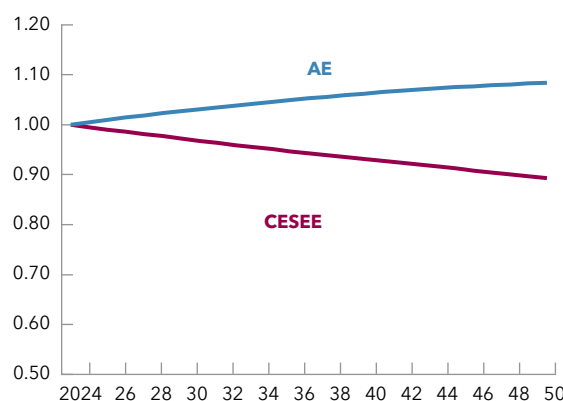
¹Annual spending pressures beyond baseline.

Pension spending is set to rise steadily in Advanced Europe by 0.75 percent of GDP over the next 10 years, with a slowdown in the late-2030s. In contrast, in CESEE, pension spending is set to grow similarly initially but accelerates from the mid-2030s to close to more than 1.25 percent of GDP in the decade from the mid-2030s on (Figure 3). By 2050, pension spending pressures are projected at 3 percent and 1.75 percent of GDP in CESEE and Advanced Europe, respectively. Underlying this difference is an increase in the old-age dependency ratio in CESEE, beyond that of Advanced Europe (Figure 4). Moreover, the total population in Advanced Europe is projected to rise slightly because of immigration, whereas in CESEE it is projected to decline by 10 percent in the next quarter-century, based on recent trends and the assumption of convergence to past trends in the EU.⁵ It should be noted, however, that migration patterns are changing in CESEE, with migration in most CESEE countries having turned net positive in recent years. Moreover, even when accounting for private schemes, pension adequacy—with an average replacement rate of 33 percent—remains an issue in CESEE, likely requiring more generous public pensions going forward (though this is not included in the projections).

⁵ These projections are based on a set of assumptions for future levels of fertility, mortality, and migration. The widening gap between the two sets of countries is driven by relatively higher population projections (close to 40 percent increase by 2050) in countries like Iceland, Luxembourg, and Malta and relatively lower population projections (about 20 percent decline by 2050) in countries like Latvia, Lithuania, and Serbia.

Figure 4. Europe: Old-Age Dependency Ratio and Population Projections**1. Old-Age Dependency Ratio****2. Population Projections**

(Index 2024=1)



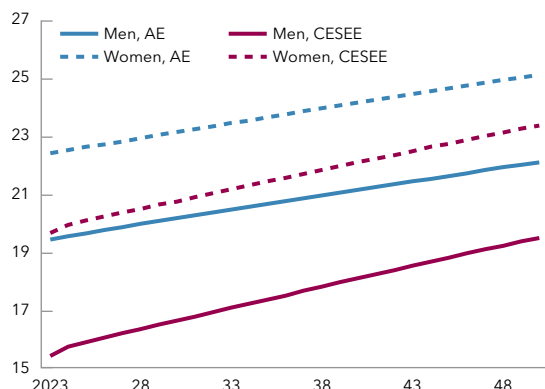
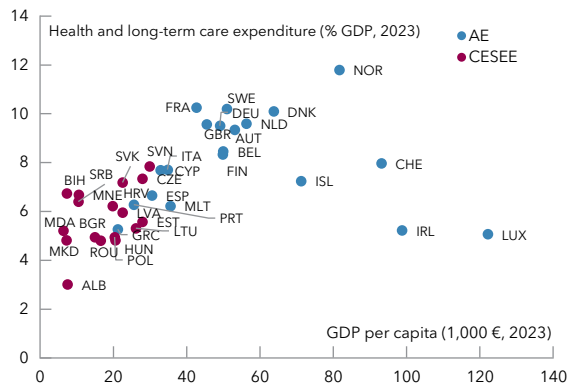
Sources: Eurostat; and United Nations.

Note: Old-age dependency ratio is defined as the population aged 65 and over as a share of the population aged 20 to 64. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

Similar to pensions, demographic trends suggest that health care costs, especially for long-term care, are set to increase. The cost of long-term care already represents the fastest-growing component of health care costs, particularly in higher income countries. In addition, technological advances, which offer better but costlier treatments, as well as rising wages in a labor-intensive sector drive up costs. The latter is a factor particularly relevant in CESEE.⁶

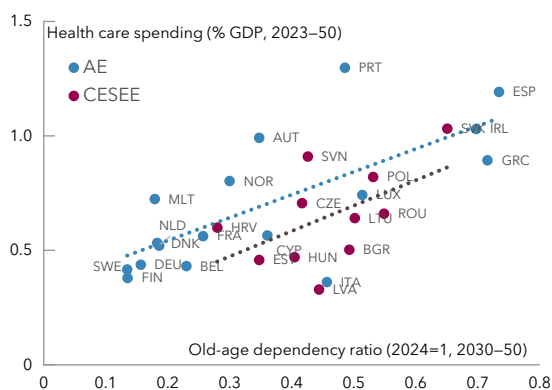
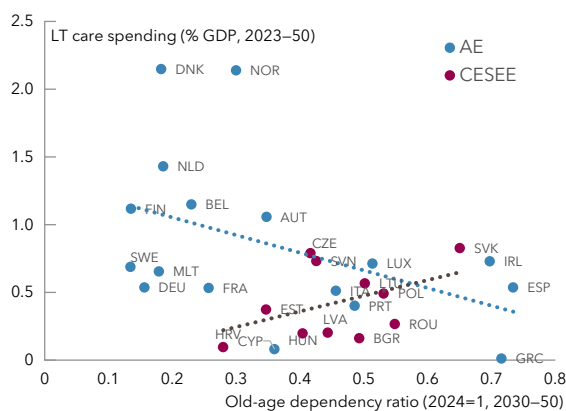
Health care and long-term care costs are set to rise gradually both in Advanced Europe and CESEE. However, higher life expectancy in Advanced Europe implies that especially long-term care costs are rising more rapidly in these countries because a large share of these costs arise in the past few years of life in the absence of an equivalent increase in healthy life expectancy (Figure 5). Although life expectancy at age 65 is projected to rise faster in CESEE than in Advanced Europe, a gap of about 2.25 years is projected to remain even in 2050. At the same time, because spending is financed through social contributions, higher old-age dependency ratios and a lower share of the active population, especially for CESEE (Figure 4) put pressure on the public health care systems. There is, however, a risk that because CESEE income levels converge toward those of Advanced Europe, spending pressures on health care and long-term care increase more rapidly than currently projected because demand for such services tends to grow with income and other factors, especially technological progress. Currently, at an average per capita GDP that is about half of Advanced Europe, CESEE countries spend on average 5.2 percent of GDP on health care and 0.7 percent of GDP on long-term care, compared with 6.3 and 1.8 percent of GDP, in Advanced Europe, respectively. There is a lot of variation across countries, especially in Advanced Europe, with health care spending ranging from 4 percent of GDP in Ireland to 8.4 percent of GDP in France. Even under conservative assumptions, health care and long-term care spending is expected to rise by more than per capita GDP and old-age dependency rate growth in countries such as Czech Republic, Slovak Republic, and Slovenia (Figure 6).

⁶ However, the effect of technology on health care costs is uncertain. Although in the past medical advances have increased costs, several studies suggest that this could change in the future (The Economist 2024).

Figure 5. Europe: Life Expectancy and Health Care Expenditure**1. Life Expectancy at Age 65
(Years)****2. Health Care Expenditure versus GDP
Per Capita
(Percent of GDP)**

Sources: Eurostat; and IMF staff estimates and projections.

Note: Simple averages were calculated for each group. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

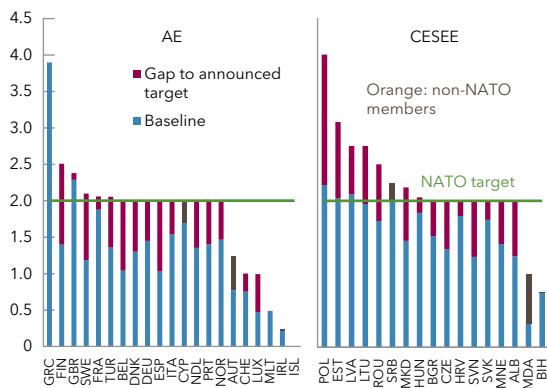
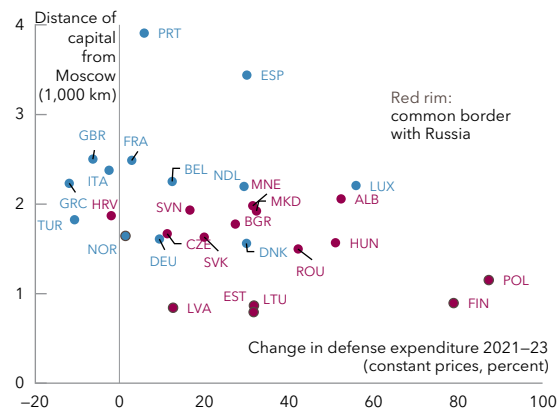
Figure 6. Europe: Projected Change (in pts) in Health Care Spending 2023-50 versus Projected Change in Old-Age Dependency Ratio 2030-50**1. Advanced Europe****2. Central, Eastern, and Southeastern Europe**

Sources: EC; and IMF staff estimates and projections.

Note: Simple averages were calculated for each group.

AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe; LT = Long-term.

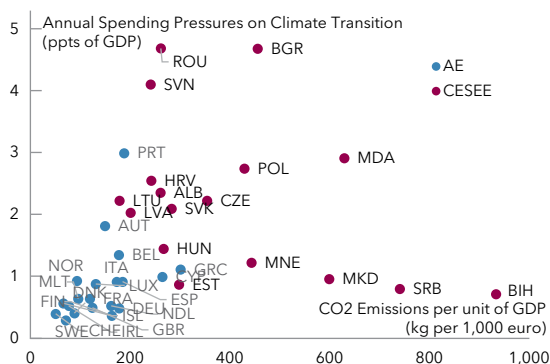
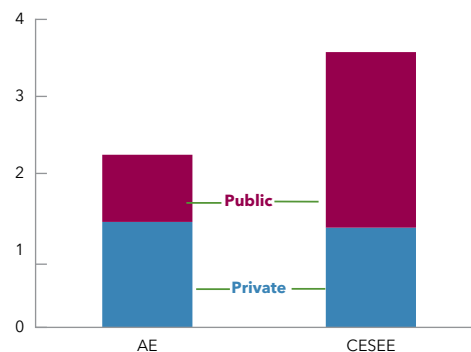
Defense spending pressures are also high in both Advanced Europe and CESEE because the geopolitical landscape is shifting (Figure 7). Again, pressures are higher in CESEE, despite their higher starting position. This is because many CESEE countries, given perceived threats and their closer proximity to Russia, are aiming to spend well beyond the North Atlantic Treaty Organization (NATO)'s 2 percent-of-GDP minimum guideline in response to the invasion of Ukraine. For example, Poland is planning to boost defense spending to close to 5 percent of GDP in 2025 and about 3.5 to 4 percent of GDP in the longer run; the Baltic states and Romania are also aiming at defense spending levels of about 2.5 to 3 percent of GDP. Defense spending pressures could become even higher if perceived or actual threats increase further.

Figure 7. Europe: Defense Spending**1. Europe: Defense Spending (2021–22)**
(Percent of GDP)**2. North Atlantic Treaty Organization: Military Expenditure**

Sources: NATO; World Bank; www.distancecalculator.net; and IMF staff calculations.

Note: AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe; NATO = North Atlantic Treaty Organization.

Climate spending needs are substantial and immediate in both Advanced Europe and CESEE. Higher costs in emerging Europe partly reflect higher emissions intensity which implies larger abatement costs to achieve or approach climate neutrality, especially in non-EU emerging countries in Europe where greenhouse gas (GHG) emissions intensity of GDP is more than double that of Advanced Europe (Figure 8). In addition, the public sector share of climate spending is expected to be bigger in CESEE compared with Advanced Europe, given the already larger role of the public sector in the economy and the energy sector specifically. As a result, the public budget is projected to cover slightly below two-thirds of needed climate spending in CESEE, compared with below 40 percent in Advanced Europe. However, as the economic structure changes more toward services over time, emissions (and hence required spending to reduce them to reach climate targets) may decline (Box 2).

Figure 8. Europe: Spending Pressures on Climate Transition**1. Spending Pressures (2050) versus Emissions****2. Climate Spending Pressures 2050**
(Percent of GDP)

Sources: EC; EIB; Eurostat; WEO, and IMF staff estimates and projections.

Note: The chart on the left excludes non-EU countries. Greenhouse gas emissions data are for 2019. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

Box 2. The Uncertainty of Assessing the Fiscal Costs of Addressing Climate Change

Estimating the fiscal implications of addressing climate change is a challenging task, beset with uncertainties. Nevertheless, it is important for countries to produce estimates of its potential effect on public finances to set aside the necessary resources to tackle it.

The fiscal implications of climate mitigation depend on the timeline and ambition for emissions abatement, the cost and availability of technological solutions, and the fiscal instruments used.

In the context of increasing urgency to tackle climate change, countries have been raising their mitigation targets by pledging deeper and sooner abatement plans (Black, Parry, and Zhunussova 2023). Increased ambition translates into higher costs. For example, in 2020, the EU committed to achieving climate neutrality by 2050 and accordingly revised its Nationally Determined Contributions, pledging a steeper 55 percent greenhouse gas reduction by 2030 compared with 1990 levels, up from the previous 40 percent. More recently, the European Commission proposed frontloading the remaining effort to achieve a 90 percent emissions reduction by 2040 and net zero emissions by 2050.

In this context, definitional problems are complicating the fiscal cost assessment. For example, the replacement of a coal power plant at the end of its operational lifespan with a wind park or a solar farm should not be included as an additional cost (in fact, this replacement may be less costly than constructing a new coal power plant), whereas replacement of a plant that has not yet reached the end of its operational lifespan should be partially counted as additional cost.

Furthermore, the development of many technologies crucial for the energy transition, such as electric vehicles and carbon capture and storage, is still in its early stages. Their future development paths and the associated costs are highly uncertain, complicating the estimation of decarbonization plans that extend decades into the future. In addition, these costs can be influenced by industrial policy decisions, such as tariffs on electric vehicle imports imposed by the United States and the EU and subsidies by China.

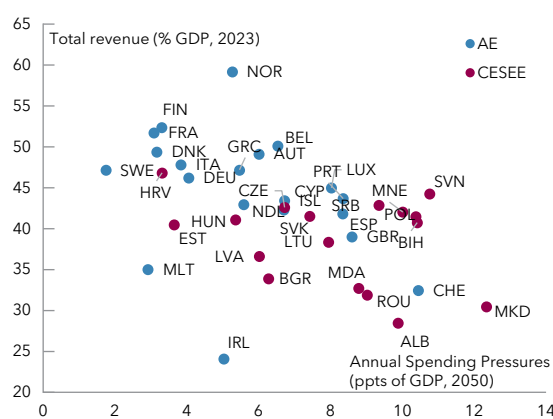
Moreover, mitigation objectives can be achieved through different fiscal instruments. Carbon taxes and emissions trading systems are the most economically efficient mitigation instruments (Parry, Simon, and Zhunussova 2022), though they would need to be accompanied by at least partial relief in other areas of taxation. The net effect on fiscal revenues depends on the extent to which rising carbon revenue offsets the erosion of existing fossil fuel tax bases during the green transition. The resulting net effect on public finances could even be positive; the higher the carbon intensity of GDP, the larger the revenue gain. Countries that still subsidize fossil fuels through the current system of excise taxes will benefit from higher revenues when implicit or explicit subsidies are removed. However, other instruments that carry a larger fiscal burden can also be used to accelerate decarbonization efforts in specific sectors, including feebates, targeted subsidies, and public investments. Regulations, on the other hand, are cost free for the public sector but not for the private sector. Countries are likely to pursue a mix of these policies complicating the estimation of mitigation costs. Estimating the fiscal costs of adaptation requires a framework of climatological projections—which are uncertain because of uncertainty regarding the future path of emissions as well as the projected effect—and identification of a baseline. Modeling the effects of climate change on the macroeconomic framework is even more challenging and further compounds the uncertainty.

Finally, it is unclear how much adaptation will take place through the natural adjustments of individuals and ecosystems (autonomous adaptation) versus deliberate, strategic actions and policies by governments (planned adaptation). In this context, it is also important to note that climate change itself can also affect key economic variables, for example, through migration, and hence the size and composition of the population, or through direct effects on economic output.

With regard to interest payments, the pressure for both Advanced Europe and CESEE are similar. The assumptions underlying our projections are that average interest rates are gradually rising to the neutral rate (although there is also the possibility that interest rates are below that level in the long term), as approximated by the nominal GDP growth rate, and that debt levels are evolving broadly consistent with fiscal consolidation in line with the new EU fiscal framework rules. This also implies that in projecting interest payments, new spending pressures are not assumed to be financed by higher debt.

Countries have varying but limited space to accommodate some of these pressures. Successive shocks have already constrained the fiscal space of most countries, with many of them facing significant consolidation needs, suggesting that the room to accommodate pressures is limited everywhere. Although spending pressures in Advanced Europe are relatively smaller than in CESEE (5.75 and 8 percent of GDP, respectively) and their fiscal deficits are on average lower (0.9 and 3.3 percent of GDP, respectively in 2023), these spending pressures come on top of already large levels of public expenditure and high public debt. Moreover, lower debt levels in CESEE (48 percent of GDP versus 75 percent) combined with higher sovereign spreads reflect in part lower debt carrying capacity, although public debt has been on a rising trend recently. On the other hand, CESEE countries have more potential to raise revenues compared with Advanced Europe (Figure 9), and higher GDP growth rates driven by ongoing economic convergence will help accommodate somewhat higher fiscal deficits (see Section 5).

Figure 9. Europe: Spending Pressures and Revenue
(Percent of GDP)



Sources: EC; EIB; WEO; and IMF staff estimates and projections.
Note: AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

B. Additional Fiscal Pressures

Factors driving long-term spending pressures will also strain public budgets through indirect channels—such as their effect on potential growth—which in turn puts pressure on the cost of public services relative to GDP—and fiscal revenues. This will further compound the direct effect of spending pressures on the fiscal accounts.

Factors putting downward pressure on potential GDP, productivity growth, and investment going forward include adverse demographic trends, geopolitical fragmentation, higher interest rates, and the effect of projected higher temperatures.

- Aging and shrinking populations will reduce labor input and productivity and could thus cause a decline in aggregate potential output. Batog and others (2019) estimate that a 1 percentage point increase in the share of workers aged 55 and older is associated with a decrease in total factor productivity growth by about 0.6 ppts, implying that average GDP growth in CESEE would be lower by about 1.2 ppts and GDP levels by 31 percent by 2050 than if the age structure of the population remained constant. The effect of aging on per capita and potential output will be further affected by firms' response to the decline in the workforce. Labor supply scarcity may increase firms' capital intensity, but it may also result in higher average wages and reduce private sector profits and investment.

- Geopolitical fragmentation may also lower competitiveness and growth. Restrictions on international trade reduce economic output, which discourages cross-border investment and further weakens economic activity and trade linkages. Financial fragmentation induced by geopolitical tensions could also increase the vulnerability of economies to adverse shocks and dampen their ability to respond to shocks. On the other hand, scaling up defense spending to deal with ongoing geopolitical tensions can have a positive technology and human capital spillovers to the civilian economy. On the negative side, defense spending could crowd out investment and reduce potential growth.
- Higher interest rates can lead to lower investment and slower growth of the capital stock. Moreover, persistently low growth combined with higher interest rates could put debt sustainability at risk, restricting governments' capacity to finance new investments.
- Although the GDP effect of projected higher temperatures could also be significant (Mohaddes and Raissi 2024), investment in climate mitigation, for example, green public infrastructure, innovation, and clean technology deployment, is likely to boost total welfare and potential output, as showed by recent empirical studies (Yamazaki 2017; Bernard and Kichian 2021; Metcalf and Stock 2023; IMF 2023). The size of the effect is dependent on the revenue-recycling strategies, reform strength, and the response of households and firms to climate mitigation policies, as well as how fiscal instruments affect growth and interest rates (that is, higher public capital adds to productive capacity, boosting long-term output and current spending supports near-term output, whereas carbon pricing increases revenues but tends to reduce near-term output).

In addition, fiscal revenues are expected to decline with an aging population. This is particularly true in countries where tax systems are heavily reliant on labor income taxes, as is the case in many advanced economies (as of 2022, taxes on labor accounted for 19 percent of GDP in Advanced EU member states, compared with about 15 percent for CESEE EU). In OECD countries, revenues from personal income tax, social contributions, and payroll taxes are expected to decline in per capita terms because of the effect of population aging on labor income—by 9 percent on average, eroding general government revenues in per capita terms by 8 percent on average (Dougherty, de Biase, and Lorenzoni 2022). Finally, revenues are also affected by climate change through lower productivity, hours worked, and total labor force triggered by more frequent and severe natural disasters and extreme weather events.

C. The Cost of Inaction

As countries tend to prioritize considerations on immediate and near-term issues, there is a risk of postponing decisions on spending pressures that will affect future budgets and generations.

Countries' inaction will, however, have important consequences. Although some spending increases are more or less automatic (for example, pensions), others are discretionary and require action (for example, fighting climate change, strengthening defense). Thus, doing nothing risks that climate commitments will be squeezed out, even though they may emerge as a top priority should there be a comprehensive review of spending needs. Also, if certain expenditure pressures cannot be met, there could be even larger distributional implications, for example, deteriorating quality of health services that will mostly hurt poor segments of the population because the wealthy would be able to obtain private health insurance or purchase privately provided health services.

Delaying climate action and structural reforms to control aging-related spending pressures also has intergenerational consequences because the burden is shifted to future generations. Moreover, the range of future options to deal with the current inaction is narrowing. On climate, distributional and intergenerational issues are compounded because unmanaged climate change tends to disproportionately affect the poorest regions and people (Taconet, Méjean, and Guivarch 2020). Not meeting GHG emissions targets risks bringing the world closer to a tipping point where the reduction of emissions will no longer be enough to reverse the effects of climate change.

Last but not least, increasing fiscal deficits and debt beyond what is considered sustainable will result in higher debt servicing costs, including through higher country risk and spreads, reduce fiscal flexibility to respond to shocks, and at some point, undermine long-term economic and financial stability and growth.

4. The Central Role of Fiscal Institutions

Well-designed fiscal frameworks and accurate economic forecasting of long-term spending pressures and timely data are central to prudently manage them, thus promoting sound public finances, while meeting important policy goals. In particular, comprehensive assessments of the long-term fiscal effects of aging-related costs, climate change, and defense spending embedded in well-defined fiscal frameworks and regularly updated can help gauge their implications for fiscal sustainability (Caselli and others 2022). Also, only a medium- and long-term orientation of public finances can enable policymakers to align their current fiscal and budgetary decisions with broader and longer-term economic objectives, maintaining a sustainable fiscal trajectory. Furthermore, integrating long-term spending pressures of aging populations and climate into MTFFs' set of targets and ceilings would help reflect the macro-fiscal implications of long-term spending pressures and policies, while preserving the powerful role of MTFFs in promoting fiscal discipline and sustainability (Caselli and others 2022; Sakrak and others 2022; Curristine and others 2024).

A proactive approach, with regular publication of long-term forecasts under different scenarios, would enhance transparency, inform the public about policy trade-offs, and support the design of well-conceived fiscal strategies to ensure sustainability and enhance credibility (IMF 2018). To be effective, these long-term forecasts should be linked with the national annual budgetary process. Comparing current policies with reform scenarios helps guide and persuade the public on necessary but often politically difficult reforms, including those that take time to yield results, such as pension measures. Incorporating automatic adjustment mechanisms can also ensure fiscal discipline in case no other reforms are carried out to control costs. Budget processes could systematically consider challenges like climate change, for example, by monitoring and assessing the “green” effect of the budget programs, thus further enhancing credibility.

Fiscal strategies, supported by fiscal rules and independent fiscal councils that emphasize long-term spending pressures can help ensure that appropriate resources are set aside for priority spending. Automatic adjustment mechanisms and built-in prudence factors can help address the inherent uncertainty while maintaining the credibility of the multiannual framework.

Spending reviews, that is, thorough assessments of existing expenditure categories, can be instrumental in not only improving the efficiency and quality of existing spending but also creating fiscal space for long-term spending pressures. They should be ideally integrated with the budgetary process to have a visible effect on the policymaking (Doherty and Sayegh 2022).

Good practices based on these principles for incorporating long-term spending pressures into MTFFs and institutions are included in Box 3.

Box 3. Good Practices to Account for Long-Term Fiscal Pressures in Budgetary Frameworks

Recent Fund advice stressed the need to better integrate spending pressures from long-term challenges like climate and aging into national fiscal frameworks (Caselli and others 2022). This box builds on this work and a comprehensive institutional EUR desk survey (2024) to highlight key aspects of fiscal institutions in selected advanced economies that can help recognize these pressures and facilitate debates on potential solutions.

Medium- and long-term forecasts for public debt and deficits should incorporate age-related pressures from growing health care and pension costs and fiscal costs of climate change and defense needs under current policies (for example, Denmark, Finland, Greece, Ireland, the Netherlands, Spain). For instance, the Dutch Bureau for Economic Policy Analysis produces medium- and long-term macroeconomic, fiscal, and public debt projections that integrate age-related pressures from health care and pension costs, alongside fiscal costs of climate change under current policies, including assumptions on future climate change damages and adaptation costs. In Sweden, long-term projections published every year focus on pension, health care, and long-term care services, alongside future defense spending over the next 15 to 20 years, reviewed by the Fiscal Policy Council and the National Audit Office.

Publication of annual fiscal sustainability reports with medium- and long-term forecasts of public finances. These reports also include sensitivity analyses to changes in key demographic, macroeconomic, and other relevant assumptions (Denmark, Greece, the Netherlands, Spain, United Kingdom) and defense spending in the next 15 to 20 years (Sweden, United Kingdom). For instance, in the United Kingdom, the Office of Budget Responsibility publishes annual fiscal sustainability reports with long-term projections of the public finances and sensitivity analyses to key assumptions like labor force participation rates.

Fiscal strategies to address future spending pressures. Greece, Ireland, and Norway have established wealth funds to pay for age-related costs and climate commitments, whereas the Netherlands focuses on stabilizing medium-term debt levels and implementing structural reforms to manage spending pressures. Norway, for example, manages age-related fiscal costs within its long-term fiscal framework by directing petroleum revenues to its public pension fund. This strategy aims to sustainably manage public expenditure growth amid aging populations and the green transition. Similarly, the Netherlands' Budget Space Committee advocates for medium-term fiscal adjustment and specific reforms to build buffers in anticipation of future spending pressures.

Strong independent fiscal councils. In several countries, these are mandated to conduct independent evaluations of long-term spending pressures (Ireland, Spain, Sweden) and to evaluate scenarios, fiscal risks, the realism of macro projections, and costings (the Netherlands, United Kingdom). In Sweden, the National Institute of Economic Research produces its own long-term projections on aging and defense spending under various reform scenarios. The Spanish Independent Fiscal Council produces official long-term fiscal projections covering pensions, health and long-term care, and education independent from the government's forecasts. At the minimum, countries should regularly assess the actuarial solvency of their pension, health care, and long-term care systems and the consequences of aging populations on fiscal sustainability and ensure their actuarial fairness.

Box 3. Good Practices to Account for Long-Term Fiscal Pressures in Budgetary Frameworks (Concluded)

Automatic reforms if outturns worsen. In Luxembourg, pension reserves must exceed 1.5 times pension expenditures for the pension system to avoid reassessment. Sweden employs an automatic balancing mechanism in its public pension system to adjust expenditures downward during shocks. Norway's pension reform ensures long-term financial sustainability by adjusting benefits based on changes in life expectancy. In the case of quasi-automatic mechanisms, for example, the pension safeguard clause introduced in Spain in 2023 with the pension reform, although a parliamentary process can be triggered to take corrective measures more aligned with societal preferences, the consultative process may also lead to delays and inaction, in the case of hard decisions. A few countries (for example, Czech Republic and Poland) have implemented fiscal rules with well-specified automatic correction mechanisms as debt approaches their debt-GDP anchor.

Adapt public financial management practices to be climate sensitive. France's Green Budget since 2023 tracks spending, including tax expenditure, against climate change objectives and tags spending that might hinder the achievement of climate goals. Integrated into the budgetary procedure, it links physical targets and financial assessments to control public spending effectively and determine investment requirements to achieve France's *Fit for 55* climate commitments. In Sweden, climate targets interact with budgetary targets under the MTFF; every four years, the government drafts a climate action plan detailing how the climate targets are to be achieved. In Switzerland, starting with 2024, the fiscal sustainability report incorporates climate mitigation cost projections, in addition to population aging.

A few countries outside Europe also have well-established fiscal practices incorporating long-term spending pressures (for example, New Zealand and United States). In the United States, the Congressional Budget Office provides Congress with independent projections of the economy, federal budget, and debt over the next 30 years under current laws. These projections account for growing pressures from health care, social security, defense, and interest expenses and are updated annually. In New Zealand, every four years, the Treasury issues a mandatory statement on the long-term fiscal position, projecting government finances for the next 40 years. It includes spending pressures from climate change and population aging and assessing their effect on the fiscal balance and debt under current policies. In addition, the Minister of Finance presents an annual Fiscal Strategy in the budget, delineating long-term policy objectives and offering at least 10-year projections to measure progress.

Data and institutional frameworks to support policies addressing medium- to long-term spending pressures are often lacking. Actuarial projections for pensions and health care are often not available in non-EU emerging countries in Europe, and cost profiles are incomplete. Even in countries where actuarial projections do exist, the uneven quality of estimates can often lead to inaccurate spending estimates, given the fragmented data sources (for example, for health care and long-term care), insufficient information on private pension schemes, or difficulties in assessing the fiscal effect of recently legislated reforms. Despite regular reports from the EC on aging-related costs and debt sustainability, only a few EU countries (Czech Republic, Denmark, Finland, France, Greece, Ireland, the Netherlands, Sweden) produce comprehensive multiannual projections as part of their national budget documents that allow to systematically assess the

fiscal implications of medium- to long-term spending pressures.⁷ Few national energy and climate plans so far are costed to assess the fiscal effect of achieving EU-wide climate targets, and spending for the green transition is rarely integrated into MTFFs. Defense spending and interest payments are usually well-incorporated into fiscal frameworks, although in some NATO members (for example, Germany) the financing to ensure that the 2-percent guideline is reached consistently is not assured.

The quality of institutional frameworks to support medium- to long-term spending pressures also varies greatly across Europe. Six EU countries (Denmark, Finland, Greece, Ireland, the Netherlands, Spain), along with advanced non-EU countries (Norway, United Kingdom), regularly and comprehensively assess these medium- to long-term spending pressures. At the other end of the spectrum, CESEE countries, especially in the Western Balkans, often lack long-term assessments of aging and climate-related spending pressures and also have less developed fiscal institutions.

The absence of credible fiscal frameworks that systematically incorporate long-term considerations in some European countries poses risks that spending pressures are not adequately addressed. In the aftermath of the recent multiple shocks (COVID-19, energy), deficits and debts are already high. This leaves governments with two choices. Without action, unanticipated and unavoidable spending pressure (pensions and health care given existing legislation) could lead to even higher budget deficits and an unsustainable debt path. Alternatively, some spending pressures may be sidelined, including if there is unanticipated unavoidable expenditure. Interest, pensions, health care costs, and, to some degree, defense spending are unavoidable. But if adequate resources are not set aside for climate mitigation, those investments—as well as more traditional spending needs, such as infrastructure or education—may be underfunded, leading to higher costs later. A clear framework that accounts for long-term spending pressures would provide transparent information to help persuade the public to act on those reforms. This is even more urgent because reforms, particularly of pension or procurement systems, are often complex to design, politically difficult, and take time to yield results, increasing the urgency to plan and enact them well in advance of the full materialization of the associated spending needs.

In this regard, the EU's reformed fiscal sustainability framework is a step in the right direction because it takes into account the trade-offs between the pace of fiscal consolidation and supporting structural reforms or investments, and it explicitly accounts for spending pressures arising from aging societies. However, a more systematic approach to other spending pressures at the national level is also needed (Box 4). For non-EU CESEE countries, deeper reforms and capacity-development efforts would be needed to improve the quality of their fiscal institutions and deepen their public financial management.

⁷ The EC (2024a) and Debt Sustainability Monitor provide comprehensive assessments of future aging-related spending pressures and debt sustainability in each EU member state, respectively. They provide a good basis for national governments for long-term fiscal planning.

Box 4. How the New European Union (EU) Fiscal Framework Deals with Long-Term Spending Pressures

The reform of the EU's economic governance framework that came into force in April 2024 aims to strengthen fiscal sustainability by creating incentives for growth-enhancing reforms and by basing adjustment requirements on a debt sustainability analysis (DSA) that takes into account long-term aging-related spending pressures from the EC (2024a).¹

Countries with debt ratios above 60 percent of GDP or fiscal deficits larger than 3 percent of GDP are required to make fiscal adjustments that restore long-term fiscal sustainability. The required fiscal adjustment should be implemented over a four-year period, which can be extended to a seven-year period if the member state undertakes structural reforms or makes public investments that strengthen growth, resilience, and fiscal sustainability. At its most basic level, the framework requires that if the country—at the end of the adjustment period—would keep its fiscal policy unchanged, then debt will decline, and deficit levels will stay moderate for the next 10-year period. The assessment—and hence the derivation-required adjustments—is based on a DSA that assumes that expenditure generated by population aging is added to the otherwise constant primary fiscal balance. Fiscal sustainability is verified by subjecting long-term debt developments to a variety of adverse scenarios and shocks, requiring that debt is declining even in these instances.

By relying on a country-specific DSA to determine each member state's fiscal adjustment, the framework aims to link medium-term fiscal policy to long-term sustainability. Countries with less benign debt dynamics will be required to make larger near-term adjustments than countries with low initial debt, high long-term growth, or better financing conditions.

The new framework provides countries with incentives to undertake structural reforms and investment to enhance long-term growth through a possible extension of the fiscal adjustment path from four to seven years. Not only could these structural reforms and public investments alleviate long-term spending pressures directly (for example, pension, health care, or subsidies reform), but also the higher available policy space through the longer adjustment period can be used by countries to spend on common EU priorities (for example, achieving EU climate goals or boosting defense). By providing a longer adjustment period, the framework also recognizes that policies that are fiscally costly in the short term but will generate long-term savings or growth can help strengthen long-term fiscal sustainability (through higher revenues and improved debt dynamics), which should help to address long-term spending pressures.

The framework also aims to identify future spending pressures and requires policies that address those. Costs associated with an aging population structure—public pensions, health care, and elderly adults care—as estimated based on current policies in the EC (2014a), are added to the primary fiscal balance used for calculating the debt trajectory in the DSA.² To the extent that the aging costs make the long-term fiscal trajectory inconsistent with the requirements under the framework, the member state has two alternatives. It can either implement larger fiscal adjustments over the upcoming four- or seven-year period, or it can reform pension or benefit systems to reduce long-term aging costs.

¹ Although aging-related spending pressures were previously included in the setting of the medium-term objectives, the numerical parameters were difficult to understand, whereas other variables like real interest rates played no role.

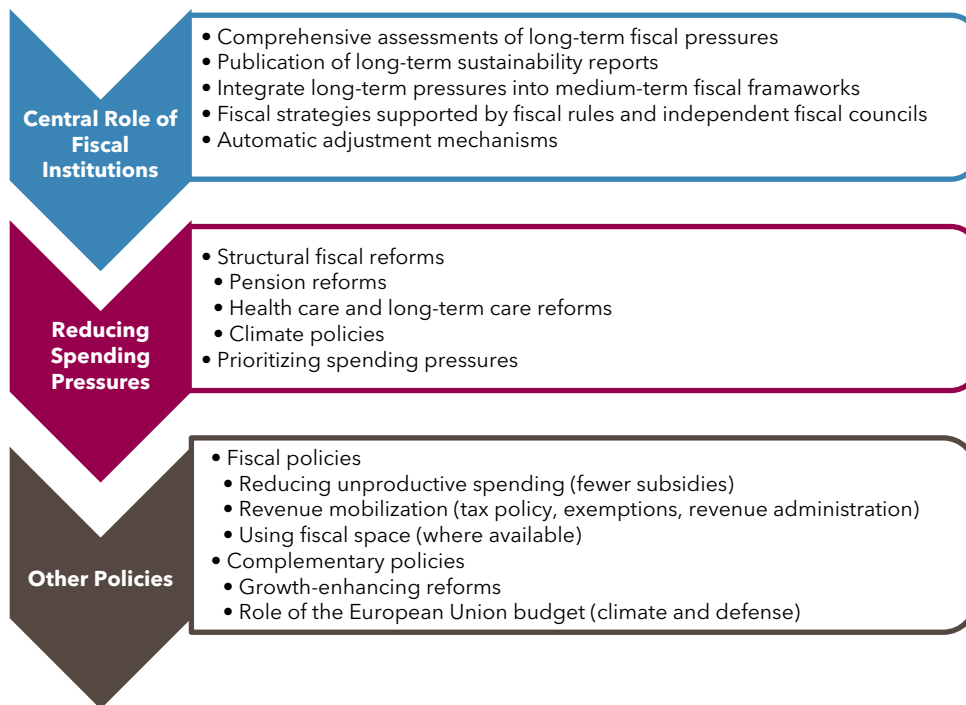
² This report is jointly prepared by the Directorate-General for Economic and Financial Affairs (DGECFIN) with the EPC Working Group on Aging Populations and Sustainability (made of Member States' delegates) with the latest version published in April 2024.

Although it is positive that the framework aims to capture future spending pressures from aging, the methodology may underestimate these costs in some cases because the baseline scenario is being used. Further, if pension benefits indexation falls behind wage growth for various reasons (partial wage indexation, built-in sustainability facts, and so on), this may lead to sustained declines in pension replacement rates and pension generosity. This could trigger future demands for ad-hoc increases (top-ups of pensions), which would result in larger spending pressures than those included in the new EU fiscal framework.

The framework also only considers aging-related long-term costs, not other spending pressures. A more comprehensive identification of emerging spending needs—such as climate mitigation measures—would improve the framework and create stronger incentives to implement policies today that will neutralize future fiscal needs.

5. Policy Options for Addressing Spending Pressures

Figure 10. What Needs to Be Done to Address Long-term Spending Pressures?



Source: the authors.

As discussed in the previous section, national fiscal institutions and adequate data will play a key role in recognizing and estimating spending pressures and facilitating open debate about possible options to address them. However, given the scale of spending pressures—on top of the consolidation needs to preserve fiscal sustainability in many European countries—addressing them will likely require a comprehensive rethinking about the role of the state, taxation, spending priorities, and accelerating growth-boosting reforms.

A multipronged response will in most cases be needed and should in principle consider options for reducing spending pressures, other fiscal and structural policies to create space to accommodate them, and the role of central EU fiscal capacity and financing (Figure 10). Each of these approaches has different distributional effects across income groups and generations, and many may be politically difficult to implement. To help navigate the economic, social, and political choices involved, effective elaboration, coordination, and sequencing of reforms will be needed. In terms of sequencing, the most urgent reforms should take place in areas identified as addressing the largest spending needs because political capital is limited. Policies will also need to be individually tailored, considering that each country's circumstances are different, including the size and composition of long-term fiscal pressures, initial fiscal position and fiscal adjustment needs, and access to EU funds. For each spending category, the various options should be compared in terms of their savings potential, the effect on economic growth and efficiency, and distributional consequences.

within and between generations. Not all the options outlined in the menu here will be available or relevant to all countries or may not always reflect the first-best approach, particularly where difficult trade-offs need to be made.

A. Reducing Public Spending Pressures

Fiscal structural reforms to improve the efficiency and effectiveness of spending can help mitigate spending pressures in all key spending areas (pension, health, climate-related investment, and defense). They can reduce costs in a lasting way (IMF 2017; Masuch and others 2018) and are thus often the first-best solution. Many countries have already embarked on such reforms (Box 5). However, pension reforms to improve their financial sustainability by increasing the retirement age, reducing benefits, or increasing contributions are often politically difficult to implement, and their results may only accrue over long-time horizons and are sometimes reversed.

Reforms may also entail a shift of obligations to the private sector to reduce pressures on public finances, especially for pensions and climate-related investments, but also health care. Although public sector spending pressures will decrease, higher private sector costs will reduce disposable income for households and businesses. Therefore, the overall macroeconomic effect of shifting obligations to the private sector will depend on how efficiently the private sector can meet the spending needs and whether any distributional consequences are being addressed. Also, to have a positive effect, such reforms require strong institutions to supervise private operators, developed financial markets that can channel savings into their most productive use, and macroeconomic stability to reduce risks to individuals.

Pensions

In many countries, reforms of pension systems have been undertaken in recent decades, but projections for gross pension spending suggest that pressures are significant nonetheless with pension system deficits projected to worsen in many EU countries (EC 2024a). Absent higher fiscal transfers to pension schemes, which would weigh on fiscal sustainability and reduce resources available for other uses, implies that higher contributions, lower benefits, or increases in the retirement age—or a combination of these—are required.

More ambitious increases in retirement age in countries where this is still relatively low should be the first line of defense. Linking the retirement age to life expectancy—as some countries have already done—would introduce an automatic adjustment mechanism that reduces the need for lengthy and systematic decision making. Although adverse demographic trends—a projected increase of the number of older people relative to those in prime working age—are broadly given, extending the contribution period for a full pension, increasing contribution rates, discouraging early retirement, and equalizing women’s retirement age with that of men (for example, Hungary, Poland) could also substantially reduce pension spending pressures (OECD 2023). In this context, the effect of different policies on labor supply would also need to be taken into account—raising the retirement age (possibly combined with benefit reform) not only would reduce spending on pensions but could also contribute to alleviating labor shortages and reduce the ratio of pensioners to the working-age population.

In some countries, where replacement rates are relatively generous, an adjustment to pension levels could also be considered. Finally, shifting some of the burden to the private sector by increasing the role of complementary private pension schemes could help alleviate pressures on public systems in the long term (though it could increase pressures in the medium term as contributions to public systems fall). At the same time, this would imply a major transfer of risk to individuals and would do little to alleviate the burden on the economy as a whole. Private pension schemes are vulnerable to weak governance within the private sector, hence strong regulation and oversight are essential for them to operate effectively (Clements, Eich, and Gupta

2014; Clements and others 2015). Multi-pillar systems introduced by many countries enable the spreading of risk between the public and private sectors; however, their performance in terms of spurring domestic savings, capital market development, and labor market flexibility remains mixed (World Bank 2006).

Such reforms will take time to bear fruit and therefore should be initiated early on. Political economy considerations suggest that abrupt changes are likely to engender significant popular resistance (indeed, in some countries, reforms have been partially taken back). Typically, the retirement age—where such reforms have already been introduced—is increased incrementally, and adjustments to benefits or contributions are also generally phased in. Moreover, even if changes were to be introduced with immediate effect, they would take time to feed through the system because existing pensioners are unaffected. Initiating these reforms now would therefore ensure policy predictability and help with reducing spending pressures in places where they will materialize over the longer term.

Health Care and Long-Term Care

As for health care and long-term care, a combination of reform measures could help contain these cost pressures while maintaining societal solidarity. Several countries are already implementing procurement reforms to stem cost increases or are experimenting with improving preventive care to forestall later, more costly treatments. Additional measures could include adjustments to the basic, insurance-covered health care package—even though the trend has generally been toward universal coverage and the recognition of additional diseases and treatments—as well as increasing co-payments by the insured. Integrating care,⁸ as well as longer-term workforce planning,⁹ can improve quality and meet higher demands, while making the system more sustainable. Lastly, technological advances like AI and digitalization may help mitigate potential labor shortages and enhance productivity of the health care sector, although technology is also likely to trigger additional demand for care (Newhouse 1992; Smith 2009; Willemé and Dumont 2015).

As with pensions, implementing such reforms may be politically difficult. Reducing coverage or increasing co-payments raises distributional issues—people with chronic illnesses or elderly individuals would be disadvantaged, and people with diseases requiring expensive treatments may be denied such treatment. Such effects could be contained by introducing ceilings for out-of-pocket expenses but would still imply hardships in individual cases.

Climate Policies

Blending public and private sector funding is needed to scale up climate finance for large adaptation and mitigation climate investments while de-risking these investments for private sector capital by helping internalize the social benefits of climate investment (Prasad and others 2022). However, the distribution of costs between the public and private sectors is significantly affected by the policy mix of subsidies, carbon pricing, and regulations. Shifting some of the burden away from the public sector will be needed to reconcile climate policies with public budget constraints, including the need for fiscal consolidation in many European countries. Crowding-in effects can materialize when public investment in green energy (or digitalization) provides firms with high-quality infrastructure or human capital that supports development. Insufficient investment in low-carbon energy sources can lead to higher energy costs, which can become an obstacle to investment by firms.

⁸ The fragmentation of care related to, for example, the absence of care-focused collaborative approaches increases the costs of health care and especially long-term care systems because aging populations have more complex care needs. A well-planned integration would not only control costs, but also ensure the person receives a constant flow of care during their lifetime, reduce inequalities, and free up underused labor force.

⁹ The workforce (availability of human resources) is a key factor in the long-term care projections. Workforce scarcity in the presence of rising demand for formal provision of long-term care may increase wages, hence the total cost, or constraint the supply of care because the labor participation for women goes up.

Box 5. Recent Fiscal Structural Reforms in Europe

Fiscal structural reforms in Europe have focused largely on pension systems. Health care reforms implemented because the COVID-19 pandemic have focused on strengthening systems' resilience and have not led to notable savings. Climate change efforts have leaned toward public spending and subsidies, with less focus on carbon taxation and pricing.

Many countries in Europe have implemented reforms to bolster the fiscal health of their pension systems. Reforms have generally focused on the following:

- Extending the retirement age or contribution periods (Bulgaria, France, Greece, Spain, Sweden)
- Introducing automatic adjustment mechanisms such as balancing mechanisms that reduce pension indexation if the pension system runs into deficit (Germany, Lithuania, Luxemburg, and Sweden), pension sustainability factors that link benefits to changes in life expectancy through the annuity factor (Finland, France, Italy, Latvia, Norway, Portugal, Sweden), or factors that directly link the retirement age to life expectancy (Cyprus, Denmark, Estonia, Finland, Greece, Italy, the Netherlands, Portugal, Slovak Republic, Sweden)
- Discouraging early retirement (Austria, Czech Republic, Romania, Spain)
- Raising women's retirement age to match men's (Austria, Bulgaria, Romania)
- Promoting privately funded pensions, including mandatory occupational pension schemes (Denmark, the Netherlands), voluntary schemes, and second pillar pensions (Croatia, Estonia, Latvia, Lithuania, Romania)

Ambitious pension reforms are expected to lead to declining spending pressures from pensions. Spending pressures from pensions are expected to decline over 2022-70 in Denmark, Estonia, France, Italy, Portugal, and Sweden (OECD 2023; EC 2024a). However, in some countries (for example, Latvia), reforms assume a declining replacement rate and benefit ratio which may not be sustainable given possible concerns about the adequacy of pension income for persons relying on public pensions. For example, a sustainability factor, introduced as part of the 2013 pension reform in Spain, to ensure the long-term sustainability of its pension system was recently repealed because of concerns about pension adequacy (OECD 2023).

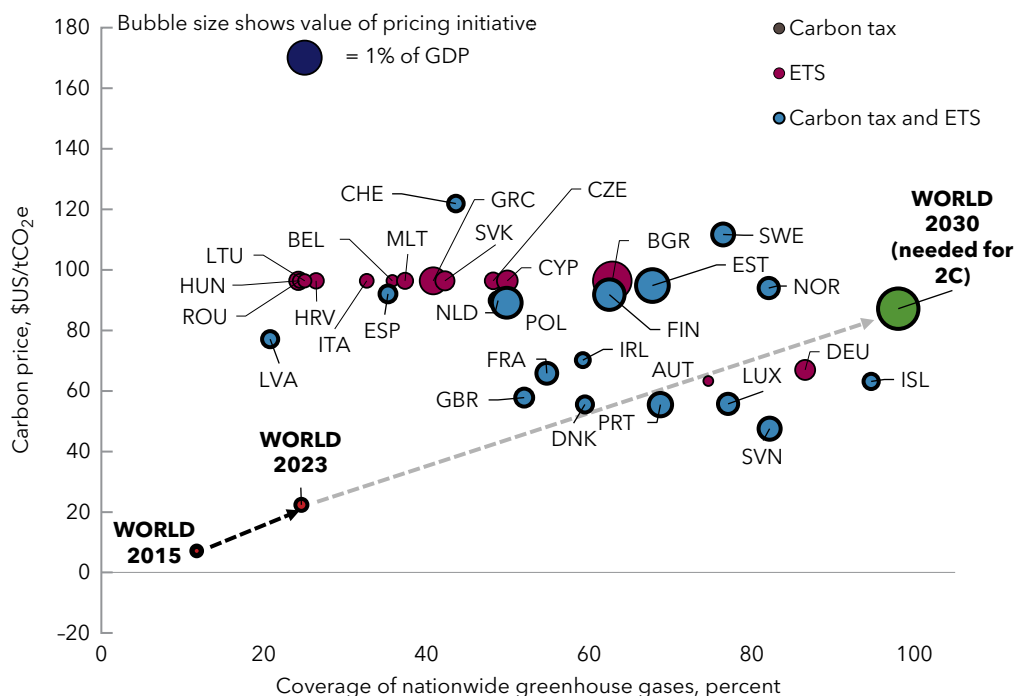
Health care reforms have mostly focused on strengthening systems' resilience—especially since the COVID-19 pandemic—and have not led to notable savings. Reforms have covered several sub-sectors (hospitals, outpatient care, pharmaceuticals, preventive care, long-term care). However, they often have multiple goals—realize savings but also improve access or quality—and are technically difficult to implement. Some reforms, for example, in health care procurement systems and practices, while leading to permanent savings, do not alter the trend of rising costs. Reforms have also been implemented in the long-term care sector, given the large pandemic effect in this area. These have mostly led to increasing spending on investment in personal protective equipment, testing of staff, increasing wages to boost labor supply, and generally expanding the capacity of the sector. Reforms are also being planned to improve coverage and quality of long-term care (Bulgaria, Czech Republic, France, Germany, Portugal, Slovak Republic, Slovenia). Efforts to improve sustainability have included legislation to regulate the indexation of long-term care benefits to recover the cost of long-term care either from private insurance or the beneficiaries themselves (France, Germany, Slovenia). With such regulations, public long-term care expenditure could decline, but this would imply a shift of risks to the private sector.

Box 5. Recent Fiscal Structural Reforms in Europe (Concluded)

Policies to reduce greenhouse gas emissions currently rely on a mix of subsidies, carbon pricing, and regulations. Most European countries provide subsidies for specific investments, including electric vehicles, modern heat pumps, or rooftop solar panels, and many are also increasing public investments in—or providing subsidies for—complementary infrastructure, such as extending transmission lines to renewable sites or building a network of electric vehicles charging stations. At the same time, the EU's emissions trading system introduced in 2005 for the energy sector, manufacturing, and aircraft operators—or about 40 percent of the EU's emissions—will be extended in 2029 to cover maritime transport. Emissions trading system 2 is set to expand further to include buildings, road transport, and fuels for additional sectors, mainly small industry from 2027. These are putting a price on CO₂ emissions, and several European countries also impose national carbon taxes (Box Figure 5.1). These vary widely in their coverage, ranging from 30 percent or below in Hungary, Latvia, Lithuania, and Romania to over 70 percent in Germany, Norway, and Sweden. Reaching beyond the EU's borders, the carbon border adjustment mechanism, introduced in 2023, puts a carbon tariff on carbon-intensive products imported into the EU.

Reforms in the defense industry include common EU procurement to prevent crowding-out effects, increase the effectiveness of public spending, and reduce excessive fragmentation in defense procurement (European Parliament 2023). Single-source contract regulations in the United Kingdom that regulate defense contracts awarded without competition (Brooke-Holland 2024) and, more broadly, security sector reforms that aim at aligning security provision, management, and oversight with the principles of good governance are other examples (Jasutis, Tagarev, and Fuor 2022).

Box Figure 5.1. Explicit Carbon Pricing Schemes, 2023



Source: Black, Parry, and Zhunussova 2023.

Note: ETS = Emissions trading system.

Carbon taxes—whether direct or through an ETS—are the most efficient way to incentivize energy saving and GHG reduction (Parry, Williams, and Goulder 1999; van der Ploeg 2016; Andersson 2019) while also generating fiscal revenues and reducing the need for public investment because they incentivize the private sector to undertake emissions reducing investments. Subsidies for climate-friendly investments or consumption, on the other hand, are less efficient and effective (Gugler, Haxhimusa, and Liebensteiner 2021) and a burden to the public finances, unless they are coordinated and finance the production of public goods (Kammer 2024). Therefore, the climate policy mix will need to shift further toward a robust, gradually and predictably rising carbon price and de-emphasize subsidies. However, concurrent policies to mitigate adverse effects on the private sector will also be needed:

- **Social effects:** Carbon taxes are generally regressive because low-income households tend to be hit harder than high-income ones, unless when revenues are redistributed in a way that mitigates the effect (Merkle and Dolphin 2024). Therefore, a significant part of additional tax revenue generated by carbon taxes will need to be redistributed, either through direct payments or through reduction of other taxes. Such a redistribution should be broadly even, implying a net financial gain for households that consume few carbon-intensive products and services.¹⁰ Another option is revenue-neutral feebates (that is, tax-transfer/subsidy schemes) in specific sectors, especially in areas such as mobility, buildings, and agriculture where additional measures are needed beyond carbon pricing to significantly lower emissions. These can help gather political support because they do not increase the average net tax burden (Parry, Simon, and Zhunussova 2022).
- **Competitiveness:** Increasing carbon taxes would disadvantage domestic industries relative to those of trading partners, especially in areas where major investments are needed to reach carbon neutrality, for example, steel. These sectors may relocate elsewhere. The EU's carbon border adjustment mechanism seeks to address this by levying tariffs for imports from countries and firms where the carbon price is lower than in the EU. Although such schemes can be abused for protectionist purposes, they also incentivize stronger climate policy efforts in trading partners. Nonetheless, dislocation of specific industries could be a significant threat, which would have to be addressed by compensatory measures such as support for climate-friendly investments.

Transfers are likely to increase to deal with the distributional consequences of carbon pricing and the shift from fossil fuel to cleaner energy. Policies to fight climate change necessitate redistributive spending (for example, compensation of carbon tax) and new financing to compensate vulnerable households and industries. Decarbonization through different types of carbon pricing has a fiscal incidence across and within income groups, through lower consumption, raising the need for redistribution mechanisms. For instance, revenues can be recycled by using direct targeted transfer schemes with immediate effect, by increasing public investment in infrastructure access, by increasing current spending on social assistance and other social protection schemes, or by enacting labor tax reforms or reductions. The budgetary effect is likely to be larger in emerging market economies that have a greater share of public investment in total investment, energy markets dominated by greater state ownership, and where energy prices tend to be more regulated.

Prioritizing Spending Pressures

Another way to manage those spending pressures is to clearly prioritize some spending pressures more than others. Examples include the discussion around defense versus welfare spending in Germany, making defense the top spending priority in Poland, or the shift in EU spending priorities from greening the economy

¹⁰ As an example, Austria's recently introduced Climate Bonus scheme increases carbon taxes but redistributes the entire amount raised evenly to residents below a certain annual household income threshold (2022) and based on the ease of regional access to public infrastructure (2023).

to investing in defense (Financial Times 2024). Some countries, such as the Netherlands, already do this, taking a broader view of long-term spending pressures and aiming to align spending with key policy goals as an integral part of the budgetary process.

B. Other Policies

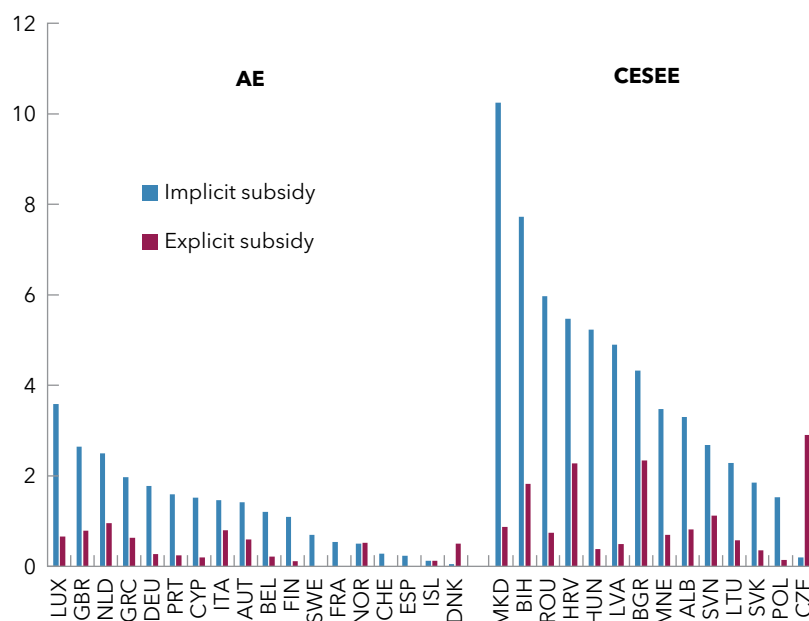
Other policies can help create fiscal space or make best use of available space to meet spending pressures. These include reducing unproductive spending and raising additional revenues. In some countries, fiscal space is available and could be used to cover spending needs. Policies to support higher productivity growth would increase the fiscal room for maneuver and help pressures to be met. In addition, greater burden sharing within the EU could not only support countries that face particularly high pressures but also lead to efficiency gains.

Reducing Unproductive and Inefficient Spending

One of the largest inefficiencies in public spending is energy subsidies. Fossil fuel and electricity subsidies in Europe amounted to 3.25 percent of GDP in 2023 on average (Figure 11). This includes explicit subsidies (0.75 percent of GDP), which involve undercharging for supply costs, and implicit subsidies (2.5 percent of GDP), which account for environmental costs and forgone consumption taxes. Subsidies peaked in 2022 because energy prices increased sharply in the wake of Russia's attack on Ukraine.¹¹ They have since been reduced but remain higher than in 2019, for example, in Belgium, Bosnia and Herzegovina, Germany, Hungary, and Serbia. Reducing or eliminating these subsidies—for example, raising fuel taxes to account for externalities—would not only improve the fiscal balance in some countries (with a low multiplier) and create space to accommodate new spending needs but also support climate mitigation efforts and reduce economic inefficiencies. In CESEE, the simultaneous presence of large spending pressures from climate mitigation and large subsidies suggest that their phaseout can be the first line of defense, given the large potential revenues from reducing implicit subsidies (Figure 11). This could prepare the ground for advancing toward carbon pricing.

However, energy subsidies phaseout would imply price increases not only in specific sectors like aviation but also across the board, which would have a significant distributional effect because it would affect areas where individuals have few options to avoid the tax by changing their behavior (for example, with regard to transportation in rural areas). It could also necessitate very large investments by the private sector, which it may not have the capacity to undertake. To facilitate the transition in such cases, the removal of subsidies should be gradual and preceded or accompanied by investments in green infrastructure (for example, subsidization of electronic vehicle charging stations or improvements in rural public transport). Notably, because most energy subsidies are indirect, changing behavior will also erode the tax base of carbon taxes. Therefore, the overall net effect would be smaller than the headline figures suggest. Nonetheless, such reforms are worthwhile because they simultaneously reduce tax expenditures while also furthering climate goals.

¹¹ Implicit energy subsidies (that is, underpricing relative to the true social cost) do not represent spending in the IMF's Government Finance Statistics Manual (GFSM) sense but could potentially generate additional fuel tax revenue.

Figure 11. Europe: Total Energy Subsidies, 2023*(Percent of GDP)*

Source: Black and others2023a.

Note: AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

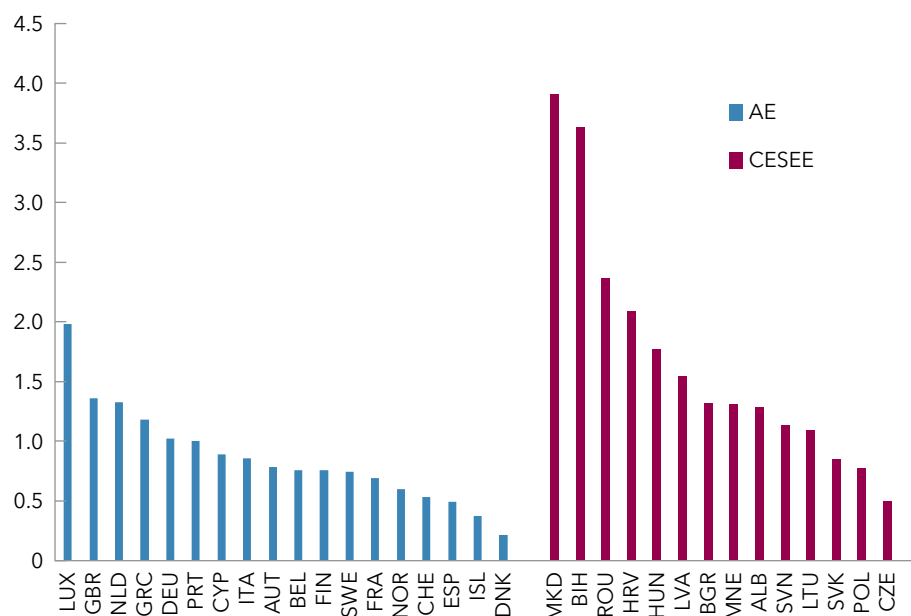
Revenue Mobilization

Another option to finance increased spending needs is raising revenues. Although tax revenues and social security contributions, at an average of 44.5 percent of GDP in 2023, are already high in most advanced European economies, CESEE countries—at 38.5 percent of GDP on average—have more room to raise taxation. Tax-to-GDP ratios have the potential to rise by about 0.9 percent of GDP per annum in Advanced Europe and by 1.5 percent of GDP in CESEE (Figure 12).

The lower revenue-to-GDP ratios in CESEE are because of a combination of less efficient tax collection, larger informal economies, and lower income tax rates compared with advanced European economies (Figure 13). Thus, in CESEE, increasing income taxation by making systems more progressive, increasing the efficiency of revenue administration, and widening tax bases by eliminating tax expenditures and unwinding the remaining implicit subsidies and fiscal support schemes could go some way to finance additional spending pressures. In CESEE countries, especially outside the EU, further fiscal room could be created through a more balanced tax structure and improved tax policy design. Any tax rate changes should however be part of a comprehensive review of the overall tax system and be embedded in a Medium-Term Tax Reform Strategy to make the system more efficient and robust.

Figure 12. Europe: Revenue Mobilization Potential

1. Gains from Tax System Reform and Institutional Capacity Building, 2020
(Tax gap as percent of GDP)



Source: IMF Regional Economic Outlook (Europe), October 2023; and IMF staff calculations.

Note: Tax gains are estimated by closing the gap between the country's observed level of tax collection and its potential, which is the highest observed level controlling for country characteristics. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

Increasing tax rates can be challenging. In part, CESEE's lower revenue (and spending) ratios often reflect a less generous social security net than in Advanced Europe. However, it should be noted that higher taxation would not go hand-in-hand with more generous benefits—the increases in pension and health care service costs are to a large extent based on current (in a few cases even declining) benefit ratios. This may make increasing tax rates politically difficult. Higher taxes will therefore need to be accompanied by greater efficiency to improve service delivery and efforts to ensure intergenerational equity and adequacy of spending, in addition to fiscal sustainability. Nevertheless, in some cases, tax increases were moving forward despite being politically difficult. For example, Estonia raised taxes in 2023 to finance additional military spending in the wake of Russia's invasion of Ukraine, with part of the extra revenues also used to finance emerging green transition and infrastructure needs.¹²

In Advanced Europe—despite already relatively high tax rates—the increase in revenues could come from base-broadening and nondistortionary revenue measures (eliminating preferential tax treatments and tax exemptions), basing property taxes on market valuation, increasing carbon taxes, and removing tax incentives for high-income households. However, measures should be tailored to country-specific circumstances

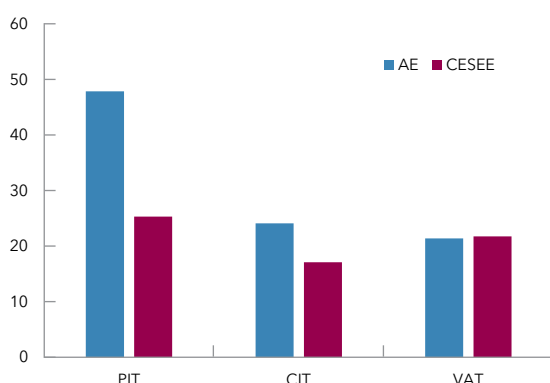
¹² In 2023, Estonia adopted several amendments to its tax laws, providing for an increase in tax rates for VAT, excise duties and gambling, as well as changes to corporate and individual income tax. The standard VAT rate increased from 20 to 22 percent from January 1, 2024, and will further increase to 24 percent from July 1, 2025. The flat-rate income tax will increase for both corporations and natural persons from 20 to 22 percent in 2025. A new round of tax changes is being discussed.

and not include tax increases that widen the tax wedge, discourage investment, and suppress labor supply. Equity and fairness considerations need to be kept in mind. Further, digitalization reforms offer significant benefits in terms of better revenue collection (Amaglobeli and others 2023).

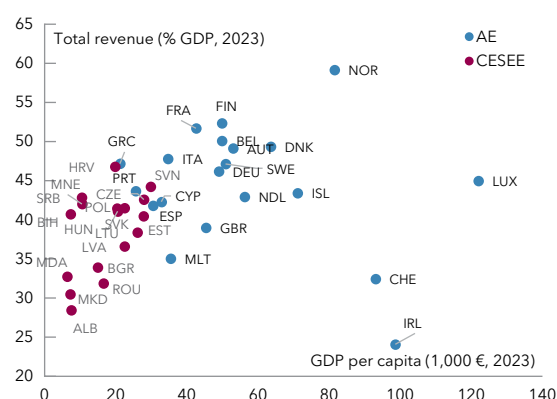
Figure 13. Europe: Spending Pressures and Revenues

1. Tax Rates

(In percentage)



2. Revenue versus GDP per Capita



Sources: EC; EIB; Eurostat; WEO; and IMF staff estimates and projections.

Note: Simple averages. For PIT and VAT, the top marginal rates and standard rates are used, respectively. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe; CIT = corporate income tax; PIT = personal income tax; VAT = value-added tax.

Using Fiscal Space

Some countries in Europe have fiscal space and could afford higher budget deficits without jeopardizing their access to markets or the sustainability of their debt or violating EU rules. Fiscal space is country specific, is inherently dynamic, and is itself a function of the policies being adopted. Several factors are relevant in assessing fiscal space, including the current level of government debt, its structure and financing profile, market conditions, public assets, contingent liabilities, future spending commitments, fiscal adjustment plans and their credibility, and implementation capacity (IMF 2016). Countries with fiscal space are mostly advanced economies in central and northern Europe, notably Germany, Luxembourg, the Netherlands, Nordic Countries, and Switzerland.

The decision of whether and when to use fiscal space should be the result of a cost-benefit analysis, including whether there is a need that can best be met through fiscal policy rather than other measures, the state of the economy, and the expected quality of fiscal measures (IMF 2018). A typical case is debt-financed public investments, which can be justified by their long-term benefits that are spread across generations—as is the debt service. A justification for debt-financing of consumption expenditure could be used to smoothen the tax or expenditure path until growth-enhancing reforms yield results. However, in a few European countries (for example, Germany, Switzerland), deficit levels could be increased and still reduce public debt, even if at a slower pace, with no threat to debt sustainability. In other cases, it may be appropriate to reduce debt now, with a view of increasing it in the longer run when spending pressures materialize.

The use of fiscal space in some countries may be constrained by national fiscal rules, such as the debt brake in Germany. These would need to be adjusted and tailored to allow for appropriate use of fiscal space. For example, in Germany or Switzerland, available space beyond debt/deficit ceilings could be used to raise infrastructure and defense spending, support the green transition, invest in digitalization, and support research and development (R&D).

Boosting Productivity

Growth-enhancing structural reforms can also create fiscal space by raising growth and the debt-carrying capacity of the public sector. Through strengthening investor confidence and increased competition, first-generation reforms have been associated with lower sovereign risk premia in emerging and developing economies with large structural deficiencies, especially in times of macroeconomic stress (Budina and others 2023). In advanced economies, structural reforms in the labor market tend to be associated with sizable and long-lasting reductions in debt-to-GDP ratios, with better results when reforms are initiated in good times and in countries facing high borrowing costs (Ebeke 2017; Aligishiev and others 2023). Revenue buoyancy will also help create additional fiscal space (Dudine and Jalles 2017) to finance investment, further bolstering growth prospects.

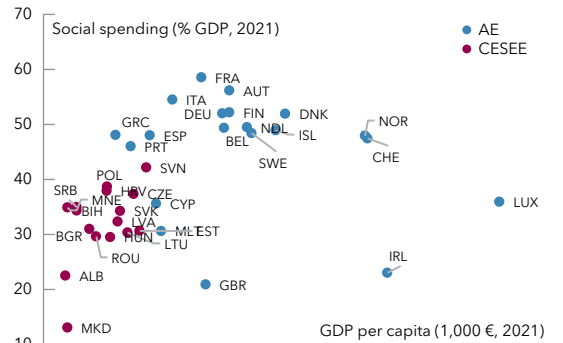
In the EU, the main obstacles to higher productivity growth are insufficient market size and capital market financing and business dynamism. Boosting productivity, growth, and competitiveness requires strengthening the single market, including through (1) leveling up all remaining barriers to a fully functioning single market for goods and services, by for example, enhancing competition, especially in services and sectors dominated by public enterprises, such as energy and railways; (2) improving border infrastructure and harmonizing rules for businesses operating across jurisdictions; and (3) completing the banking and capital market union to improve the efficiency and risk-sharing opportunities of the financial system and to enable firms to better achieve economies of scale. Moreover, countries should focus on public investment and structural change by overcoming investment bottlenecks and delayed structural reforms under Next Generation EU (NGEU)/ Recovery and Resilience Facility (RRF) and enhancing the EU budget for investment in public goods to address shared long-term challenges. Industrial policies should be limited to addressing market distortions, narrowly targeted and time bound, while avoiding negative cross-border spillovers (“smart” industrial policies; especially for R&D), adoption of early-stage green technologies, supply-chain resilience, strategic public goods (such as defense), and the green transition.

Measures at the European level must be complemented by strong domestic reform efforts, in particular, addressing skills shortages and promoting active labor market policies. CESEE countries also need to upgrade infrastructure, raise worker skills, and improve institutions to resume their income growth catchup. Although greater EU integration would represent a one-off shift in the production frontier (albeit being realized over some time), it would likely also create a more competitive and dynamic environment, fostering permanently higher productivity growth (IMF 2024c).

However, higher growth and thus higher incomes may also imply higher spending pressures because the costs of some services and government transfers will likely increase.

- Higher labor incomes increase the demand for higher pensions to maintain relative income levels—pensions are often indexed (at least partially) with wages to ensure that retirees share in the prosperity of the working population. Also, health care services are highly labor intensive, and as general wages increase, doctors, nurses, and care workers will also seek higher compensation, directly increasing the cost of health services and long-term care. Moreover, demand for higher-quality health care tends to grow with rising GDP per capita (Figure 14). Health care expenditure tends to grow 1 to 2 percent faster than GDP per capita because of non-demographic factors (Hagist and Kotlikoff 2009; IMF 2010), such as innovations in medical technology, and the associated greater usage of them. These factors explain up to half of health care spending growth since 1960 in advanced economies (Smith 2009).

Figure 14. Europe: Social Spending
(Percent of GDP)



Sources: Eurostat; WEO; and IMF staff estimates.

Note: Social spending is the sum of on health, pension, and social benefits spending. AE = Advanced Europe; CESEE = Central, Eastern, and Southeastern Europe.

- As for defense spending, NATO minimum spending guidelines are defined as a share of GDP, and thus spending will need to increase in line with economic growth in order to remain compliant with NATO minimum spending guidelines. However, in countries where national spending targets are already well above 2 percent of GDP or that are not part of NATO, higher growth can help reduce defense spending as a share of GDP.
- CO₂ emissions are also closely associated with GDP, implying that rising GDP would entail larger climate mitigation costs. However, economic studies and examples from some advanced economies show that it is possible to reconcile economic development with declining emissions by shifting from fossil fuels to renewable energy, improvements in energy efficiency, and structural change.

That said, even if higher growth contributes to higher costs and demand for higher spending on pensions, health, climate, and defense, it should still have a positive effect on reducing or creating fiscal space to accommodate spending pressures.

The Role of the EU Budget

Centralizing and increasing spending at the EU level, or providing grants from the EU budget, could help alleviate specific spending pressures for individual countries. This approach is especially warranted in areas offering public goods with positive externalities (for example, defense, climate initiatives), where network effects are present (for example, infrastructure, digital transition), economies of scale exist, or coordination is required (for example defense).

Fighting climate change at EU level can be more cost efficient and help overcome coordination problems (for example, for cross-border energy infrastructure) in the presence of externalities—both positive (for example, R&D) and negative (for example, free rider problems, implicit subsidies) (Panetta 2022; IMF 2024b). To some extent, this is already happening, notably through the NGEU and RePower EU programs. Sector-specific regulations can deliver larger energy security gains more evenly spread across countries, also benefiting some fossil fuel-intensive economies in CESEE. Hence a broad climate policy package could both achieve Europe's emissions-reduction goals and deliver sizable energy security co-benefits (Dolphin and others 2024). Moreover, to the extent that EU member states are seeking to increase defense spending to address

common security concerns, coordinating the initiatives through an EU-level fiscal capacity with common procurement could reduce duplication and achieve cost savings, for example, by standardizing military equipment and systems. Providing more common public goods at the EU level (for example, climate mitigation, R&D) could also make it easier for member states to reduce national fiscal risks.

Increasing EU financial resources, however, would imply higher contributions by member states to the EU budget or additional resources. At an aggregate EU level, any additional resources would primarily come from efficiency gains. For some member states, however, common EU financing would be supplementary if, as with the NGEU package (see following passages), it comprises a redistributive element. This would enable the EU to strengthen the capacity of those member states that face particularly high spending pressures. In addition, it could also contribute to a more efficient use of resources, especially in climate mitigation efforts, by allowing to channel funds to countries where the effect of mitigation action is highest.

The introduction of the NGEU package is an example of common EU financing. It provides €648 billion in grants and loans (4.4 percent of 2021 GDP, and more than 10 percent in countries like Croatia and Greece) over 2021–26. To this end, EU fiscal resources were boosted not only to ensure fiscal stabilization to fight the economic downturn induced by the pandemic but also to provide common public goods by funding green and digital transition projects of member states. Funds for climate policy were increased in the 2021–27 EU budget from 21 to 30 percent of the total, with climate being integrated into all spending areas.

There is scope to expand common public goods provision in several areas, such as defense, energy efficiency and security, and R&D through a common EU fiscal capacity. An EU Climate and Energy Security Facility could play a role in improving the provision of common public goods related to energy security and the green transition. Cross-border energy infrastructure and common electricity market regulation could contribute to lower energy costs and electricity prices and increase EU resilience while supporting the decarbonization of EU economies. The new European Defense Industrial Strategy (EC 2024b; ECFR 2024) could fill gaps in EU member states' military inventories and in insufficient industrial production capacities, in the face of large long-term spending needs in this area.

6. Conclusion

This analysis calls for a renewed focus on fiscal policy and comprehensive structural reforms to prepare European economies for the next decades. European countries need to meet high, rising, and long-lasting spending pressures. Some pressures are immediate, whereas others will build up over time. By 2050, these expenditures are estimated to be 5.75 percent of GDP in Advanced Europe and 8 percent of GDP in CESEE.

Adding to the challenge, fiscal consolidation is also needed now to safeguard sustainable public finances and rebuild fiscal buffers in an environment of low growth, consecutive shocks, and heightened uncertainty. Fiscal paths need to take into account these large and increasing long-term spending pressures; navigating these narrow paths will require spending prioritization. Large-scale and comprehensive efforts—including building institutional capacity and implementing deep structural reforms—can ensure adequate revenue, contain spending, and meet environmental, social, and security objectives. Given the scale and time span of these pressures, a broad reform agenda will be needed.

The institutional frameworks to support this task need to be strengthened to ensure that policymakers and the public at large have the information needed to evaluate trade-offs and make policy decisions with long-term implications. Well-designed fiscal frameworks and accurate economic forecasting of long-term pressures and timely data are central to prudently manage all long-term spending pressures, thus promoting sound public finances while meeting important policy goals.

As reforms take time to yield results, urgent action is needed despite the long-term nature of the challenges. Their sequencing should be based on savings potential, the effect on economic growth and efficiency, and distributional consequences, given that the political capital is limited. The first line of defense is reducing spending pressures through structural fiscal reforms to ensure the long-term sustainability of pension systems, redistributing the burden between the state and the private sector, and prioritization of spending needs. For several European economies, entitlement reforms are inescapable. These need to be implemented urgently because they take time to have an effect. Fighting climate change requires fiscal instruments, both taxation and spending. Carbon pricing will need to be extended to promote savings and encourage the shift to clean energy, with fiscal revenues recycled to compensate vulnerable households. This will be even more challenging in the CESEE region, where climate spending needs are particularly large given the higher carbon intensity and a larger share of public ownership in electricity generation. Other policies include reducing unproductive spending (for example, fuel subsidies). Increased revenue mobilization will also need to be considered, especially in CESEE, as will the use of fiscal space where available and appropriate.

Strengthening the EU's fiscal capacity in key areas to expand the provision of common public goods, such as climate, defense, energy security, and R&D, could also help realize efficiency gains and could be used to support member states that face particularly high spending pressures in some areas. Finally, structural reforms to boost Europe's growth potential should help all countries to increase fiscal maneuvering room.

Implementing this agenda will not be an easy task. Reforms have distributional consequences within and across countries, as well as across generations. Fiscal practices and frameworks, supported by comprehensive analysis and data, can help inform and shape the public debate that will be needed to take action and ensure that spending pressures are adequately addressed. The reformed EU framework is a step in the right

direction in terms of explicitly accounting for spending pressures from aging, but spending on the green transition and defense will need to be integrated, and national energy and climate plans will need to be costed to assess the fiscal effect of achieving EU-wide climate targets.

These are demanding times for policymakers. The challenges are immense, and the solutions are not easy. But taking no action is not an option because this could risk fiscal sustainability or mean that priority spending needs remain unmet. Or both.

Annex 1. Methodology

This annex outlines the methodology for generating the estimates of fiscal pressures in this paper. Fiscal pressures are estimated for each country individually. A uniform approach has been used for all countries to ensure consistency across countries.

Spending Pressures

Future spending pressures are calculated as the difference between baseline spending levels and projected future spending levels.

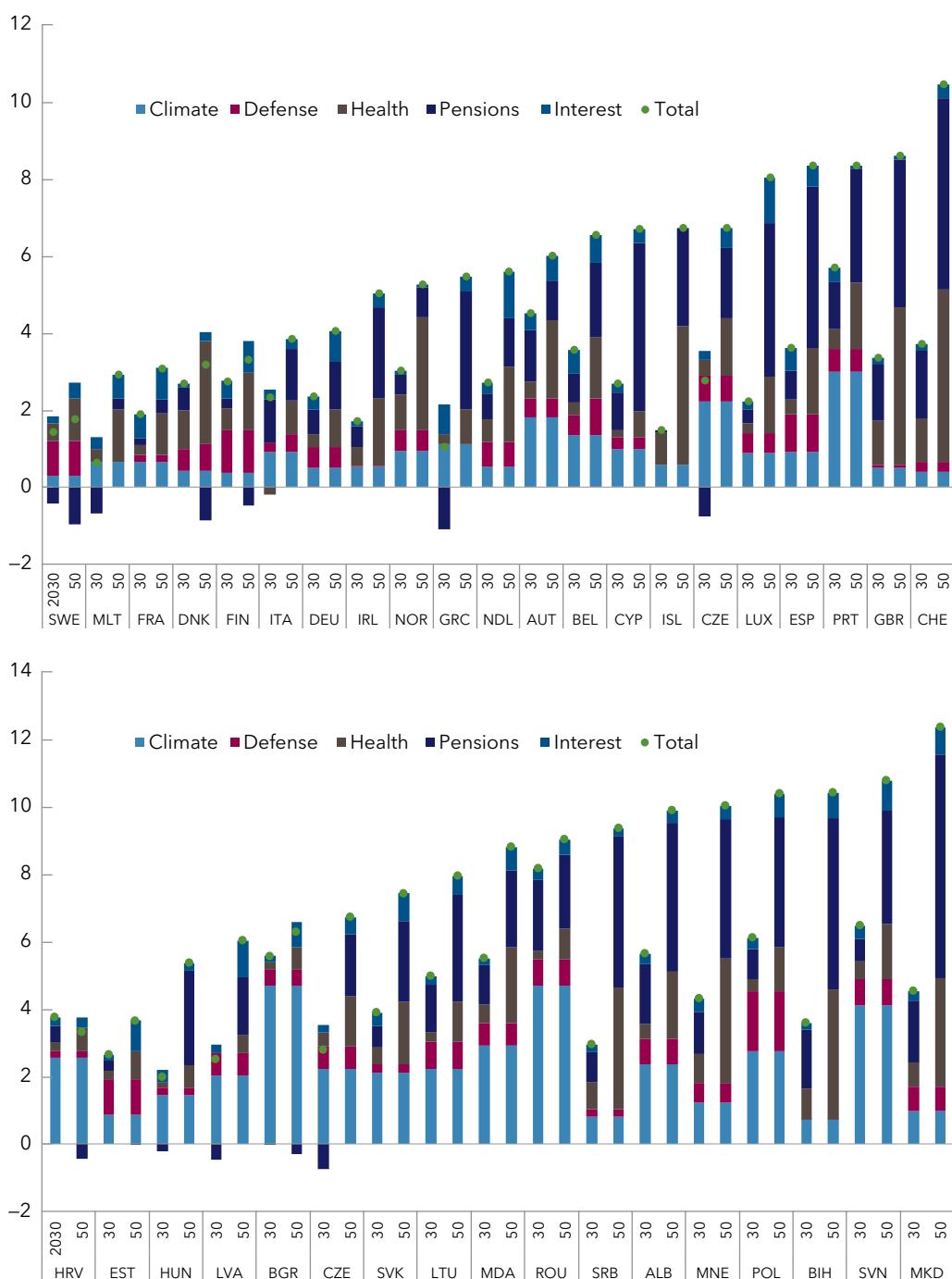
- **Interest:** As outlined in the macroeconomic framework in previous passages, the baseline interest cost is set as a constant fraction of the preceding period's debt stock. For the projection of future interest payments, the interest rate is projected to gradually rise to the neutral rate which is approximated by the nominal GDP growth rate. The increase to that level is gradual, by steps of 0.1 percentage points per year. This reflects the assumption that, as interest rates rise, they feed gradually through to debt servicing costs as debt is rolled over. The level of debt after spending pressures remains unchanged from the baseline (that is, it is assumed that any spending pressures—whether from higher interest costs or other sources—are fully absorbed). The debt stock is projected based on the evolution of fiscal balances broadly in line with the new European Union (EU) fiscal rules.
- **Defense:** Baseline defense spending is set at the level (as a share of GDP) of 2021 or 2022, whichever is lower (in some countries, defense spending in 2022 fell as a share of GDP because defense budgets were set before Russia's invasion of Ukraine). Data are from the North Atlantic Treaty Organization (available through 2023) or the World Bank's World Development Indicators (WDI) database, which are in turn from the Stockholm International Peace Research Institute (SIPRI). Projected future defense spending is set based on announcements made by individual countries. In most North Atlantic Treaty Organization member countries, this implies an increase to 2 percent of GDP, though in some countries the targeted level of defense spending is higher (especially but not only in countries neighboring Russia). Where no announcements were made, the level of defense spending as a share of GDP was assumed constant.
- **Pensions:** Baseline spending is set at the level (as a share of GDP) of 2023. Data are from Eurostat where available or from desks. Projections for EU member states and Norway are from the baseline scenario of the EC (2024a). The baseline is projected by the EC taking into account the legislation as of the end of 2023. In some cases, this can lead to low levels of pensions. Where this is the case, the EC has calculated a "no benefit loss" scenario, which is used instead of the baseline. For other countries, we have projected pension spending based on Eurostat projections of population and age structure as of 2023, and the average share per pensioner in GDP per capita in recent years.
- **Health and long-term care:** Baseline spending is set at the level (as a share of GDP) of 2023. Data are from Eurostat where available, or from the WDI database. Projections for EU member states and Norway are from the baseline scenario of the EC (2024a). The baseline is projected by the EC based on legislation as of the end of 2023. For other countries, we have used projections from the IMF's Fiscal Monitor (updated as of March 2024).
- **Green transition:** For this spending category, there are no reliable estimates. For EU member states and Norway, we have used data from the European Investment Bank (EIB)'s 2020/21 Investment Report (EIB 2021), which outlines investment needs for the green transition. Country-by-country estimates of annual investment needs to reach the 40 percent greenhouse gas (GHG) reduction target by 2030 as reported by the report are scaled up to the average of estimates for total investment needs to reach a 55 percent

reduction of GHG emissions and new total estimates by the EC to reach the more ambitious targets set in the RePower EU plan. Other EIB data indicate that about 45 percent of the needed spending is, on average, already taking place in sectors other than transport—this has been removed from the spending pressures because these are already in the baseline. Reducing emissions in the transport sector adds on average one additional percentage point of GDP in investment needs. These total investment needs are distributed between the public and private sectors based on EIB estimates. These estimates in turn are based on national plans and are not available for all countries. We have taken averages for Central, Eastern, and Southeastern Europe and other countries, as reported by the EIB, and applied them uniformly to each country (the share of the public sector is higher in Central, Eastern, and Southeastern European countries than in western Europe). For other countries (non-EU member states), we have used as an approximation the estimates of the IMF's CPAT model of the carbon taxes required to achieve a 25 percent reduction in GHG emissions (because these countries are not bound by the EU's targets) and the accompanying erosion of the tax base.

Annex 2. Cross-Country Variation

Annex Figure 2.1. Advanced Europe and Central, Eastern, and Southeastern Europe: Evolution of Spending Pressures 2030-501

(Percent of GDP)



Sources: EC; EIB; WEO; and IMF staff estimates and projections.

¹Annual spending pressures beyond baseline. Estimates may differ from the authorities' projections, if available, as a consistent methodology is applied.

References

- Aligishiev, Zamid, Gabriela Cugat, Romain A. Duval, Davide Furceri, João Tovar Jalles, Margaux MacDonald, Giovanni Melina, and others. 2023. "Market Reforms and Public Debt Dynamics in Emerging Market and Developing Economies." IMF Staff Discussion Note 2023/005, International Monetary Fund, Washington, DC.
- Amaglobeli, David, Ruud A. de Mooij, Andualem Mengistu, Mariano Moszoro, Manabu Nose, Soheib Nunhuck, Sailendra Pattanayak, and others. 2023. "Transforming Public Finance through GovTech." IMF Staff Discussion Note 2023/004, International Monetary Fund, Washington, DC.
- Andersson, Julius J. 2019. "Carbon Taxes and CO₂ Emissions: Sweden as a Case Study." *American Economic Journal: Economic Policy* 11 (4): 1–30.
- Anil, Ari, David Bartolini, Vizhdan Boranova, Gabriel Di Bella, Kamil Dybczak, Keiko Honjo, Raju Huidrom, and others. 2020. "Infrastructure in Central, Eastern, and Southeastern Europe: Benchmarking, Macroeconomic Impact, and Policy Issues." IMF Departmental Paper 2020/011, International Monetary Fund, Washington, DC.
- Batog, Cristina, Ernesto Crivelli, Anna Ilyina, Zoltan Jakab, Jaewoo Lee, Anvar Musayev, Iva Petrova, and others. 2019. "Demographic Headwinds in Central and Eastern Europe." IMF Departmental Paper 2019/011, International Monetary Fund, Washington, DC.
- Bernard, Jean-Thomas, and Maral Kichian. 2021. "The Impact of a Revenue-Neutral Carbon Tax on GDP Dynamics: The Case of British Columbia." *The Energy Journal* 42 (3): 205–24.
- Black, Simon, Antung A. Liu, Ian W. H. Parry, and Nate Vernon-Lin. 2023a. "IMF Fossil Fuel Subsidies Data: 2023 Update." IMF Working Paper 2023/169, International Monetary Fund, Washington, DC.
- Black, Simon, Ian W. H. Parry, Victor Mylonas, Nate Vernon-Lin, and Karlygash Zhunussova. 2023b. "The IMF-World Bank Climate Policy Assessment Tool (CPAT): A Model to Help Countries Mitigate Climate Change." IMF Working Paper 2023/128, International Monetary Fund, Washington, DC.
- Black, Simon, Ian W. H. Parry, and Karlygash Zhunussova. 2023. "Is the Paris Agreement Working? A Stocktake of Global Climate Mitigation." Staff Climate Note 2023/002, International Monetary Fund, Washington, DC.
- Bouabdallah, Othman, Ettore Dorrucci, Lucia Hoendervangers, and Carolin Nerlich. 2024. "Mind the Gap: Europe's Strategic Investment Needs and How to Support Them." *The ECB Blog*, June 27.
- Brooke-Holland, Louisa. 2024. "Defence Procurement: The Single Source Contract Regulations." Research Briefing, CBP-9645, August 2. Defence procurement reform: The single source contract regulations - House of Commons Library
- Budina, Nina, Christian H. Ebeke, Florence Jaumotte, Andrea Medici, Augustus J. Panton, Marina Mendes Tavares, and Bella Yao. 2023. "Structural Reforms to Accelerate Growth, Ease Policy Trade-offs, and Support the Green Transition in Emerging Market and Developing Economies." IMF Staff Discussion Note 2023/007, International Monetary Fund, Washington, DC.
- Caselli, Francesca, Hamid R. Davoodi, Carlos Goncalves, Gee Hee Hong, Andresa Lagerborg, Paulo A. Medas, Anh D. M. Nguyen, and others. 2022. "The Return to Fiscal Rules." IMF Staff Discussion Note SDN/2022/002, International Monetary Fund, Washington, DC.

- Clements, Benedict, Kamil Dybczak, Vitor Gaspar, Sanjeev Gupta, and Mauricio Soto. 2015. "The Fiscal Consequences of Shrinking Populations." IMF Staff Discussion Note SDN/15/21, International Monetary Fund, Washington, DC.
- Clements, Benedict, Frank Eich, and Sanjeev Gupta. 2014. *Equitable and Sustainable Pensions*. Washington, DC: International Monetary Fund.
- Curristine, Teresa R., Isabell Adenauer, Virginia Alonso-Albarran, John Grinyer, Koon Hui Tee, Claude P. Wendling, and Delphine Moretti. 2024. "How to Develop and Implement a Medium-Term Fiscal Framework." IMF How-To Note 2024/005, International Monetary Fund, Washington, DC.
- Doherty, Laura, and Amanda Sayegh. 2022. "How to Design and Institutionalize Spending Reviews." IMF How-To Note 2022/004, International Monetary Fund, Washington, DC, September.
- Dolphin, Geoffroy, Romain A. Duval, Hugo Rojas-Romagosa, and Galen Sher. 2024. "The Energy Security Gains from Strengthening Europe's Climate Action." IMF Departmental Paper 2024/005, International Monetary Fund, Washington, DC.
- Dougherty, Sean, Pietrangelo de Biase, and Luca Lorenzoni. 2022. "Funding the Future: The Impact of Population Ageing on Revenues Across Levels of Government." OECD Working Papers on Fiscal Federalism 39, OECD Publishing, Paris.
- Dudine, Paolo, and João Tovar Jalles. 2017. "How Buoyant Is the Tax System? New Evidence from a Large Heterogeneous Panel." IMF Working Paper 2017/004, International Monetary Fund, Washington, DC, January.
- Ebeke, Christian. 2017. "Who Dares, Wins: Labor Market Reforms and Sovereign Yields." IMF Working Paper 17/14, International Monetary Fund, Washington, DC.
- European Commission (EC). 2024a. "2024 Ageing Report. Economic and Budgetary Projections for the EU Member States (2022–2070)." Institutional Paper 279, Brussels, April.
- European Commission (EC). 2024b. "Defence Investment Gaps Analysis and Way Forward." DG DEFIS Report, Brussels, May.
- European Council of Foreign Relations (ECFR). 2024. "Opening Shots: What to Make of the European Defence Industrial Strategy." Online Article, March.
- European Investment Bank (EIB). 2021. "Investment Report 2020/21. Building a Smart and Green Europe in the COVID-19 Era." Luxembourg.
- European Parliament. 2023. "Options for a Stronger and More Agile EU Budget." Study of the European Parliament's Committee on Budgets, EC, Brussels, October.
- Financial Times. 2024. "EU Shifts Spending Focus from Climate to Defence." Online Article, January 31.
- Gugler, Klaus, Adhurim Haxhimusa, and Mario Liebensteiner. 2021. "Effectiveness of Climate Policies: Carbon Pricing vs. Subsidizing Renewables." *Journal of Environmental Economics and Management* 106:102405.
- Guillemette, Yvan, and David Turner. 2021. "The Long Game: Fiscal Outlooks to 2060 Underline Need for Structural Reform." OECD Economic Policy Paper 29, OECD Publishing, Paris.
- Hagist, Christian, and Laurence Kotlikoff. 2009. "Who's Going Broke? Comparing Growth in Public Healthcare Expenditure in Ten OECD Countries." *Hacienda Pública Española/Review of Public Economics* 188 (1): 55–72.

- International Monetary Fund (IMF). 2010. "Macro-Fiscal Implications of Health Care Reform in Advanced and Emerging Economies." IMF Policy Paper, International Monetary Fund, Washington, DC, December.
- International Monetary Fund (IMF). 2016. "Assessing Fiscal Space: An Initial Consistent Set of Considerations." IMF Policy Paper, International Monetary Fund, Washington, DC, November.
- International Monetary Fund (IMF). 2017. *Fiscal Monitor: Achieving More with Less*. Washington, DC, April.
- International Monetary Fund (IMF). 2018. "Assessing Fiscal Space: An Update and Stocktaking." IMF Policy Paper, International Monetary Fund, Washington, DC, June.
- International Monetary Fund (IMF). 2023. *Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World*. Washington, DC, October.
- International Monetary Fund (IMF). 2024a. *Fiscal Monitor. Fiscal Policy in the Great Election Year*. Washington, DC, April.
- International Monetary Fund (IMF). 2024b. *Euro Area Policies: Article IV Consultations Staff Report*. Washington, DC, July.
- International Monetary Fund (IMF). 2024c. *Europe: Regional Economic Outlook. A Recovery Short of Europe's Full Potential*. Washington, DC, October.
- Jasutis, Grazvydas, Todor Tagarev, and Teodora Fuior. 2022. "Parliamentary Oversight of National Defense Industry." Geneva Centre for Security Sector Governance (DCAF) Report, Geneva, May.
- Kammer, Alfred. 2024. "Europe: Turning the Recovery into Enduring Growth." Speech at the House of the Euro, Brussels, May 14.
- Kammer, Alfred. 2023. "Europe, And the World, Should Use Green Subsidies Cooperatively." *IMF Blog*, May 11.
- KPMG. 2023. "Budgets under Pressure: Long-Term Fiscal Challenges in Europe." Available online. September.
- Masuch, Klaus, Robert Anderton, Ralph Setzer, and Nicholai Benala. 2018. "Structural Policies in the Euro Area." ECB Occasional Paper 2010, ECB, Frankfurt am Main.
- Merkle, Magnus, and Geoffroy Dolphin. 2024. "Distributional Impacts of Heterogenous Carbon Prices in the EU." IMF Working Paper 2024/149, International Monetary Fund, Washington, DC.
- Metcalf, Gilbert E., and James H. Stock. 2023. "The Macroeconomic Impact of Europe's Carbon Taxes." *American Economic Journal: Macroeconomics* 15 (3): 265–86.
- Mohaddes, Kamiar, and Mehdi Raissi. 2024. "Rising Temperatures, Melting Incomes: Country-Specific Macroeconomic Effects of Climate Scenarios." Cambridge Working Papers in Economics, Cambridge.
- Newhouse, Joseph P. 1992. "Medical Care Costs: How Much Welfare Loss?" *Journal of Economic Perspectives* 6 (3): 3–21.
- OECD. 2023. *Pensions at a Glance 2023: OECD and G20 Indicators*. Paris: OECD Publishing.
- Panetta, Fabio. 2022. "Investing in Europe's Future: The Case for a Rethink." Speech available online, Istituto per gli Studi di Politica Internazionale (ISPI), Milan, November 11.
- Parry, Ian W. H., Black Simon, and Karlygash Zhunussova. 2022. "Carbon Taxes or Emissions Trading Systems?: Instrument Choice and Design." Staff Climate Note 2022/006, International Monetary Fund, Washington, DC.

- Parry, Ian W. H., Robertson C. Williams, and Lawrence H. Goulder. 1999. "When Can Carbon Abatement Policies Increase Welfare? The Fundamental Role of Distorted Factor Markets." *Journal of Environmental Economics and Management* 37:52-84.
- Prasad, Ananthakrishnan, Elena Loukoianova, Alan Xiaochen Feng, and William Oman. 2022. "Mobilizing Private Climate Financing in Emerging Market and Developing Economies." IMF Staff Climate Note 2022/007, International Monetary Fund, Washington, DC, July.
- Sakrak, Ozlem A., Bryn Battersby, Fabien Gonguet, Claude P. Wendling, Jacques Charaoui, Murray Petrie, and Suphachol Suphachalasai. 2022. "How to Make the Management of Public Finances Climate-Sensitive—Green PFM." IMF How-to Note 2022/006, International Monetary Fund, Washington, DC.
- Smith, Peter C. 2009. "The Impact of User Charges in Health Care." In *Achieving Better Value for Money in Health Care*, OECD Health Policy Studies, 151-163. Paris: OECD Publishing.
- Taconet, Nicolas, Aurélie Méjean, and Céline Guivarch. 2020. "Influence of Climate Change Impacts and Mitigation Costs on Inequality between Countries." *Climatic Change* 160 (11): 15-34.
- The Economist. 2024. "Can Artificial Intelligence Make Health Care More Efficient?" Online Article, March 27.
- van der Ploeg, Frederick. 2016. "Second-Best Carbon Taxation in the Global Economy: The Green Paradox and Carbon Leakage Revisited." *Journal of Environmental Economics and Management* 78 (C): 85-105.
- Willemé, Peter, and Michel Dumont. 2015. "Machines that Go 'Ping': Medical Technology and Health Expenditures in OECD Countries." *Health Economics* 24 (8): 1027-41.
- World Bank. 2006. "Pension Reform and the Development of Pension Systems: An Evaluation of World Bank Assistance." Report of the Independent Evaluation Group, International Monetary Fund, Washington, DC.
- Yamazaki, Akio. 2017. "Jobs and Climate Policy: Evidence from British Columbia's Revenue-Neutral Carbon Tax." *Journal of Environmental Economics and Management* 83:197-216.
- Zettelmeyer, Jeromin, Grégory Claeys, Zsolt Darvas, Lennard Welslau, and Stavros Zenios. 2023. "The Long-term Fiscal Challenges Facing the European Union." Bruegel Policy Brief Issue 10/23, Bruegel, Brussel.



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