

INTERNATIONAL MONETARY FUND

# **Navigating Minefields and Headwinds: National Security, Demographic Shifts, Climate Change and Fiscal Policy in Lithuania**

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WP/24/201

**2024  
SEP**



**WORKING PAPER**

**IMF Working Paper**

European Department

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Authorized for distribution by Kazuko Shirono

September 2024

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**Abstract**

Lithuania's immediate fiscal challenges are national security and higher costs of borrowing, but fiscal prospects are further exacerbated by long-term pressures stemming from climate change and a shrinking and aging population. The country has experienced a rapidly decreasing population—from 3.7 million in 1991 to 2.8 million in 2023—and its old-age dependency ratio is consequently expected to increase from 33 percent in 2023 to 53.4 percent by 2050. The resulting long-term spending pressures are projected to amount to as much as 11.2 percent of GDP, which is about 30 percent of the current level of spending. Debt sustainability concerns would not allow financing additional spending with more debt. Hence, a comprehensive strategy will help address these long-term fiscal challenges, including tax policy changes to raise additional revenue while primarily reducing expenditure needs through pension and healthcare reforms.

JEL Classification Numbers:	E61; E62; H51; H52; H55; H56; H6; Q54
Keywords:	Military spending; interest rates; climate change; demographics; pension; healthcare; tax policy; fiscal sustainability; Lithuania
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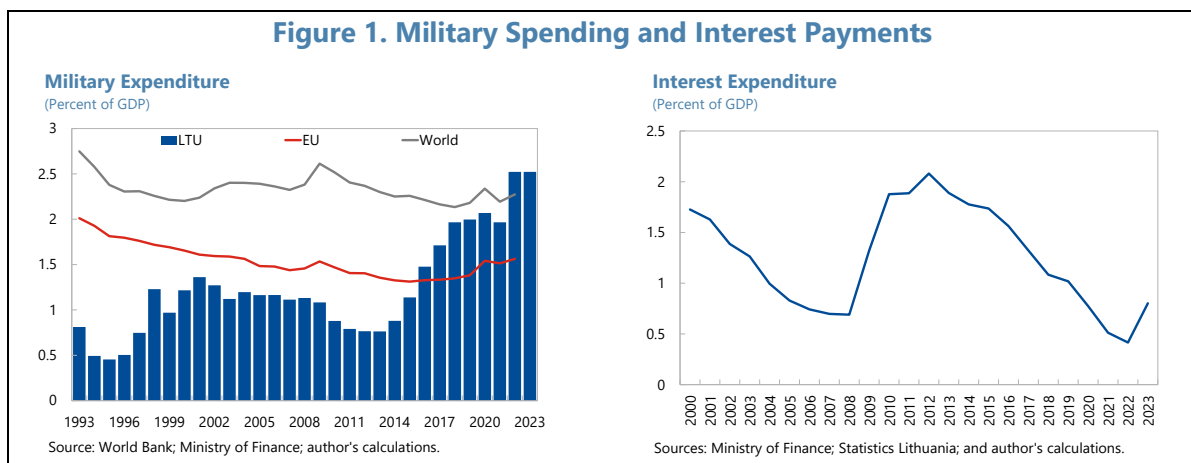
<sup>1</sup> This working paper is based on the Selected Issues Paper published in the context of the 2024 Article IV Consultation with Lithuania: <https://www.imf.org/en/Publications/CR/Issues/2024/07/23/Republic-of-Lithuania-Selected-Issues-552407>. The author would like to thank Dora Benedek, Helge Berger, Lukas Boer, Borja Gracia, Mark Griffiths, Nicola Pierri, Alpa Shah, Kazuko Shirono, Charles Vellutini, the Bank of Lithuania, the Ministry of Education, the Ministry of Finance, the Ministry of Health, the Ministry of Social Affairs and Labor, and participants of a conference at Vilnius University for helpful comments and suggestions, and Sadhna Naik for excellent research assistance.

## I. INTRODUCTION

There are few countries in Europe—or elsewhere—escaping the barrage of shocks in recent years unscathed. Lithuania stands out with a remarkable performance since the global financial crisis (GFC) in 2008, with appropriate policy responses and strong macroeconomic fundamentals that helped maintain rapid income convergence towards the upper echelons of the European Union (EU). Maintaining the fast pace of income growth into the future, however, will become more difficult, as Lithuania faces mounting fiscal pressures and a shrinking and aging society.

The immediate fiscal challenges are national security needs and higher cost of borrowing. In the wake of Russia’s war in Ukraine, military outlays have increased from the post-Cold War low of 0.9 percent of GDP in 2010 to 2 percent in 2020 and over 2.5 percent in 2023 (Figure 1). There is a cross-party consensus in Lithuania on the need for raising defense spending to 3 percent of GDP or more over the medium term, albeit without a concrete agreement on how to finance the additional expenditure on a sustainable basis. At the same time, monetary tightening by the European Central Bank (ECB) to bring inflation under control has raised the average cost of borrowing for all countries in the eurozone. In the case of Lithuania, interest payments increased from 0.4 percent of GDP in 2022 to 0.7 percent in 2023 and are projected to reach over 1.2 percent by 2030 as the government borrows more and refinances debt at higher interest rates.

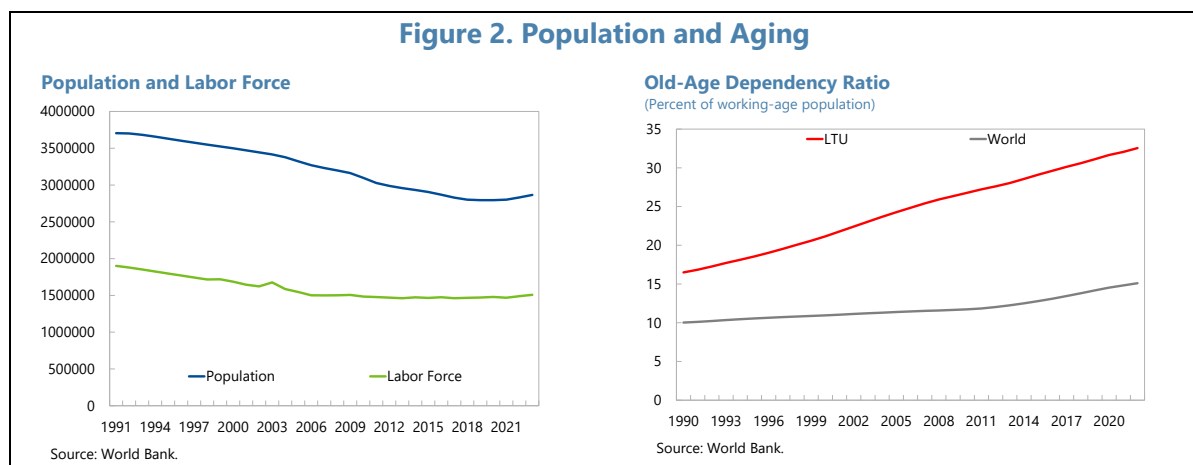
In the long run, however, the impact of higher interest payments and additional military spending pales in comparison to mounting fiscal pressures stemming from climate change and a fast-aging population. The global total fertility rate—the average number of births per woman—has roughly halved to 2.3 over the past 50 years. In most European countries, it is significantly below the replacement rate of 2.1, where the population replaces itself from one generation to the next. Lithuania has already experienced a rapidly shrinking population—from 3.7 million in 1991 to 2.8 million in 2023—due to demographic changes and net emigration. As a result, the share of elderly increased from 18 percent of the working age population in 1991 to over 33 percent in 2023 (Figure 2). According to the EU’s baseline projections, Lithuania’s old-age dependency ratio will increase to 53.4 percent in 2050 and 67.5 percent by 2070—far above the EU average of 57 percent. Consequently, even if we assume the net replacement rate—defined as the net pension entitlement divided by net pre-retirement earnings—remains unchanged at



about 30 percent for the pay-as-you-go system, pension spending is projected to increase by 5 percentage points of GDP from 6.9 percent in 2023 to 11.8 percent by 2050. Similarly, public health expenditure is projected to increase by 1.2 percentage points of GDP from 5.3 percent in 2023 to 6.5 percent by 2050.

Altogether, long-term spending pressures are projected to amount to as much as 11.2 percent of GDP on an annual basis by 2050, which is about 30 percent of the current level of government spending.<sup>2</sup> If financing conditions remain favorable, Lithuania with relatively low public debt ratio can finance some of the projected increases in expenditure with debt by relaxing its existing set of nationally determined fiscal rules within the supranational limits imposed by the EU. However, absent expenditure and revenue measures, gross public debt would increase by 36 percentage points of GDP from 35.6 percent in 2023 to 71.5 percent by 2050. This increase in public debt would come with greater risks to debt sustainability and macro-financial stability, demonstrating the need for pension and healthcare reforms to prevent expenditures from rising as much as projected. In addition, along with less-restrictive immigration policies, labor market reforms would help address structural unemployment, strengthen the flexibility of work arrangements, enhance human capital through adult learning, and encourage longer working lives, which in turn increases average effective retirement ages.

Even the most ambitious reforms cannot fully offset the fiscal cost of the rapid and increasing pace of population aging. That is why a well-balanced fiscal strategy should also include tax policy changes designed to mobilize additional revenue towards the EU level in a growth-friendly and inclusive manner by (i) rationalizing tax concessions and exemptions; (ii) raising the effective corporate income tax (CIT) and value-added (VAT) rates; (iii) introducing an economy-wide carbon tax and increasing other environmental taxes; and (iv) modernizing the property tax regime. All in all, long-term fiscal sustainability would be credibly safeguarded with a comprehensive strategy bringing different elements together in a rule-based policy framework.



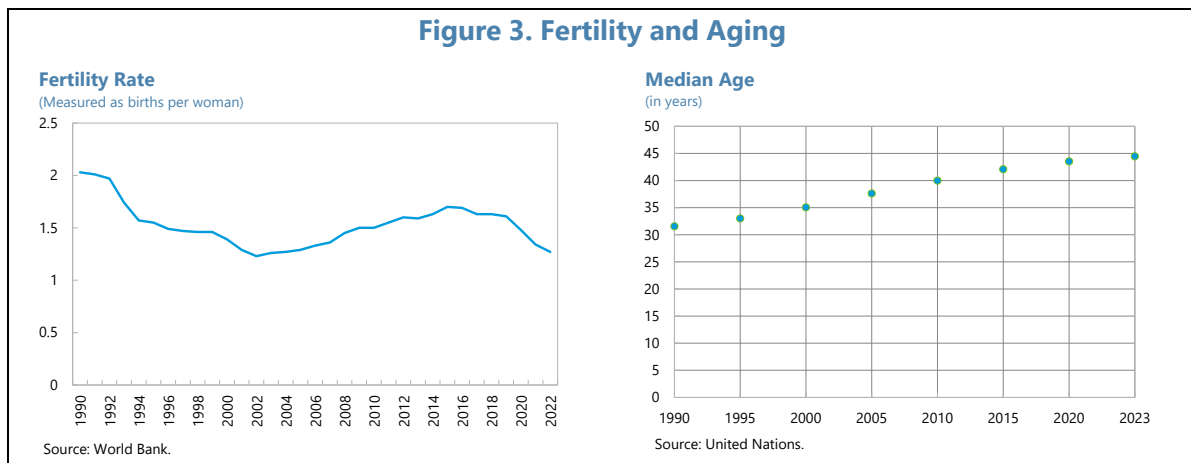
<sup>2</sup> Long-term spending pressures are defined as the deviation of expenditure needs from the baseline, which refers to the level of spending in 2023 for interest, healthcare and pensions, the pre-war level of military spending in 2021, and the 2011-2020 average for climate-related spending. Budina *et al.* (2024) presents a detailed overview of the methodology.

The remainder of this paper is structured as follows. Section II provides an assessment of long-term expenditure pressures. Section III presents expenditure measures and structural reforms. Section IV considers revenue options. Section V recommends an alternative rule-based framework. Finally, Section VI summarizes and provides concluding remarks.

## II. SHORT-RUN AND LONG-TERM EXPENDITURE PRESSURES

Russia's invasion of Ukraine in 2022 has become a *force majeure* in Europe, leading to the largest increase in military expenditures in the post-Cold War era. The pledges to amend defense spending varied from country to country, but most members of the North Atlantic Treaty Organization (NATO) have boosted military outlays to the minimum target of 2 percent of GDP. As a member of NATO, Lithuania has raised its defense spending to 2.5 percent of GDP by 2023 and announced plans to permanently increase it to at least 3 percent by 2030 to modernize and further develop its armed forces.<sup>3</sup> The appropriate level of defense spending depends on the security environment and international circumstances to deter threats and preserve peace. Amid the risk of a protracted conflict in Ukraine—and beyond, it is not unexpected to observe elevated levels of military spending in front-line countries like Lithuania. The additional defense outlays compared to the pre-war period amounts to about 1.5 percent of GDP—a significant fiscal burden that still needs to be funded either by new sources of revenue or additional borrowing.<sup>4</sup>

The post-pandemic inflation surge forced central banks to tighten monetary conditions. In the euro area, the ECB has raised short-term interest rates from 0 percent in 2022 to 4.5 percent by the end of 2023, pushing the average cost of government borrowing higher. In the case of Lithuania, interest expenditure is projected to rise from 0.4 percent of GDP in 2022 to 0.7 percent in 2023 and to about 1.2 percent by 2030, as the government borrows more and refinances long-term debt at higher rates. Taking into account long-term spending pressures, additional increase in interest payments compared to the baseline will amount to 1.3 percent of GDP by 2050.

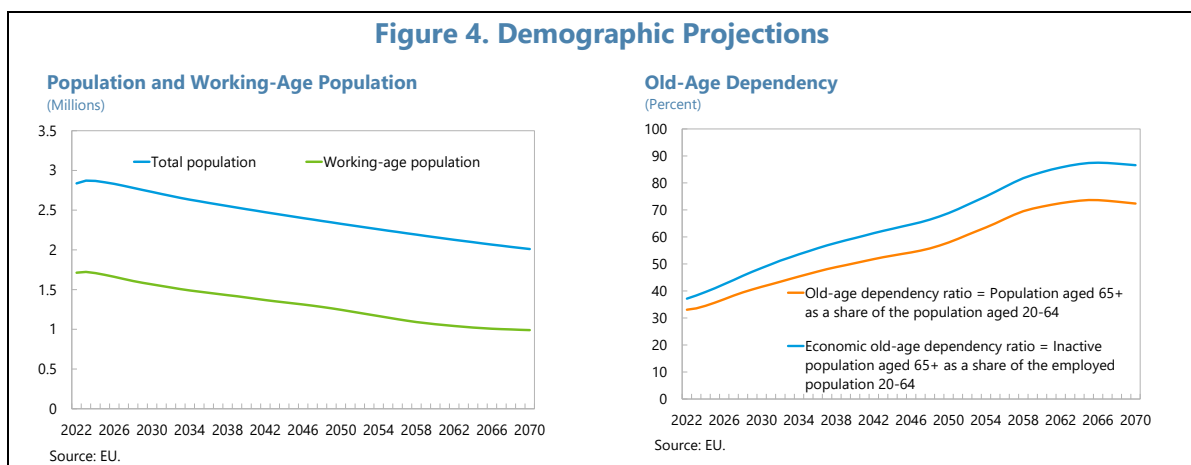


<sup>3</sup> Some in Lithuania call for increasing annual military spending to 4 percent of GDP by 2030.

<sup>4</sup> According to the new EU fiscal rules, defense spending will be regarded as a mitigating factor in assessing whether a country breaches the budget deficit limit. Beyond fiscal and security considerations, however, it should be noted that military spending could have broader macroeconomic effects (Cevik and Ricco, 2018).

The fiscal impact of higher interest rates and national security needs, however, pales in comparison to long-term pressures stemming from climate change adaptation and mitigation and a shrinking and aging population. The two key indicators to understand the future of Lithuania’s demography are (i) the fertility rate and (ii) the median age. The average number of children per woman fell from 2.03 in 1990 to 1.18 in 2023—far below the fertility-replacement rate; and the median age increased by 12.5 years from 31.5 to 44 over the same period (Figure 3). Consequently, the old-age dependency ratio—the share of population at and above 65 to the working age population—surged from 18 percent in 1991 to 33 percent in 2023. For the first time in history, more workers will retire than those entering the labor market in 2024. According to the recent EU Aging Report, these demographic shifts, albeit subject to uncertainty, will accelerate over the next two and half decades, lowering population by 18.9 percent to 2.3 million in 2050—and further by 13.7 percent to 2 million by 2070. With shrinking population and increasing life expectancy, the median age of the population will increase over 48 and those aged 65 and above will constitute 57.9 percent of the working age population by 2050.<sup>5</sup>

Demographic headwinds, along with net emigration, have reduced the size of the workforce by 20.6 percent from 1.9 million in 1991 to 1.5 million in 2023. By 2050, Lithuania’s workforce is projected to shrink further by 27.7 percent to 1.2 million (Figure 4). At the same time, the share of prime-age workers (25-54 years) is projected to decline to 40.1 percent of the total population in 2023 and 33.1 percent by 2050 (Figure 5). Moreover, the share of the economically inactive population aged 65 and above will increase from 38.3 percent of the employed population aged 20-64 in 2023 to 68.8 percent by 2050. The labor force participation of those aged 65 and above is significantly lower than younger cohorts. For example, while 90.3 percent Lithuanians aged between 25 to 54 are either employed or actively looking for work, the participation rate is only 18.7 percent among those aged 65 to 74. Absent policy interventions, this implies that the labor force participation will fall in rapidly aging population. The contracting labor supply will in turn reduce output per capita, depress aggregate fixed investment, and stifle the economy’s long-run

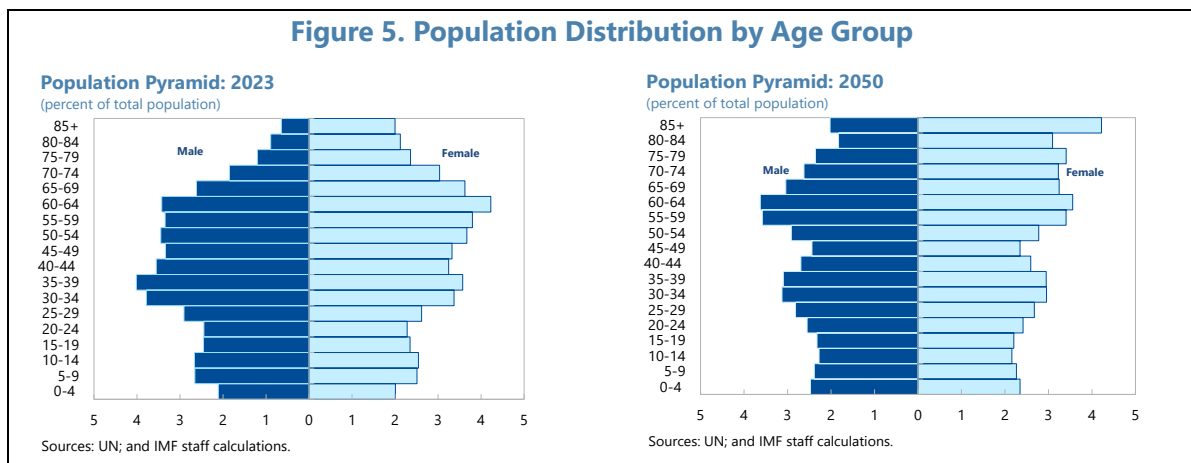


<sup>5</sup> Life expectancy at birth in Lithuania increased from 70.5 years in 1991 to 75.3 years in 2022, but still stands lower than the EU average of 80.7 years. Furthermore, there is a significant gap in life expectancy between men (71.4 years) and women (80.1 years), which is one of the largest gender gaps in the EU.

growth potential (Sheiner, 2014; Bouman *et al.*, 2015; Lee, 2016; Bodnar and Nerlich, 2022; Kotschy and Bloom, 2023; Maestas, Mullen, and Powell, 2023).

Over the next couple of decades, the 'green transition' for climate change adaptation and mitigation will become a growing source of expenditure pressures. The annual warming trend for the Baltics has been about 0.10°C per decade, which is twice as much as the global average of 0.05°C per decade. Although global warming may initially provide a boost to economic activity in the northern hemisphere, greater volatility in climatic conditions and a projected increase of as much as 75 percent in precipitation during winter in the Baltics will bring significant downside risks (Cevik, 2024). These adverse developments will affect biodiversity, food production, infrastructure and weather-sensitive other economic activities such as transportation and tourism. Enhancing structural resilience requires infrastructure and other ex-ante investments to limit the impact of disasters, while building financial resilience involves creating fiscal buffers and using prearranged financial instruments to protect fiscal sustainability and manage recovery costs. According to the model developed by the European Investment Bank (EIB) for EU countries, the annual fiscal cost of 'green transition' in Lithuania is currently estimated to reach 2.2 percent of GDP by 2050 (EIB, 2021).

Altogether, long-term spending pressures in Lithuania are projected to amount to as much as 11.2 percent of GDP on an annual basis by 2050, which is about 30 percent of the current level of government spending and almost three times the eurozone average (Table 1).<sup>6</sup> Therefore, measures to pursue pension and healthcare reforms to prevent expenditures from rising as much as projected are crucial to maintain fiscal sustainability and avoid economic distortions. In addition, given that even most ambitious reforms cannot fully offset the fiscal cost of national security, climate change and population aging, structural reforms need to be supported by alternative revenue measures as an integral part of a well-balanced fiscal strategy.



<sup>6</sup> Long-term spending pressures are estimated to amount to an average of 6.8 percent of GDP in Europe and 4.4 percent of GDP in eurozone countries (Budina *et al.*, 2024).

**Table 1. Additional Annual Cost of Long-Term Spending Pressures**

	<b>Lithuania</b>	<b>Euro Area</b>
Defense	1.5	0.5
Interest payments	1.3	0.8
Climate change	2.2	0.8
Pension	5.0	1.2
Healthcare	1.2	1.1
<b>Total</b>	<b>11.2</b>	<b>4.4</b>

Note: Estimations presented in this table are based on information and projections from the Ministry of Finance, the IMF, the EIB, the UN, and the EU Aging Report. Main demographic projections used in projections are displayed in various figures throughout the paper. The pension spending projection for Lithuania assumes a constant replacement rate, as opposed to a declining replacement rate that is necessary to keep pension spending constant as a share of GDP.

Source: IMF; author's calculations.

### III. EXPENDITURE MEASURES

If financing conditions remain favorable, Lithuania with a relatively low public debt ratio can finance some of the additional permanent increases in expenditure with debt by relaxing the existing set of fiscal rules within the supranational limits imposed by the EU. However, absent expenditure and revenue measures, gross public debt would increase by 36 percentage points of GDP from 35.6 percent in 2023 to 71.5 percent by 2050 (Figure 6). This increase in public debt as a share of GDP would come with greater risks to public debt sustainability and macro-financial stability. Therefore, responsible long-term fiscal planning requires to keep debt financing below the country's fiscal capacity and the extent to which it is affected by macroeconomic circumstances outside the control of policymakers, such as the term structure of real interest rates and the growth rate of the economy over the long run.

#### A. Pension Reform

Preparing the social security system for population aging is *sine qua non* for fiscal and socioeconomic considerations. While these changes put the system on a financially sustainable footing, it has also kept lowering the net replacement rate for the pay-as-you-go system.<sup>7</sup> Furthermore, given better-than- projected developments in the labor market, discretionary additional increases in benefits (up to 75 percent of short-term surpluses of the social security)

<sup>7</sup> The pension system in Lithuania has evolved since independence, starting with the conventional pay-as-you-go pillar. The government introduced a new pension system to increase pension benefits and reduce redistribution effects in 2000 and voluntary second pillar and third pillars in 2004 (Bitinas, 2011).



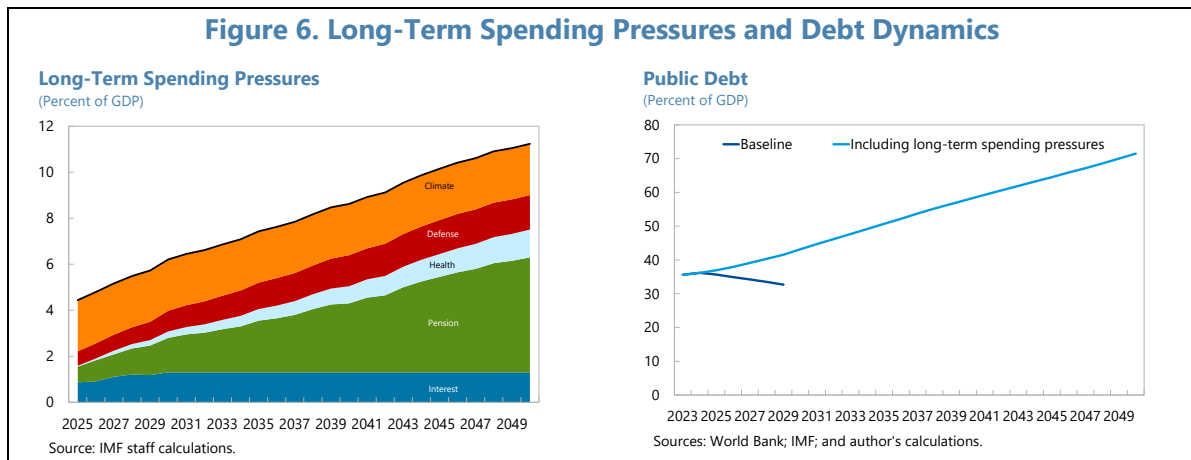
have been approved at the cost of permanent long-term entitlements—accrued total pension entitlements have increased from 217 percent of GDP in 2019 to 275 percent in 2021. This reflects the risks from a reform that, while ensuring the financial sustainability of the system in the short run—the law establishes that the pension formula is applied unless it generates a deficit in the system in which case, pensions are left unchanged—does not ensure its social sustainability with low and decreasing replacement ratios for the pay-as-you-go system. Lithuania has one of the highest old-age poverty risk in the EU and, given the relatively modest level of pension benefits, more older workers participate in the labor force than EU peers.

Public pension expenditure as a share of GDP is calculated as the product of four key components: (i) the average pension over average output per worker; (ii) the share of pensioners in the total population above the retirement age; (iii) the share of population above 65 to the working-age population; and (iv) the share of workers in the total working-age population:

$$\frac{PE}{GDP} = \frac{PE}{pensioners} / \frac{GDP}{workers} * \frac{pensioners}{pop_{65}} * \frac{pop_{15-64}}{workers} * \frac{pop_{65}}{pop_{15-64}}$$

This implies that that public pension spending grows in line with the old-age dependency ratio, which may increase due to aging and/or a shrinking workforce. For example, assuming constant benefit and coverage ratios, an increase in the population aged 65 and above due to higher longevity would translate into higher public pension spending for the same level of GDP, thereby increasing pension expenditure as a share of GDP. At the same time, the net replacement rate for the pay-as-you-go system is already at 28.9 percent in Lithuania. This is the lowest level across the EU and set to decline to 20 percent by 2050, indicating that Lithuania’s social security system is ineffective in providing a retirement income to replace pre-retirement earnings.

As a result, with a declining replacement rate, public pension expenditure is projected to remain at around 7 percent of GDP amid a shrinking and aging population. However, even though the reform assumes a higher rate of participation in voluntary pension schemes to offset the lower replacement rate in the public system, this is not socially and politically feasible to maintain over the long run. Even if we assume the net replacement rate for the pay-as-you-go system remains unchanged at about 30 percent, demographic shifts—lowering population by 18.9 percent to 2.3

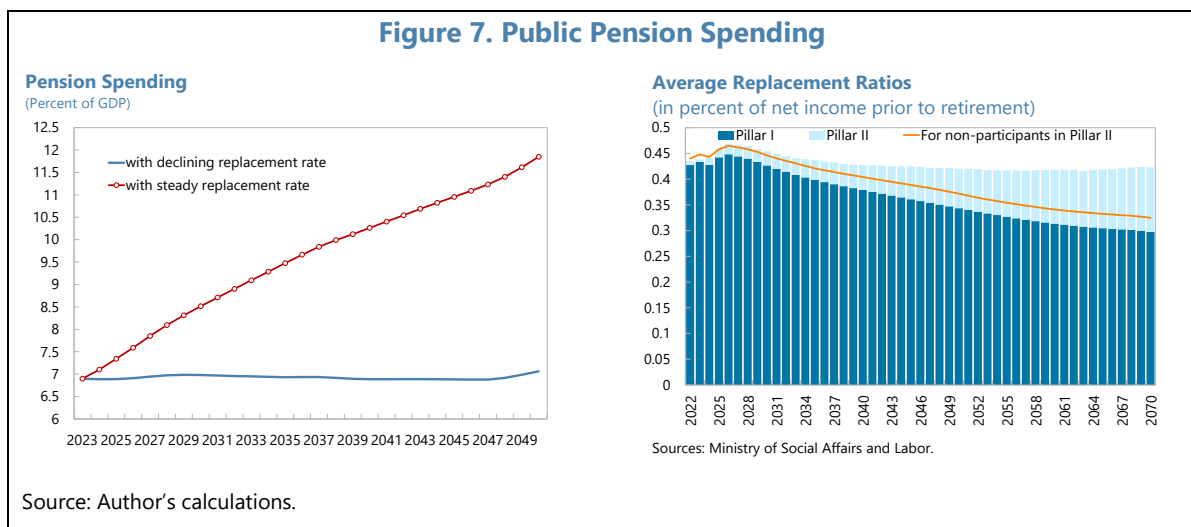


million in 2050 and raising the share of those aged 65 and above to 57.9 percent of the working age population—are projected to increase pension spending by 5 percentage points of GDP from 6.9 percent in 2023 to 11.8 percent by 2050 (Figure 7).

In view of unfavorable demographic trends, increasing fertility, along with migration, would help reduce the old-age dependency ratio and rebalance the ratio of pensioners to workers over the long run. However, extensive interventions to raise fertility rates above the replacement rate of 2.1 in Europe and elsewhere appear to have had no significant impact (Thevenon, 2011; Cohen, Dehejia, and Romanov, 2013; Sobotka, Matysiak, and Brzozowska, 2019; Doepke *et al.*, 2023; Zhang *et al.*, 2023). Therefore, a new round of social security reforms should be considered to address macro-fiscal challenges in Lithuania's fast-aging society.

*Linking the retirement age to longevity.* The statutory retirement age is set to gradually increase to 65 years for both men and women by 2026. Albeit a step in the right direction, this parametric adjustment is not sufficient even to maintain the current ratio of pensioners to the working-age population in the future. That would require linking the statutory retirement age to longevity, having a significant effect on pension spending as a share of GDP and helping to maintain actuarial balance over the long run.

*Reducing benefits.* Although pension benefits can be cut to realign pension spending as a share of GDP in the future, the replacement rate of about 30 percent for the pay-as-you-go system in Lithuania is already one of the lowest in the EU and significantly below the minimum level of 40 percent recommended by the International Labor organization (ILO). The cost of raising the replacement rate to the recommended minimum level of 40 percent by 2050 would increase pension spending by about 7 percentage points of GDP compared to no policy change scenario in which the replacement rate is set to decline to 20 percent. In this context, means testing of pensions would align social security benefits according to individual economic status and thereby help mitigate the fiscal cost of pension expenditure and enhance the progressivity of the pension system, especially in a country with a shrinking and aging population (Kudrna, Tran, and Woodland, 2022).



*Increasing revenues.* Raising the rate of pension contributions or the upper limit of an individual's income that is subject to the payroll tax could be important adjustments, but these measures need to be weighed against the potential adverse impact on labor force participation (Gruber and Wise, 2002; Liebman, Luttner, and Seif, 2008; Breda, Haywood, and Wang, 2022). The tax on labor income is already high in Lithuania and increasing payroll contributions further may hinder employment growth. Instead, pension income could be taxed at progressively higher marginal rates and generate additional revenue.

*Incentivizing private pillars.* Along with the mandatory pay-as-you-go social security system administered by the state, Lithuania has two voluntary defined-contribution pension schemes. The second pillar is based on individual accounts funded by an employee contribution of 3 percent of gross salary, with an additional state incentive of 1.5 percent of the national average wage in the previous year, which could be gradually replaced by the employer's contribution.<sup>8</sup> The third pillar is funded completely by private savings with no limit on amount and frequency of contributions. Strengthening the management efficiency of these schemes and disincentivizing early withdrawal would allow to remove the state incentive in the second pillar (about 0.5 percent of GDP). Real returns on private pension accounts could also be taxed progressively, which would be less distortionary than increasing the payroll tax rate.

## **B. Healthcare Reform**

The health system in Lithuania is based on a single-payer compulsory insurance system, mainly funded through the National Health Insurance Fund (NHIF) that nearly covers the entire population. The NHIF—governed by the Ministry of Health—purchases healthcare services through five regional branches, with municipalities in charge of organizing the provision of primary and social care, as well as some public health activities. The private sector has a limited role in providing inpatient care, but a substantial role in outpatient areas, such as primary care and dental practice, as the NHIF has increased outsourcing to private providers.

Total health expenditure in Lithuania was 7.8 percent of GDP in 2023, compared to an average of 9.5 percent in the EU.<sup>9</sup> Moreover, one-third of health spending comes from out-of-pocket payments, which mainly cover the full cost of prescribed and over-the-counter pharmaceuticals, except for eligible groups (children, elderly, disabled and patients with certain diseases including cancer, tuberculosis and some chronic diseases).<sup>10</sup> While most of the public spending on health comes from the NHIF funded by payroll contributions from the working population, a substantial

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<sup>8</sup> The government's annual contribution to the second pillar currently amounts to about €300 million (0.4 percent of GDP).

<sup>9</sup> On a per capita basis, total health expenditure in Lithuania amounts to €1,335, less than half of the EU average of €3,269.

<sup>10</sup> Even in the case of full reimbursement for medication by the NHIF, almost all patients incur some form of copayment for outpatient pharmaceuticals when its market price is higher than the reimbursed reference prices.

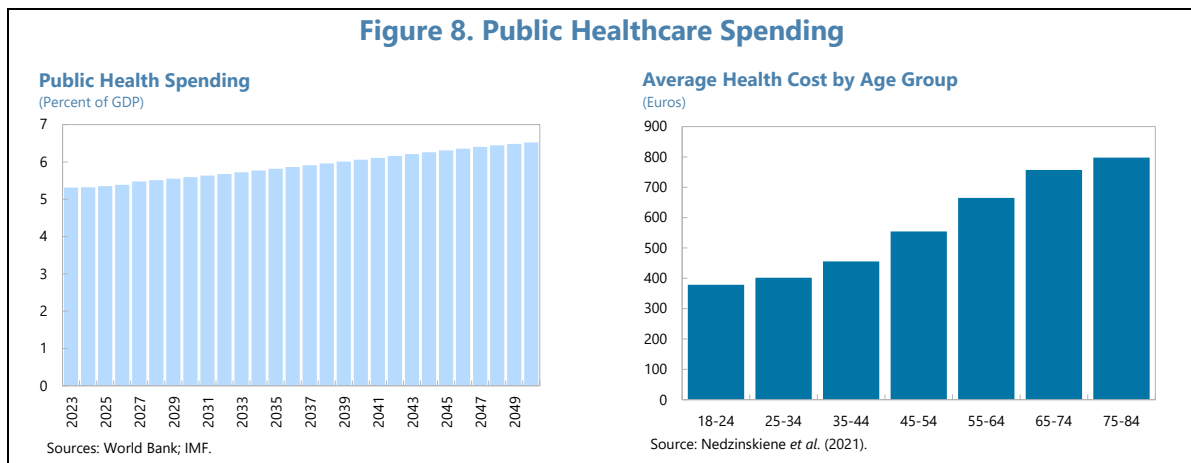
portion of the NHIF revenue comes from the government budget to provide universal insurance coverage for the non-working population.

Public healthcare expenditure as a share of GDP is calculated as the product of three key components: (i) average health spending per population aged 0-64 as a share of GDP; (ii) the share of workers in the total working-age population; and (iii) a function that depends on the ratio of per capita health spending for the population aged 65 and above to the per capita health spending for the population aged 0-64 ( $\alpha$ ) and the old-age dependency ratio:

$$\frac{HE}{GDP} = \frac{HE_{0-64}}{pop_{0-64}} / \frac{GDP}{workers} * \frac{pop_{0-64}}{workers} * (1 + \alpha * \frac{pop_{65}}{pop_{0-64}})$$

Similar to pension dynamics, an increase in the number of people aged 65 and above leads to an increase in healthcare spending as a share of GDP. Using demographic projections by the UN, public healthcare spending in Lithuania is projected to increase by 1.2 percentage points from 5.3 percent of GDP in 2023 to 6.5 percent of GDP by 2050. As shown in Figure 8, healthcare costs escalate with age and tend to be concentrated among elderly. Persons aged 65 and over already account for over 50 percent of the total hospitalization days, despite being only about 20 percent of the population. The average length of hospital stay for patients in this age group is also longer at 8.7 days, compared to 6.4 days the younger cohort of all patients.<sup>11</sup> Similarly, the average cost of a patient with multimorbidity<sup>12</sup> increases with age—from €378.7 for persons aged 18-24 to €665.1 for those aged 55-64 and €797.6 for those aged 75-84 (Nedzinskiene *et al.*, 2021).

With adverse demographics, age-related health and long-term care expenditure will account for the great majority of the projected increase in total healthcare spending by 2050. There are considerable risks skewed to the upside. First, healthcare costs would rise more than the baseline if age-specific utilization rates continue increasing due to greater prevalence of chronic diseases



<sup>11</sup> The Eurostat calculates the average length of stay for in-patients from the total number of nights spent in hospitals divided by the total number of discharges.

<sup>12</sup> Multimorbidity refers to the presence of two or more chronic illnesses.

and consumption of healthcare with longer life expectancy. Second, supply-side costs could increase at a faster pace due to more expensive medical technology and experimental treatments and higher wage inflation as the workforce shrinks.

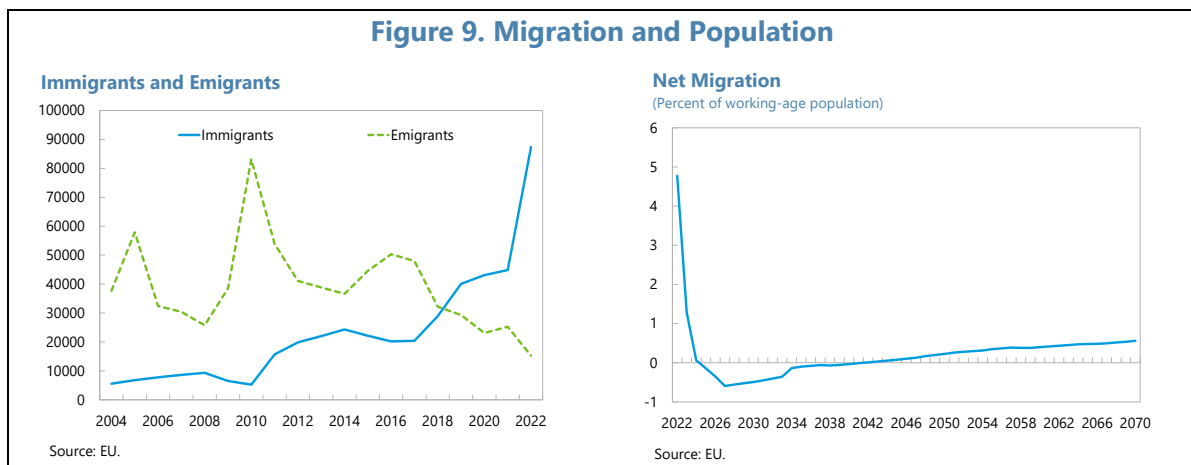
*Allocating more resources for preventive care.* Lithuania has an extremely high level of preventable and treatable mortality rate compared to the EU average: 540 vs. 272 per100,000. Channeling healthcare spending to preventive care would not only improve health conditions of the population at large, but also cost effective.

*Lengthening working lives.* Healthy aging can effectively raise retirement ages and create new opportunities to pursue different work objectives over the course of a professional career. Working for longer can maintain cognitive function and provide social stimulation, lowering the risk of dementia (Dufoil *et al.*, 2014). Lengthening working lives would help manage the economic costs of aging by adding directly to economic growth, attenuating skill shortages, limiting pension spending, and contributing to tax revenue.

*Evaluating the cost effectiveness of medical treatments and technology.* While it is important to strengthen innovation in healthcare, it is necessary to assess the cost effectiveness of new and existing technologies to cover treatments that add small benefits at high incremental costs. In particular, competition and cost-containment measures could yield significant savings in pharmaceuticals for the government as well as individuals who face out-of-pocket payments.

### C. Education and Labor Market Reforms

The burden of pension and healthcare outlays for older populations will fall on a shrinking workforce during the coming decades. That may not only put public finances under greater pressure, but fewer youngsters in the workforce could also limit innovation and productivity growth (Jones, 2022). Thus, while education spending is projected to decline by 0.5 percent of GDP by 2050 due to population aging, education and labor market reforms are still necessary to help address structural unemployment, strengthen the flexibility of work arrangements, enhance



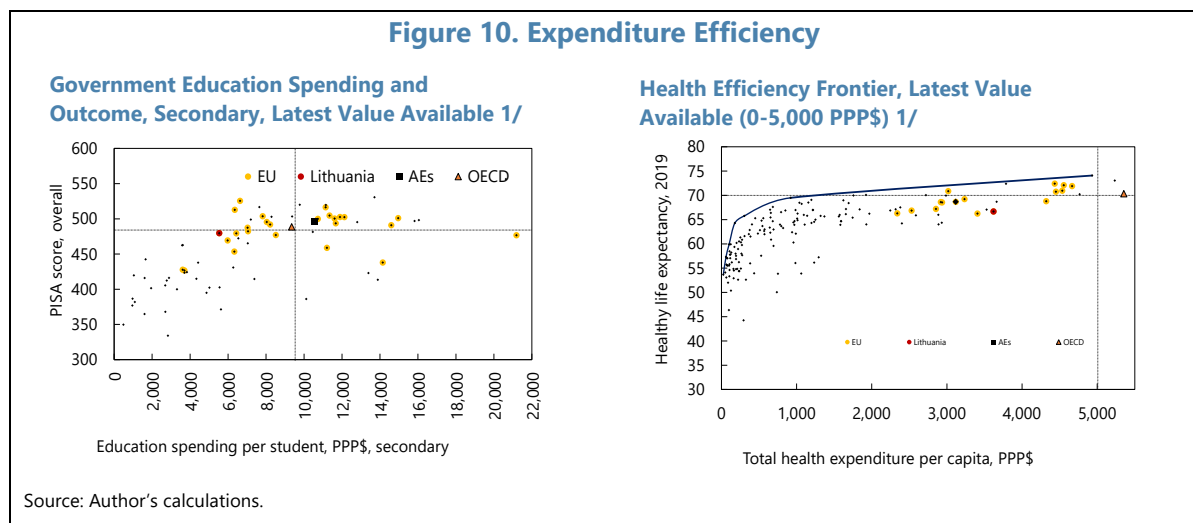
human capital through adult learning, and encourage longer working lives. Removing barriers and disincentives to working longer and encouraging older workers to remain active are thus crucial to raise average effective retirement ages and maintain the level of the labor force.

*Tapping the potential of older workers.* Demographic trends cannot be reversed in a brief period of time, which means that persons aged 65 and above could constitute about 60 percent of Lithuania’s working-age population by 2050. Therefore, for productive aging, the government should encourage older workers to remain active by (i) providing greater flexibility in work arrangements, including increased part-time work; (ii) introducing new education and training policies to reskill the aging workforce; (iii) eliminating taxes and benefits that tend to favor early retirement; and (iv) improving the infrastructure for greater digitalization and better transportation links.

*Increasing immigration to enlarge the workforce.* Immigration can play a vital role in expanding the labor force in an aging society. Lithuania’s recent experience is a case in point. The number of foreign workers increased by 56,000 to 142,000 in 2023, the great majority (131,400) of which are nationals outside the EU, and helped stabilize the workforce amid the decline in the Lithuanian population. The return of Lithuanian workers—recently gaining momentum—could also become an important factor in counterbalancing the impact of aging on the size and composition of the labor force. However, as shown by the projections presented in Figure 9, recent developments in net migration should not be assumed to remain intact over the long run in the absence of active policy measures.

#### D. Expenditure Reforms for Greater Efficiency

Lithuania has managed to contain expenditure pressures—even after unprecedented shocks, but there is still a significant scope for strengthening efficiency in government spending, with potentially large fiscal savings that could cover part of the projected cost of aging. Public spending on education and health is evaluated using the Expenditure Assessment Tool (EAT)



developed by the IMF, which captures the relative efficiency of a country in translating spending into measurable outcomes (Garcia-Escribano and Liu, 2017). The EAT framework benchmarks a country's public spending and outcomes against comparators and thereby shows how far away any given country is from the efficiency frontier (Figure 10).

*Improving efficiency in education.* Education reforms remain incomplete, lowering the expenditure efficiency in education relative to peers. Although enrollment is high, Lithuania stands at the lower end of EU countries in performance as measured by the Program for International Student Assessment (PISA) test scores. Rationalizing the extensive school network would provide savings and impetus for curriculum modernization that is necessary to address skills mismatch in the labor market.

*Improving efficiency in healthcare.* With one of the highest levels of preventable and treatable mortality in the EU, Lithuania also scores poorly in the efficiency of public health expenditure. Consequently, the level of healthy life expectancy in Lithuania is significantly less than the EU average.<sup>13</sup> Although spending per capita is still on the low end of the distribution, adverse demographic trends will exert upward pressure on healthcare spending in the future. Hence, making the healthcare system as efficient as in the EU could obtain the same outcome with less spending. This could be achieved by focusing on preventive care and reducing the cost of pharmaceuticals and hospitals.

#### IV. POTENTIAL SOURCES OF ADDITIONAL REVENUE

Expenditure measures and structural reforms may not entirely alleviate the long-term fiscal burden of national security, climate change and population aging—amounting to over 11 percent of GDP by 2050. Additional growth-friendly revenue mobilization thus needs to be considered as a vital element of a well-balanced fiscal plan, especially taking into account that Lithuania collects less tax revenue as a share of GDP compared to other EU countries. In 2022, the tax-to-GDP ratio amounted to 31.6 percent in Lithuania, significantly below an average of 40.2 percent in the EU. Moreover, Lithuania's tax system is heavily tilted towards the taxation of labor income, which accounts for over 55 percent of total tax revenue.

A shrinking and aging population will reduce in particular personal income tax (PIT) and social security contributions.<sup>14</sup> Consumption-related taxes would follow a similar pattern, but not as steep as the fall in direct taxes due to consumption smoothing over time. Increasing the tax burden on a smaller base of taxpayers to pay for additional age-related expenditures, without

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<sup>13</sup> Healthy life expectancy adjusts standard life-expectancy measures for severity of illnesses and quality of life factors. As of 2021, the average number of healthy life-years lived by the population in Lithuania is 6 years lower than the EU average: 57.6 years vs. and 63.6. The difference in healthy life expectancy for men is 7.7 years: 55.4 years vs. 63.1 years, while women in Lithuania have a longer average healthy life expectancy of 59.8 years—4.4 years behind the EU average of 64.2 years.

<sup>14</sup> The impact of population aging on tax revenue over the long run depends on modelling assumptions (Woodland, 2016). There is empirical evidence indicating a decline in tax receipts due to lower labor force participation and consumption by the elderly relative to the younger cohorts (Jappeli and Pistaferri, 2010; Borrallo, Parraga-Rodriguez, and Perez, 2021).

implementing structural reforms, would simply exacerbate economic distortions and cause a further drop in labor force participation. Population aging has the least effect on environmental and real estate taxes, which are currently underutilized in Lithuania compared to other EU countries. Therefore, while shifting the tax base away from labor-related taxation remains an important objective, a balanced revenue mobilization strategy should consider a spectrum of potential measures designed to address the fiscal challenges of aging.

*Increasing social security contributions and/or taxing pensions.* There is limited space to increase social security contributions in Lithuania, but the tax schedule could still be adjusted in a manner that would not cause distortions in the labor market. More importantly, however, pension income could be taxed at progressively higher marginal rates and generate additional revenue.

*Adjusting the effective CIT rate.* The CIT regime yields 2.3 of GDP in revenues, compared to an average of 3.3 percent in the EU. Hence, Lithuania has some room for additional revenue mobilization from CIT by eliminating exemptions and, if necessary, raising the statutory CIT rate.<sup>15</sup>

*Rationalizing tax expenditures.* Tax concessions and exemptions (excluding the non-taxable allowance) amount to around 3 percent of GDP, causing significant revenue losses. Some exemptions may benefit vulnerable groups of society, but most of the foregone revenue benefit the wealthy even more. Therefore, simplifying tax expenditures would generate a considerable amount of additional revenue of about 3.2 percent of GDP and also make the tax system more efficient and equitable.

*Introducing a carbon tax and increasing other environmental taxes.* Currently, environmental taxes in Lithuania amount to 1.5 percent of GDP, but merely 0.2 percent excluding taxes on transportation fuel. Introducing an economy-wide carbon tax of US\$75 per metric ton of CO<sub>2</sub> emissions—covering sectors excluded in the EU Emissions Trading System (ETS)—would raise about 1.5 percent of GDP in revenues and contribute to climate change mitigation (Cevik, 2024).<sup>16</sup>

*Modernizing the property tax regime.* Property taxes in Lithuania are only applied to high-value real estate (buildings and land) and paid by a relatively small fraction of the population. As a result, property tax revenue amounts to 0.3 percent of GDP, compared to the EU average of 2.1 percent. Bringing real estate taxes to the EU level would generate a substantial amount—about 1.8 percentage points of GDP—make the tax regime more progressive.

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<sup>15</sup> The CIT rate is set to increase from 15 to 16 percent on January 1, 2025. However, it will remain significantly below the OECD average of 23.6 percent and continue to have a reduced rate for small companies and the agricultural sector.

<sup>16</sup> With an appropriate design, the distributional impact of a carbon tax would be progressive (i.e., reducing after-tax income inequality) as shown by Cevik *et al.* (2023) and Merkle and Dolphin (2024).



## V. REALIGNING FISCAL TARGETS

Lithuania has long followed a rule-based fiscal framework—even stricter than the EU-level policy anchors—that promotes prudent fiscal management and enhances policy credibility. The country's fiscal targets, however, can be reset at current levels to create additional fiscal space to deal with long-term challenges and manage larger risks, while still safeguarding fiscal sustainability with counter-cyclical features. The existing fiscal rule is a form of structural balance rule with an expenditure correction mechanism and a debt anchor imposed by the EU framework. It targets a structural balance or surplus of the general government except when the output gap is negative when the deficit cannot exceed the medium-term objective (currently set at -1 percent of GDP). While overly complex, the current fiscal rule imposes a welcome counter-cyclical fiscal stance and, since its introduction, has proven effective in consolidating fiscal discipline. In particular, the structural fiscal position in the five years before the recent shocks 2015-19 was a structural surplus of around 0.5 percent of potential GDP.

Given low debt and deficits, Lithuania complies with the reference values in the EU economic governance framework and the domestic rule anchors policy. Hence, the structural fiscal target can be set at the present level that would be consistent with steady state public debt at around the current level (36 percent of GDP) and provide sufficient space to support the economy during downturns and help facilitate the smooth implementation of structural reforms without pushing the budget deficit above the 3 percent limit under the EU fiscal framework. Furthermore, this approach would ensure that government debt remains below the threshold with high probability even when negative shocks occur over the long run (Checherita-Westphal, Hallett, and Rother, 2014; Cevik, 2019; Alloza *et al.*, 2021).

Importantly, while non-climate related capital expenditure needs to be preserved, the government's multi-year fiscal strategy should systematically consider long-term spending pressures arising from climate change and population aging on a regular basis. In the five years prior to the COVID-19 pandemic, public investment was below 3 percent per year, resulting in no growth in capital stock that has resulted in an infrastructure gap. Some spending pressures over the last few years have been largely accommodated by reducing discretionary spending. But with discretionary spending already low, there is little room for further accommodation this way. The risk going forward is that some current spending pressures might crowd out already modest capital spending. Although this risk appears to be small in the near future given large funding provided by the EU, financial support from the EU may decline over the long run as Lithuania continues to converge towards the average level of income in the EU.

### Box 1. Lithuania's Fiscal Rules

Fiscal rules are described in the Constitutional Law on the Implementation of the Fiscal Treaty (CLIFT) of 2014 and the Republic of Lithuania Law on Fiscal Discipline (LFD) of 2007. The CLIFT is consistent with the European Fiscal and has prominence over the LFD in case of conflict. Although the CLIFT is best described as a form of structural balance rule with an expenditure correction mechanism. Its main provisions can be summarized as follows:

**Fiscal anchors:** A (structural) balance target in the form of a medium-term objective and a debt anchor imposed by the EU framework.

**Operational target:** Each year, except in exceptional circumstances (an event outside the control of the authorities or a severe economic downturn) at least one of the following conditions must be met:

- The structural budget balance of the general government is in surplus.
- If not in surplus (and below the medium-term objective), it should be improving except when the output gap is negative.
- When the output gap is negative, the structural budget deficit can remain below the medium-term objective, which is a structural budget deficit of 1 percent of GDP if debt is less than 60 percent of GDP and the risks to debt sustainability are low, and not higher than 0.5 percent of GDP otherwise.
- If the structural budget balance is worse than the medium-term objective, the targeted improvement should be met. In this context, the structural adjustment target is to be set if: (i) the deficit (actual or planned) reaches 3 percent of GDP; (ii) the structural budget deficit is worse than the medium-term objective. The adjustment target is set so that the medium-term objective is reached within two-to-four years, depending on whether the deviation from the medium-term objective is smaller or bigger than 2 percentage points of GDP.

**Expenditure growth limit:** If the average general government balance in the previous five years is negative, budget appropriations should grow by less than half of the average growth of potential GDP during the same period. The Law specifies five 'escape clauses' under which the expenditure rule would not apply:

- *Weak economy and weaker economy relative to the EU.* The projected output gap for the budget year is negative or Lithuania's nominal GDP growth is less than the average 5-year GDP growth in the EU plus 2 percentage points.
- *Strong fiscal position.* The average general government balance during the last [4 years and the projection for the current year] is in surplus of at least 0.1 percent of GDP.
- *No deterioration relative to the original budget.* In case of budget revisions, the balance of the revised budgets is not worse than the original one and if the improvement in the planned nominal general government balance is higher than 1 percentage points of GDP.

**Rules for other parts of the general government.** All general government budgets except the state pension fund (and smaller units) must be planned, approved, amended, and implemented targeting a structural balance (on accrual basis) or surplus. The pension fund's structural deficit can deteriorate only when the projected output gap is negative. For smaller general government units (below 0.3 percent of GDP), expenditures can only exceed revenues (by no more than 1.5 percent) when the output gap is projected to be negative.

## VI. CONCLUSION

Cyclical fiscal pressures should not be underestimated, but the real daunting challenge is national security, climate change and, most importantly, unfavorable demographic shifts with adverse economic and fiscal consequences. Lithuania's population already declined by almost 25 percent from 3.7 million in 1991 to 2.8 million in 2023. The combination of low fertility rate and increased life expectancy has led to a rapid increase in the median age and consequently in the old-age dependency ratio. Over the next two and half decades, these demographic shifts, albeit subject to uncertainty, will lower population by about 20 percent to 2.3 million, increasing the median age of the population over 48 and the share of those aged 65 and above to 58 percent of the working age population. Permanently older population portends unprecedented challenges to fiscal sustainability and long-term growth trend.

Long-term spending pressures in Lithuania are projected to amount to as much as 11.2 percent of GDP on an annual basis by 2050, which is about 30 percent of the current level of government spending and almost three times the eurozone average. Absent expenditure and revenue measures, gross public debt would increase by 36 percentage points of GDP from 35.6 percent in 2023 to 71.5 percent by 2050. This increase in public debt would come with greater risks to fiscal sustainability and macro-financial stability. Furthermore, the burden of long-term spending pressures will fall on a shrinking workforce during the coming decades. That may not only put public finances under greater pressures, but a shrinking and aging labor force could also limit innovation and productivity growth, increase labor costs and reduce the country's international competitiveness. The projected increase in current expenditures including age-related spending will likely cause a contraction in capital spending and undermine productivity growth over the long run.

Therefore, addressing these long-run repercussions requires a comprehensive strategy of structural reforms and policy changes to reduce the fiscal burden of pensions and healthcare, enhance revenue mobilization, draw on the potential of older workers, and increase immigration to enlarge the workforce. With ample fiscal space and strong macroeconomic fundamentals, Lithuania has an opportunity to pursue small adjustments over an extended period, rather than a 'big bang' approach that could have distortionary and politically contentious effects.

Current macroeconomic projections indicate that Lithuania would have no difficulty in bringing its fiscal stance within the limits, but long-term fiscal challenges stemming from national security needs, 'green transition' for climate change adaptation and mitigation, and adverse demographic transitions will require a new well-balanced strategy entrenched in fiscal rules to credibly ensure long-run fiscal sustainability.

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