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REPUBLIC OF LITHUANIA

SELECTED ISSUES

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July 29, 2025

Approved By
European Department

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TAXES IN LITHUANIA: BENCHMARKING AND POLICY OPTIONS[1]

Lithuania faces immediate fiscal challenges from increased defense needs adding to the existing long-term spending pressures. Tackling these requires a multifaceted strategy, including revenue mobilization to ensure fiscal sustainability. This note examines tax policy options, assessing potential changes and their effects. It benchmarks Lithuania's tax system with Baltic and European peers and analyzes revenue mobilization scenarios. Findings suggest that improving VAT efficiency, and adjusting personal income and property taxes, could boost revenues while enhancing progressivity.

A. Motivation and Benchmarking

1. Lithuania faces a near-term need to boost defense spending adding to other mounting long-term spending pressures. The long-term pressures are related to the ageing population and investment needs for green transition. Defense spending is expected to increase by an additional 2 percent of GDP relative to previous 2024 projections—and would reach 5 percent annually from 2026-30. While financing could partly come from debt or EU funds—mobilizing tax revenues would be an essential part of a more comprehensive fiscal package ensuring fiscal sustainability, especially given the multi-year scope and permanent component of spending pressures.

2. There have been some recent legislative changes related to national security needs and tax policies. Lithuania's defense fund package adopted in 2024—intended to raise revenues for an increase of defense spending to 3-3.5 percent of GDP—included an increase in the corporate income tax (CIT) from 15 to 16 percent, a faster increase in the CO_2 component for energy products from 2025 to 2030, the inclusion of a security component in excise duty rates for gas and oils intended for agricultural use, an additional increase in excise duty rates for alcoholic beverages and tobacco and an extension of the banks' solidarity contribution through 2025. Subsequently, in July 2025, the Council activated the escape clause for 15 member states, including Lithuania. This clause allows for the exemption of up to 1.5 percent of GDP in defense budgets from deficit calculations, allowing higher defense spending in Lithuania.

3. A draft law approved by the Parliament in June 2025 proposes further tax changes from January 2026 (Table 1). Key features include the following: The PIT would maintain exemptions for lower-income earners and the same phase-out rates but add more tax brackets, while pooling all types of income together (with some exceptions, e.g. dividends) and introducing intermediate tax rate of 25 percent. The standard CIT rate would increase to 17 percent, and the reduced rate would rise to 7 percent. For property taxes, an additional 0.2 percent tax would be implemented on commercial immovable property, with the revenue allocated to the State Defense

[1] Prepared by Lukas Boer and Tara Iyer (all EUR), and Martin Grote, Tibor Hanappi, and Fayçal Sawadogo (all FAD). We thankKazuko Shirono for helpful guidance. We also thank the Lithuanian authorities, Helge Berger, Vincenzo Guzzo, Irina Bunda, and Sebastian Beer for useful comments, and Sadhna Naik for excellent research assistance. All errors are our own.

Fund, the non-taxable EUR 150,000 threshold for non-commercial immovable property owned by individuals would decrease for non-primary residence and taxation of the property would divide into two "baskets" for the primary residence and for other non-commercial property, with revenues from the latter allocated to the State Defense Fund. The reduced VAT rate would rise from 9 to 12 percent. The proposals additionally include an excise duty on sweetened non-alcoholic beverages as well as concentrates used in preparation of beverages and a 10 percent tax for non-life insurance premiums.

Table 1. Lithuania: Government's Proposed Tax Policy Changes and Expected Revenue Impact

Tax	Existing	Proposal	Revenue impact [i]
PIT	Schedule: 20/32 for thresholds of 0-60 (with non-taxable amount) and >60 average wages	20/25/32 for thresholds of 0-36 (with non-taxable amount), 36-60, and >60 average wages	0.23 percent of GDP
CIT	Rate: 16 percent and 6 percent reduced rate	17 percent rate (also on dividend income) and 7 percent reduced rate, introduction of instant depreciation of certain fixed assets, limitations on the deductions of tax losses	0.05 percent of GDP
Property	EUR 150,000 non-taxable threshold and 0.5-2 percent tax rate for non-commercial immovable property owned by individuals. Revenue from this tax is allocated in the state budget. Other property – 0.5-3 percent rate is set by municipalities. Revenue from this tax is allocated to municipal budgets.	1. Non-commercial property owned by individuals (a) *primary residence* - non-taxable threshold of EUR 450,000) and tax rates ranging from 0.1 to 1 percent would be set by municipalities, with revenues allocated to the municipal budgets. (b) *other property* – EUR 50,000 non-taxable threshold and progressive tax rates ranging from 0.2 to 1 percent would be set by law. Revenues from this tax would be allocated to the State Defense Fund until 2030. 2. Commercial property Additional 0.2 percent tax. Revenue would be allocated for the State Defense Fund.	0.08 percent of GDP (except from primary residence for which the size of impact will depend on decisions taken by the municipalities)
VAT	Reduced rates: 5 and 9 percent	Reduced rates: Increase 9 percent rate to 12, lower rate for books to 5 percent, no VAT relief for heating, hot water and firewood.	0.09 percent of GDP
Sugar tax		Excise duty in EUR/hl differentiating by sugar content per 100 ml.	0.03 percent of GDP
Insurance tax		10 percent tax for all non-life insurance premia	0.12 percent of GDP
Total			**0.6 percent of GDP**

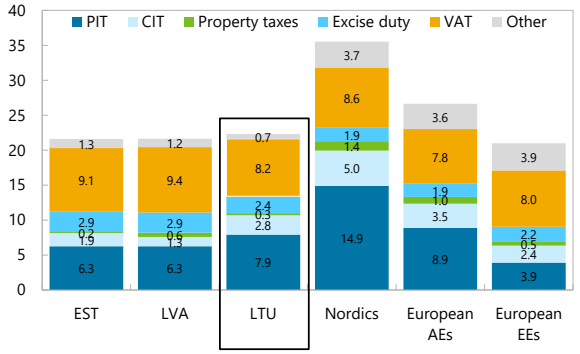
[i] Ministry of Finance estimates. In percent of projected 2026 GDP.

4. Benchmarking Lithuania's tax system indicates potential for raising tax revenues (Figure 1). Compared to other EU countries, Lithuania collects a lower share of tax revenue relative to GDP. Its government revenue levels, similar to Latvia's and Estonia's, align more with EU emerging markets. Lithuania has increased its tax-to-GDP ratio, reaching 22.3 percent in 2023, aided by improved compliance measures, but still remains below the EU average of 26.1 percent. Its tax system relies more on VAT and excise duties while property taxes contribute a smaller share compared to other EU nations.

5. Lithuania's tax structure includes a low-progressivity PIT, low property taxes, high excise taxes, and potential to boost CIT productivity and VAT efficiency (Table 1). The Personal Income Tax (PIT) system is less progressive than in the other Baltic countries, with relatively few employees facing the top PIT rate. Corporate Income Taxes (CIT) have higher productivity than Baltic peers, with an exemption for small entities with less than EUR 300,000 in gross annual revenues. Property taxes are low compared to EU advanced economies, which collect four times more, hinting at room for increases. There is limited scope to increase excise taxes, which are already high relative to AEs. The Value-Added Tax (VAT) system, with a notable efficiency gap compared to Estonia, highlights key areas for reform to enhance revenue.

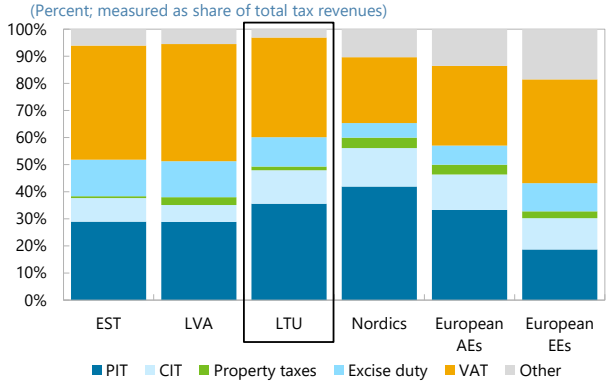
Figure 1. Benchmarking Tax Revenues

Tax Revenue Level
(Percent of GDP)



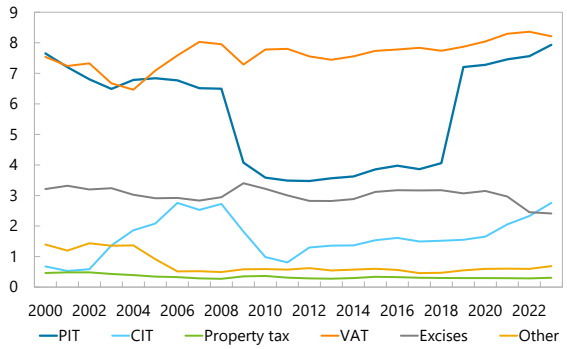
Source: Government Finance Statistics, IMF; and Eurostat. Notes: 2023 data.

Tax Revenue Composition
(Percent; measured as share of total tax revenues)



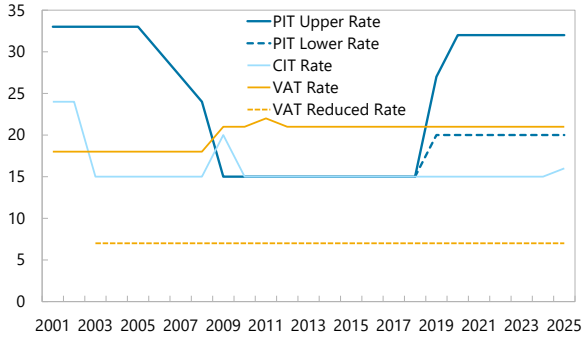
Source: Government Finance Statistics, IMF; and Eurostat. Notes: 2023 data.

Lithuania: Tax Revenues
(Percent of GDP)



Sources: Government Finance Statistics, IMF.

Statutory Tax Rates
(in percent)



Sources: OECD. Notes: Reduced VAT rates are 5 and 9 and shown as the average of 9 here. Prior 2019 there was only one PIT rate with a non-taxable amount.

6. Lithuania can boost tax revenue, as current efforts are below potential (Figure 2). Tax capacity is estimated at 30.6 percent of GDP, but collection is only 22.3 percent—similar to Baltic peers yet below European levels, indicating room for growth. Stochastic frontier analysis, used to gauge maximum tax revenue based on structural traits, shows a gap between actual and potential revenue. This gap reflects long-term issues, like the informal sector's size, and short-term inefficiencies, such as tax reform challenges. Lithuania's tax potential, matching Baltic neighbors, lies between European emerging and advanced economies. The 30.6 percent potential underscores the need for structural reforms—including widening the tax base—to enhance revenue collection.

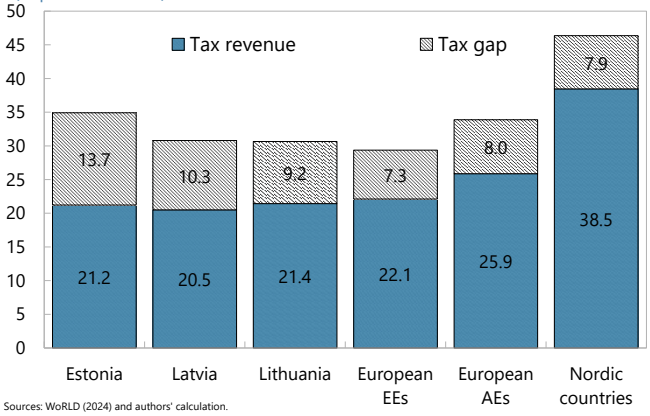
7. This note explores tax reform options for four main taxes: PIT, CIT, property, and VAT. Revenues collected from excise taxes are comparable with other European peers.

Table 2. Lithuania: Benchmarking the Tax System

		Lithuania	Estonia	Latvia	Europe EMEs	Europe AEs	Nordic countries
CIT	Revenue *(in percent of GDP)*	**2.1**	1.5	1.0	2.4	4.0	7.1
	Rate *(in percent)*	**16.0**	20.0	20.0	14.4	22.3	21.2
	Productivity *(in percent)*	**14.0**	7.7	4.9	17.4	19.0	32.9
PIT	Revenue *(in percent of GDP)*	**7.5**	6.9	5.9	3.6	8.3	15.0
	Rates *(in percent)*	**0/15/20/ 32**	0/20	0/25/33			
	Top rate *(in percent)*	**32.0**	20.0	31.0	17.7	36.0	26.1
VAT	Revenue *(in percent of GDP)*	**8.3**	9.2	9.3	10.1	7.7	8.8
	Rate *(in percent)*	**21.0**	20.0	21.0	20.6	20.8	24.8
	C-efficiency *(in percent)*	**52.6**	67.8	54.2	55.6	52.5	54.0
Property tax	Revenue *(in percent of GDP)*	**0.3**	0.2	0.6	0.6	1.2	1.4
Excise tax	Revenue *(in percent of GDP)*	**3.0**	3.2	2.9	3.7	2.1	2.2

Source: WoRLD (2024), Tax Policy Rates Database, and authors' calculation.
Notes: The values for Estonia and Lithuania refer to 2021 to have details on the full tax revenue composition, while the averages for Nordic countries are based on the latest available year, i.e., 2021 or 2022. Nordic countries include Denmark, Finland, Norway, and Sweden. VAT C-efficiency is defined as the ratio of actual VAT revenue to theoretical VAT revenue, i.e., the product of VAT statutory rate to final consumption.

Figure 2. Tax Potential



Sources: WoRLD (2024) and authors' calculation.
Note: Nordic countries include Denmark, Finland, Norway, and Swedden. The values for Denmark and Sweden used for computing the average values for Nordic countries refer to 2021. The latest year for the other countries refers to 2022.

B. Direct Taxes

8. Lithuania's personal income tax (PIT) has a complex marginal rate structure with low progressivity, driven by the basic allowance phase-out and varying statutory rates (Table 2). This leads to sharp marginal tax rate increases at low-to-average income levels, potentially discouraging work for full-time median wage earners. Top marginal tax rates affect only a small fraction of the population. Two thirds of the population's income is below 12 average wages (below EUR 20,000) taxed at a marginal tax rate of 30 percent while only 0.1 percent of the population earns income above 120 average wages subject to the highest tax rate of 32 percent (compare the income distribution in panels 1 and 2 of figure 3). Indeed, Lithuania faces some of the highest income inequality relative to comparator countries. The revised law approved in June aims to make the PIT system more progressive, with incomes below 36 average wages facing a 20 percent rate, a new 25 percent bracket introduced for incomes between 36 and 60 average wages, and a 32 percent rate for income above 60 average wages. This is reflected in the "Government Plan" simulations in Figure 3.

9. Scenario-based analysis of Lithuania's PIT system highlights potential for increased revenue through a more progressive structure (Figure 3). Streamlining the marginal rate schedule to prevent higher marginal tax rates for lower-income earners, and add more middle-income tax brackets, could yield up to 0.5 percent of GDP in additional funds ("Progressive 1" scenario). [2] This would require different phase-out rates than the current tax schedules, and the

[2] The graphs are based on output from the IMF's Personal Income Tax Analysis (PITA) tool. The graph on the "Decomposition of Redistributive Capacity" indicates that progressive capacity of a specified PIT system increases as the indifference curves shift toward the upper-east. Progressive capacity on the y-axis measures the Kakwani progressivity index which is the difference between the Gini coefficient of tax liabilities and pre-tax income, a

(continued)

increase in middle-income tax brackets has also been suggested by OECD (2022). An even more progressive tax schedule could raise over 1 percent of GDP ("Progressive 2" scenario).[3] Such progressive reforms would reduce the distortion of labor supply and incentives created by the current tax system for lower-income households, while easing their tax burden. This approach tackles the PIT's implicit complexity and weak effect on income inequality, balancing revenue growth with economic efficiency.

Table 3. Lithuania: Marginal Tax Rates – 2024 System and Alternatives

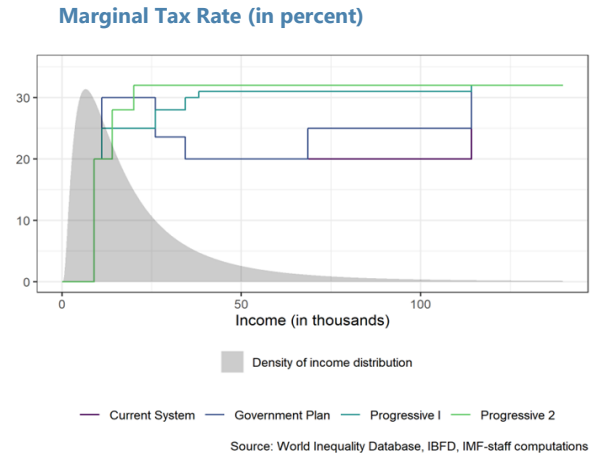
	Current System		Government Plan		Progressive I		Progressive 2	
	EUR	*%*	*EUR*	*%*	*EUR*	*%*	*EUR*	*%*
Bracket 1	0 – 8,964	0	0 – 8,964	0	0 – 8,964	0	0 – 8,964	0
Bracket 2	8,965 – 11,088	20	8,965 – 11,088	20	8,965 – 11,088	20	8,965-18,000	20
Bracket 3	11,089 – 26,004	30	11,089 – 26,004	30	11,089 – 26,004	25	14,001 – 20,000	28
Bracket 4	26,005 – 34,371	23.6	26,005 – 34,371	23.6	26,005 – 34,371	28	>20,000	32
Bracket 5	34,372-114,162	20	34,372-68,497	20	34,372-38,147	30		
Bracket 6	>114,162	32	68,498-114,162	25	38,148-114,162	31		
Bracket 7	-	-	>114,163	32	>114,162	32	-	-

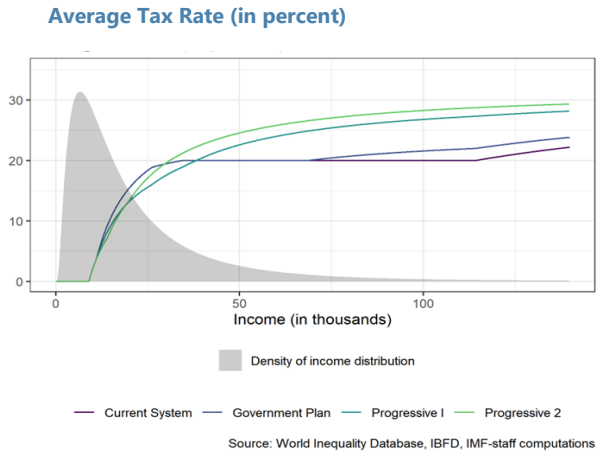
Notes: "Government Plan" is the proposal to be implemented in Jan 2026. Alternative *Progressive I* phases out the basic allowance of 8,964 with different coefficients until an income of 38,147. There is a phase out of 25% for income from 11,089 - 26,004, a phase-out of 40% for income from 26,005 - 34,371 and a phase-out of 50% for income from 34,372 – 38,147. This produces implicit rates of 25, 28 and 30 marginal tax rates. Alternative *Progressive II* removes the phase-out completely and instead sets statutory rates of 20, 28 and 32 at different income levels.

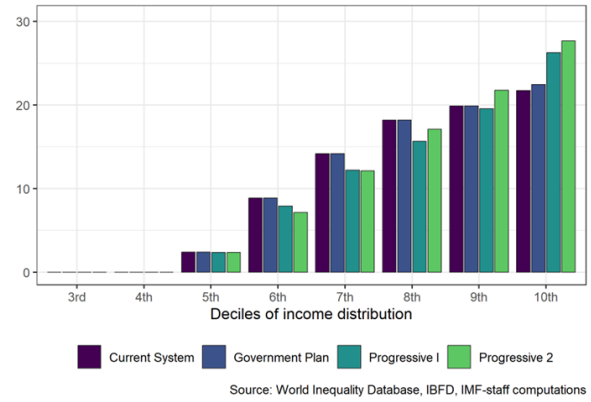
measure of distributive concentration of taxes on higher income.. World Inequality Database (WID) information is based on household surveys and only approximates actual incomes. Results thus need to be interpreted with some caution—e.g., income is frequently underreported at the top of the distribution, especially in developing countries. Moreover, the tool does not include social security contributions, which could affect the tax burden and economic decision.

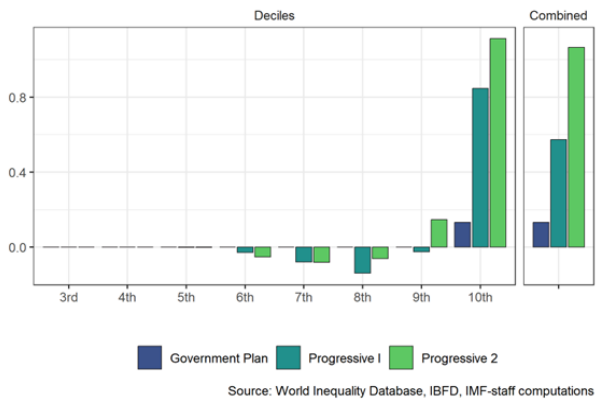
[3] Removing the phase out of the basic allowance completely—thus, smoothing out the marginal rate increases completely—would lower tax revenues by more than 1 percent of GDP.

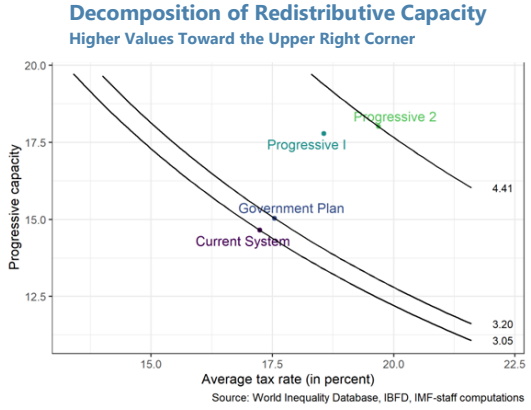
Figure 3. Personal Income Tax System Characteristics and Scenarios











Phase-out of Basic Allowance (2024)	
Basic Allowance	8,964
Phase-out Range #1	11,088 to 26,004
Phase-out Rate #1	50.00%
Phase-out Range #2	26,004 to 34,371
Phase-out Rate #2	18.00%

Source: Tax parameters have been sourced from IBFD, EY and PwC. Note: Two different phase-out rates apply over two subsequent income range

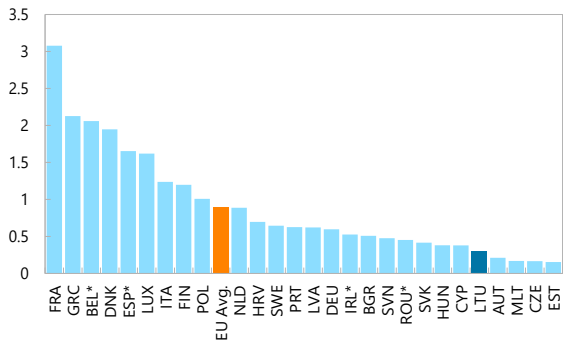
10. Corporate taxes are subject to competitive pressures in an international context, while their productivity is low due to generous tax exemptions. The CIT was raised from 15 to 16 percent in January 2025, along with a rise from 5 to 6 percent for the reduced rate. This is projected to generate a modest additional 0.04 percent of GDP in tax revenues, based on revenue changes

linked to previous CIT hikes, and reflecting the lower productivity of the CIT as a revenue source. A recent proposal suggests a further CIT hike of one percentage point, from 16 to 17 percent, which could potentially yield an additional EUR 111.5 million in revenue (when full impact comes into effect, also excluding other CIT related changes) though this depends on stable corporate profits and compliance levels. Lithuania currently raises more CIT revenue than its Baltic counterparts—which tax only distributed (not retained) profits at a 20 percent rate—yet its 16 percent rate is competitive in an international context and remains below the 21-22 percent averages in EU advanced economies and Nordic countries like Finland and Sweden.

11. While there is limited scope to raise substantial revenues through CIT hikes – exemptions can be addressed. Given the Baltic region's inclination to maintain competitive corporate tax rates to attract investment—there is limited scope for substantial CIT increases. Moreover, the low CIT productivity in Lithuania raises the issue about the economic and political costs of such increases. Consequently, the focus should shift towards addressing exemptions that erode revenue, particularly the EUR 300,000 turnover threshold, below which small businesses qualify for the reduced 7 percent rate, as this shift from 7 to 17 percent for growing businesses creates a steep tax cliff that discourages firm growth (see Garriga and Scot, 2023) and reduces overall CIT efficiency. This could be done potentially through a graduated rate or lowering the threshold to capture more firms under the standard rate.

12. Lithuania's property tax revenues are relatively low (Figure 4), and administrative powers are decentralized. There are currently two property taxes: the land tax ranges from 0.01 percent to 4 percent of assessed value, and the immovable property tax ranges from 0.5 percent to 3 percent for real estate over EUR 150,000, targeting thus only high-value buildings. The two legislations include various exemptions with discretionary decision making at the municipal level—municipalities administer property taxes and grant exemptions—which results in inadequate incentives, potential tax competition at the local level, and meagre revenues for local budgets that are already fairly balanced.

Figure 4. Property Taxes



Source: Government Finance Statistics, IMF.
Notes: 2023 data. *Latest available data is for 2022.

13. The tax policy change in 2026 aims would only partially broaden the tax base and leave revenues far below international benchmarks. The change would include distinct provisions for residential and commercial properties. For primary residences, municipalities would set a non-taxable threshold of EUR 450,000 and apply tax rates ranging from 0.1 percent to 1 percent, with revenue directed to municipal budgets. For other properties, a lower EUR 50,000 non-taxable threshold would apply, with progressive tax rates from 0.2 percent to 1 percent set by law, and revenue allocated to the State Defense Fund until the end of 2030. Commercial properties

would face an additional 0.2 percent tax, with the revenue also allocated to the State Defense Fund. A reasonable target range for property tax revenues is between 1 and 2 percent of GDP—significantly higher than the current 0.3 percent in Lithuania. To address equality concerns, an ideal property tax should be levied according to the benefits principle as property owners benefit from public goods like infrastructure. Tax relief ideally should be individualized and based on means testing individual applications for relief. It would include access to a tax deferral regime that taxes the most vulnerable parts of the population only when assets change ownership and thus prevent permanent revenue loss.[4]

C. Indirect Taxes

14. Lithuania's VAT has a standard rate of 21 percent, with exemptions and reduced rates (Figure 4). The compliance gap[5] improved to 14.6 percent from 24.0 percent in 2018. The 2022 policy gap was EUR 3,281 million (33.2 percent of potential revenue), including a 22.7 percent non-actionable exemption gap, a 6.0 percent actionable exemption gap, and a 4.5 percent rate gap (EUR 446 million), mainly from accommodation, restaurant, and pharmaceutical sectors. A proposed law would raise the reduced rate from 9 percent to 12 percent for essentials like accommodation, transport, and cultural events, aiming to simplify the system and align it with the 21 percent rate, adding EUR 80 million in annual revenue.

15. VAT efficiency has significant scope to improve. The VAT C-efficiency in Lithuania was 52.6 percent in 2022, lower than Latvia and significantly below Estonia, but comparable to European AEs. Improving this efficiency to the level of European EMs (55.6 percent) could potentially yield an additional 0.5 percent of GDP in revenue.[6] Improving it to the average of Latvia and Estonia (61 percent) would yield an additional 1.3 percent. Several targeted strategies can be applied.

- *Strengthening digitalization* by expanding the State Tax Inspectorate's i.MAS system with real-time e-invoicing and AI analytics can reduce fraud, building on its 2016 launch and proven EU successes. The i.MAS system is a digital platform that integrates tax data, allowing authorities to monitor transactions and VAT filings more effectively.
- *Reducing carousel fraud* would help mitigate the VAT gap. Carousel fraud occurs when goods are traded across borders in a circular pattern to exploit VAT-free intra-EU transactions, leading to significant revenue losses, and can be reduced through regional cooperation and promoting digital payments to shrink the informal economy.
- *Simplifying compliance,* especially for small businesses, including by further raising the VAT registration threshold below which firms with annual sales under are exempted from VAT obligations (which is currently set at EUR 45,000) —and offering pre-filled returns, as seen in Estonia, would ease burdens on small businesses.

[4] See IMF (2024): How to Design and Implement Property Tax Reforms.

[5] This is an estimate of overall non-compliance, a proxy for VAT revenues lost due to VAT fraud, evasion and avoidance, non-fraudulent bankruptcies and financial insolvencies, or miscalculations, among other drivers.

[6] The additional revenue projections have been approximated as (8.3*55.6)/52.6-8.3.

- *Strengthening oversight of cross-border trade* with stricter controls and Baltic collaboration can curb tax evasion.
- *Targeting VAT evasion hotspots* through sector-specific audits in agriculture and fuel, alongside piloting Poland's split payment model, where buyers pay VAT directly to a tax authority account rather than the seller, preventing the seller from potentially pocketing it.

D. Conclusion

16. This study suggests that changes to the PIT, VAT, and property taxes would have sizeable revenue impacts while also having other economic benefits (Table 4). The note benchmarks the Lithuanian tax system against Baltic and other European peers and explores different revenue mobilization scenarios. Changes to the PIT and property tax systems could mobilize more revenue while also making the tax system more progressive – addressing the high societal inequality – and providing more fiscal autonomy to municipalities. Furthermore, improving VAT efficiency through methods including strengthening digitalization, reducing carousel fraud, and simplifying compliance would bring in greater tax revenues. Changes to these three taxes should be prioritized, while CIT reform should focus more on addressing exemptions.

Table 4. Lithuania: Staff Proposal for Tax Policy Change Options and Expected Revenue Impact

Tax	Existing	Proposal	Revenue impact
PIT	Schedule: 0/15/20/32	Increase progressivity by eliminating the current system of phase-out and lower income brackets.	0.2 – 1 percent
CIT	Rate: 16 percent	Limit large CIT rate increases beyond 18 percent, and address exemptions.	0 – 0.1 percent
Property	Revenues: 0.3 percent GDP	Broaden property tax base and limit exemptions. Use means-testing.	0.5 – 1.5 percent
VAT	Rate: 21 percent	Increase efficiency through digitalization, improving compliance, reducing carousel fraud.	0.5 – 1.3 percent

Note: Revenue impact of PIT reforms estimated using the IMF Personal Income Analysis (PITA) revenue mobilization tool, and of CIT reforms using government revenue estimates from historical CIT changes. Staff estimates and benchmarking are used to assess the revenue impact of property tax and VAT reforms.

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POTENTIAL GROWTH AND MIGRATION[1]

Recent immigrants have been successfully absorbed into the Lithuanian labor market and legislative amendments have enabled easier migration for high-skilled workers despite the reduction of non-EU workers quota in 2025. The analysis in this note shows immigration can play a role in mitigating the impact of aging on labor force and support potential output growth. Policies should continue to focus on integrating migrants in the most productivity-enhancing way possible while allowing the participation of foreign professionals in those sectors with the largest shortages. At the same time, given the uncertainty about immigration developments, addressing remaining constraints limiting capital deepening and TFP growth would be crucial.

A. Introduction

1. Lithuania faces severe demographic pressures with negative consequences for medium-term potential growth (Figure 1). Driven by a low fertility rate—around 1.5 percent since the 1990s—and significant negative net migration, Lithuania's working age population has fallen from 2.34 million in 1998 to 1.81 million in 2019. Since then, net migration—especially of Ukrainians, Belarussians and Lithuanians—has turned positive pushing the working age population up to 1.89 million in 2024. According to the European Commission, however, the demographic pressures from low fertility rates and renewed negative net migration will only accelerate over the next decades, decreasing the working age population further.[2] The shrinking labor force will have negative implications for Lithuania's potential growth over the medium and long term.

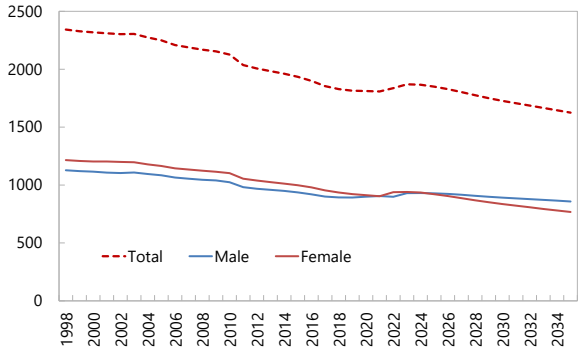
2. While the literature has generally found positive productivity effects from inward migration, adequate integration is key. A large literature has focused on the economic effects of migration (see e.g., Caselli et al., 2024 for a brief general review and Engler et al., 2023 for the economic effects of large migration waves). Migration can have positive effects on TFP growth for instance via knowledge diffusion (e.g., Andersen et al., 2011 or Hornung, 2014), or skill diversity and innovation (e.g., Stuen et al. or 2012; Ariu, 2022). An increase in migration, as seen in 2022 in Lithuania, firstly raises a country's population. Depending on the characteristics of the migrants (age, gender, skills, language) relative to the host country, such an increase will also change the structure of the population. To understand the effects of higher net migration on potential growth it is crucial to have adequate data on those characteristics. Younger migrants speaking local languages and possessing skills desired by firms are easier to integrate into the labor force and will result in stronger aggregate productivity effects if capital can adequately adjust to the increase in labor supply.

[1] Prepared by Lukas Boer (EUR). The author would like to thank Saioa Armendariz, Helge Berger, Harri Kemp, Alberto Musso and Kazuko Shirono for helpful comments and Sadhna Naik for excellent research assistance.

[2] At the same time, upside risks to net migration cannot be ruled out, given the recent trend of positive net migration of Lithuanians and the increasing number of migrants from the third countries. This possibility is explored in one of the scenarios in the paper.

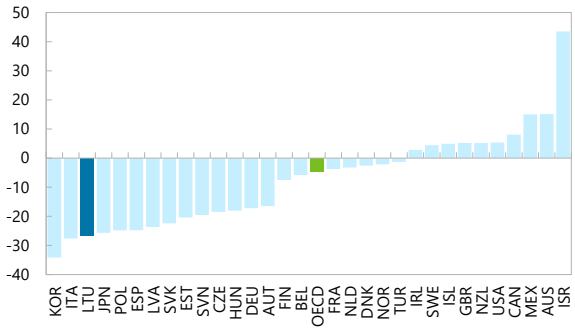
Figure 1. Labor Force and Migration

Working Age Population
(in thousands)



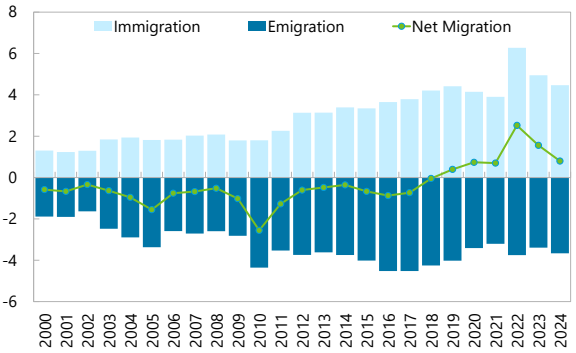
Sources: Eurostat

Change in Working-Age Population, 2024-2050
(Percentage change, 20-64 years)



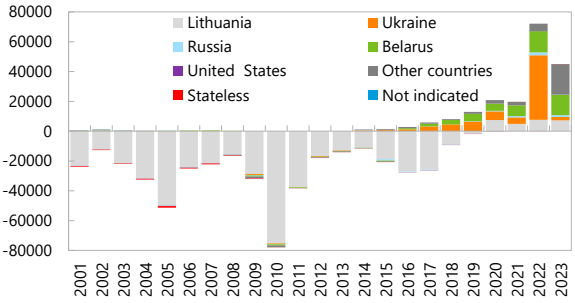
Sources: United Nations World Population Prospects 2024; and IMF staff calculations.

Lithuania: Net Migration
(Percent of total population)



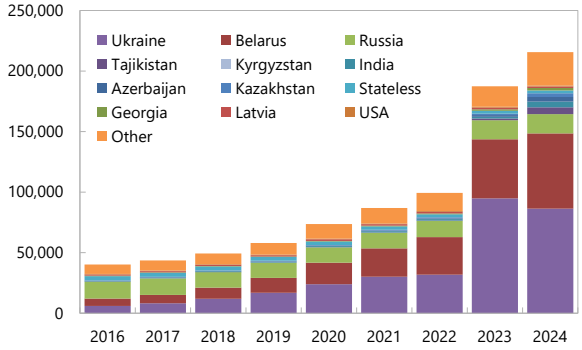
Source: Statistics Lithuania.

Lithuania: Net External Migration by Citizenship
(Number of people)



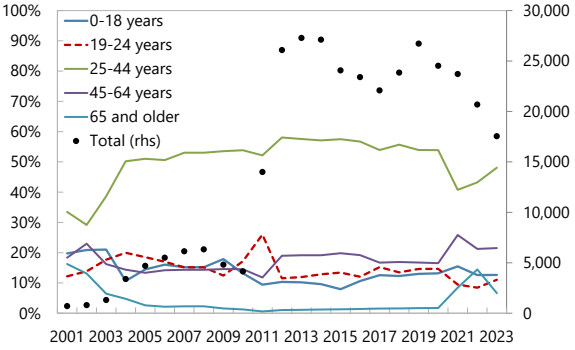
Sources: Statistics Lithuania; and IMF staff calculations. Notes: Other countries in 2023 are Uzbekistan, Kirgizstan, Tajikistan, India, Azerbaijan, Kazakhstan and others (in descending order).

Foreign-born Population
(total)



Sources: European Migration Network.

Lithuanian Nationals Returning
(age group share of nationals returning and total returning)



Sources: Statistics Lithuania.

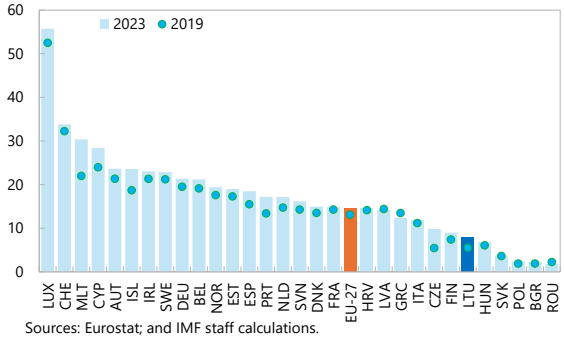
3. Lithuania has experienced strong growth of net migration in recent years (Figure 1)**.** The foreign-born population has more than doubled to around 8% from 2022 to 2024. Ukrainians and Belarusians were the largest foreign groups migrating to Lithuania. Ukrainians were integrated extremely quickly and currently around 70% of them are actively participating in the labor market.

However, they mostly work low-wage jobs. Citizens of Belarus mostly work in higher value-added sectors and only very rarely in low-skilled activities (Bank of Lithuania, 2024). The net migration of Lithuanians has become positive in recent years, reflecting both the decline in emigration flows and the increased number of returning Lithuanians. While the number of Lithuanians moving back to the country has recently somewhat fallen and the share of retirees among them increased, continued net migration of Lithuanians could partially mitigate the declining labor force.

Figure 2. Integration of Migrant Workers

Share of Foreign-Born in Population

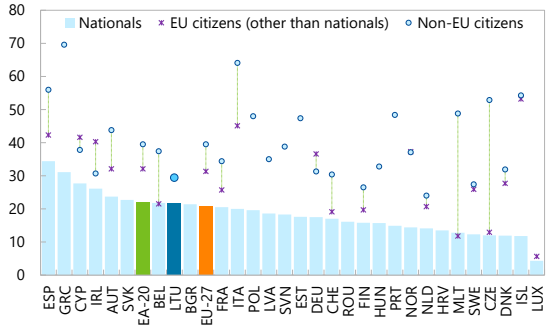
(Percent)



Sources: Eurostat; and IMF staff calculations.
Note: Population 15 years and older.

Over-Qualification Rate by Citizenship, 2023

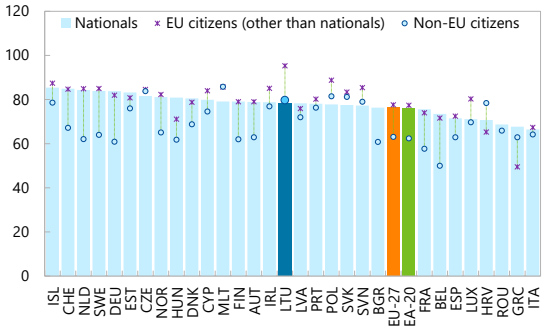
(Percent; age class: 20-64)



Source: Eurostat.

Employment Rate by Citizenship, 2023

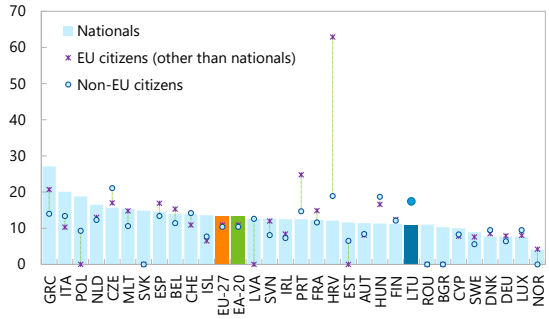
(Percent; age class: 20-64)



Source: Eurostat.

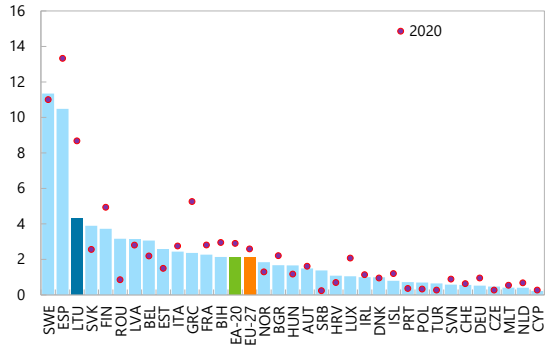
Share of Self-Employed in Total Employment, By Citizenship

(Percent of total employed; age class: 20-64)



Source: Eurostat.

Skills Mismatch Index, 2023



Source: Eurostat; and IMF staff calculations.

Annual Migration Quotas

Year	Quota	Share of working age population	Quota used
2021	32,200	1.8%	32,200
2022	35,600	1.9%	35,600
2023	40,250	2.2%	40,250
2024	40,250	2.1%	37,933
2025	24,830	1.3%	

Sources: Migration Department. Notes: Quotas before 2025 were structured with sub-quotas for certain industries. This was abolished in 2025. High-skilled industries that lack workers are excluded from the quotas.

4. While the level of foreign-born population is still relatively low, migrants are integrated well into the local labor market (Figure 2)**.** Compared to European peers, Lithuania's foreign-born share in the domestic population is relatively low implying potential for additional immigration. Migrant workers seem relatively well integrated: Overqualification of non-EU citizens is not particularly high while their employment rates are exceptionally high. Moreover, non-EU citizens are relatively more often entrepreneurs than nationals. Skills mismatch is relatively high but has come down significantly since net migration has picked up in 2020. Finally, quotas during the last years have kept non-EU migration at around two percent, contributing to a persistently low foreign-born share of the population.

B. Estimation Approach

5. This note will use a production function approach to explore the effects of different migration scenarios on potential growth in Lithuania over the medium term. The estimation relies on a standard Cobb-Douglas production function.[3] Capital inputs over the scenario horizon until 2030 are in line with IMF staff forecasts, while labor inputs rely on different migration scenarios from Eurostat. The analysis shows that potential growth could be 0.2 percent lower or higher in a low- or high-migration scenario.

6. Potential output growth is estimated with a production function approach. The analysis assumes a standard Cobb-Douglas production function with constant returns to scale.[4] Potential output is given by:

$$\overline{Y_t} = \overline{A_t}(\overline{K_t})^{\alpha}(\overline{L_t})^{1-\alpha} \quad (1)$$

where Y_t is real GDP, A_t is total factor productivity (TFP), K_t is the capital stock, and L_t is labor. Bars represent potential values of the inputs and $(1-\alpha)$ is the labor share of production. Taking logs on both sides and differentiating yields the following expression for potential output growth which can be estimated by applying a Hodrick-Prescott (HP) filter to the underlying data series:

$$\Delta \log(\overline{Y_t}) = \Delta \log(\overline{A_t}) + \alpha \Delta \log(\overline{K_t}) + (1-\alpha)\Delta \log(\overline{L_t}). \quad (2)$$

For the estimation the labor share, taken from the Penn World Tables, is kept constant at its average value of 51% over the historical sample from 1995 to 2023.

7. Potential growth estimates over the scenario horizon rely on several assumptions in line with IMF staff forecasts. Data on the capital stock is taken from the European Commission and projected forward using the capital accumulation equation

$$K_{t+1} = I_t + (1-\delta)K_{t-1} \quad (3)$$

[3] See Caselli et al. (2024) for a related EU-wide exercise using a semi-structural general equilibrium model.

[4] The setup follows Annex II. Potential Growth in IMF (2024).

where I_t is real gross fixed investment and δ is the implicit capital depreciation rate. The forecasts for fixed investment are taken from the latest IMF staff forecast.[5] The depreciation rate is kept fixed at its average 2015-2023 level, implicitly calculated from the capital accumulation equation. Growth in the real capital stock is expected to slow from 5.5 percent in 2024 to 4.5 percent in 2030 (Figure 3). Labor input is defined in terms of hours worked as

$$L_t = WAPOP_t * LFPR_t * (1 - UNR_t) * HOURS_t \quad (4)$$

where $WAPOP_t$ is the working age population (age 15-64), $LFPR_t$ is the labor force participation rate, UNR_t is the unemployment rate and $HOURS_t$ are the average hours worked per worker. Forecasts for the working age population are from Eurostat. In the baseline migration scenario, the working age population is assumed to shrink by 1.1 percent per year. The labor force participation rate and hours worked are kept constant over the scenario horizon at their 2023 levels (Figure 3). Labor force participation has increased significantly since the 2000s and is already at a relatively high level with female participation close to male participation. The unemployment rate is projected forward using IMF staff forecasts.

8. Demographic pressures are weighing on total factor productivity over the medium-term. Historically, TFP is calculated as the Solow residual of the potential output function (1), with its growth calculated as:

$$\Delta \log(A_t) = \Delta \log(Y_t) - \alpha \Delta \log(K_t) - (1 - \alpha) \Delta \log(L_t). \quad (5)$$

TFP growth has been decreasing over time with average TFP growth around 1.6 percent. Most recently, TFP growth has been negative in 2022-2024 as Lithuania was hit by a large terms of trade shock resulting from Russia's invasion of Ukraine while firms responded by hoarding labor. Over the medium-term TFP growth is assumed to pick up again to close to 1 percent, the historical average over 2012-2024 (Figure 3). This drag on growth is related to the rapid aging of the Lithuanian society; the population share aged 60+ has increased from 19 percent in 2000 to 28 percent in 2023 and is projected to increase further to 31 percent by 2030 (see Maestas et al., 2023 for evidence on the relation between the 60+ population share and growth for the US).

C. Scenario Analysis

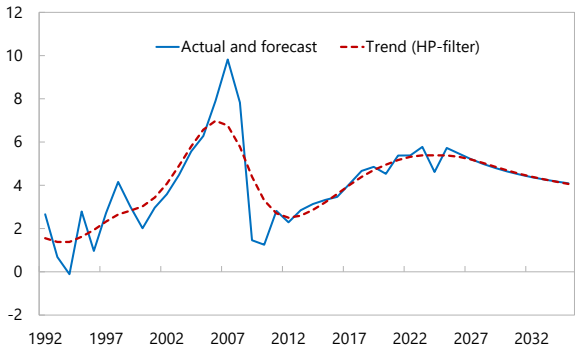
9. The trend in potential growth has been decreasing over time with time-varying contributions. Using the described inputs above, potential growth can be estimated as the sum of labor, capital and TFP, as shown in equation (2). The HP-filter is used to obtain potential levels of each of the individual input series across the entire sample. Potential growth according to this production function approach has been highest before the financial crisis, dropped sharply during the crisis and then recovered to 4 percent in 2017 (Figure 4). Since then, potential growth has been

[5] Forecasts for underlying inputs are extended beyond the current WEO forecast horizon, before applying the HP filter, to mitigate the end-point bias when using the HP-filter to calculate the potential level of production inputs.

somewhat declining driven by lower TFP growth. Capital has contributed most to potential growth while labor has played a negligible role and the TFP contribution has fallen over time.

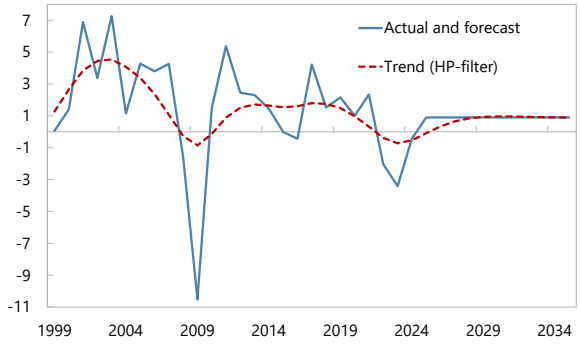
Figure 3. Model Assumptions

Capital Stock Growth
(percent change year-on-year)



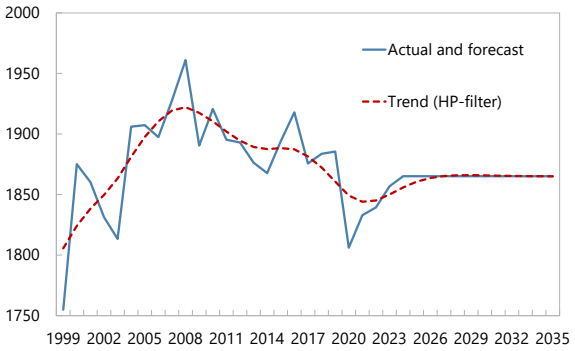
Sources: Haver and IMF staff calculations

Total Factor Productivity Growth
(Percent change year-on-year)



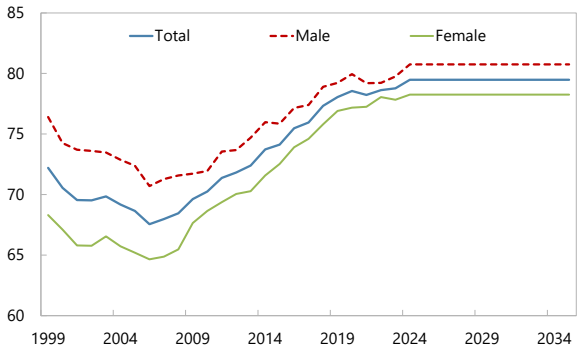
Sources: Haver, Penn World Tables, Eurostat and IMF staff calculations

Hours Worked
(Number per worker per year)



Sources: Haver and IMF staff calculations

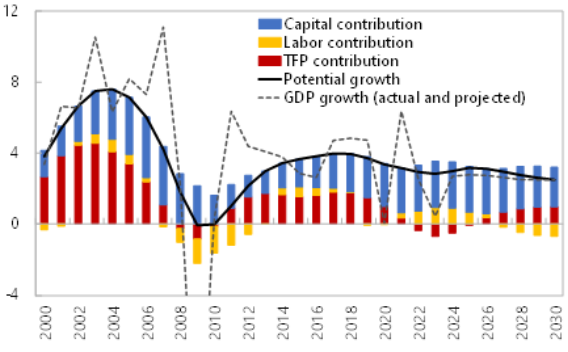
Labor Force Participation Rate
(Percent, actual and forecast)



Sources: Haver, Eurostat and IMF staff calculations

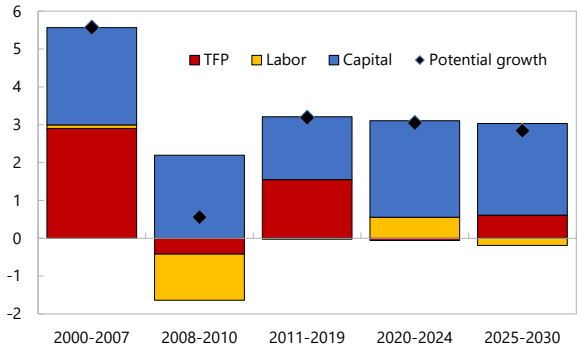
Figure 4. Potential Growth and Contributions

Potential Growth and Contributions
(Percent change year-on-year)



Sources: Haver, Eurostat, Penn World Tables, IMF staff calculations.

Contributions to Potential Growth
(Percentage points, yearly averages)



Sources: Haver, Eurostat, Penn World Tables, IMF staff calculations.

10. The shrinking working age population is a major drag on potential growth. Baseline projections by the European Commission indicate a decrease in Lithuania's labor force by around 7 percent from 2025 to 2030, around 1.3 percent per year. Assuming a constant labor force participation rate, which is already at an internationally high level and a slight increase in hours per worker—however below pre-Covid levels—labor will contribute negatively to potential growth at around -0.7 percent in 2030 (Figure 4). Lower capital stock growth, driven by presumably lower receipts of EU funds after 2026 and a normalization of investment growth after exceptionally strong investment growth in 2021-23, is assumed to also bring down potential growth gradually. Contributions from TFP are increasing over time given their negative contributions in 2022-24. They remain, however, below historical averages given the ageing population. The results show that it is critical for Lithuania to improve productivity growth to make up for the drag on potential growth from labor.

11. Different migration scenarios could exacerbate or ameliorate the drag of labor shortages on potential growth over the medium-term (Figure 5)**.** Eurostat provides different scenarios of the working age population based on low (downside), medium (baseline) and high (upside) net migration scenarios[6] The labor force is shrinking in all three scenarios—decreasing by 1.5 and 1.0 percent per year in the downside and upside migration scenarios, respectively. The average labor force growth rate in the upside migration scenario is similar to a scenario with zero net migration. Preventing the labor force from shrinking would require positive net migration of around 20,000 people per year—levels reached in 2020-23. This is equivalent to yearly net migration of around 0.7 percent of the population. Whether it is possible to sustain the level of migration remains to be seen.[7] Potential growth is significantly affected by different migration levels. It could be 0.2 percent lower or higher in the upside or downside Eurostat migration scenarios, while sustained migration closer to levels seen in recent years would increase potential growth strongly[8, 9]

D. Conclusions

12. Providing favorable conditions for migration, ensuring effective integration into the labor market, and addressing skills mismatch is critical to stabilize potential growth. The large skills mismatch between the domestic labor force and vacancies poses a significant issue for potential growth which could be partly alleviated by the right migration flows. Recent immigration

[6] The low immigration scenario assumes 33 percent less immigration from non-EU countries relative to baseline in each individual year, while the high immigration scenario assumes 33 percent more non-EU immigration per year. In absolute numbers of working age population net migrants, the baseline scenario assumes cumulative net migration of around -20,000 from 2025 to 2030, the low migration scenario around -45,000 and the high migration scenario around 5,000. In a no migration scenario, which is close to the high migration scenario, the labor force falls by 6.4 percent from 2025 to 2030. See Eurostat for further details.

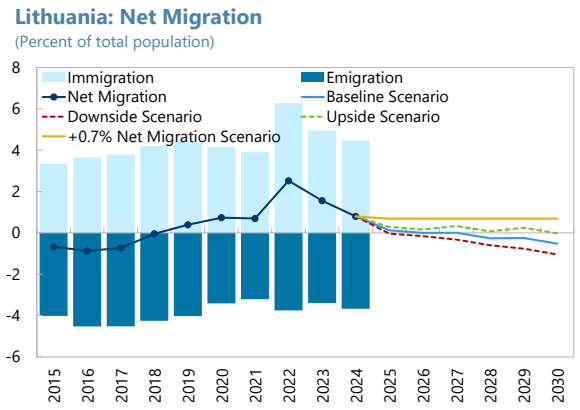
[7] This may be possible if net migration of Lithuanians continues while Lithuania becomes an attractive destination of workers from a more diversified set of countries—an emerging trend seen in recent years.

[8] The effects on GDP per capita depend on the evolution of TFP. It is assumed that higher migration improves TFP growth.

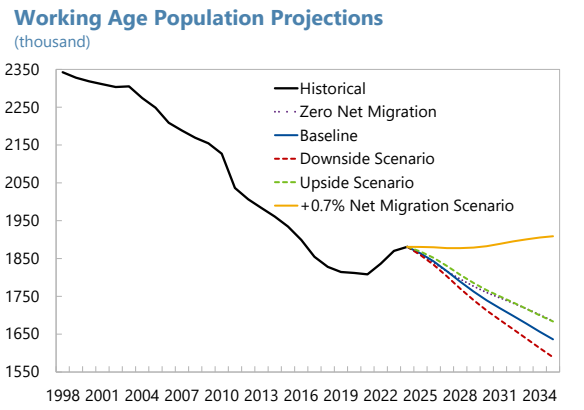
[9] A decrease in hours worked back to 2022 levels could reduce potential growth by up to 0.2 percent (compare Figure 3 on model assumptions).

flows have been successfully absorbed into the Lithuanian labor market and legislative amendments have enabled easier migration for high-skilled non-EU workers. Policies should continue to focus on integrating migrants in the most productivity-enhancing way possible and allow also for non-EU migration of lower-skilled workers to address skills-mismatch in those occupations. Given survey evidence on views towards migration, taking the local population onboard remains critical, informing the population of the potential positive spillovers, ensuring adequate provision of public services and compensating potential losers.

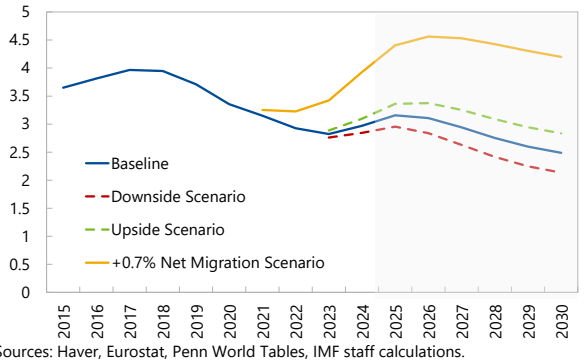
Figure 5. Working Age Population and Potential Growth Across Migration Scenarios



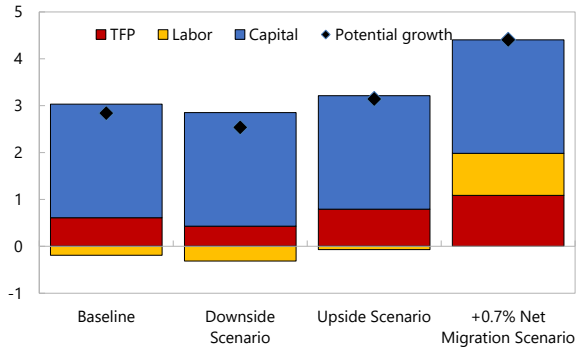
Source: Statistics Lithuania, Eurostat, IMF staff calculations.



Sources: Eurostat, Lithuania Department of Statistics.



Sources: Haver, Eurostat, Penn World Tables, IMF staff calculations.
Notes: Potential growth is historically higher in '+0.7%' scenario due to the HP-filter.



Sources: Haver, Eurostat, Penn World Tables, IMF staff calculations.

13. These scenarios and the implications for potential growth are based on several simplifying assumptions. The uncertainty surrounding these scenarios is high, linked not only to the uncertainty about the assumptions for capital deepening and TFP growth, but also to the complexity of the possible interactions between all the factors of production. Since the scope for increasing the labor force contribution is likely limited even with migration, it is important to deepen our understanding of developments in capital intensity and TFP growth to project potential output growth. The next SIP will examine driving forces and remaining constraints affecting these factors and provide a discussion of structural reforms allowing to unlock their full potential.

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THE EVOLVING GROWTH MODEL OF LITHUANIA[1]

Lithuania has seen strong income convergence since regaining independence, but in recent years progress in this respect has stalled as the contribution of capital deepening and TFP growth to labor productivity growth became lackluster. Persisting constraints faced by firms, such as lack of access to credit, low spending in R&D and limited availability of workers with sufficient digital skills, explain low rates of corporate investment, productivity and innovation. Looking ahead, targeted structural reforms are essential to support a lasting recovery in labor productivity growth. Key structural reforms include changes in labor market and education needed to reduce skill mismatches and improve labor quality, reforms in the financial sector allowing for deeper capital markets, and reforms aimed at accelerating to transition to a digitalized economy and a more comprehensive AI preparedness.

A. Introduction

1. Lithuania has recently reached key milestones in its European integration, with ten years in the euro area and two decades in the EU. During this period, it has experienced a rapid income convergence, with GDP per capita rising by 116% percent. The economic structure has also evolved over time, with the rise of higher value-added sectors including ICT contributing to increasing service exports while favorable migration dynamics in recent years—including the increasing number of returning Lithuanians and a temporary surge in migration from Ukraine and Belarus—has supported labor markets which would have been otherwise constrained by declining labor force due to rapid population aging. In part reflecting these developments, the economy has been resilient to a series of recent shocks and recovered strongly in 2024 with faster growth than Baltic peers and other EA countries.

2. However, the pace of income convergence has slowed while the adjustment is incomplete. The recent strong growth performance was largely driven by labor accumulation while capital intensity remains low, and productivity growth has been weak. The long-standing income inequality also persists. There are structural factors limiting productivity and long-term growth which remain unaddressed. In addition, new challenges are emerging with increased defense spending needs adding to the long-term spending pressures. Given the adverse demographics due to aging and uncertainty about migration flows, structural reforms to support capital accumulation and increase productivity are key to safeguarding sustained medium-term growth to bring the economy back to the convergence path.

3. Against this background, this note analyzes structural factors limiting productivity and long-term growth and possible structural reform options to unlock productivity growth. To put this in a context, the note first briefly reviews the evolution of the growth model of the

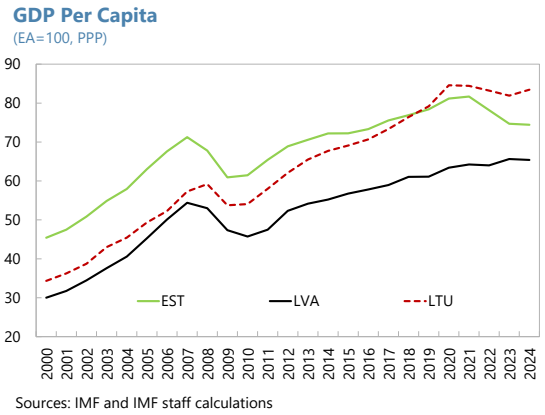
[1] Prepared by Saioa Armendariz (EUR) and Alberto Musso (RES). The authors would like to thank Kazuko Shirono and experts from the Bank of Lithuania for very helpful comments and Sadhna Naik and Kofi Zhou for excellent research assistance.

Lithuanian economy and then examines the structural impediments to growth focusing on capital deepening and TFP, followed by a discussion on a range of structural reform considerations.

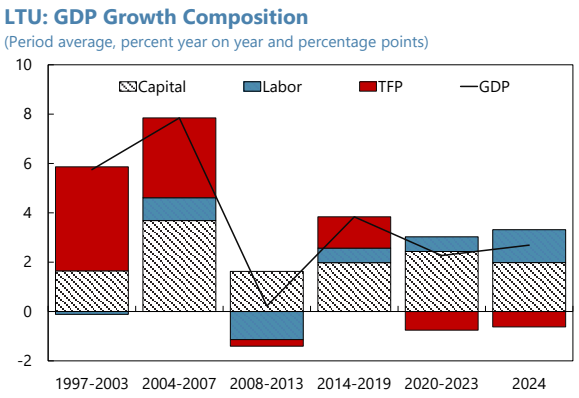
B. Output Convergence and Transformation

4. Lithuania has seen strong income convergence since regaining independence. GDP per capita of Lithuania has increased from about 30 percent that of the euro area in the second half of the 1990s to about 85 percent in recent years. Income convergence has been particularly fast in the decade preceding the GFC and during the 2010s (Figure 1, LHS), with growth during both of these periods largely driven by strong TFP growth and capital accumulation (Figure 1, RHS). Over the past five years convergence has stalled, as the positive contribution to output growth from labor accumulation—largely driven by positive net migration flows (see SIP on Potential Growth and Migration) —has been offset by negative TFP growth.

Figure 1. Drivers of Output Convergence



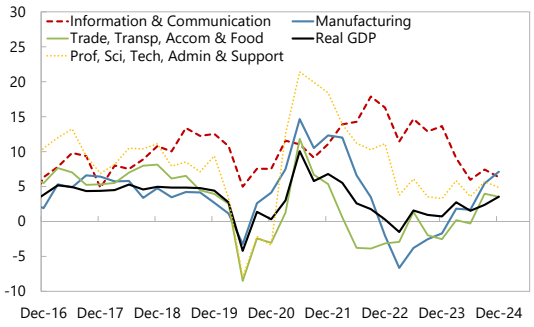
Sources: IMF and IMF staff calculations



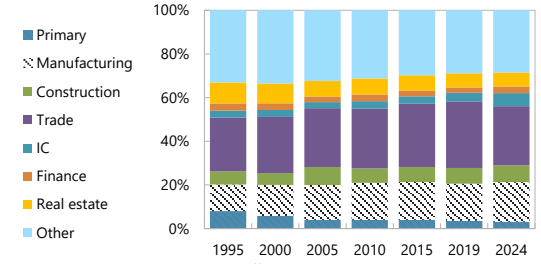
Sources: Haver Analytics, Eurostat and IMF staff calculations

5. The Information and Communication Technologies (ICT) sector has become an increasingly important driver of growth over the past decade. The past ten years have seen a significant expansion of the ICT sector in Lithuania, growing on average by about 10 percent per year (Figure 2, LHS), leading to a marked increase in the share of GDP (6 percent by the end of 2024, up from 3 percent in 2015) (Figure 2, RHS). The expansion of the ICT sector was supported by proactive policy measures from the government, including tax incentives for startups, investments in technology infrastructure and focused policy initiatives (e.g., 2021-27 Smart Specialization, 2023-28 Fintech Strategy). The increasing share of ICT economic activity has not yet translated into a systematic increase in labor productivity growth in this sector, which could come at a later stage once the market selection of the most productive firms is fully completed. Over the past ten years, the share of GDP of other sectors has decreased, including that of trade, travel, accommodation and food, and that of real estate activities. By contrast, the shares of manufacturing and of construction have slightly increased, while that of financial and insurance activities has remained broadly stable.

Figure 2. The Increasing Role of ICT



Sources: Haver Analytics, Eurostat and IMF staff calculations



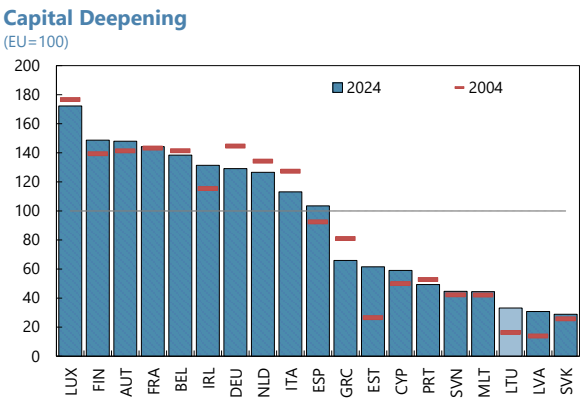
Sources: Haver Analystics; and IMF staff calculations.
Notes: Based on real gross value added data. IC stands for Information & Communication. Other includes other services, such as professional services, education, public administration, arts and recreation and industry other than manufacturing and construction.

C. Structural Impediments to Growth

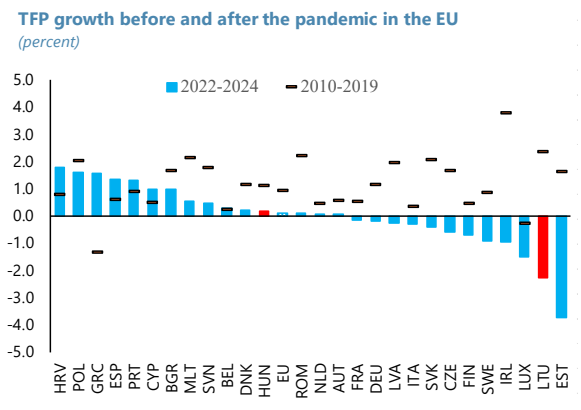
6. Despite the recent strong performance, Lithuania faces multiple structural challenges to productivity and potential growth. Medium- to long-term challenges to underlying growth include aging, structural change induced by technological progress, remaining frictions in financial, labor and product markets (including shallow capital markets, skill mismatches, inefficient firm insolvency regulations) associated to persistent misallocation of resources, and the need to accelerate the green transition and defense spending pressures which might require to allocate increasing resources to less productive activities (IMF, 2024; Armendariz et al., 2025). Aging poses challenges not only to labor accumulation but also to productivity growth (IMF, 2025).

7. The contribution of key components of labor productivity growth remains lackluster. Capital deepening, a key driver of labor productivity growth, remains very low in Lithuania (Figure 3, LHS). At the same time, TFP growth, after displaying strong dynamics during the decade before the pandemic, has turned negative in more recent years (Figure 3, RHS).

Figure 3. Key Drivers of Growth



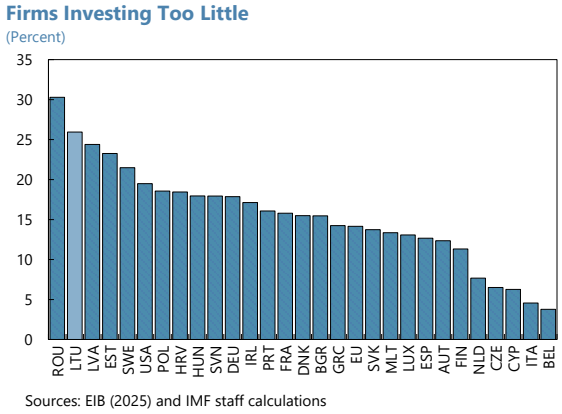
Sources: Haver Analytics, Eurostat and IMF staff calculations



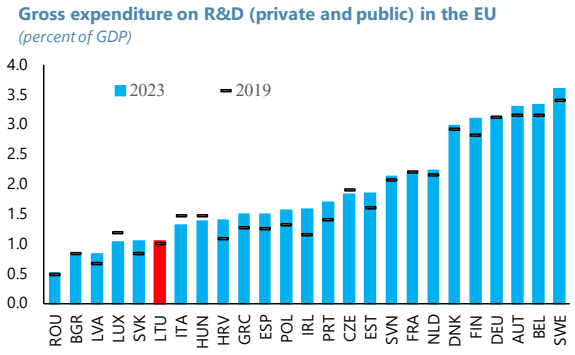
Sources: EC (AMECO) and IMF calculations.

8. Firms face persistent constraints in investment. In part, low capital intensity reflects insufficient investment by Lithuanian firms, linked to various factors including lack of access to credit reported by a large share of non-financial corporations (Figure 4). Moreover, total expenditure in Research and Development (R&D), broadly deemed essential to enhance innovation, remains relatively low in Lithuania. This is the case for both government spending in R&D and private business R&D expenditure, as few firms take advantage of the available tax incentives for business R&D (OECD, 2025). Firm productivity growth is constrained also by the limited availability of workers with sufficient digital skills, as only about half of Lithuanians have basic or above basic digital skills. In turn, this can explain the limited digital take-up by the business sector, as nearly 80% of firms have low or very low digital intensity in Lithuania, despite the available performing digital infrastructure.

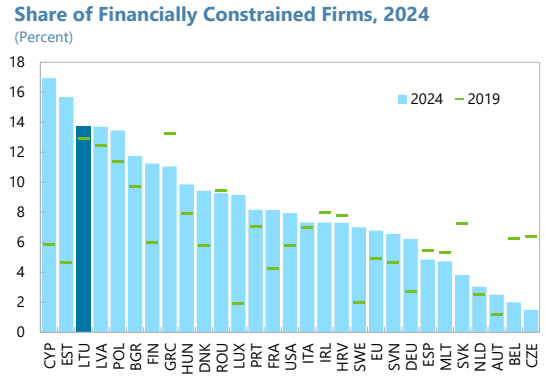
Figure 4. Factors Constraining Firm Growth



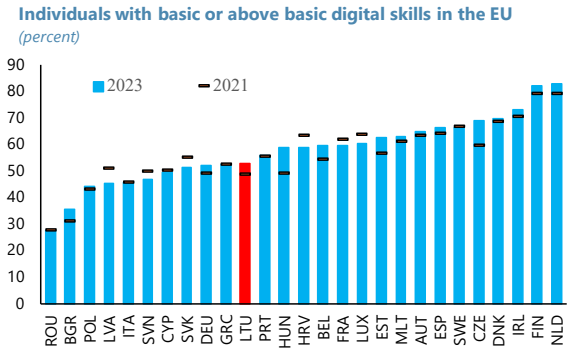
Sources: EIB (2025) and IMF staff calculations



Sources: OECD (MSTI database).
Note: Total expenditure (current and capital) on R&D by all resident companies, research institutes, university, and government laboratories.



Sources: EIB Investment Survey; and European Investment Bank.



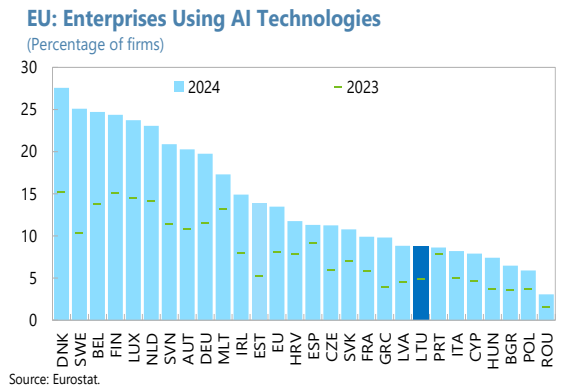
Sources: Eurostat (Database on Digital Economy and Society).

D. The Potential Benefits of AI

9. Looking ahead, further investment in digitalization and AI preparedness is necessary to ensure the Lithuanian economy can compete and grow. Lithuania has invested significantly in digitalizing its economy in recent years, has created one of the main Fintech Hubs of Europe, and has adopted a national AI strategy. However, a relatively limited number of firms have adopted one

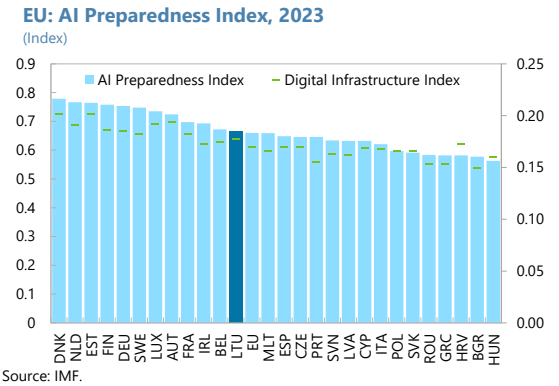
or more AI technologies in their business process, also compared to EU averages (Figure 5, LHS). Moreover, progress in digitalization and in AI preparedness has not yet brought its digital infrastructure far from the EU average (Figure 5, RHS). To unlock substantial productivity gains, policies should aim to facilitate technological diffusion, job transition and AI adoption among firms, while introducing measures to mitigate associated risks in terms of possible job replacements and deepening inequality.

Figure 5. AI Preparedness



Source: Eurostat.

Notes: Percentage of enterprises using at least one of the AI technologies (such as text mining, speech recognition, natural language generation, image recognition, image processing, or machine learning for data analysis) among firms employing 10 persons or more operating in all sectors except agriculture, forestry and fishing, mining and quarrying, or financial sector.

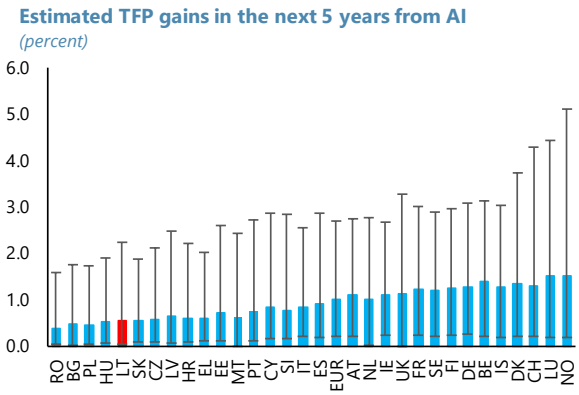


Source: IMF.

Notes: For details on the index see www.imf.org/external/datamapper/datasets/AIPI.

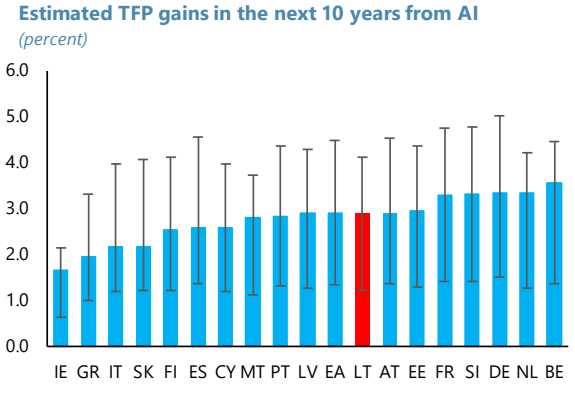
10. Enhancing AI preparedness has the potential to bring non-negligible productivity growth gains in the medium- to long-run. While estimates tend to be highly uncertain, variants of the simple framework proposed by Acemoglu (2024) suggest that AI adoption has the potential to enhance TFP growth in Lithuania by between 0.11 percentage points per year (Misch et al., 2025) and 0.29 percentage points per year (Bergeaud, 2024) according to baseline scenarios (Figure 6).

Figure 6. AI and Productivity



Sources: Misch, Park, Pizzinelli and Sher (2025).

Note: Bars are baseline estimates of total TFP gains from AI adoption. Upper and lower whiskers report estimates of gains for alternative scenarios, assuming different values for AI exposure rates, adoption rates and productivity gains.



Sources: Bergeaud (2024).

Note: Bars are baseline estimates of total TFP gains from AI adoption. Upper and lower whiskers report estimates of gains for alternative scenarios, assuming different values for the fraction of exposed tasks that can be automated and for increased productivity for these tasks.

E. Unlocking Productivity Growth via Structural Reforms

11. Structural reforms are essential to support a lasting recovery in labor productivity growth and the expansion of activity in high-value-added sectors that can ensure a complete income convergence (Table 1). Structural reforms in the labor market and education are needed to reduce skill mismatches and improve labor quality in an environment where specialized training in new technologies is essential. Reforms in the financial sector allowing for deeper capital markets—ideally in the context of a Capital Markets Union at the EU level—will support medium to large firms to overcome difficulties in accessing credit. In parallel, a reform to allow for more frequent updates of the property register could lead to a more updated and credible value of collateral to be posted when applying for loans, especially important for SMEs, thereby enhancing their access to external finance. Finally, reforms aimed at accelerating to transition to a digitalized economy, AI preparedness, not least via increased R&D spending and innovation, can facilitate the diffusion of new technologies and expansion of high-tech activities needed to support productivity growth.

Table 1. Lithuania: Summary of Structural Reforms to Enhance Productivity Growth

Category	Reform	Details	Priority
Labor Market	Boost ALMPs to address skill mismatches	Strengthen ALMPs, including life-long learning and apprenticeships and reskill and retrain especially of older workers, and increase its funding. Strengthen collaboration with firms when designing activation programs, including training.	High
Education	Education reform to address skill mismatches	Adapt PES-provided training and university curriculum to market needs and strengthen collaboration with firms. Improve vocational training system, university courses targeting to address skills mismatch by producing those jobs the labor market needs.	High
Financial Market	Deepening of capital markets and facilitating access to financing for SMEs	Capital markets in Lithuania are not well developed, limiting investment and innovation, especially for SMEs. Lithuanian firms tend to remain small and would benefit from facilitated access to financing for innovation (including boosting venture capital to ease financial conditions) targeting young growing firms.	Medium to high
Innovation and R&D	Innovation, R&D, and digitalization	Consolidating research institutions, simplifying access to public R&I support and incentivizing business R&I investment.	Medium to high

Sources: IMF.

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