

WP/15/278

IMF Working Paper

From Expenditure Consolidation to Expenditure Efficiency:
Addressing Public Expenditure Pressures in Lithuania

by David Coady and Nan Geng

I N T E R N A T I O N A L M O N E T A R Y F U N D

IMF Working Paper

European Department and Fiscal Affairs Department

From Expenditure Consolidation to Expenditure Efficiency: Addressing Public Expenditure Pressures in Lithuania

Prepared by David Coady and Nan Geng¹

December 2015

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Abstract

This paper reviews public expenditure in Lithuania to identify areas where deeper structural reforms may be warranted to improve spending efficiency and contain future spending pressures. The analysis benchmarks spending in Lithuania against other European countries focusing on spending levels, spending composition, and spending outcomes, and for both economic and functional spending classifications. While recent expenditure consolidation efforts have kept public spending among the lowest in Europe, a transition from broad-based measures to more structural measures will be required: to ensure that low spending levels remain sustainable, to address poor social outcomes such as high inequality and poor health and education outcomes, and to efficiently and equitably contain spending pressures arising from an ageing population.

JEL Classification Numbers: H11, H5, I18, I28, I38

Keywords: public expenditure review, spending efficiency, equity, benchmarking, Lithuania, European countries

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¹ The authors would like to thank Christoph Kligen, Csaba Feher, Baoping Shang, Mauricio Soto, the Lithuanian authorities, and the seminar participants at the Ministry of Finance of the Republic of Lithuania, and the European and Fiscal Affairs Departments of the IMF for helpful comments and suggestions. We are also very grateful to Louis Sears and Candice Liu for excellent research assistance, and to Saida Khamidova for excellent administrative assistance. The authors alone are responsible for remaining errors and omissions.

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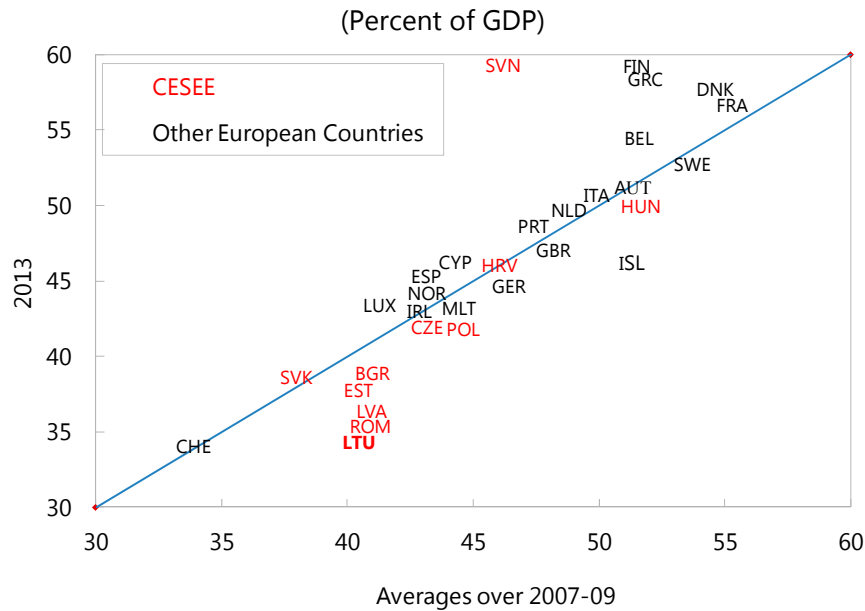
I. INTRODUCTION

Fiscal consolidation over the past five years has reduced Lithuania's public expenditure as a share of GDP to among the lowest in the region. Prior to the 2008/09 financial crisis, Lithuania's public spending was already well below the European average. Fiscal consolidation efforts in the wake of the crisis relied heavily on expenditure measures, which accounted for approximately two-thirds of the overall effort (Figure 1; Geng, 2013; Geng and Poirson, 2014).² As a result, public spending fell from a peak of 45 percent of GDP in 2009 to around 35 percent of GDP in 2013, although the steep decline of GDP in 2009 somewhat inflated the ratio in this year (Table 1). Current spending accounted for the bulk of the spending adjustment, with reductions in social benefits and public sector wages contributing the most (Table 1, top panel). In terms of spending by functional category, social protection, education, and health contributed the most (Table 1, bottom panel).

While expenditure reductions have so far been sustained, spending pressures are likely to emerge. These pressures come from four main sources. First, to the extent that expenditure consolidation measures have been of low quality, such as postponed capital spending or untargeted across-the-board freezes and cuts, these often tend to unwind. Second, if low spending leads to social outcomes that compare very unfavorably to those in other European countries, society may demand higher spending to attain more acceptable outcomes. Third, Lithuania will experience even larger long-term spending pressures related to population ageing than the rest of Europe because of its particularly challenging demographics. Annual public pension and health spending is projected to increase by 3.9 percent of GDP by 2050 (European Commission, 2012). Fourth, international experience suggests that the demand for public services as a share of GDP rises with growing incomes. Moreover, in the absence of revenue increases, additional expenditure consolidation will be needed to reach Lithuania's medium-term fiscal objectives and to offset committed increases in defense spending.

This paper reviews public expenditure in Lithuania with a view to identifying areas where deeper reforms may be warranted to improve spending efficiency and contain future spending pressures. The paper benchmarks spending levels and spending composition in Lithuania against those in other European countries. The 31 European countries covered in the benchmarking exercise include the EU-28 plus Iceland, Norway, and Switzerland. Reflecting the tendency for public spending to increase with income, Lithuania's spending as a share of GDP is compared with the EU average spending controlling for GDP per capita. For simplicity, the term EU average is used throughout the paper. The paper also tries to assess spending relative to outcomes to get a sense of spending efficiency. Since it is important to evaluate public spending levels in relation to their objectives, rather than just their relative size, a functional perspective is required, with a

² Appendix Table 1 summarizes the main expenditure consolidation measures adopted from 2009.

Figure 1. General Government Public Spending in European Countries, 2007–2013

Source: Eurostat.

Note: CESEE comprises Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovakia.

Table 1. General Government Spending by Economic and Functional Classifications

	2008	2009	2010	2011	2012	2013	Difference (2013–2009)	
	(Percent of GDP)						(Ppts of GDP)	(Share of total exp consolidation (%))
<i>Economic classification</i>								
Total expenditure	37.9	44.9	42.3	38.7	36.1	34.4	-10.5	100.0
Current spending	32.9	41.0	37.8	34.6	32.6	31.1	-9.9	94.6
Compensation of employees	10.7	12.8	11.0	10.3	9.8	9.6	-3.2	30.6
Goods and services	5.7	5.8	6.4	5.2	5.1	4.7	-1.1	10.2
Interest payments	0.7	1.3	1.8	1.8	1.9	1.7	0.4	-3.9
Subsidies	0.7	0.6	0.5	0.4	0.3	0.3	-0.3	2.9
Grants	0.8	1.0	0.7	0.7	0.7	0.9	-0.1	0.6
Social benefits	13.3	18.4	16.4	14.6	13.9	13.0	-5.3	50.9
Other expense	1.0	1.1	1.0	1.6	0.9	0.8	-0.3	3.3
Capital spending	5.0	3.9	4.5	4.1	3.5	3.3	-0.6	5.4
<i>Functional classification</i>								
Total expenditure	37.9	44.9	42.3	38.7	36.1		-8.8	100.0
General public services	3.9	4.3	4.5	4.5	4.3		0.0	0.0
Defence	1.4	1.4	1.2	1.1	1.0		-0.4	4.5
Public order and safety	1.9	1.9	1.9	1.9	1.8		-0.1	1.1
Economic affairs	4.7	4.0	4.5	3.9	3.3		-0.7	8.0
Environment protection	0.8	1.2	1.4	0.9	0.9		-0.3	3.4
Housing and community amenities	0.4	0.5	0.3	0.3	0.2		-0.3	3.4
Health	5.6	6.7	7.0	6.7	5.9		-0.8	9.1
Recreation, culture and religion	1.1	1.2	1.0	1.0	0.8		-0.4	4.5
Education	5.8	6.8	6.1	5.8	5.6		-1.2	13.6
Social protection	12.3	16.8	14.4	12.6	12.1		-4.7	53.4

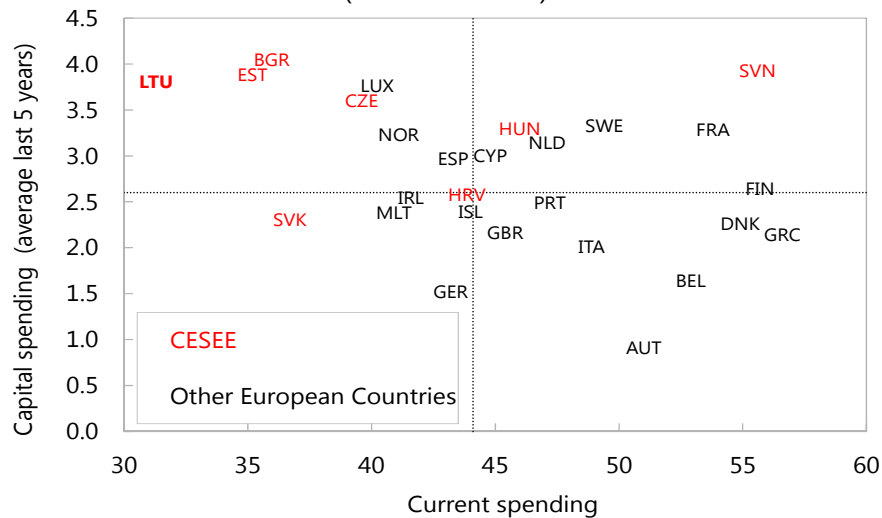
Sources: Eurostat (ESA95 methodology) and IMF staff calculations.

particular focus on social protection, education, and health.³ However, useful insights into the efficiency of public spending can also be gleaned from an analysis of spending by economic classification, especially regarding the split between current and capital spending and the size and composition of the wage bill.⁴

II. PUBLIC SPENDING BY ECONOMIC CLASSIFICATION

Lithuania largely resisted the temptation to achieve fiscal consolidation at the expense of investment. Notwithstanding international evidence that consolidating current spending is typically more growth friendly and sustainable (IMF, 2014a), postponing or cutting capital spending is often politically more palatable. In the case of Lithuania, while capital spending as a share of GDP has fallen slightly since the 2008/09 crisis, it has been a less important source of expenditure consolidation than in other countries. This reflects in part the government's decision to shield EU-funded projects from cuts, which account for a large share of public investment. Consequently, Lithuania's capital spending exceeded the European average in the last five years, which is appropriate considering its comparatively low stock of public capital (Figures 2 and 3).

Figure 2. Public Capital and Current Spending in CESEE and EU Countries, 2013
(Percent of GDP)



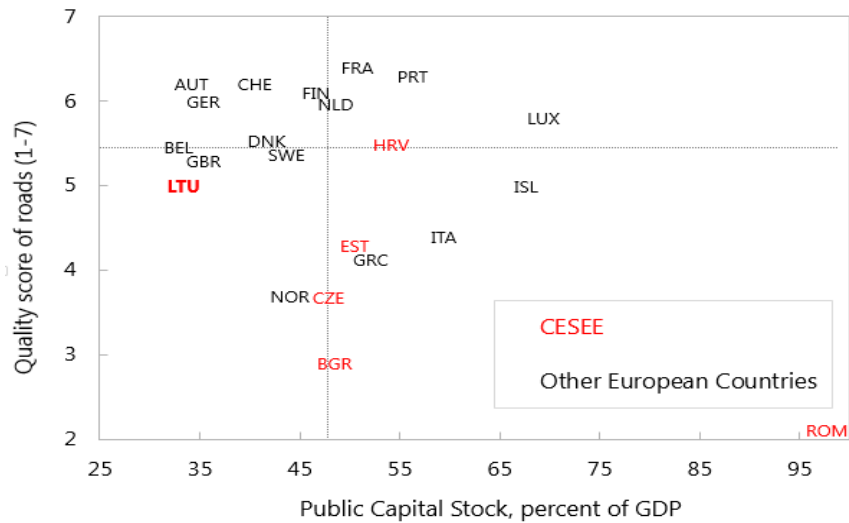
Source: Eurostat.

Note: Dashed lines indicate medians.

³ These three functional areas account for about two-thirds of total spending. Around one-third of public spending is dominated by wage spending, which is discussed separately under economic classification.

⁴ The heterogeneity of goods and services spending across functions means that it is better analyzed from a functional perspective.

Figure 3. Public Capital Stock and Quality in European and CEE Countries, 2012



Source: Eurostat.

Note: Dashed lines represent medians. Public capital stock was constructed using the perpetual inventory method (Collier, Hoeffler, and Pattillo, 2001; Kamps, 2006; Arslanalp and others, 2010). The “quality of roads” index is based on the executive opinion survey from the World Economic Forum’s Global Competitiveness Report (2011–12).

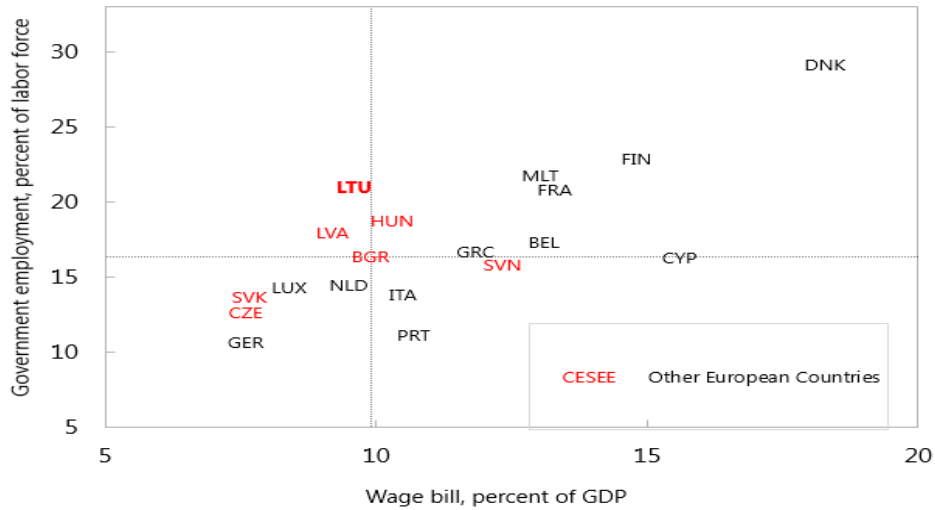
Instead, wage bill reductions contributed greatly to consolidation. Within current primary spending, the public sector wage bill typically accounts for a relatively high share. Untargeted wage bill consolidation measures, such as across-the-board freezing of wage and employment levels, are often one of the few avenues open to governments under pressure to achieve quick results. Lithuania’s wage bill had increased sharply prior to 2009 — by 50 percent in real terms between 2005 and 2008, including by nearly 20 percent in 2008 alone. All public sector groups benefited from rapidly growing wages, but medical doctors and judges fared best, seeing their real wages double over the period. Unsurprisingly, much of the consolidation effort in the crisis was directed at the wage bill, including employment and nominal wage freezes and reductions, elimination of unfilled vacancies, and suspension of bonuses and promotions (Box 1).

The size of the wage bill in Lithuania is close to the European average, but there are important differences in its composition. At 9.6 percent of GDP in 2013, the wage bill is not excessive by regional standards. However, general government employment levels are relatively high, consistently exceeding the EU median of around 17 percent of the labor force over the last decade, despite recent decreases (Figure 4). Based on available data on international comparisons, the education sector seems chiefly responsible although the health sector and “other” employment components also contribute (Figure 5A).⁵ The flipside of relatively high employment is relatively low average wages, which could make it challenging for the public

⁵ Within the “others” employment seems high in the sub-categories transportation and storage; arts, entertainment, and recreation; and professional, scientific, and technical activities.

sector to attract and retain qualified staff and possibly increase future wage pressures (Figure 5B). A comprehensive evaluation of public-private wage differentials, as well as wage differentials within the public sector to ensure horizontal equity, would usefully shed further light on this issue.

Figure 4. General Government Employment and Wages in Europe, 2013 or Latest

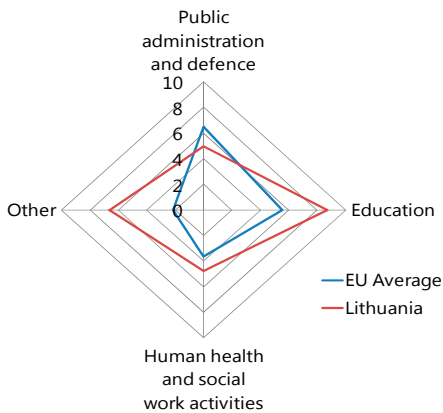


Source: Eurostat.

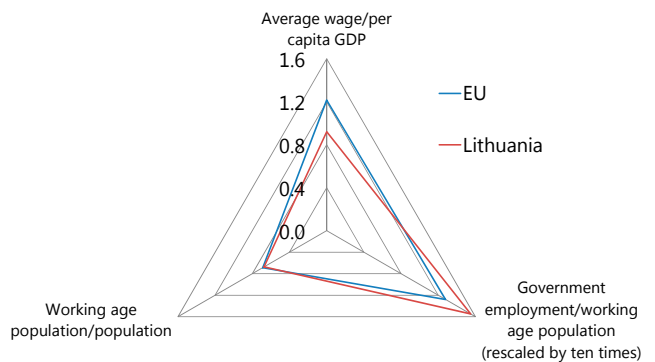
Note: Care needs to be taken when comparing public employment levels since certain important categories (such as doctors) may be classified as private in some countries.

Figure 5. Decomposition of General Government Employment and Wage Bill, 2012

A. General Government Employment by Function (Percent of labor force)



B. Factor Decomposition of General Government Wage Bill (Ratio)



Sources: Eurostat, and Statistics Lithuania.

Note: EU average in 5A is calculated based on 7 countries with available breakdown data on general government employment (Belgium, Bulgaria, Cyprus, Finland, Italy, Lithuania, and Netherlands).

Box 1. Wage Bill Consolidation Measures in Lithuania Since 2009

Public wage bill consolidation has been a key component of expenditure consolidation since 2009. It has been achieved through freezing and reducing employment and wages, elimination of unfilled vacancies, and suspension of bonuses and promotions.

Measures introduced in 2009 included:

- **A hiring freeze** was introduced and the existing 600 public administration vacancies were eliminated. The freeze is still in effect.
- **Parametric changes** of the wage system: From January, the civil service base wage was decreased from LTL 490 to LTL 475 (a 3 percent reduction) and in August to LTL 450 (a 8 percent cumulative reduction). Bonus payments were also decreased in August from 15, 30 and 50 percent of service pay (the product of base wage and an individual-specific factor) to 10, 15, and 30 percent, respectively—this expired on October 1, 2013. In May, a progressive downward adjustment in base wages led to an average 25 percent gross cut for high-paid civil servants (excluding teachers, police and medical workers). These disproportionate cuts for high-paid civil servants were reversed on October 1, 2013, to comply with a Constitutional Court ruling of July 2013.
- **Further reduction of overall wage bill** by 12 percent. To achieve this, the number of full-time civil service positions was cut by 4,000 (approximately 6,700 civil servants) in October, but managers were given discretion to meet reduction targets by cutting working days. Bonuses and promotions were also suspended.

Measures introduced after 2009 included:

- In 2010, a further reduction of the wage bill of about 0.6 percent of GDP was achieved through a 10 percent wage bill cut for civil servants, a 2 percent cut for statutory civil servants and a 5 percent cut for cultural and social workers and teachers.
- Public sector wages were frozen during 2011–13, delivering annual budget savings of 0.3-0.5 percent of GDP.

Even though the consolidation measures in 2009 delivered an estimated full-year savings of 1.5 percent of GDP, some measures were introduced later in the year and therefore did not yield their full impact in 2009. In addition, teachers' wages increased by 18 percent because teaching hours were increased (and despite a decline in their basic wage in September 2009 from LTL 128 to LTL 122). These factors, coupled with a dip in GDP, meant that the total public wage bill still increased by 2 percentage points of GDP from 2008 to 2009 (Table 1).

Further public sector reforms should focus on structural measures. To date, consolidation of the wage bill has relied mostly on blunt measures such as freezing wage and employment levels. While these can be effective at addressing short-term consolidation needs, they can quickly become inefficient and unsustainable as the skill composition becomes unbalanced, putting

pressure on the quality of public services and making it difficult to attract and retain qualified staff.⁶ International evidence suggests that structural measures, such as linking public sector pay to productivity, improving hiring processes, and improving service efficiency can be more effective at sustainably achieving consolidation objectives (IMF, 2014a). But reducing employment levels can take time and may require additional spending in the short term, e.g., to cover severance and redundancies payments.⁷ However, incentives for reform can be enhanced through linking future wage increases to the adoption of structural measures. Similarly, there is evidence that promoting social dialogue and public support can improve the chances for successful reform.

III. PUBLIC SPENDING BY FUNCTIONAL CLASSIFICATION

Relatively low total public spending in Lithuania translates into relatively low spending in most functional categories (Table 2).⁸ At 36 percent of GDP in 2012, spending in Lithuania was 7 percentage points below the EU average of 43 percent of GDP. Spending was lower in most functional categories, but there are exceptions: education spending is substantially above the EU average and spending on health is slightly above. The analysis below focuses on three key functions: social protection, education, and health, which together account for about two-thirds of total spending.⁹

A. Social Protection

Social protection spending in Lithuania is among the lowest in Europe. At 12.1 percent of GDP in 2012, social protection spending is well below the European average of 14.9 percent (Figure 6). This partly reflects the large decrease of 4.7 percentage points in social protection spending since 2009.¹⁰ Low social protection spending is primarily driven by low pension spending. However, within this small pension spending envelope, spending on sickness and disability is 22 percent above the EU average (Box 2).

⁶ In the short term, some measures aimed at reorganizing services (such as consolidating common support services) and targeting specific positions and functions for downsizing are often possible. Indeed, the 2009 Public Employment Commission recommended that employment should decrease through the consolidation of duplicating public institutions.

⁷ Reliance on voluntary redundancies can be self-defeating since it often results in a loss of more skilled staff with attractive private sector employment alternatives.

⁸ Whereas spending by economic classification is available from Eurostat for 2013, functional spending is only available up to 2012.

⁹ The other functional classifications are dominated by wage spending, which was discussed in Section II.

¹⁰ This followed a very large increase in social protection spending from 2006 to 2009 of about 7 percentage points of GDP.

Table 2. General Government Spending by Function, 2012
(Percent of GDP, unless otherwise indicated)

	Lithuania (1)	EU benchmark (2)	Diff (3)=(1)-(2)	(3)/(2), in %	% Share of Total Difference
Total spending	36.1	43.1	-7.0	-16%	100%
General public services	4.3	6.6	-2.3	-35%	33%
Defence, public order and safety	2.8	3.2	-0.4	-14%	6%
Economic affairs	3.3	4.8	-1.5	-31%	21%
Health	5.9	5.8	0.1	2%	-1%
Education	5.6	4.9	0.7	13%	-10%
Social protection	12.1	14.9	-2.8	-19%	41%
Pensions	9.4	12.1	-2.7	-22%	39%
Sickness and Disability	3.0	2.5	0.5	22%	-8%
Non-pensions	2.7	3.2	-0.5	-15%	7%
Others	2.1	2.8	-0.7	-25%	10%

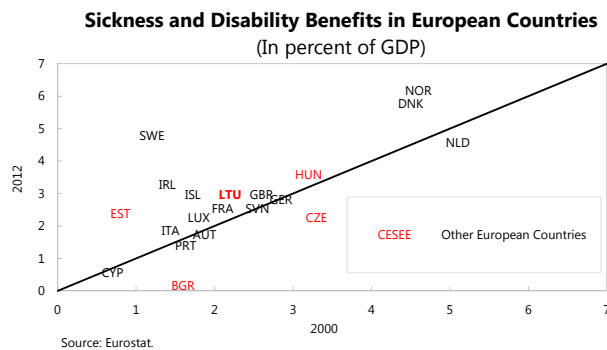
Sources: Eurostat General Government Statistics (ESA 95) and IMF staff calculations.

Note: EU benchmark is defined as EU average controlled for GDP per capita (\$) by regressing logarithm of spending-to-GDP ratio on GDP per capita.

Box 2. Disability Benefits in Lithuania

Spending on disability benefits is high relative to other EU countries and has been rising over the last decade. In 2012, sickness and disability spending stood at 3 percent of GDP compared to an EU average of 2.5 percent of GDP (Figure). High spending partly reflects high disability rates, especially among the working-age population above 45 years of age. Approximately a quarter of the population aged 55 to 59 years is receiving disability benefits (Table). In addition, according to World Bank (2009), the number of claims for special needs more than doubles immediately after reaching retirement age. Disabled and old-age pensioners are also eligible for other subsidies, e.g., transport subsidies administered by the Ministry of Transportation. The disabled can also be eligible for special needs covering (i) constant care, (ii) constant nursing, (iii) assistance, (iv) compensation of transport expenses, or (v) compensation of expenses on purchase of a passenger car.

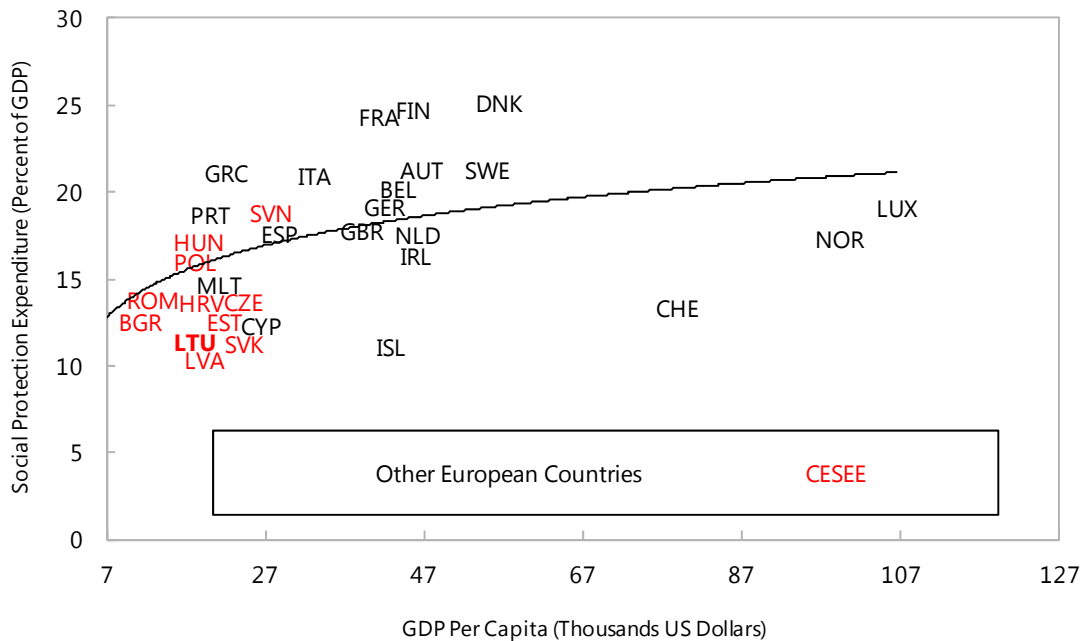
Although recent reforms have tried to address high disability spending through tightening the certification system, the number of disabled beneficiaries has continued to increase. The certification process has undergone substantial reform since 2005, with the introduction of an Agency for the Assessment of Loss of Working Capacity, which has expanded the criteria for determining disability and the capacity to work to include social as well as physical factors. New entrants into the system are subjected to the new criteria, while existing entitlements and benefit flows were grandfathered. The assessment of special needs has been centralized in the same agency since July 2009. Nonetheless, the number of beneficiaries of disability pensions has continued to increase after 2009, suggesting that an evaluation of the effectiveness of these changes is warranted.



Disability Benefit Claims by Age Groups

	Number of disabled per 1000				
	20-64	20-34	35-44	45-54	55-59
OECD14 Average, 1999	64	15	33	73	144
Lithuania, 2005	89	11	46	113	233
Lithuania, 2009	86	8	43	108	226
Lithuania, Jan. 2014	91	10	47	119	241

Sources: OECD database on programs for disabled persons; Lithuanian SoDra; and Statistics Lithuania.

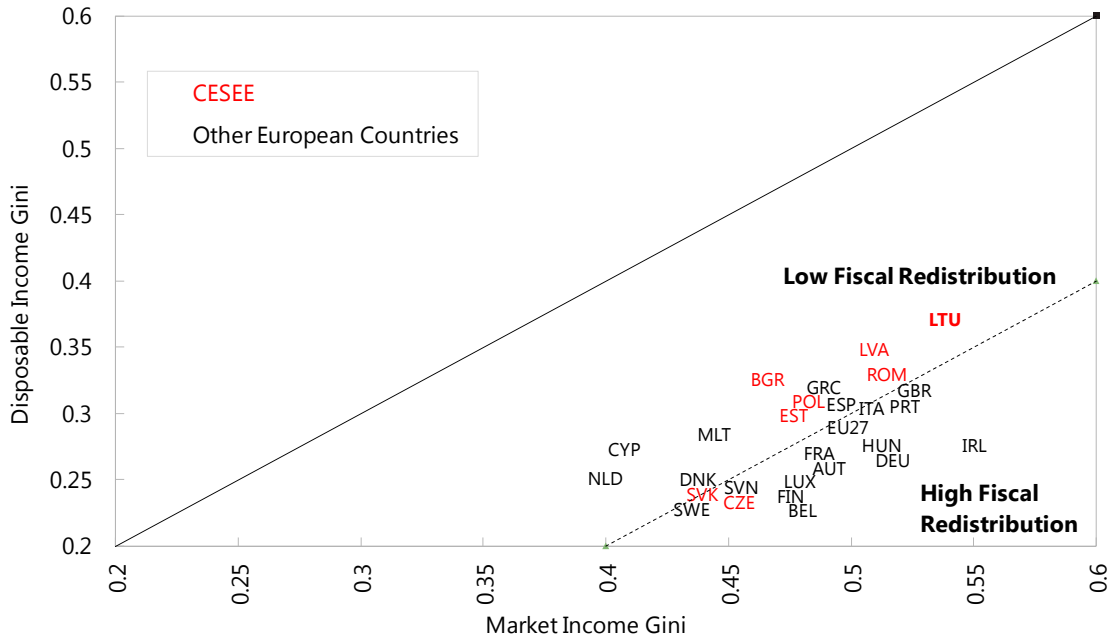
Figure 6. Social Protection Spending in European Countries, 2012

Source: Eurostat General Government Statistics.

Low social protection spending is partly responsible for poor social outcomes—a high degree of income inequality and a large share of the population at risk of poverty. Lithuania has one of the highest market (i.e., pre-tax-and-transfer) income inequalities and one of the lowest levels of fiscal redistribution (Figures 7). The low level of fiscal redistribution reflects the low redistributive impact of both means-tested and non-means-tested non-pension transfers as well as of the direct personal income tax system (Figure 8).¹¹ As a result, Lithuania recorded the EU's highest inequality of disposable (i.e., post-tax-and transfer) income in 2013, and over half of the gap with the EU average is explained by the lower redistributive impact of fiscal policy in Lithuania (Figure 7). Moreover, all of the increase in inequality in Lithuania between 2009 and 2013 (the disposable income Gini increased from 0.357 to 0.372) is due to the declining redistributive power of fiscal policy. This contrasts with other EU countries where the smaller increase in market income inequality was more than offset by the increasing redistributive impact of fiscal policy. Meanwhile, Lithuania's at-risk-of-poverty rate after social transfers, an indicator for the most vulnerable households that are at the lower end of the income distribution, is also high compared to levels in other European countries, especially among the non-elderly (Figure 9).

¹¹ The high redistributive impact of pensions in spite of low spending suggests that pension design emphasizes its redistributive role. This is consistent with reforms to the pension system from 2009, which focused on decreasing generosity of benefits while protecting low-income pensioners through increasing the basic pension and decreasing the earnings-related pension in a progressive manner (Coady, Jousten and Kangur, 2010).

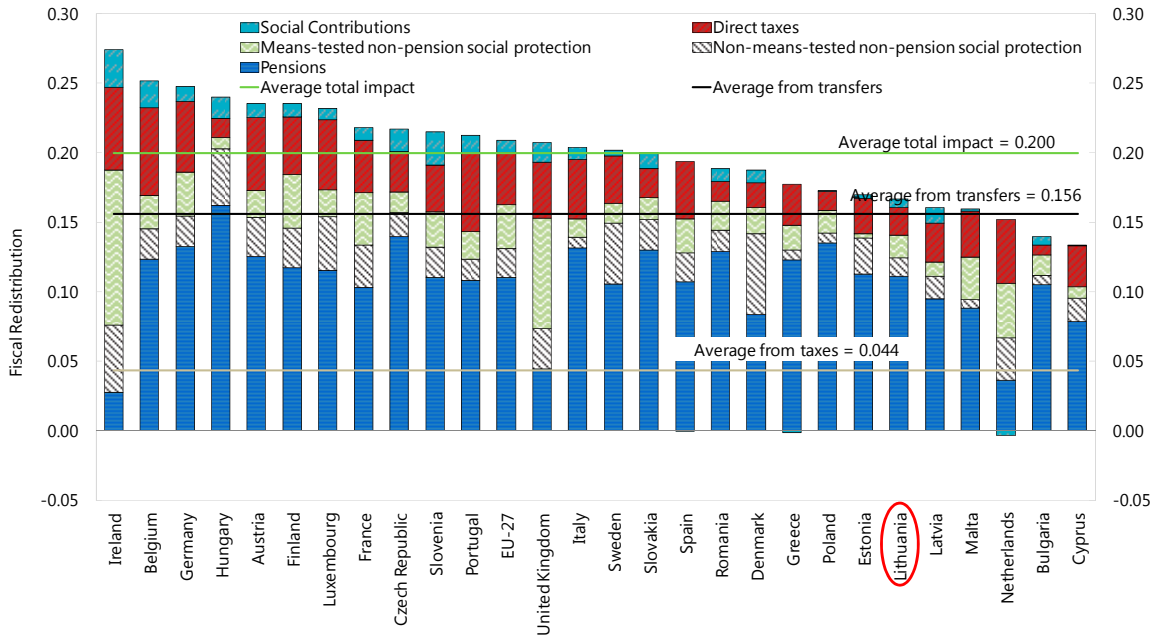
Figure 7. Market and Disposable Income Inequality in European Countries, 2013



Source: Eurostat.

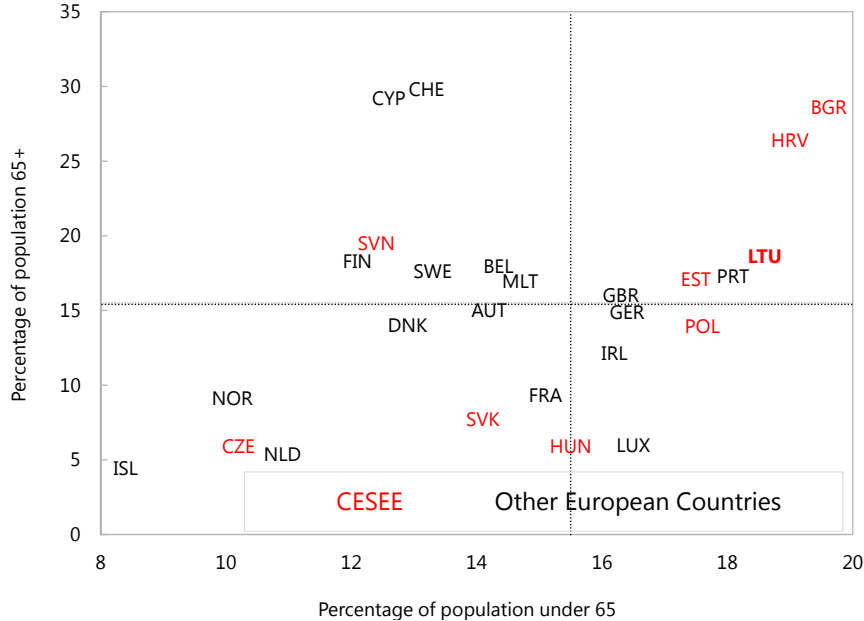
Note: Low (high) fiscal redistribution refers to the difference between market and disposable income Gini being less (greater) than 0.2.

Figure 8. Contributions to Fiscal Redistribution in European Countries, 2013



Sources: Eurostat, and IMF staff calculations.

Note: Fiscal redistribution is calculated as the difference between market income and disposable income Gini.

Figure 9. At-Risk-of-Poverty Rate After Social Transfers and Pensions in Europe, 2012

Source: Eurostat.

Note: Dashed lines represent EU medians.

A range of reforms can help make social protection more efficient and thereby also less susceptible to spending pressures. Rising poverty combined with increased EU monitoring of poverty outcomes may increase social and political pressures for higher social protection spending.¹² There is also evidence of a growing demand for redistribution in Lithuania.¹³ The following measures can help to contain these spending pressures and achieve social protection objectives more efficiently:¹⁴

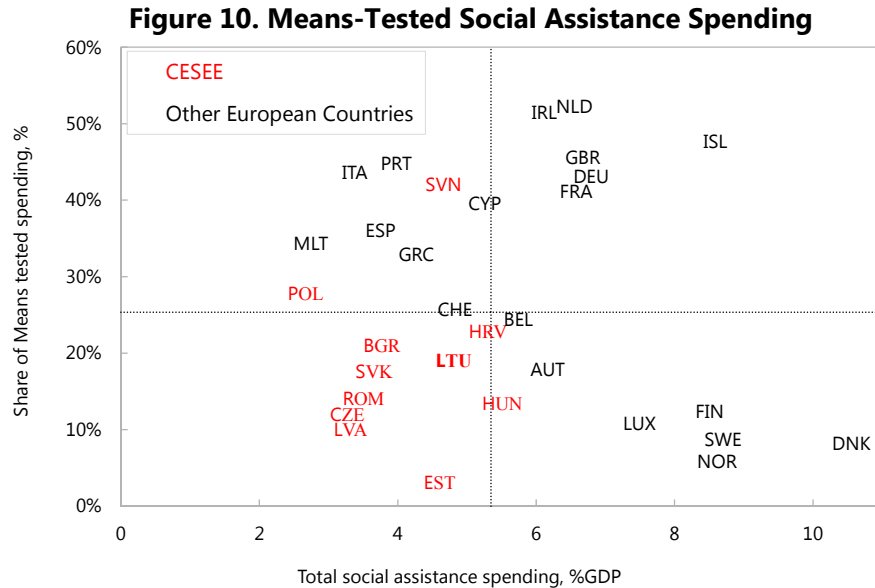
- *Increased use of means-testing of social assistance:* The share of social assistance spending that is means tested is currently low across CESEE countries compared to many other European countries (Figure 10). However, careful design of means-tested benefits is necessary to avoid disincentives to work and welfare dependency. This can be achieved through greater use of in-work benefits and by expanding the role of active labor market

¹² Lithuania's national target for "fighting poverty and social exclusion" (one of the five Europe 2020 targets for EU countries) is to reduce the number of persons at risk of poverty or social exclusion to 814,000 from the current level of 917,000 as of end-2013.

¹³ International surveys show that there has been a very large increase in the percentage of the population in Lithuania supporting greater redistribution, from 22 percent in the late 1990s to 54 percent ten years later (IMF, 2014b).

¹⁴ Note that it is important for any reform of specific components of social protection, in particular of pensions, to take account of the objectives and effectiveness of the overall social protection system.

programs and strengthening their link to social assistance benefits (IMF, 2012).¹⁵ Lithuania's public spending on these programs was only one fifth of the EU average in 2012.



Source: European & Central Asia - Social Protection & Expenditure Evaluation Database.

Note: Dashed lines represent medians.

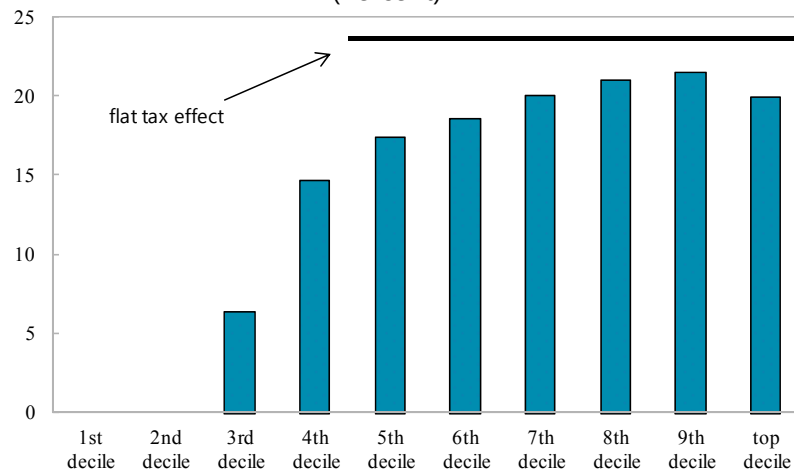
- Pension measures that protect the poor:* The pension system is likely to come under pressure over the medium term due to population ageing (IMF, 2014a). The EC 2012 Ageing Report projects that population ageing will increase pension spending as a percent of GDP in Lithuania by 3.4 percentage points by 2050, more than twice the projected increase for the EU as a whole. A key policy challenge therefore is how to contain these spending pressures without further exacerbating poverty among the elderly (Clements, Eich, and Gupta, 2014), especially since the pension replacement rate (i.e., average pension divided by average wage) is already low—33.6 percent in Lithuania compared to an average of 46.4 percent for the EU and 56.7 percent for the euro area. Increasing official retirement ages is an attractive option since it does not reduce pension replacement rates in retirement. From 2012, Lithuania started to gradually increase its statutory retirement age to 65 years by 2026 for both men and women, from 62.5 and 60 years, respectively. To be effective, such increases should be accompanied by complementary measures such as tightening opportunities for early

¹⁵ These active labor market programs (ALMPs) include skills training, subsidized employment in private firms, job rotation (temporary employment to cover temporary leave of employees), public works, as well as programs for the disabled (subsidized employment and vocational training). Currently, in Lithuania, eligibility for social assistance requires registration as a job seeker at the local labor exchange office and availability for suitable employment. To incentivize exit from social assistance and unemployment, municipalities continue to pay social benefits for six months after a person entitled to social benefit finds a job at a level of 50 percent of his/her average social benefit during the 12 months preceding the exit.

retirement, including for disability benefits, and enhancing the employment prospects of older workers. Adopting a built-in mechanism to deal with ageing, such as automatically linking the official retirement age to life expectancy, will also help protect these gains over the longer term.¹⁶

- *Subjecting pension benefits to progressive income taxation.* The effective personal income tax rate is flat beyond the lowest income deciles, because Lithuania’s tax schedule applies a constant rate to income above the basic allowance (Figure 11). In addition, there are multiple allowances and exemptions that favor high-income groups (e.g., the largely non-taxation of interest income and certain capital gains).¹⁷ This, together with the very limited taxation of wealth, greatly restricts the redistributive impact of the tax system. Uniformly raising gross pensions and subjecting them to progressive income taxation may help to lower inequality and strengthening the pension system’s social sustainability. Depending on the design, it could also reduce the net fiscal cost of pensions and generate savings compared to the status quo.

Figure 11. Effective Income Tax Rate (Incl. SSC) by Income Group in Lithuania, 2010
(Percent)



Sources: Income and Living Conditions Survey (2010); and IMF staff estimates.

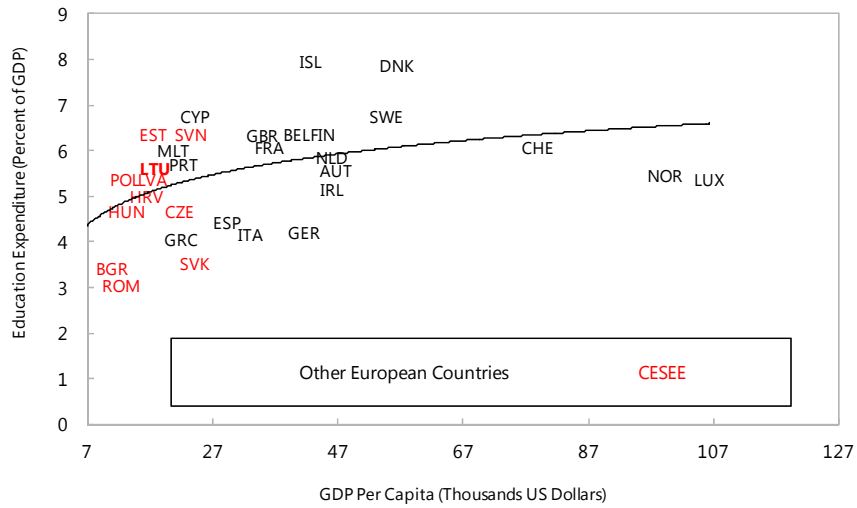
¹⁶ Currently social security contributions are calculated as a uniform uncapped proportion of wage while pension benefits are capped at around 1.7 times the average net wage. Employer contributions are deductible against profits while pensions are exempt from income taxation, resulting in a more favorable treatment of pensions than workers with the same gross income. This can create incentives for greater social contribution evasion, a preference of self-employment over wage-earner status, and later entry into the labor market as well as earlier exit.

¹⁷ Income from interest and capital gains over 10,000 LTL (2,896 EUR) have been subject to PIT starting January 2014.

B. Education

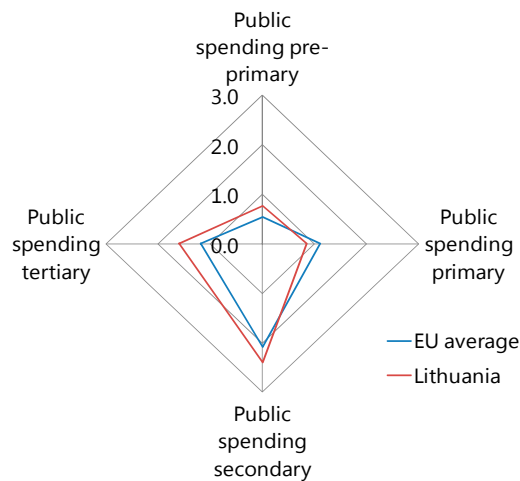
Public education spending in Lithuania is high relative to that in other EU countries. In most advanced economies public education spending has risen despite declining school-age populations. However, the increase in Lithuania has been larger than elsewhere, resulting in spending of 5.6 percent of GDP in 2012, which is 13 percent above the EU average of 4.9 percent and the CESEE average of 4.8 percent (Figure 12). Higher spending on secondary and tertiary education is mainly responsible for this gap (Figure 13).

Figure 12. Education Spending in Lithuania and Europe, 2012



Source: Eurostat General Government Statistics.

Figure 13. Education Spending in Lithuania and Europe, by Level of Education, 2011 (Percent of GDP)

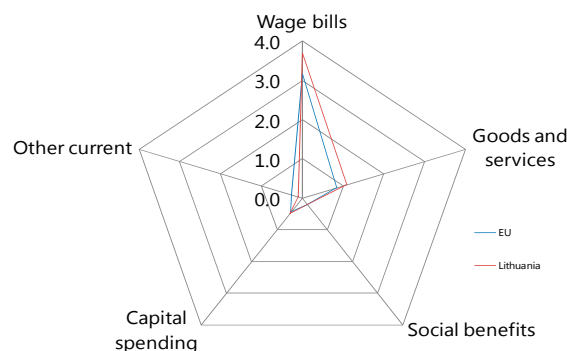


Source: Eurostat.

High education spending is driven by both a high wage bill and high spending on goods and services (Figure 14). This indicates an over-sized education system that has not been reformed to reflect demographic trends:

- *Student-teacher ratios are low, especially in secondary and tertiary education:* As in many EU countries, student teacher ratios have fallen over the past decade as the decline in the number of teachers has failed to keep pace with the falling school-age population (Figure 15A). Student-teacher ratios in general education started to decline steadily since 2005, while ratios in tertiary decreased sharply after 2009. As a result, ratios in secondary and tertiary education are now below the average of EU countries (Figure 15B). In particular, the student-teacher ratio in tertiary education in Lithuania was just 11 compared to the EU average of 15 in 2012. If Lithuania had the same student-teacher ratio as the EU average, it would need 8.5 percent fewer educators in general education and 12.9 percent fewer in tertiary education than is currently the case.
- *Class sizes in general education are small:* Class sizes have also been decreasing over time, consistent with a school infrastructure in general education that has not been reduced commensurately with the decline in the school-age population. Class sizes are currently below the EU average, especially in primary education (Figure 15B). An oversized infrastructure results in high spending on goods and services (including operating costs such as electricity and maintenance) relative to the EU average.
- *There is an intensifying oversupply of higher education:* The enrollment ratio in tertiary education is higher than in any other European country. Lithuania has a very large number of universities—14 state universities and 13 state colleges in a country with a population of just three million. This number has been stable notwithstanding a sharp decline in the tertiary-age population after 2009, which is projected to continue to decline over the next decades (Figure 16).

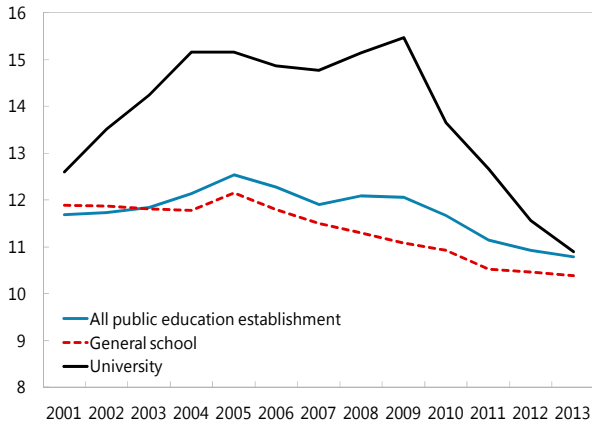
Figure 14. Education Spending by Economic Classification, 2012



Source: Eurostat.

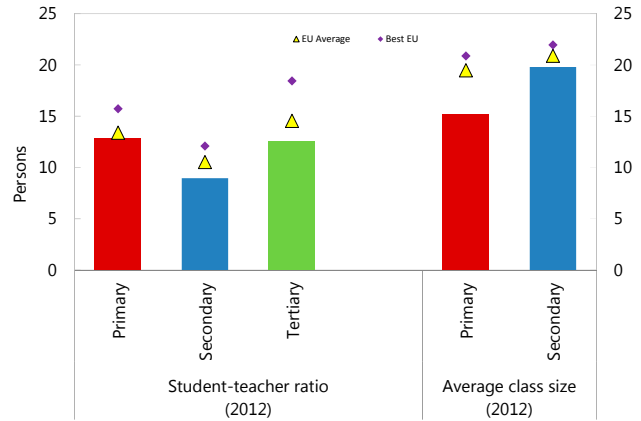
Figure 15. Student-Teacher Ratio and Class Size

A. Student-Teacher Ratio in Lithuania Public Education Establishments



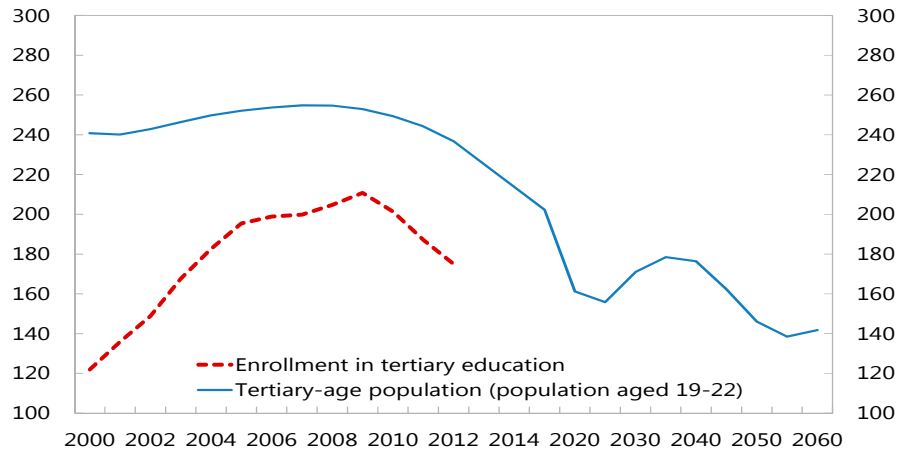
Source: Statistics Lithuania.

B. Student-Teacher Ratio and Class Size, Lithuania vs. EU Average, 2012 or latest



Source: UNESCO.

Figure 16. Tertiary-Age Population and Tertiary Education Enrollment (Thousands of people)



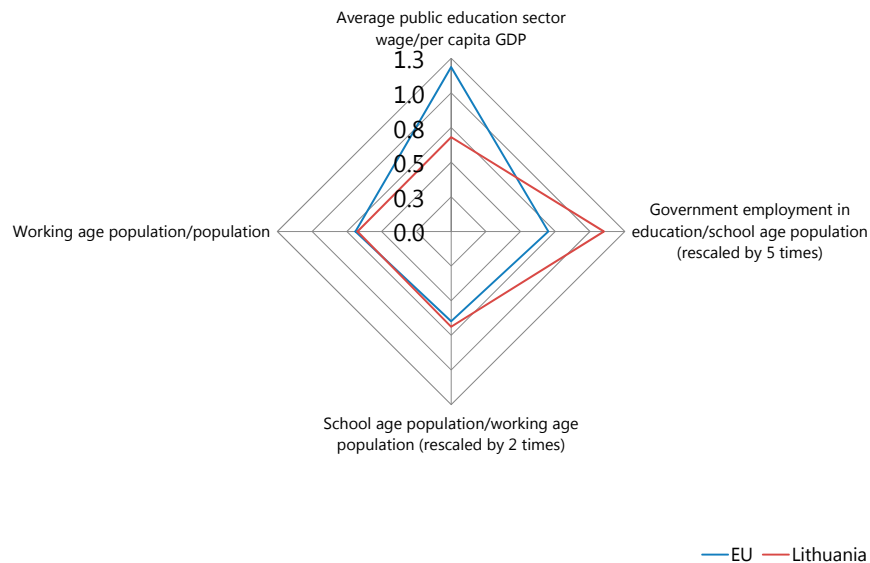
Source: United Nations.

High employment levels appear to have resulted in low wages, especially for young teachers. The wage bill of 3.7 percent of GDP is higher than the European average of 3.2 percent (Figure 14) due to high employment levels in the education sector (Figure 17).¹⁸ Moreover, the share of older

¹⁸ For general education, the wage bill for teachers is determined by the government based on the level of students, an agreed wage structure, and contracted hours. The government allocates budgets to municipalities (the student basket) based on the number of enrolled children, which determines the number of teaching hours required, and an agreed structure of wages. Municipalities must finance most of non-wage expenditures and school heads have wide discretion over the number of teachers employed and teacher contracts, which are determined annually.

teachers with relatively high wages is large, with those aged 50 years and above accounting for nearly half of the total.¹⁹ High severance payments, which are also due to teachers who have already reached the official retirement age, create incentives to keep employing existing teaching staff. Overstaffing results in low effective teacher pay, which is based on hours worked that have declined to an average of just 25.8 hours per week. This combination of low hours and low wages may undermine morale and makes it particularly difficult to attract young teachers, ultimately harming the quality of education.

Figure 17. Decomposition of General Government Education Wage Bill, 2012



Sources: Eurostat, and IMF FAD dataset.

Despite high education spending, education outcomes fall short of those achieved in many other EU countries. Education outcomes in general education (i.e., primary and secondary) are subpar. For example, PISA scores in mathematics, science, and reading are all below EU averages (Figure 18). Despite the large number of universities, none of these universities gets into the top 500 best universities in world rankings. The recent tertiary education reform has also led to a mismatch between course provision and market needs. The 2008/09 tertiary education reform tied state funding to students instead of institutions, with funding now going to state institutions and programs of study chosen by enrolling students who have completed the secondary education with the best results, without exceeding state funding established for each study program.²⁰ About half of the full-time students are funded from the state budget while the rest

¹⁹ In Lithuania, teachers' salaries can rise from the minimum statutory salary to the maximum salary after just 15 years, compared with the European median of 24 years.

²⁰ There are six broad study fields, social science, humanities, physical science, arts, biomedicine, and information technology. They are further subdivided into 20 study programs, within each of which students with the best academic performance compete for state funding. The distribution of funding by area of study is established by the government, giving priority to areas deemed necessary for national economic, social and cultural development, and taking the state's financial capability into account.

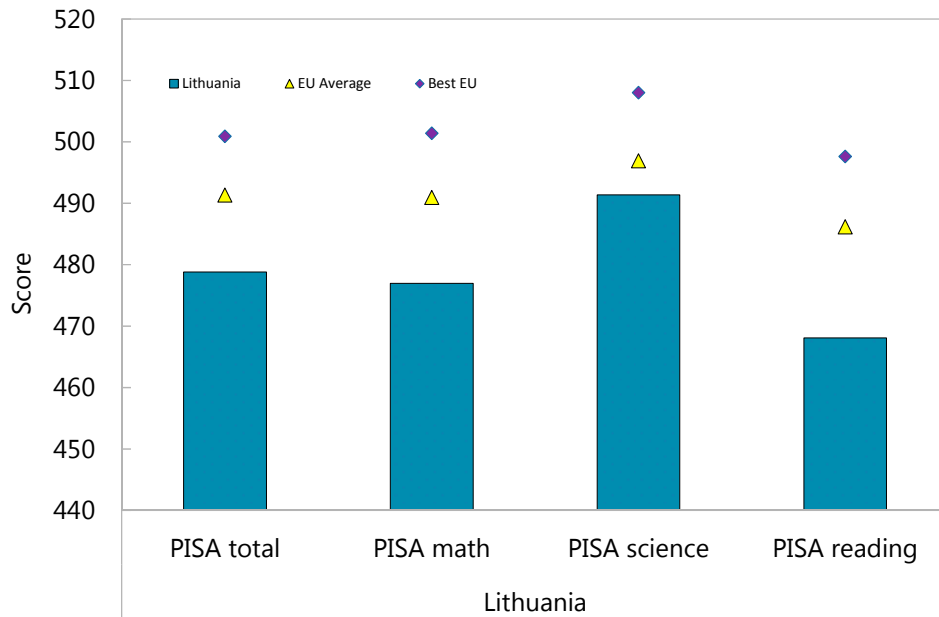
pay full tuition fees. The tuition cost in each study area is standardized, but varies across study areas with social science being the lowest and aircraft pilot training the highest. Higher education institutions are no longer budgetary institutions after 2009 and have autonomy in deciding course enrollment levels, creating financial incentives to admit as many self-paying students as possible by catering to the high demand for low-cost study fields from the declining pool of tertiary-age students. Compared with the best European performers in terms of youth employment, Lithuania has a significantly larger share of tertiary graduates from social sciences, business and law while producing fewer graduates in physical sciences (Figure 19A).²¹ This has contributed to the mismatch between fields of study and labor market needs, especially since information about labor market needs is unavailable or poorly disseminated. The mismatch of education and occupation choices in most study fields seems more severe in Lithuania than in the comparator group (Figure 19B).

Addressing the above inefficiencies will require reforms on a number of fronts. The expected continued decline in the school-age population by 6.5 percent over the next two decades reinforces the need for action. Many of the measures outlined below have been introduced in other European countries (European Commission and Economic Policy Committee, 2012).

- *Reduction in the number of teachers.* This can be achieved through a number of channels including attrition, redundancies, and early or mandatory retirement. However, the latter can involve up-front severance payments and thus higher short-term spending, and transfers costs to elsewhere in the budget (e.g., pension spending). The potential for successful reforms in this area can be enhanced through adopting a number of complementary reforms. For example, the number of teachers could be linked to the number of students so that it declines with school-age population, requiring careful projection and workforce planning. Strengthening these spending norms over time can signal a commitment to further reducing spending, e.g., adjusting financing formulas to reflect lower target student-teacher ratios and class sizes, as well as changes in teaching loads and reforms in support of multi-grade classrooms.
- *Consolidation of the school infrastructure.* This can help reduce both operating and capital costs, and provide the basis for a more cost-effective upgrading of other school infrastructure such as technology and internet access. However, it also typically requires an increase in spending on complementary services such as transport (especially for primary school consolidation). Lithuania has made some progress in this respect since 2000, with the number of general schools cut by 48 percent. However, this reduction largely reflects school mergers rather than closures so that infrastructure and teacher numbers have not been commensurately scaled back.

²¹ In 2014/15, 58 percent of self-paying students majored in social science while only 29 percent of students receiving state funding chose to study social science.

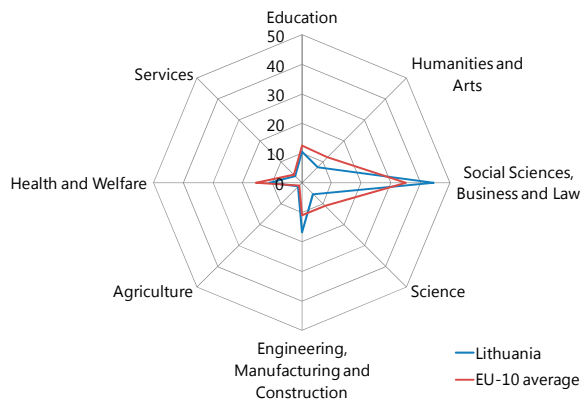
Figure 18. General Education Performance, 2009



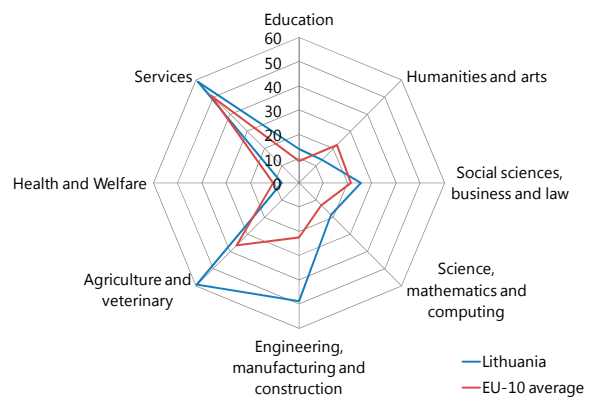
Source: OCED Programme for International Student Assessment.

Figure 19. Relative Demand and Supply by Tertiary Study Field, 2012 or Latest

A. Percentage of Graduates from Tertiary Programs by Study Field (Percent)



B. Education-Occupation Mismatch (ISCED 5–6) of Persons aged 25–34 by Study Field (Percent)



Source: UNESCO.

Note: EU-10 average includes countries in the bottom quartile of average youth unemployment during 2000–2012. (Austria, Cyprus, Denmark, Germany, Greece, Iceland, Ireland, Luxembourg, Netherlands, and Norway). Education-occupation mismatch is calculated as the percentage of persons aged 25–34 employed in a field that they did not graduate in.

- *Decentralization of decision-making and increased choice.* If properly implemented, increasing the choices available to schools and families has been found to improve learning outcomes (Hanushek and Woessmann, 2011). This involves giving schools with good performance more autonomy over the formulation and implementation of education decisions and providing students with a wider choice of schools to promote competition among schools.²² To be effective, these reforms require increased transparency, accountability, and competition, e.g., through the publication of school performance indicators and allowing school choice by students and teachers. Although Lithuania's system is decentralized, this has resulted in excessive teacher employment and subpar education outcomes. It is therefore important to link decentralization of spending to education performance in order to improve spending efficiency.
- *An in-depth review of the nexus between the large number of universities, financial incentives, quality standards, and guidance for future students.* Further reform of the higher education system is called for to address the mismatch between skills taught by the higher education system and those sought by the labor market. Recognizing the political difficulties in this area, some quick and easy measures, such as improving information collection and dissemination on market needs and university graduate's job placement, could help better guide students in choosing their fields of study.

C. Health

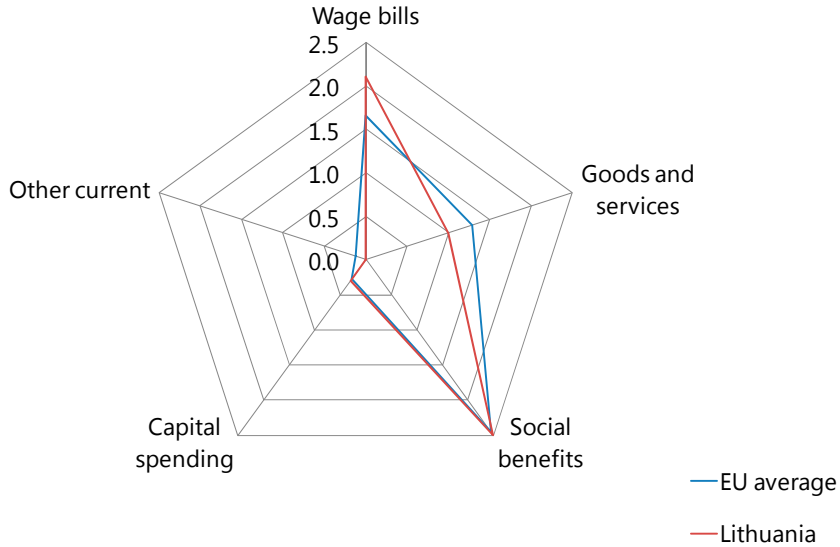
While the current level of public health spending is similar to that in comparator countries, an ageing population and rising incomes will likely lead to mounting spending pressures. In 2012, public health spending stood at 5.9 percent of GDP compared to an EU average of 5.8 percent. However, the projected increase in the old-age dependency ratio from 23 percent to 44 percent by 2050 is likely to exert upward pressure on spending considering the high cost of treating the elderly. Increases in incomes can be expected to generate additional cost pressures since health care demand is typically very responsive to income growth, and this could be further reinforced by continued advancements in health-care technology that introduces better but more costly treatment options. Accordingly, spending is projected to increase by over 4 percentage points of GDP by 2050, with about one fifth attributable to ageing alone (Coady, Jousten, and Kangur, 2010; EC, 2012). This underscores the importance of having a health system in place that is capable of containing future cost pressures while delivering quality outcomes.

The composition of health spending appears skewed towards wages. At 2.1 percent of GDP in 2012, the health wage bill is well above the EU average of 1.7 percent (Figure 20). This is partly driven by the large number of doctors, especially specialist doctors working in hospitals (Figure 21). At the same time, spending on health goods and services seems relatively low

²² Greater decentralization has been introduced in a number of countries with some success, including Australia, El Salvador, and the UK.

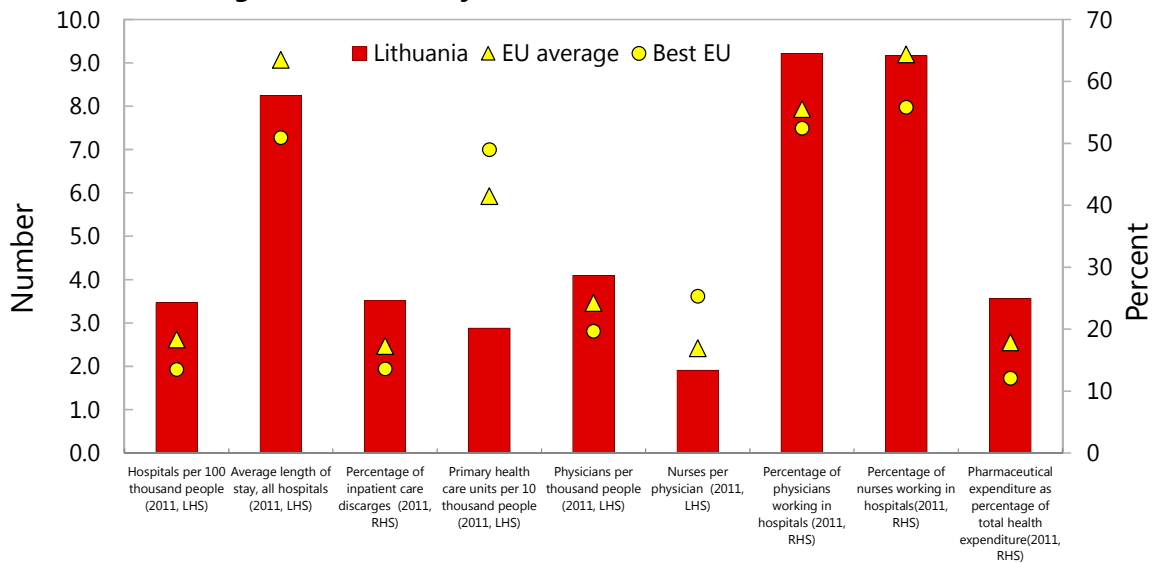
despite pharmaceutical spending accounting for a higher share of health spending than in the EU on average. The privatization of supply and delivery of pharmaceuticals in the 1990s led to an improved supply of drugs but also to growing expenditure on pharmaceuticals. In response to the economic crisis, the 2009 Plan for the Improvement of Pharmaceutical Accessibility and Price Reductions led to a reduction in public and out-of-pocket spending on pharmaceuticals (in particular through reference pricing and price-volume agreements for new pharmaceuticals), and improved access to medicines. However, there is still room for incentivizing greater use of generic drugs through differentiating copayment percentages.

Figure 20. Health Spending by Function in Lithuania and Europe, 2012



Source: Eurostat.

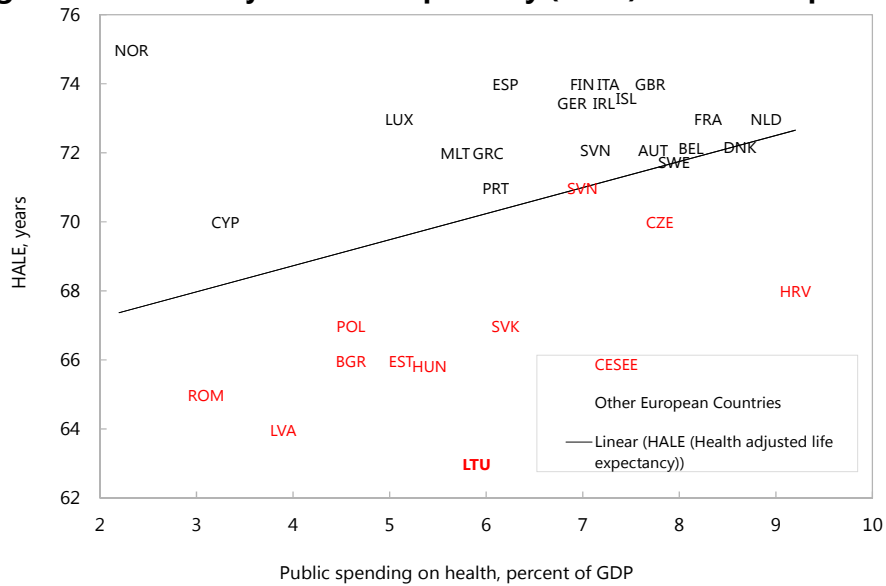
Figure 21. Health System Characteristics in Lithuania, 2011



Sources: WHO and OECD.

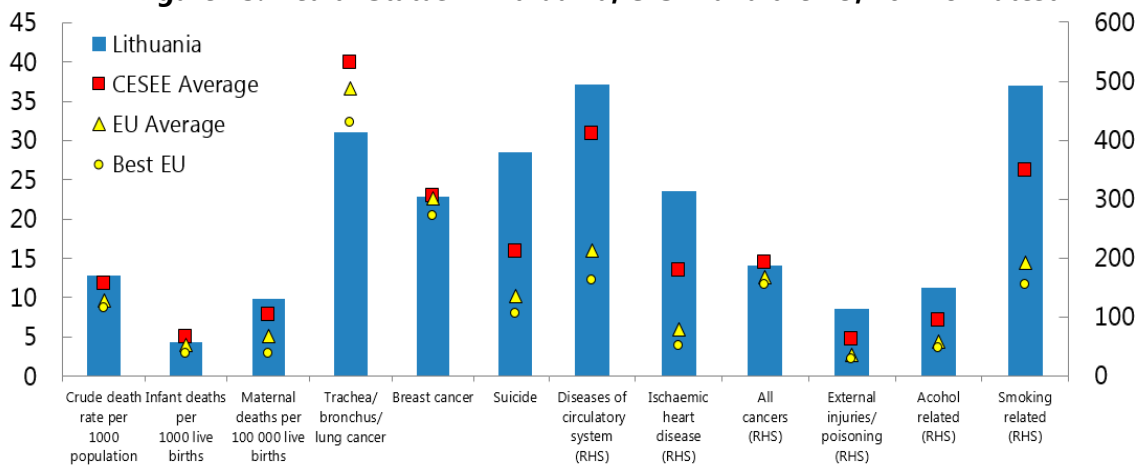
Despite health spending levels similar to the EU average, health outcomes in Lithuania are among the poorest in the EU (Figure 22). For example, Health-Adjusted Life Expectancy (HALE) in Lithuania stands at 63 years compared to the EU average of over 70 years.²³ The age-standardized mortality from all causes was the second highest among the EU in 2013. According to World Bank (2009), the incidence of tuberculosis is 70 percent above the regional average. Data from the WHO show that mortality from diseases of the circulatory system (especially ischemic heart disease), from external causes, and from suicide, is among the highest in the EU. Alcohol- and smoking-related mortalities are more than twice their EU averages (Figure 23).

Figure 22. Health-Adjusted Life Expectancy (HALE) and Public Spending



Sources: Eurostat, and WHO.

Figure 23. Health Status in Lithuania, CESEE and the EU, 2012 or Latest

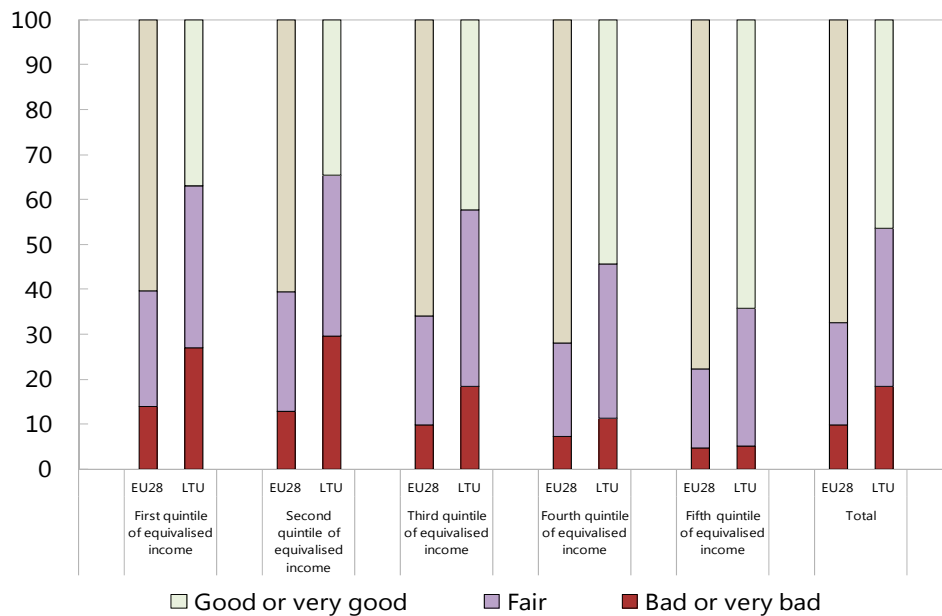


Source: WHO.

²³ HALE adjusts standard life-expectancy measures for severity of illnesses and quality of life factors. Other factors, such as the quality of the health care environment and financial risks, are not taken into account.

Reflecting this, a number of studies have pointed to significant inefficiencies in health spending in Lithuania. A recent IMF study found that the average loss in HALE due to health system inefficiencies in Lithuania was 2.16 years.²⁴ To put this in perspective, the study also found that increasing total health spending by 50 percent would increase HALE by only 1 year. The EU-SILC survey also suggests that patient satisfaction with the primary health care system is very low due to ineffective health care, long waiting times, and widespread informal charging (European Commission, 2014). In addition, there is evidence that self-perceived health status is lower than the EU average, especially among lower income groups (Figure 24).

Figure 24. Self-Perceived Health Status in Lithuania, CESEE and the EU, 2012 or Latest



Source: EU-SILC (2013).

Although addressing these health system inefficiencies can be difficult in practice, the evidence suggests a number of key reform areas based on accepted good practice. These include:²⁵

- *Expansion and strengthening of the role of the primary and preventive health care system:* Many of the causes of poor health outcomes can be addressed by strengthening the primary health care system and through an effective public health intervention and prevention

²⁴ On average, the loss of HALE in advanced EU countries was about 2 years, increasing to 2.5 years for a larger sample of advanced economies (including CEE/CIS countries). Joumard, Andre, and Nicq (2010) estimated losses equivalent to 2 years in OECD countries. Similarly, the 2010 World Health Report found that around 20–40 percent of total health spending does little to improve health outcomes.

²⁵ For a discussion of system inefficiencies in Lithuania, see World Bank (2009) and Coady, Jousten, and Kangur (2010).

agenda.²⁶ Technological progress means that many of the health services previously carried out in hospitals can now be more cost effectively delivered in primary health care facilities on an outpatient basis. Available evidence for Lithuania suggests that the primary health care system is indeed underdeveloped with a heavy reliance on an oversized hospital infrastructure. The number of hospitals and of physicians working in hospitals per capita are among the highest in the EU and the same is true for the inpatient admission rate into hospitals (Figure 21). On the other hand, there are only 1.9 nurses per physician in Lithuania when 2 is considered a minimum, 4 is considered to be a cost-effective benchmark, and the average in OECD countries is above 3. Unequal distribution of medical personnel throughout the country is another challenge.²⁷ Recent policies have focused on the strengthening and expansion of primary health care services, the decentralization of primary care, the development of same-day surgery, and the consolidation of hospitals in the largest cities.²⁸ However, there still appears to be scope for deepening these reforms to further streamline and optimize health resource allocation according to population needs and from hospital to primary care to further increase spending efficiency.

- *Development of efficient provider payment systems for hospitals and primary care:* It is generally accepted that shifting from fee-for-service to case-based payments can provide stronger incentives for more efficient provision and use of health care services. For hospitals, this requires the expanded use of a more detailed Diagnostic Related Group (DRG) payment system based on an appropriate costing system and introducing some competition among insurance and service providers. Although there is extensive use of case-based payments in Lithuania, according to the World Bank (2009), in many cases the administrative prices do not accurately reflect the true cost of services, which introduces opportunities for the hospitals to “play the system.”²⁹ For primary health care, it requires greater reliance on payments linked

²⁶ Many of the recorded premature deaths in Lithuania from tuberculosis, heart disease, alcohol-related disease, smoking-related disease, and external causes can be avoided through public health interventions, changes in lifestyle, prevention, and early detection and treatment in a primary care setting. Yet these services are often underprovided and underutilized.

²⁷ Murauskiene and others (2013) shows that, countrywide in 2010, the density of practicing physicians ranged from 906 to 54 per 100 000 population, but even within regions density varies by up to a factor of 7, and similarly for nurses and midwives.

²⁸ In the 1990s many health administration functions were decentralized to municipalities, including organizing the provision of primary and social care, and public health activities at the local level. Municipalities also own the majority of polyclinics and small-to-medium sized hospitals, yet there are concerns about their capacity to effectively govern these facilities. Although the role of the private sector has been increasing it is still limited, particularly in inpatient care—since 2008, the National Health Insurance Fund has increasingly been contracting private providers for specialist outpatient care. The private sector does play a substantial role in dental care, cosmetic surgery, psychological therapy, some outpatient specialties, and primary care.

²⁹ A combination of payment methods exist in Lithuania for publicly funded health services. Three quarters of primary care is financed through capitation, with the remainder financed through fee-for-service and performance-related payments. Outpatient care is financed mainly through case payment, and through fee-for-service for diagnostic tests. Inpatient care is financed mainly through case payment.

to treatments rather than a narrowly defined capitation system based simply on age as is currently the case in Lithuania. However, this in turn requires steps to ensure the primary health care system's capacity to provide cost-effective quality health care and measures to enhance the "gate-keeping" role of primary care by reducing incentives for unnecessary referrals.

- *Appropriate use of copayments:* A well designed system of copayments can help prevent overuse of the health care system and direct patients to more cost-effective treatments, such as outpatient health services or use of generic drugs. Lithuania's compulsory health insurance provides a standard benefits package for all beneficiaries. There exists both a positive and a negative list of health services provided in state financed health-care facilities. There is no copayment for primary care and hospital health services that are on the positive list, and emergency care is provided free of charge to all permanent residents. There is a positive list of drugs approved by the Ministry of Health with preferential copayment rates available for certain groups of the population (e.g., children, pensioners, and the disabled), as well as for patients suffering from certain diseases. However, there is no preferential copayment to promote the use of generic drugs. Some facilities charge patients for treatment, most often for diagnostic tests, although there is no legal base for some of these charges. There therefore seems to be some scope for developing a more coherent system of copayments focused on directing patients and providers to more cost-effective treatments and behaviors.
- *Development of an effective health information system:* Improving the incentives that providers face for providing cost-effective health care services and for containing costs requires continued investments in the software and hardware systems to collect, store and process information on provider costs, service quality, and health outcomes. This information is crucial for developing strong clinical guidelines and monitoring systems needed for case-based systems to be effective.³⁰ One important aspect of health information systems is a systematic application of health technology assessment (HTA), which is currently lacking in the country. Starting in 2013, two three-year projects financed by the EU Social Fund have been under implementation to develop a strategy for HTA in Lithuania.
- *Development of an effective system of global expenditure ceilings:* Health expenditure ceilings for health care providers can further incentivize providers to deliver cost-effective health care services. This is part of the future reform envisaged up to 2020, and should be supported by explicitly linking spending to a well-defined package of services backed by appropriate costing mechanisms. Budgets should also be clearly linked to local and regional health risks, e.g., based on age, income, gender, and location.

³⁰ Improved information is also crucial to generating an informed policy debate around the appropriate allocation of health resources and can often act as a very effective catalyst for change.

IV. SUMMARY AND CONCLUSIONS

In Lithuania, deeper expenditure policy reforms will be required to ensure that recent expenditure consolidation achievements are sustained and to contain new spending pressures that are likely to emerge. When short-term expenditure consolidation measures are of low quality, renewed spending pressures are likely to emerge eventually. They will likely be compounded by demands of society to achieve better social outcomes that are more in line with European standards, by the tendency of the demand for public services to increase more than proportionally with rising incomes, and by population ageing.

This paper identifies a range of reforms that can improve the efficiency of spending and help contain these spending pressures. The analysis is based on a comprehensive approach of benchmarking spending in Lithuania against other European countries focusing on spending levels, social outcomes, and the composition and quality of spending. The main findings include the following:

- *Wage bill:* Although the wage bill is in line with European standards, Lithuania's general government employment levels appear to be on the high side, largely reflecting high public employment in education. This suggests that average wages may be on the low side, which could make it challenging to attract and retain qualified staff, especially younger teachers whose wages appear to be relatively low. Instead of the blunt measures adopted in the past, future reforms should focus on structural measures that are more effective at achieving sustainable consolidation, such as linking public sector pay to productivity, improving hiring processes, and improving service efficiency through infrastructure consolidation and reductions in employment levels. Incentives for adopting structural reforms can be enhanced by linking future wage increases to the adoption of structural measures.
- *Social protection:* Mainly reflecting low old-age pensions, social protection spending is among the lowest in Europe. Low spending contributes to poor social outcomes, e.g., the highest inequality level in the EU and a relatively high at-risk-of-poverty rate. To address the growing spending pressures from both ageing and poor social outcomes, a range of reforms can be helpful, including increased use of means-testing of social assistance and pension reforms that protect the poor.
- *Education:* Education outcomes lag behind average EU levels in spite of high spending, suggesting significant spending inefficiencies. An oversized education structure is reflected in low and declining student-teacher ratios in secondary and tertiary education, small class sizes in primary education, and large number of institutions and distorted financial incentives in higher education. Improving efficiencies will require reducing the number of teachers, consolidating school infrastructure, linking decentralization of spending and decision-making to education performance, and providing the right financial incentives and better guidance to students in choosing study fields. Furthermore, education resources should be linked to

the school-age population and education performance to allow education quality to improve and spending to adjust automatically to new demographic norms.

- *Health*: Although public health spending is similar to the EU average, health outcomes are among the worst in the EU, suggesting substantial scope for improving the efficiency of public spending. Poor health outcomes, coupled with an ageing population and rising incomes, are likely to significantly increase future spending pressures. Cost pressures can be reduced by improving spending efficiency through expansion and strengthening of the role of the primary and preventive health care system, strengthening the use of copayments, and the adoption of more efficient provider payment systems.

**Appendix Table 1. Expenditure Consolidation Measures
by Economic Classification, 2009–2013**

Measures	Year taken	Estimated full-year savings in the reform year (percent of GDP)*
Across the board cut in government spending	2011	0.5
Across the board cut in government spending	2012	0.6
Current Expenditure		
15 percent reduction in government current expenditure	2009	0.8
Reduction of current expenditure of municipalities and state budget (further cut in May supplement budget)	2009	1.0
Wage		
12 percent reduction of wage bill	2009	1.0
25 percent cut on average for high paid civil servants including SoDRA payments and via adjustments in base wage coefficients (excluding teachers, police, medical workers etc.), with inproportional cuts in base wage coefficient restored on Oct 1, 2013	2009	0.2
Parametric changes in civil servants wage system through 8 percent cut in base wage and adjustment in bonus payment categories	2009	0.2
Reduction of wage bill (10% civil servants, 2% statutory civil servants, 5% cultural and social workers and teachers)	2010	0.6
Wage Freeze	2011-13	0.3-0.5
Expenditure on G&S		
Reduction in immediate government consumption	2010	1.1
Subsidies		
Cut in transportation subsidies to municipal budget	2009	0.1
Reduction in subsidies for agriculture and spending on land reform	2009	0.3
Social benefits		
Lowered social spending and transfers on childcare, including school lunch payments	2009	0.1
Reform of sickness payments to lower state share of payment in first 3 days, and savings on medical services, investment and purchases. (SoDRA 170 (sickness payments) + HIF 298.6 (medical services 200, investment and purchases 98.6)	2009	0.4
Progressive reduction of social benefits, including old age pensions, state pensions; disproportional part restored in 2012.	2010	1.0
Cut in Child benefits: Eligibility reduced from 18 to 7 years, more comprehensive move towards means-testing. Duplication with maternity benefits removed.	2010	0.4
Cut in maternity benefits: Compensated wage shares reduced from 100 to 90 for the first year and 85 to 75 for the second year, with reduction of ceiling from 5 to 4 times the insurable	2010	0.1
Further Maternity/parental benefits' cuts (Compensated wage shares reduced from 90 to 70 for the first year and 75 to 40 for the second year. Reform takes effect from July 1, 2011 and affects both old and new beneficiaries.)	2011	0.4
Reduction in social benefits, mainly health care and maternity benefits	2012	0.5
Increase in retirement age for both men and women to 65	2012	0.1
Capital expenditure		
Cancelling or scaling back of state investment project (part of it to be replaced by EU funds)	2009	1.5
Total savings from all expenditure measures in the reform year		11.2-11.4

Sources: Lithuanian authorities and staff calculations.

* The estimated full-year savings in percent of GDP is calculated based on the GDP in the year when reform was taken.

REFERENCES

Bruns, B., Filmer, D, and Patrinos, H., 2011, Making School Work: New Evidence on Accountability Reforms (Washington: WB/IBRD).

Clements, Ben, David Coady, and Sanjeev Gupta, 2012, *The Economics of Public Health Care Reform in Advanced and Emerging Economies* (Washington: International Monetary Fund).

Clements, B., Eich, F., and Gupta, S., 2014, Equitable and Sustainable Pensions (Washington: International Monetary Fund)

Coady, D., 2009, "Lithuania: Options for Short-term Expenditure Adjustment," Technical Assistance Report, Fiscal Affairs Department (Washington: International Monetary Fund).

Coady, D., A. Jousten, and A. Kangur, 2010, "Lithuania: Securing the Financial Sustainability of Social Security," Technical Assistance Report, Fiscal Affairs Department (Washington: International Monetary Fund)

European Commission and Economic Policy Committee, 2012, The 2012 Ageing Report: Economic and budgetary projections for the 27 EU Member States (2010–2060).

European Commission, 2014, The EU Anti-Corruption Report: Lithuania Country Report.

Galgoczi, Bela, and Vera Glassner, 2008, "Comparative Study of Teachers' Pay in Europe," ETUI-REHS Research Department.

Gaynor, Martin, Rodrigo Moreno-Serra, and Carol Propper, 2013, "Death by Market Power: Reform, Competition, and Patient Outcomes in the National Health Service," *American Economic Journal: Economic Policy*, Vol. 5, No. 4, pp. 134–66.

Geng, Nan, 2013, "Towards a Sustainable and Inclusive Consolidation in Lithuania: Past Experience and What is Needed Going Forward," IMF Working Paper WP/13/157 (Washington: International Monetary Fund).

Geng, Nan, and Helene Poirson, 2014, "Republic of Lithuania: Selected Issues Paper," April 2014, (Washington: International Monetary Fund).

Hanushek, E., and Woessmann, L., 2011, "The Economics of International Differences in Educational Achievement", *Handbook of the Economics of Education*, Vol. 3 pp. 89–200 (Amsterdam: North Holland).

Hillestad, Richard, and others, 2005, "Can Electronic Medical Record Systems Transform Healthcare? An Assessment of Potential Health Benefits, Savings, and Costs," *Health Affairs*, Vol. 24, No. 5, pp. 1103–1117.

International Monetary Fund, 2012, "Fiscal Policy and Employment in Advanced and Emerging Economies," IMF Policy Paper (Washington: International Monetary Fund).

International Monetary Fund, 2014a, Fiscal Monitor – April 2014, Public Expenditure Reform. Making Difficult Choices (Washington: International Monetary Fund).

International Monetary Fund, 2014b, "Fiscal Policy and Income Inequality", IMF Policy Paper (Washington: International Monetary Fund)

Jamison Dean T., and others, 2013, Global Health 2035: a World Converging within a Generation, *The Lancet*.

Joumard, Isabelle, Christophe André, and Chantal Nicq, 2010, Health Care Systems. Efficiency and Institutions, OECD Economics Department Working Papers No. 769.

Murauskiene, L. and others, 2013, "Lithuania: Health System Review," *Health Systems in Transition*, Vol. 15, No. 2, 2013.

Stabile, Mark, and Sarah Thomson, 2014, "The Changing Role of Government in Financing Health Care: An International Perspective," *Journal of Economic Literature*, Vol. 52(2), pp. 480–518.

World Bank, 2007, Higher Education Financing in the New EU Member States. (Washington: World Bank).

World Bank, 2009, "Lithuania: Social Sectors Public Expenditure Review," (Washington: World Bank).

World Health Organization, 2010, World Health Report—Health System Financing: the Path to Universal Coverage, (Geneva).