



REPUBLIC OF LITHUANIA

SELECTED ISSUES

June 2018

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Approved By
European Department

Prepared by Iacovos Ioannou, Vina Nguyen and
Jean Guillaume Poulain (all EUR)

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FISCAL CHALLENGES IN LITHUANIA¹

Lithuania's fiscal position has strengthened in recent years. However, medium term challenges are significant given the severe demographic pressures from population aging and net emigration. Against this background, this paper analyzes three important fiscal issues for Lithuania: The first assesses the fiscal position by constructing the balance sheet of the public sector; the second discusses the fiscal and social sustainability of the pension system; and the third discusses Lithuania's constitutional fiscal rule. The main findings are:

- *Lithuania's net financial worth of the general government is relatively strong compared to other countries in the region although contingent liabilities from the pension system are sizable.*
- *The recent reform of the pension system will help make the system more fiscally sustainable. Upcoming reforms should be carefully designed, considering their trade-offs, to ensure social sustainability; reduce old-age poverty; and limit adverse impact on labor supply and informality.*
- *The current fiscal rule has strengthened the ability to implement counter-cyclical policies. However, there are many escape clauses which make the rule unnecessarily complex. The authorities may consider a simpler rule, in the context of an EU-wide reform, to enhance its signaling effect.*

A. Lithuania's Public-Sector Balance Sheet

1. The public-sector balance sheet (PSBS) analysis of fiscal policy goes beyond the traditional debt and deficit based analysis. Focusing on central or general government debt and deficits ignores the asset side as well as other entities in the public sector that can carry fiscal risks such as state-owned enterprises (SOEs) or public banks. A government can also hold substantial non-financial assets or reserves of natural resources that can be monetized in the future. The PSBS provides a framework to analyze long-term policies, fiscal risks, and the resilience of fiscal policy in a comprehensive way. The importance of the balance sheet analysis was highlighted during the Asian Crisis, when inflated private sector balance sheets shifted to the public sector, or more recently during the global financial crisis and its aftermath when financial sector balance sheets blew up and largely shifted to the public sector.

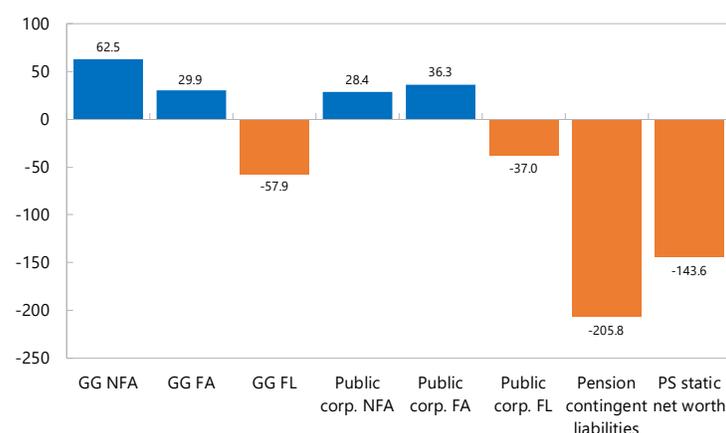
2. Lithuania's public sector includes the general government and public corporations. The general government consists of the central government, local governments, and the social security fund. Public corporations include the non-financial (the Bank of Lithuania, and state-owned enterprises) and some small financial corporations such as state social insurance funds. The balance sheet covers financial and non-financial assets and liabilities by instruments as defined in the Government Finance Statistics Manual 2014.

¹ Prepared by Vina Nguyen and Jean Guillaume Poulain (all EUR).

3. Lithuania's net financial position is relatively strong but contingent liabilities from the pension system are sizable.

The net worth (the difference between total assets and liabilities) of the general government in 2015 was slightly positive, at 35 percent of GDP (see Figure 1 and Table 1). The net financial worth (the difference between financial assets and liabilities) on the other hand, while negative at around 28 percent of GDP, was stronger than many other EU countries (see Figure 2). Moving beyond the General Government, SOEs have an overall positive net position, due to large non-financial assets (particularly those related to railways, electricity grid etc.). The central bank's balance sheet includes government deposits in treasury account and holdings of government securities, which need consolidating out when constructing the overall PSBS. Contingent pension liabilities coming from the pay-as-you-go system, or Pillar I, are the biggest component in Lithuania's PSBS (see Figure 3).² They capture accrued liabilities up until December 31st of that year ignoring future contributions. At the end of 2015, pension liabilities made up around 206 percent of GDP, resulting in a negative net worth for the public sector of 144 percent of GDP.

Figure 1. Lithuania: Static Public-Sector Net Worth, 2015
(In percent of 2015 GDP)



Sources: NFA: non-financial assets, FA: financial assets, FL: financial liabilities. The authorities, the Governance Coordination Center Reports, the Bank of Lithuania, and IMF staff calculations.

4. While the recovery in the fiscal position since the crisis has been remarkable in Lithuania, balance sheet vulnerabilities remain.

Lithuania faced the global financial crisis with a robust positive net financial worth position for the general government of around 10 percent of GDP (see Figure 2). This allowed a countercyclical response that helped ameliorate the impact of the crisis on the private sector, at the cost of deteriorating the net worth position of the general government by almost 40 percent of GDP by 2012. While the recovery, including a sizeable structural fiscal adjustment that has translated into fiscal surpluses since 2016, has helped improve the net position of the general government, the deterioration due to the 2008–09 financial crisis has proven to be rather persistent. Going forward, improving the net worth position of the public sector in Lithuania will increase resilience to future shocks.

² PSBS pension liabilities exclude defined-contribution schemes, i.e. Pillar II, which are outside the public sector. However, defined-benefit schemes for government employees are classified in the liabilities of the general government.

Table 1. Lithuania: Static Public-Sector Balance Sheet as of 2015-End
(In percent of GDP)

	Central Government	General Government	Pension contingent liabilities 2/	Public Corporations		Total Public Sector 3/
				State-owned enterprises	Central Bank	
ASSETS	N/A	92.5		36.4	28.3	157.2
Non-financial	N/A	62.5		28.3	0.1	90.9
Financial	34.3	29.9		8.1	28.2	66.3
Debt Securities	0.0	0.0			10.2	10.3
Loans	9.5	0.3			6.9	7.2
Pensions	0.0	0.0			0.0	0.0
Equity and Investment Fund Shares	12.9	15.7		0.2	0.0	15.9
Other accounts receivable	5.4	6.3		1.9	10.1	18.3
Others	6.4	7.7			1.0	8.7
LIABILITIES	50.1	57.9	205.8	6.9	30.1	300.7
Debt Securities	40.7	40.7			0.0	40.7
Loans	5.0	7.8			0.0	7.8
Pensions 1/	0.0	4.1			0.0	4.1
Currency and Deposits	1.4	1.4			27.9	29.3
Equity and Investment Fund Shares	0.0	0.0			1.8	1.8
Others	3.0	3.9			0.5	4.4
Net worth	N/A	34.6	-205.8	29.5	-1.8	-143.6
Net financial worth	-15.8	-27.9	-205.8	1.2	-1.9	-234.5

1/ Pension liabilities under General Government covers only pension for public servants and NPV of budgetary cost for Pillar II.
2/ Accrued social security scheme entitlements up until December 31st, 2015
3/ Cross-holdings between government entities are not consolidated for each of the instruments. However, the total net worth and net financial worth are not affected.

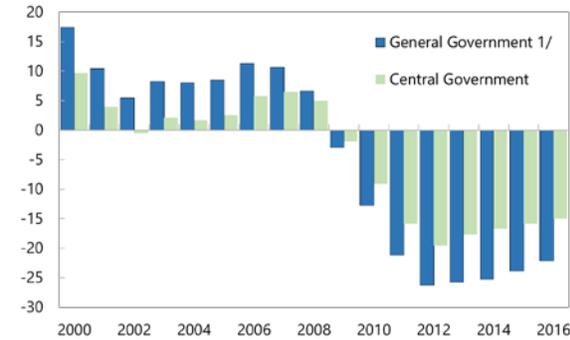
Source: The authorities, the Governance Coordination Center Reports, the Bank of Lithuania, and staff calculations.

5. The recent reform of the pension system extending the retirement age and changing the indexation formula, effective in 2018, has made the system more fiscally sustainable. Total pension entitlements in Lithuania amounted to 256 percent of GDP in early 2015 and declined to 205 percent by years-end after the approval of the reform (see Figure 3). Thus, it reduced accrued liabilities of the system by 51 percent of GDP.³ Since contingent liabilities of Pillar I pensions capture all acquired liabilities while ignoring future contributions, the net worth of any pay-as-you-go pension scheme will always be negative. The level in Lithuania, around 200 percent of GDP, is well below several other EU countries. To get a full assessment of the financial sustainability of the system we would need to look at the net present value of all current and future liabilities as well as all current and future contributions. With estimated deficits peaking at 2 percent of GDP around 2030s before moderating by 2040, the pay-as-you-go system is financially sound.

³ Note that estimates of pension liabilities are sensitive to policy changes and the assumed discount rates. For example, a one percentage point change in the discount rate can increase or decrease contingent liabilities by around 20 percent.

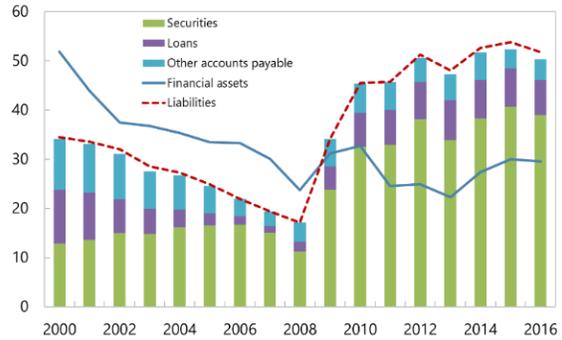
Figure 2. Lithuania: Net Financial Worth of the General Government

Lithuania: Net Financial Worth
(In percent of GDP)



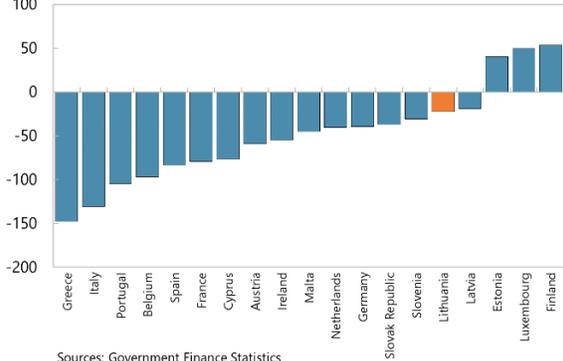
1/ General Government excluding Social Security Funds.
Sources: Government Finance Statistics Database

General Government Balance Sheet Evolution
(In percents of GDP)



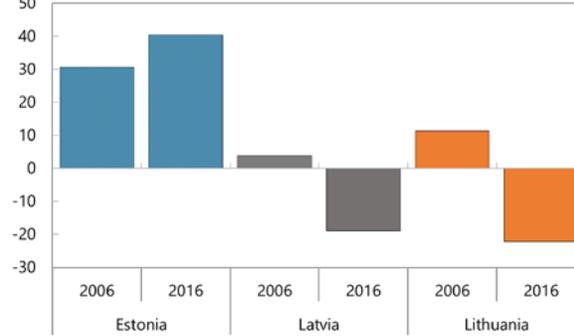
Sources: Government Finance Statistics Database

Euro Area General Government Net Financial Worth 1/
(Percent of GDP, 2016)



Sources: Government Finance Statistics
1/ NFW not including accrued pension liabilities for government employees

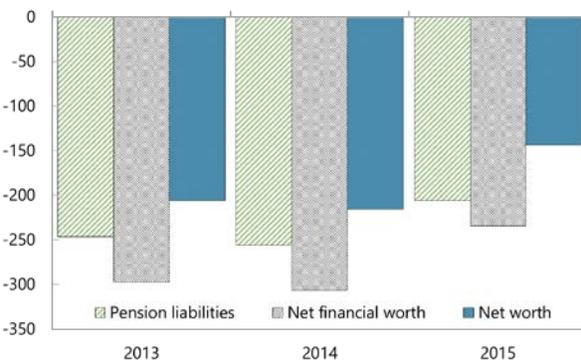
General Government Net Financial Worth 1/
(Percent of GDP, 2006 and 2016)



Sources: Government Finance Statistics
1/ NFW not including accrued pension liabilities of government employees.

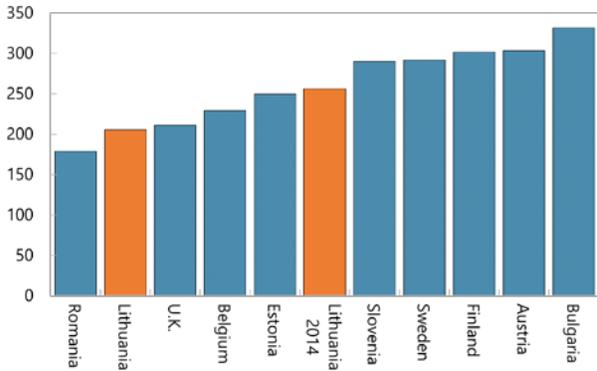
Figure 3. Lithuania: Pension Liabilities Account for Large Portion of Public-Sector Balance Sheet

Public Sector Balance Sheet
(In percent of GDP)



Sources: Staff Calculations

PAYG Accrued-to-date Liabilities
(In percent of GDP, 2015)



Sources: National Data

B. Pension System in Lithuania

6. Lithuania's pension system kept evolving over the last 20 years. The system was established in 1995 with just one pillar, the classic pay-as-you-go system. In 2000, the government adopted a new pension system, aiming to increase income for pensioners and reduce redistribution effects.⁴ Therefore, in 2004, a quasi-mandatory pillar II and a voluntary pillar III were introduced. Both pillars later became voluntary. Contributions to Pillar II have fluctuated partly due to the 2008–09 financial crisis.

7. Currently, the system consists of three pillars that serve complimentary purposes.

While the design of the first pillar is rather standard, the second and third pillars in Lithuania differ slightly from other European countries.

Table 2. Lithuania: Contribution to Pillar II

	2004	2005	2006	2007	2008	2009		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
						H1	H2													
Part of Social Security Contributions transferred to individual account	2.5	3.5	4.5	5.5	5.5	3	2	2	2	1.5	2.5	2	2	2	2	2	2	2	3.5	
Additional payment to the pension fund 1/	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	2	
Additional payment to the individual account from the budget 2/	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2	2	2	2	2	

1/ Not part of social security contributions, the amount is based on individual salary
2/ Based on the average annual economy-wide gross salary of t-2

- Pillar I is a classic pay-as-you-go system, administered by the State social insurance fund board (Sodra). It currently comprises of: a base part with a fixed benefit paid to any individual with at least 30 years of contribution (the required length expected to increase to 35 years by 2027); a supplementary part linked to income and length of service; and the additional benefit for contributions beyond 30 years. Because it exhibits a relatively weak link between contributions and benefits, pillar I is more redistributive, although it does not fully address old age poverty.
- Pillar II is a defined-contribution pension system based on personal accounts. Other countries, including CEE countries, often establish Pillar II as a mandatory defined-contribution scheme to complement the defined-benefit scheme of Pillar I. In the 2013 reform, while all new participants have a “2+2+2” contribution formula,⁵ pre-existing participants could choose to have only 2 percentage points of their social security contributions diverted to Pillar II. This latter group represents 61 percent of all participants as of 2017. By 2020, an additional 1.5 percent of an individual's social security contributions would be transferred from Pillar I to Pillar II. At the time of retirement, individuals can choose to convert pension entitlements into annuities or a lump sum. Those with accumulated returns lower than a certain threshold would only receive lump sum amounts. Having Pillar II allows for diversification of the pension system. The only

⁴ Bitinas, Audrius, 2011. “Modern Pension System Reforms in Lithuania: Impact of Crisis and Ageing.”

⁵ 2 percent of the employee's salary previously contributed to Pillar I is now transferred to Pillar II. The employer contributes 2 percent to match the employee's and the budget contributes 2 percent of the nationwide average wages.

redistributive element of Pillar II is the matching contribution from the government that comes from the general revenues. Otherwise, entitlements depend solely on voluntary contributions that are proportional to individual wages.

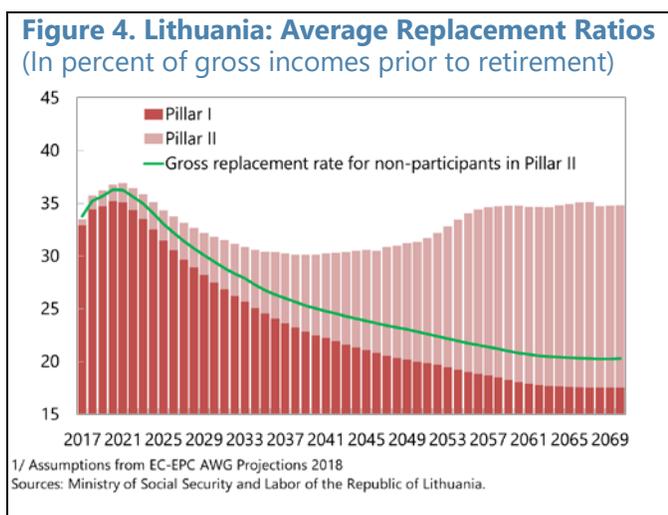
- Pillar III is a voluntary supplementary pension accumulation system. Contributions to this are paid by an individual or an employer with accompanying tax benefits. Individuals can cash out from Pillar III prior to retirement providing that the tax benefits be returned.

8. Recent changes to Pillar I have largely achieved fiscal sustainability. Starting from 2018, pension benefits are indexed to the overall wage bill and the retirement age will gradually increase to 65 by 2026 for both men and women. This will result in a reduction of 51 percent of GDP in the net present value of pension entitlements (see Section A). However, with low and decreasing replacement rates, these reforms have not addressed the issue of social sustainability carrying fiscal risks going forward.

9. Unfavorable demographic projections for Lithuania are worse than the rest of Europe. Compared to the other Baltic economies, Lithuania has lower fertility rates. After the financial crisis, the share of families with children dropped further and is now below the share of households without children⁶. Meanwhile, life expectancies have increased steadily over the past five years and the gap of longevity between men and women is expected to narrow to six years by 2070 from 11 years in 2015.⁷ The combined effects of these factors make Lithuania's old age dependency ratio among the highest in Europe.

10. Lithuania has one of the highest old-age poverty risk in the EU.⁸ Older workers with outdated skills face increasing challenges in the labor market. Once laid off, they remain unemployed for a longer period. They also tend to be concentrated in declining sectors.⁹ On the other hand, more older workers participate in the labor force in Lithuania compared to other EU countries, partly due to the modest level of pension benefits.

11. Therefore, the current pay-as-you-go pension system does not ensure socially sustainable level of benefits. The current replacement rate at 35 percent is already lower than the ILO recommended



⁶ See further discussions in Selected Issues Paper "Social Inequality in Lithuania after the Global Financial Crisis: Evidence from Household Survey Data," 2018.

⁷ [The 2018 Ageing Report: Underlying Assumptions and Projection Methodologies, the European Commission.](#)

⁸ [OECD Data on Inequality, 2015.](#)

⁹ [Ageing and Labor Market Implications for Lithuania, ILO Research, 2015.](#)

minimum of 40 percent. Based on the UN median population projection and the baseline assumptions, the replacement ratios for workers opting out of Pillar II would decline to slightly above 20 percent by 2050. To deliver a socially acceptable replacement rate, social contributions, which are already high at 30.7 percent of gross wages, would have to increase to more than 40 percent by 2050. The existence of a large informal sector poses an additional challenge to any increase in contribution rates.

12. Pillar I expenditures would need to increase significantly to deliver socially sustainable benefits. With the current population trends, contribution rates, and retirement ages, pillar I results in a small deficit by 2020. This deficit widens to 2 percent of GDP before closing towards the end of the projection horizon in 2070. The accrued pension liabilities by the end of 2015 amounted to around 206 percent of GDP, lower than other EU countries. However, to raise the replacement rate to 40 percent (as recommended by the ILO), pension expenditure would have to increase by more than 3 percent of GDP reaching 9–10 percent of GDP over the medium term (see Figure 5). Such an increase throughout 2070 would raise accrued pension liabilities by up to 66 percent of GDP.

13. There are additional issues arising during the transition into a mature system. Pension reforms have been frequent, which can undermine the credibility of the system. Due to the changes in the formula of Pillar II contributions, some previous participants have not moved to the new formula of “2+2+2.” Their returns on Pillar II at retirement will likely be small, leaving them vulnerable to the declining replacement ratios of Pillar I. The constantly changing formula for pillar II has undoubtedly dampened the incentive to participate.

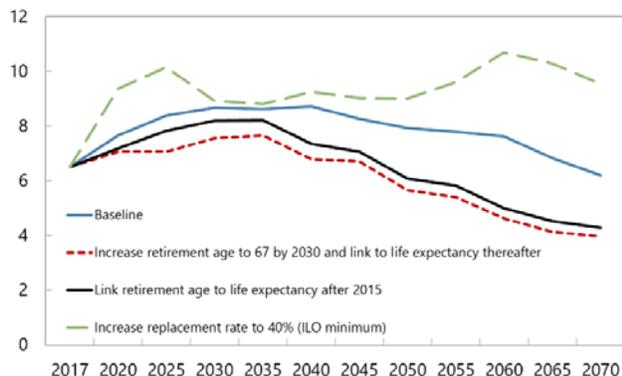
14. The trade-offs to each policy proposal should be transparently examined and communicated. There are inevitable trade-offs between reigning fiscal costs and reducing old-age poverty, and between increasing redistribution and ensuring participation and compliance. For example, strengthening the links between contributions and benefits in Pillar I will reduce its redistributive component and potentially affect old-age poverty. On the other hand, a more generous basic pension could reduce labor supply and induce underreporting of income. Increasing pension benefits could be achieved by raising the retirement age; financing Sodra’s deficit by higher tax revenues; increasing social security contributions, and increasing the scale and returns of Pillar II. While increasing the retirement age can deliver significant resources, replacement ratios high enough to reduce old-age poverty would likely result in further costs. Since social security contributions are already high, higher budgetary transfers appear inevitable to increase replacement ratios going forward.

- **Reform Pillar I to increase social sustainability while preserving fiscal soundness.** Increasing the retirement age further by linking it to life expectancies at birth can provide significant resources. Lithuania’s statutory retirement age was increased to 65 by 2026. Everything else held constant and for illustrative purposes, increasing the retirement age for both men and women gradually to 75 by 2070 could increase replacement ratio to 40 percent in a budget-neutral way.

Figure 5. Lithuania: Impact of Pension Reforms on the PAYG System

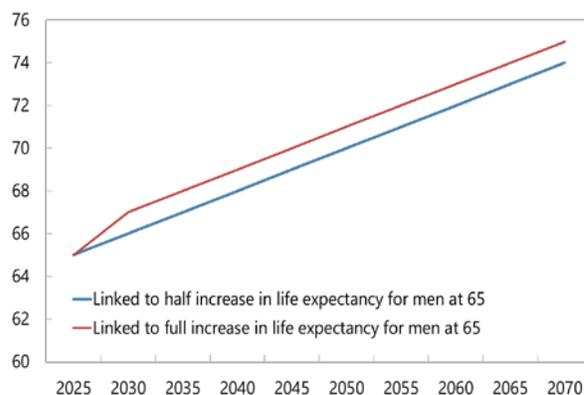
PAYG Pension Expenditure

(In percents of GDP)



Sources: IMF Staff Calculations

Increases in Retirement Age



Sources: IMF Staff Calculations

- Further incentivise delayed retirement while supporting those at risk of poverty and long-term unemployment.** Given the shrinking labor force in Lithuania, it is doubly beneficial to increase labor force participation among older workers who are eligible for pensions. Currently, early retirement results in a significant penalty and, as a consequence, lower benefits. On the other hand, deferring retirement for five years could raise benefits by almost 8 percent per year. Yet, the effective retirement age is lower than the statutory age largely driven by older workers facing no further unemployment benefits after being unemployed for long. Consideration could be given to partial or full pension eligibility for retirees who take on new part-time or full-time work.
- Make Pillar II mandatory and more efficient.** The budget incentivizes participation in Pillar II by pledging matching contributions, currently at 2 percent of the national average wage. These permanent matching contributions could alternatively be used in raising the replacement rate for pillar I with larger redistributive impact. However, any changes in this area should weigh too the benefits of increasing incentives to achieve high participation in Pillar II (crucial for the success of the system). Fees are also an important factor in Pillar II. Despite the initial cap of one percent for management fees, the last few years have seen the doubling of management fees for most pension funds. The returns on pillar II have been volatile, highly correlated with domestic market, reducing the benefit of risk diversification for participants (see Figure 6). These issues are largely transitional while Pillar

Figure 6. Lithuania: Returns on Private Pension Funds (In percent)



Sources: Bank of Lithuania

If funds become big enough to exploit economies of scale. However, in the meantime, they reduce incentives to participate.

- **Raise gross pension benefits subjecting to income tax.** Pensions are currently exempt from personal income tax in Lithuania. By taxing pensions under the standard personal income tax system and use the proceeds to increase lower pensions, Pillar I would have a stronger and better targeted redistributed impact without budgetary cost. However, this should be done minimizing labor supply disincentives. The “implicit tax” or the change in net pension wealth from continuing to work has been found to significantly reduce the effective retirement age.¹⁰
- **Reduce the uncertainty around pension entitlements and seek broad consensus in any future reform.** Regulatory or parametric changes to the pension system are costly to its stability and credibility as they can be viewed as partial default over previous commitments. Any future pension reform, should be preceded by broad discussion involving all social agents and political parties and should seek broad consensus to ensure a smooth implementation.

C. Fiscal Rule in Lithuania

Considerations for Assessing Fiscal Rules¹¹

15. The main objective of fiscal rules is to prevent the deficit bias that results from unconstrained policy discretion. The incentives of governments to inflate away its nominal liabilities and renege on its promises lead to a time inconsistency problem for optimal policy. This could be particularly costly given the costs of restoring sustainability after a period where the intertemporal budget constraint was ignored *ex ante*. Fiscal rules promote fiscal discipline and limit the deficit bias when they effectively act as *commitment devices* tying the hands of the government and limiting the use of fiscal discretion; they provide a *signaling effect* in a context of imperfect information by increasing transparency and predictability of fiscal policy; and serve a *political function* by imposing numerical limits.

16. The design of fiscal rules should be guided by three criteria, difficult to fulfill simultaneously: simplicity, flexibility, and enforceability. The period after the global financial crisis has seen a surge in the adoption of a new generation of fiscal rules originating in Europe. These rules attempt to increase resilience in the face of shocks by increasing flexibility. Thus, while earlier rules tried to combine simplicity and enforceability, newer rules have significantly expanded existing flexibility provisions. Rules have become increasingly complicated at the cost of simplicity. To strengthen enforcement, monitoring procedures have also been enhanced through, for example, independent fiscal councils. Early evidence suggests that formal compliance with fiscal rules remains disappointing: while countries tend to develop budgetary plans in accordance with the rules, they deviate during the fiscal year as forecasts prove overoptimistic or budget plans are poorly executed.

¹⁰ Bassanini and Duval, 2006. “Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions,” OECD Economics Department Working Paper No.486.

¹¹ This section summarizes key findings from IMF Staff Discussion Note SDN/18/04 “Second-Generation Fiscal Rules: Balancing Simplicity, Flexibility, and Enforceability”, April 2018.

17. Empirical evidence suggests that rule design matters for its effectiveness. There are five key features that tend to characterize effective fiscal rules:

- Broad institutional and economic coverage.
- Countercyclical behavior i.e. builds buffers during upturns and allows for adequate fiscal support during downturns.
- Sensible calibration of thresholds and/or targets.
- Well-designed escape clauses.
- Supportive institutions or corrective mechanisms to foster compliance

18. Three elements have been identified for effective fiscal frameworks: anchoring, parsimony and consistency. In other words, the system of rules should be anchored by a debt objective to preserve fiscal sustainability; fiscal frameworks should rely on a limited number of rules and remain as simple as possible; and individual rules should not conflict with each other.

19. Recent work suggests that for the euro area, consideration could be given to updating the framework with a single anchor together with an expenditure growth operational rule.¹²

- **Single anchor.** Since the main objective is to ensure fiscal sustainability, public debt-to-GDP ratio should be the natural anchor.
- **Operational rule.** A good rule should support counter-cyclical policies (economic stabilization) and provide a strong link to the fiscal anchor (long-term debt sustainability). Based on model simulations, an expenditure growth rule as the single operational target, possibly including an explicit debt correction mechanism, appears to be the best option.

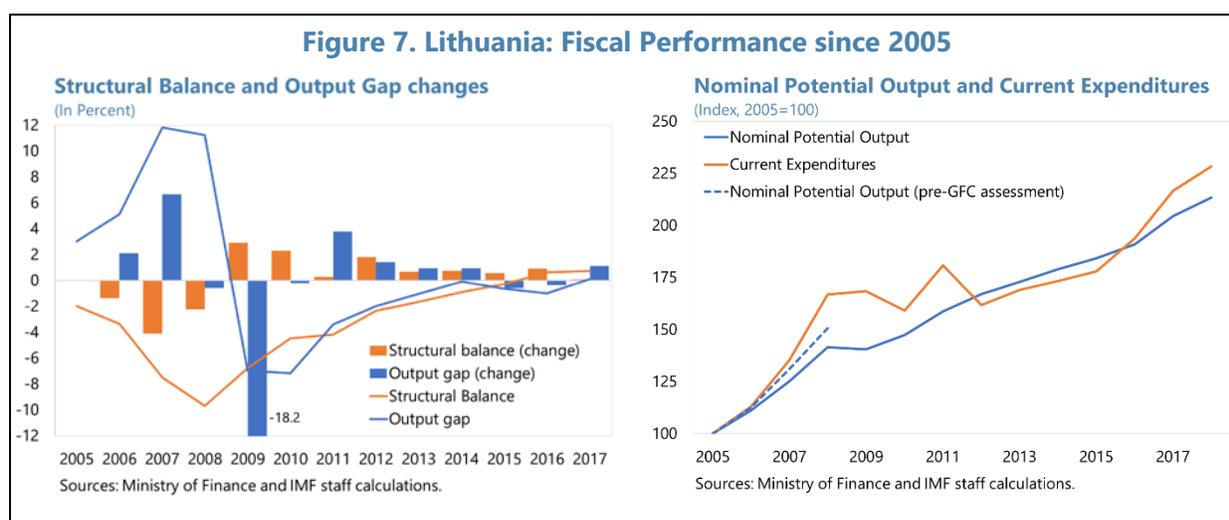
Box 1. Three Main Types of Rules

- **Nominal budget balance rules:** constrain the overall deficit and is, thus, directly link to fiscal sustainability. Easy to communicate and largely under the control of policymakers. They lack economic stabilization features potentially leading to pro-cyclical fiscal policies.
- **Structural balance rules:** Similar to nominal budget balance rules but take into account economic shocks explicitly allowing automatic stabilizers to operate. Can be complemented with a debt break to correct for past deviations from the target and ensure fiscal sustainability. Estimating the output gap is difficult and subject to measurement errors. Thus, the rule is difficult to operate, communicate and monitor.
- **Expenditure rules:** They typically impose limits on (total, primary or current) spending in absolute terms, real growth rates or in percent of GDP. They allow for automatic stabilizers to work fully on the revenue side and could allow for further support of macroeconomic stabilization on the spending side depending on the specification of the rule. They are transparent and easy to communicate. Since they are not directly linked to fiscal sustainability, a debt break mechanism may be added.

¹² See IMF Staff Discussion Note SDN/15/09 “Reforming fiscal governance in the European Union”, May 2015.

Assessment of Lithuania's Fiscal Rule and Possible Avenues for Reform

20. Lithuania's Fiscal Rule has proven effective in consolidating fiscal discipline. Lithuania's fiscal policy track record has been strong, particularly after the crisis. In the run up to the global financial crisis, with low deficits and debt levels, fiscal policy was too accommodative, as suggested by strong expenditure growth and an associated deterioration in the structural deficit until 2007. This happened at a time when the output gap was positive and increasing. However, during and after the crisis Lithuania has had a strong track record of countercyclical policy. Initially allowing the large deterioration of the fiscal position during 2008–09 to help absorb the large collapse of potential output. This was followed by a remarkable structural consolidation over 2009–17, from a structural deficit of -9.7 percent of GDP to a surplus of 0.8 percent at a time when the output gap was improving (see Figure 7). Current expenditure played a significant role in the consolidation effort as, contrary to the pre-crisis period, current expenditure growth has closely tracked but remained below potential growth since 2012.



21. Fiscal rules in Lithuania are described in the Constitutional Law on the Implementation of the Fiscal Treaty (CLIFT) of 2014, and the Republic of Lithuania Law on Fiscal Discipline (LFD) of 2007. The CLIFT adapted the fiscal framework to the European Fiscal Compact ahead of Lithuania's euro area accession. In case of conflict, the CLIFT has prominence over the LFD.

22. Although the CLIFT is difficult to categorize, it is best described as a form of structural balance rule with a debt anchor in the form of an expenditure correction mechanism. Its main provisions can be summarized as follows:

- **Two anchors:** debt (below 60 percent of GDP) and a (structural) balance target in the form of the Medium-Term Objective (MTO).

- **Operational Target.** Each year, except in exceptional circumstances,¹³ at least one of the following conditions must be met:
 - The structural balance of the general government is in surplus.
 - If not in surplus (and below the MTO), it should be improving except when the output gap is negative.
 - When the output gap is negative, the structural deficit can deteriorate, but not exceed the MTO.¹⁴
 - If structural balance is worse than the MTO, the targeted improvement, consistent with the EU compact framework, should be met.¹⁵

- **Expenditure growth limit.** This is an additional provision that must be assessed in parallel to the operational rule. If the average general government balance in the previous 5 years is negative, budget appropriations for the general government should *grow* by less than half of the average growth of potential GDP during the same period. The Law specifies five ‘escape clauses’ under which this expenditure rule would not apply:
 - i. *Weaker economy relative to the EU.* Lithuania’s nominal GDP growth is less than the average 5-year GDP growth in the EU plus 2 percentage points.
 - ii. *Strong fiscal adjustment underway* of at least 1 percent of GDP.
 - iii. *Strong fiscal position.* The average general government balance during the last 4 years and the projection for the current year is in surplus of at least 0.1 percent of GDP.
 - iv. *No deterioration relative to the original budget.* In case of budget revisions, the balance of the revised budgets is not worse than the original one.
 - v. *Weak economy.* The projected output gap for the budget year is negative.

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

¹³ Exceptional circumstances refer to an event outside the control of the authorities or a severe economic downturn.

¹⁴ The MTO is established by the Seimas by March 15 of the current year for a three-year period. The MTO for Lithuania is a structural government deficit of 1 percent of GDP if debt to GDP ratio is less than 60 percent and risks to debt sustainability are low (as it is the case currently), and not higher than 0.5 percent of GDP otherwise.

¹⁵ A structural adjustment target is to be set if: (i) the deficit (actual or planned) reaches 3 percent of GDP; (ii) the structural deficit is worse than the MTO [by more than 2 percentage points]. The adjustment target is set so that the MTO is reached within four years or less.

23. The main features of Lithuania's fiscal rule can be summarized as follows:

- **Countercyclical.** Using the information that was available in early 2008 (i.e. before major down revisions of potential output and structural fiscal balance), one can assess what may have been the impact of the rule had it been in place in 2003. The rule would have forced a significant adjustment during the boom years of 2004–06 (1.7 percent structural adjustment in 2004, followed by a 1.4 percent adjustment in each of the two subsequent years). Alternatively, under the second escape clause, the authorities may have chosen to implement a more moderate structural adjustment of 1 percent per year.¹⁶

Table 3. Lithuania: Simulation of Adjustment Had the Fiscal Rule Been in Place in 2003

	2003	2004	2005	2006
Structural Balance				
Baseline	-1.7	-3.2	-1.9	-2.6
Expenditure Growth Limit	-1.7	0.0	1.4	2.8
<i>Difference with baseline</i>		3.1	3.3	5.3
<i>Cumulative structural adjustment</i>		1.7	3.1	4.5
1-percent structural escape clause	-1.7	-0.7	0.3	1.3
<i>Difference</i>		2.5	2.2	3.9
<i>Cumulative structural adjustment</i>		1.0	2.0	3.0

1/ Assumes adjustment by expenditures and revenue increase as under the baseline

- **Size of adjustment.** A key public concern is the perceived severity and speed of the expenditure adjustment under the correction mechanism if the general government balance is improving but the five-year average remains negative. While still imposing a relatively large adjustment, this concern is lessened somewhat by the many difficult-to-understand 'escape clauses.'
- **Overly complex.** There is a significant degree of overlap between the CLIFT and the FLD, which could create confusion as they mix structural and nominal targets. There are too many escape clauses from the expenditure growth limit, some of which could be better defined and others have no clear objective or do not even appear to be properly defined escape clauses.¹⁷ Lithuania's fiscal rule is intended to be counter-cyclical and strict, particularly through the expenditure correction mechanism. In practice however, while it is counter-cyclical, the rule is not as stringent as it appears given the many escape clauses.
- **Enforceability.** The monitoring of compliance with the rules envisaged by the CLIFT and implementation of any required adjustment is performed by the State Audit Office. It is unclear however how the rule is enforced ex post in case of deviations.

¹⁶ As the focus is on the stance of policy (i.e. counter- or pro-cyclical) rather than its actual magnitude, these partial-equilibrium simulations assume unchanged revenues abstracting from the growth impact of consolidation.

¹⁷ Escape clauses must be selective, well-defined and subject to independent scrutiny and should have a limited and clearly defined set of triggers. In this regard only the first and last appear to be legitimate escape clauses.

- **Coverage is adequate.** The budgets of Sodra and municipalities are included in targets for the General Government. The SOE sector, not covered by the rule, is undergoing active reform particularly focused on governance and transparency, reducing risks to the budget.

Table 4. Lithuania: Main Type of Rules vs. Lithuania’s Fiscal Rule

	Nominal Budget Balance	Expenditure	Structural Balance	Lithuania
Simplicity	Yes	Yes	Medium	Overly Complex
Flexibility	Medium	Yes	Yes	Medium
Enforceability	Yes	Yes	Medium	Medium
Economic Stabilization	Worst of the three	Lowest output volatility	Close second	In theory, yes. But rules may force excessive adjustment in some cases
Debt Stabilization	Lowest volatility	Larger debt volatility due to (partial) economic stabilizers	Larger debt volatility due to full automatic stabilizers	
Operational guidance	Clear operational guidance as directly linked to budget formulation	Clear operational guidance as directly linked to budget formulation	Not as clear operational guidance	
Transparency	Relatively transparent	More transparent as they are less complex	Least transparent given measurement uncertainty	
Measurement uncertainty	Easy to measure	Easy to measure	Difficult to measure	
Issues	Budget balance becomes target rather than floor i.e. magnet effect	The link to debt sustainability is not direct	Unobservable and subject to large forecast errors	Unobservable and subject to large forecast errors Overly complex

24. Implementation of the rule suggests that while the rule imposes a welcome counter-cyclical fiscal stance, there is room for improvement.

- First, under current conditions, the MTO is not economically binding and does not provide guidance for fiscal policy. Over time, it could be made more realistic in line with the fiscal rule becoming more effective as a fiscal policy anchor.
- Second, ex post deviations from the rule have limited consequences. For example, the fiscal adjustment in 2017 projected to be 1 percent under one of the escape clauses, is expected to be much more modest than planned.¹⁸ There is no provision in the CLIFT outlining the practical consequences in such a case.
- Furthermore, because of the complexity of the rule and the lack of clarity in the definition of some ‘escape clauses’ (which appear not to be escape clauses at all), it is difficult to determine what part of the rule determines future fiscal policy, reducing predictability. In fact, the expenditure correction mechanism could be simplified significantly by loosening it somewhat and eliminating most of the ‘escape clauses’. In practice, the implied fiscal policy stance could be kept unchanged under these modifications that would, however, bring much needed clarity and simplicity.
- Finally, as any structural balance rule, the fiscal rule in Lithuania is subject to unavoidable measurement errors. If more profound changes to the rule were to be considered, likely in the context of potential future revisions to the European framework, consideration should be given to a debt target complemented by an expenditure rule.

¹⁸ In the autumn of 2017, when preparing the 2018 budget, the expenditure limit was not applied because of the escape clause “strong fiscal adjustment of 1 percent underway.” At that time, the authorities were forecasting a fiscal balance of—0.4 percent of GDP in 2017 and a surplus of 0.6 percent in 2018. Eventually, a surplus of 0.5 percent was recorded in 2017 while the current forecast for 2018 remains unchanged.

REVIEW OF MACROPRUDENTIAL POLICY IN LITHUANIA AGAINST INTERNATIONAL BEST PRACTICE¹

This paper reviews Lithuania's macroprudential policy framework against international best practice. It finds that Lithuania possesses the powers and tools to manage systemic risks although the benign post-crisis period offers limited scope for assessing the effectiveness of macroprudential policy.

- 1. Macroprudential policy is defined as the use of primarily prudential tools to limit systemic risk.**² Systemic risk is the risk of disruptions to financial services caused by impairment of all or parts of the financial system which can harm the economy.
- 2. Macroprudential policy achieves its ultimate objective by pursuing three intermediate objectives:** i) increase the resilience of the financial system to shocks by building buffers that allow the financial system to extend credit under stress; ii) contain the build-up of vulnerabilities over time by reducing procyclical feedback loops between asset prices and credit, and containing unsustainable increases in leverage and volatile funding; and iii) control structural vulnerabilities from interlinkages within the financial system and institutions that are "too important to fail."
- 3. To achieve these intermediate objectives, macroprudential policy relies primarily on macroprudential instruments.** These are tools which the authorities can use to implement macroprudential policy in support of their objectives. Examples include capital buffers, caps on loan-to-value (LTV), debt service-to-income (DSTI) ratios, liquidity measures, etc.
- 4. The literature and empirical evidence on the use of macroprudential policies has identified several useful lessons.** These relate to the type of institutional set up that is most conducive to effective macroprudential action, the timing of activation or tightening of macroprudential measures, the factors that should be considered when implementing macroprudential policies, and finally the way leakages of macroprudential policy may be tackled.³

A. Institutional Framework

- 5. A strong institutional framework should foster both the willingness and ability to act.**⁴ The willingness to act will be strengthened if the macroprudential framework gives clear mandate to one entity, to enhance accountability, and a well-defined objective, to counter biases for inaction

¹ Prepared by Iacovos Ioannou (EUR).

² International Monetary Fund, 2013, "Key Aspects of Macroprudential Policy," IMF Policy Paper, June (Washington: International Monetary Fund). The material in this annex also draws from the IMF Staff Guidance Note on macroprudential policy.

³ Leakages refer to a possible shift of financial activity outside the reach of the macroprudential tool.

⁴ Nier, Erlend W., Jacek Osiński, Luis I. Jácome, and Pamela Madrid, 2011, "Institutional Models for Macroprudential Policy," IMF Working Paper 250.

(e.g., lobbying by financial industry, political pressure). In general, the central bank should play a key role in macroprudential policy.⁵

6. Lithuania’s institutional framework for macroprudential policy is strong. It gives the Bank of Lithuania (BoL) sole responsibility and broad powers to conduct macroprudential policy, including identification and analysis of systemic risks. The macroprudential framework also gives the BoL a clear objective: to contribute to the stability of the financial system, including strengthening the resilience of the financial system and mitigating the build-up of systemic risk. In executing this mandate, the BoL adopted five intermediate objectives, in the context of a macroprudential strategy adopted in 2015: i) limit and prevent excessive credit growth; ii) limit and prevent liquidity surplus and other risks in the financial system; iii) limit large exposure concentrations in certain economic activities; iv) limit the systemic impact of misaligned incentives by financial institution to reduce moral hazard; and v) strengthen resilience of financial market infrastructure.

B. Macroprudential Instruments

7. The choice of macroprudential instruments should reflect a country’s potential sources of systemic risk.⁶ In general, countries should put in place a broad set of macroprudential instruments that is readily available because risks materialize quickly whereas new instruments may take time to introduce and implement. Moreover, having a variety of instruments allows the authorities to overcome shortcomings that an individual instrument may have. Overall, countries should have three sets of instruments to implement macroprudential policy: i) countercyclical capital buffers (CCyB) and provisions, to increase resilience to shocks; ii) sectoral tools to contain the buildup of risks in specific sectors; and iii) liquidity tools to contain funding risks.

8. Activation of macroprudential policy involves mapping potential vulnerabilities into concrete policy recommendations.⁷

- Vulnerabilities from credit booms should be addressed by broad-based tools that affect all credit exposures (e.g., household and corporate sectors). Examples include the CCyB, dynamic provisioning, and if passthrough is weak, caps on credit growth.
- If there is excessive credit to the household or corporate sectors and procyclical feedback between credit and asset prices, macroprudential policy should rely on sectoral tools that target specific credit categories. Examples include sectoral capital requirements (risk weights), LTV, and DSTI ratios.

⁵ In practice, there are three models for macroprudential policymaking: i) the central bank has the mandate and decisions are made by its Board (e.g., Czech Republic), ii) a committee within the central bank has the mandate (e.g., UK); and iii) a committee outside the central bank has the mandate with the central bank participating in the committee (e.g., France, US). The choice of model depends on the need for checks and balances and political economy considerations.

⁶ There is no definitive set of instruments that can be characterized as “best practice” and which should be used by others because systemic risk is country-specific.

⁷ International Monetary Fund, 2014, “[Staff Guidance Note on Macroprudential Policy](#),” (Washington: International Monetary Fund).

- If vulnerabilities in the financial system are due to systemic liquidity and currency risks, macroprudential policy should rely on liquidity tools. Examples include liquid asset buffers, stable funding requirements and limits on open currency positions.
- If vulnerabilities in the financial system are structural (e.g., contagion transmitted through interlinkages with the financial system, highly concentrated banking system), macroprudential policy should rely on a range of tools, including capital and liquidity surcharges for systemically important institutions, and measures to control interlinkages in funding and derivatives markets.

9. Lithuania's macroprudential toolkit appears adequate. Lithuania's systemic risks stem primarily from external shocks through trade channels and volatile financial conditions in the Nordics. The BoL currently uses the following macroprudential instruments: LTV, DSTI, loan maturity, stress test/sensitivity test, CCyB, other systemically important institutions buffer, and capital conservation buffer. In addition, the BoL relies on the financial leverage ratio, instruments adjusting liquidity, limiting foreign exchange risk, restrictions on large exposure concentration (by type of economic activity, asset class, and other criteria), systemic risk buffer, supervision of payment and securities settlement systems, and other instruments which may not be currently activated. The BoL's macroprudential toolkit therefore consists of the three sets of instruments that countries should have and are also appropriately overlapping to overcome shortcomings that a single one may have. Given Lithuania's interconnection with Nordic banking systems, the BoL appropriately relies on the other systemically important institutions buffer (enshrined in CRD IV) which levies higher capital requirements to systemically important institutions.⁸

10. Lithuania's macroprudential instruments are broadly in line with those used in other European countries. Like most EU countries, Lithuania has an LTV requirement, although it does not have a separate requirement for households and the NFC sector (as is the case in Hungary, Poland, Romania, and Spain). Moreover, Lithuania is one of eight EU countries that have a debt service-to-income requirement. Nevertheless, it does not have a loan-to-income requirement (used only in Ireland and Norway), or a loan amortization requirement (used in the Netherlands, Norway, Slovakia, and Sweden). Lithuania is also one of five countries with limits on loan maturity (the others are Estonia, Poland, Romania, and Slovakia) and one of seven that has a stress test/sensitivity test. Regarding capital requirements, Lithuania has a capital conservation buffer like all other EU countries. Unlike most EU countries, Lithuania has adopted a CCyB in December 2017 citing credit and real estate market developments and more generally the economic upswing, joining the Czech Republic, Norway, and Sweden. The central bank gave banks one year to accumulate 0.5 percent countercyclical buffer, pointing to the possibility of a further increase to 1 percent if trends continued. On the other hand, Lithuania does not mandate risk weights on residential and commercial mortgages unlike a significant number of countries which mandate either one (Belgium,

⁸ The CRD IV package entered into force on July 17, 2013 and transposes Basel III into EU law.

Finland, Ireland, Norway, Romania, Slovenia, Sweden) or both (Croatia, Luxemburg, Norway, and Sweden).⁹ Lithuania has also not yet activated the systemic risk buffer unlike many European countries (e.g., Austria, Bulgaria, Hungary, Poland, Romania), although it will revisit this issue in 2018. Regarding liquidity, Lithuania has implemented the liquidity coverage ratio in 2015. Five EU countries have levied a liquidity ratio and one specifies a loan-deposit ratio.

C. Recalibration of Macroprudential Policy

11. Macroprudential policy should be recalibrated if information from multiple sources points to the emergence of vulnerabilities (Table 1). Core indicators serve as a starting point; but additional indicators may be used because the mapping of core indicators is often imperfect. When all or most indicators point to the emergence of systemic risk, there is a strong case for a policy adjustment. When there is conflicting information, the case for macroprudential adjustment may be weaker and consideration should be given to other measures¹⁰ or to a more gradual approach (e.g., intensified supervision). In general, guided discretion is optimal. While a rules-based system is essential to overcome political pressure, it may give rise to excessive tightening.

12. The recalibration of macroprudential policy should consider not only potential benefits to financial stability but also costs in the form of: i) circumvention of macroprudential tools and creation of distortions; ii) costs to borrowers from reduced availability of financial services; iii) cost to financial institutions because of adherence to new regulations; and iv) potential costs to the economy (output loss). Recalibration of macroprudential policy requires understanding of the sources and level of systemic risk, the transmission mechanism of macroprudential instruments, and an assessment of costs and distortions.¹¹

13. In general, there is considerable uncertainty about the strength of the transmission mechanism and hence on the effectiveness of macroprudential tools in curbing excessive credit growth. This uncertainty is the result of leakages either domestic or cross-border. Accordingly, macroprudential tightening should be implemented in a cautious and gradual manner. Addressing cross border arbitrage requires reciprocity in the imposition of macroprudential action to ensure uniform constraints on all credit exposures to borrowers in a country, regardless of whether credit was provided by domestic or foreign entities.¹²

⁹ Risk weights may be levied if there is high variability and heterogeneity in individual bank risk weights under the internal ratings-based approach.

¹⁰ For example, rising housing prices and weak mortgage lending may point to the existence of supply constraints in the housing market which may be addressed with structural measures.

¹¹ Arregui, Nicolas, Jodi Scarlata, Mohamed Norat, and Antonio Pancorbo with Eija Holttinen, Jay Surti, Chris Wilson, Rodolfo Wehrhahn, and Mamoru Yanase, 2013, "Addressing Risk Concentration and Interconnectedness: Concepts and Experiences," (Washington: International Monetary Fund).

¹² For example, an increase in the CCyB in one country would require other countries to apply the buffer to exposures into that country. However, there is no reciprocity in the application of targeted sectoral measures.

14. Macprudential policy in Lithuania has not been recalibrated frequently in recent years, given the benign environment that has prevailed after the crisis. Hence it is difficult to fully assess its effectiveness. Since 2011, the BoL has not adjusted the value of macroprudential policy instruments, except for the reduction of the maximum loan maturity from 40 to 30 years in 2015, the introduction of stress test/sensitivity test in 2015, and the increase of the CCyB to 0.5 percent in December 2017 to address risks from rising credit and housing prices and the cyclical upswing of the economy. The infrequent recalibration of macroprudential policy reflects weak credit growth in the post-crisis years (i.e., sizable credit-GDP gap). Regarding the recent increase in the CCyB, the BoL appropriately addressed the emergence of risks related to credit growth through broad-based tools (which affect all credit exposures) such as the CCyB. Still, the increase is unlikely to have a significant impact on bank behavior because most banks hold significant capital buffers.¹³ The BoL also proceeded cautiously by phasing the cost of adherence to the new regulation. If trends in the housing and credit markets posed heightened risks, the BoL may need to complement the CCyB hike with sectoral capital requirements (e.g., LTV, DSTI) to contain not only credit supply but credit demand. Because Lithuania’s banking system is funded primarily through deposits, there was no need to tighten liquidity tools to contain credit growth.

D. Communication of Macroprudential Policy

15. Effective communication of macroprudential policy is a key ingredient of accountability. Changes in macroprudential policy should convey to markets and the public at large the benefits of macroprudential action. Effective communication may include publication of a policy strategy, record of meetings by a macroprudential committee (if charged with policy decisions), and periodic reports on activities (including assessment of risks and policy actions).

16. The authorities have a good communications strategy. The BoL publishes its macroprudential decisions and supporting information. To guide market and public expectations and to reinforce accountability, the BoL delivers public and non-public statements regarding systemic risk to warn, recommend, inform, and raise awareness unless doing so poses a threat to financial stability. The BoL seeks to convey information in an open, clear, and proportionate (to the importance of the decision) manner. The BoL issues statements not only when there is a decision to change macroprudential policy but also when macroprudential policy remains unchanged.

17. In conclusion, while experience with the application of macroprudential policy in the post crisis years is limited, it appears that the BoL possesses the powers, tools, and expertise to manage risks. Clearly, this expertise has not yet been tested in the current benign economic and financial environment, but the authorities appear well placed to apply the lessons acquired from other countries’ experiences and proactively tackle systemic risks.

¹³ The CCyB is often triggered when there is an increase of credit-GDP well ahead of the emergence of trouble.

Table 1. Lithuania: Signals Indicating Need for Macroprudential Action

Instruments	Core indicators	Additional indicators
Broad-based (Capital) tools	<ul style="list-style-type: none"> • Credit/GDP gap 	<ul style="list-style-type: none"> • Growth in credit/GDP • Credit growth • Asset price deviations from long-term trends • Under-pricing of risk in financial markets (low volatility/spreads) • DSTI ratios • Leverage on individual loans or at the asset level • Increasing wholesale funding ratio (noncore funding) • Weakening exports and resulting current account deficits
Household tools	<ul style="list-style-type: none"> • Household loan growth • Increasing house prices (nominal and real growth) • House price-to-rent and house price-to-disposable income ratios • Increasing share of Household loans to total credit 	<ul style="list-style-type: none"> • Increasing house prices by region and by types of properties • Deteriorating lending standards • High LTV ratio • High loan-to-income (LTI) ratio • High DSTI ratio • Share of FX loans and interest only loans
Corporate tools	<ul style="list-style-type: none"> • Corporate loan growth • Increasing share of corporate loans to total credit • Increasing commercial property prices • Increasing commercial real estate credit • Increasing share of FX loans 	<ul style="list-style-type: none"> • Increasing corporate leverage (debt to equity ratio) • Corporate credit gap • Increasing debt-service ratio • Deteriorating lending standards • Average DSTIs on commercial real estate loans • Average LTVs on commercial real estate loans • Share of FX loans and extent of natural hedges
Liquidity tools	<ul style="list-style-type: none"> • Increasing loan-to-deposit (LTD) ratio • Increasing share of noncore funding to total liabilities 	<ul style="list-style-type: none"> • Decreasing share of liquid assets • Worsening maturity mismatches • Increasing securities issuance • Increasing unsecured funding • Increasing FX positions • Increasing gross capital inflows

Source: Staff Guidance Note on Macroprudential Policy.

SOCIAL INEQUALITY IN LITHUANIA AFTER THE GLOBAL FINANCIAL CRISIS: EVIDENCE FROM HOUSEHOLD SURVEY DATA¹

- *The significant gaps between urban and rural areas, pensioners and working-age population, and across educational levels have been persistent throughout the crisis and the recovery. The gap can be narrowed by raising educational achievements.*
- *The recovery has been uneven. The purchasing power of rural population has not recovered to its pre-crisis level, contributing to the widening urban-rural gap. Pensioners had some cushion during the crisis but have not benefited from the recovery. As educational achievement increases across the population, those with less education are increasingly at risk of poverty.*
- *Changes in the family structure appear persistent while setbacks in employment have mostly rebounded. Importantly, health and education expenditure were preserved during the crisis.*

A. Introduction

1. The financial crisis in 2008–09 was short but dramatic. Lithuania experienced a collapse of credit and demand, and a dramatic swing in the current account, a surge in unemployment and a drop in real earnings. The slowdown started earlier in Estonia and Latvia while in Lithuania, large pension and public-sector wage increases were granted as late as mid-2008. GDP hit a record drop of 13 percent in the first quarter of 2009. The recession lasted around two years with cumulative output loss of around 28 percent.

2. The impact of the crisis and the recovery often differ across households. Therefore, micro-level data such as Lithuania's Household Budget Survey could provide greater insight. The survey in Lithuania was conducted in early 2008 before the crisis, in 2012 during the recovery, and in 2016 when the output gap was closing. The survey covers more than 6,000 households in 2008 and 2012 and around 3400 households in 2016 from different regions, age groups, and income brackets and allows for differentiating the impact for urban versus rural households, households with different sizes, educational achievements, type of employment etc.

3. A short-lived crisis can have a long-term impact. There are a few channels for this: (i) workers who lose jobs may not be able to find employment again; (ii) assets that are liquidated to smooth consumption may not be regained; and (iii) a reduction in investment in human capital such as health or education spending can reduce long-term productivity, resulting in a long-run poverty trap. However, in the case of Lithuania, these channels have been minimized.

¹ Prepared by Vina Nguyen (EUR).

B. Inequality in Lithuania

5. The urban-rural gap in Lithuania is persistent.

In 2008, the unconditional median monthly expenditures of a rural household were only 90 percent of an urban household. The gap continued to widen both in euro terms and as a percentage of urban household expenditure throughout the time horizon (see figure 1).² Controlling for additional factors, such as household sizes, monthly real expenditure in rural areas were lower by around 96 euros in constant prices, or by about 20 percent of the median urban household expenditure (see Table 1). The gap remained largely unchanged between 2008 and 2012 but widened again in 2016. Controlling for educational level of the household heads reduces the gap in euro terms by between 50 and 60 percent while controlling for employment type only reduces the gap by around 12 percent (see regression (5) in Table 1).

Figure 1. Lithuania: Monthly Expenditure per Household
(In 2010 constant prices)

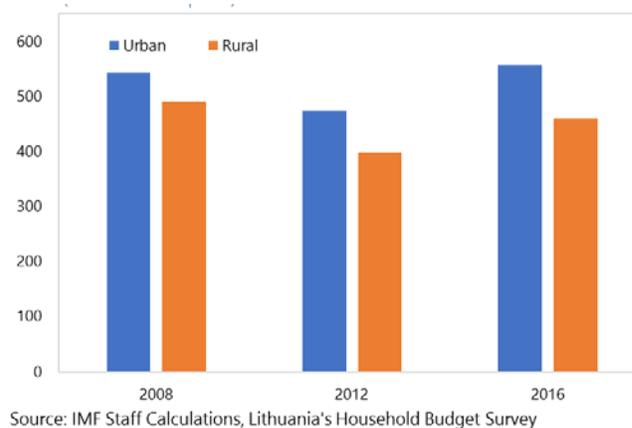


Table 1. Lithuania: Urban Rural Gap Among Households

Monthly expenditure (in 2010 constant price in euros)	(1)	(2)	(3)	(4)	(5)
Rural (compared to Urban)	-95.8*** (6.86)	-97.2*** (6.81)	-92.8*** (6.81)	-84.0*** (6.77)	-38.7*** (7.12)
Household size	149.7*** (2.93)	147.6*** (2.88)	133.5*** (3.09)	118.1*** (3.11)	116.3*** (3.02)
2016 (compared to 2008)		11.9 (9.13)	14 (9.06)	17.1+ (8.86)	-3.3 (8.79)
2012 (compared to 2008)		-84.1*** (7.4)	-82.3*** (7.34)	-78.2*** (7.19)	-96.6*** (7.21)
Age group			-34.9*** (2.81)	-5.5+ (2.98)	4.9+ (2.96)
Employment type of HH head				-83.5*** (3.12)	-58.1*** (3.00)
Educational level of HH head					77.6*** (2.90)
Constant	357.6***	397.6***	557.8***	709.8***	248.3***
Observations	16477	16477	16477	16477	16477
Adjusted R-squared	0.176	0.186	0.193	0.226	0.262
Robust standard errors in parentheses					
+ p<0.10, ** p<0.05, *** p<0.01					

² Without data on price level for different regions going back to 2008, the average gap can overstate the real living standards between urban and rural areas. At the same time, prices in some smaller cities have recently increased faster than in the main cities.

6. Education is an equalizer between households in rural and urban areas, explaining more than 50 percent of the gap. In fact, having a degree in higher education reduces the gap more than completing any other level of education. Additionally, returns to education have increased (see Figure 2). Compared to a household whose head only has a primary education, the payoff of getting a degree in higher education is the highest where the purchasing power could increase by more than 2000 euros per year. If the payoff is normalized by the number of school years, an upper-secondary degree (by completing the 11th and 12th years of schooling) and a “matura” exam would offer the highest payoff. Even after controlling for household size, location, age group, and even type of employment, the gap in household budget across educational level, especially between higher education and post-secondary education, remains.

Figure 2. Lithuania: Additional Annual Household Expenditure for Degrees beyond Primary Education

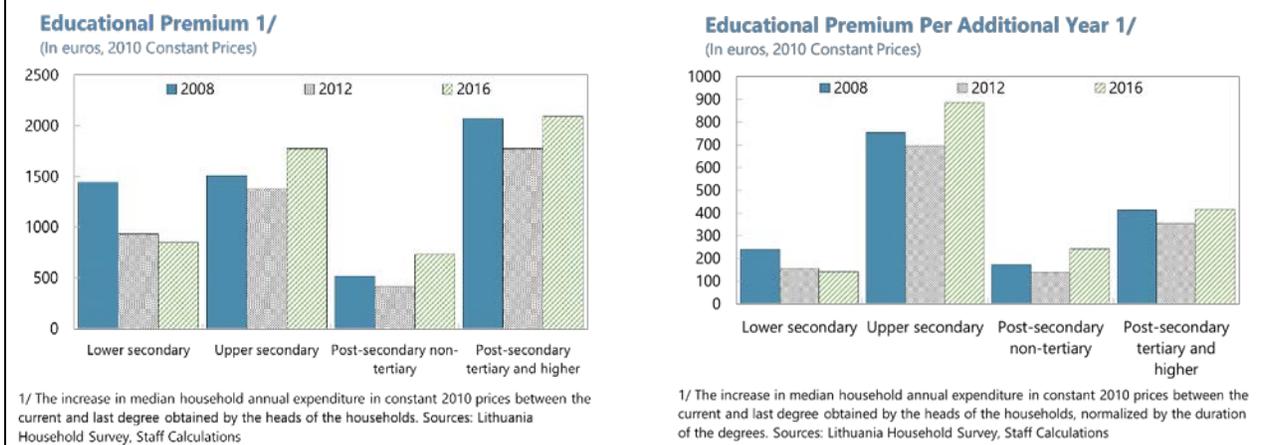


Figure 3. Lithuania: Monthly Expenditure per Household
(In 2010 constant prices)

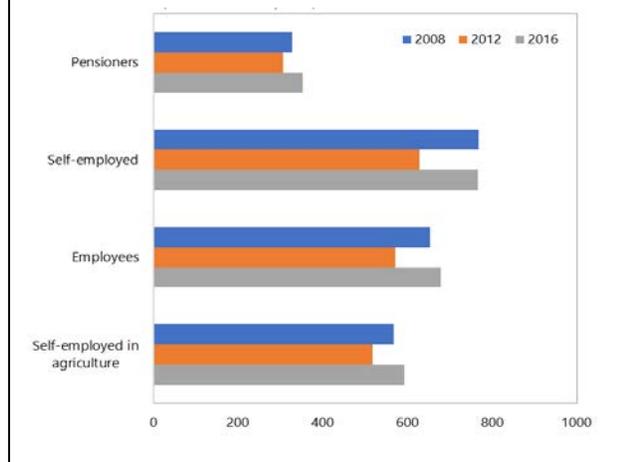


Figure 4. Lithuania: Home-ownership Rate
(In percent of surveyed sample)

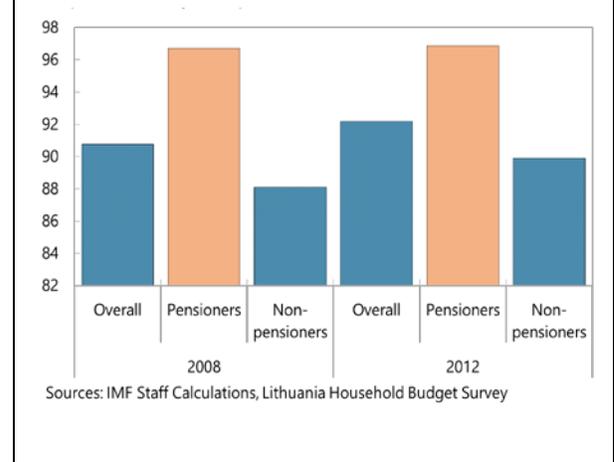


Table 2. Lithuania: Educational Gap

Real monthly consumption expenditure	(1)	(2)	(3)
Secondary (compared to Primary)	51.9*** (9.22)	49.2*** (9.28)	41.1*** (9.18)
Vocational secondary (compared to Primary)	128.7*** (9.11)	121.3*** (9.44)	85.7*** (9.29)
Post-secondary (compared to Primary)	194.6*** (9.45)	185.9*** (9.90)	138.6*** (9.72)
Higher education (compared to Primary)	369.9*** (11.72)	356.0*** (12.73)	301.4*** (12.42)
Age group	-12.9*** (2.89)	-13.1*** (2.89)	4.2 (3.04)
Household size	126.1*** (2.95)	127.5*** (2.96)	117.6*** (3.02)
2016	-5.8 (8.84)	-6.1 (8.83)	0.4 (8.73)
2012	-100.0*** (7.23)	-100.3*** (7.22)	-93.7*** (7.15)
Rural		-34.4*** (7.21)	-36.8*** (7.13)
Employment type			-60.4*** (3.01)
Constant	196.6***	213.7***	378.7***
Observations	16477	16477	16477
Adjusted R-squared	0.251	0.252	0.268

Robust standard errors in parentheses

+ p<0.1, ** p<0.05, *** p<0.01

7. Household expenditures decline as workers retire, emphasizing the social challenges of the pension system where more than 40 percent of pensioners are at risk of poverty (see Table 4). Compared to non-pensioners, households of pensioners spend on average around 140 euros less every month (see regression (1) in Table 3). All employment categories seem to have less spending power than self-employed households, who are often entrepreneurs. Compared to the self-employed, households of pensioners spend on average between 280 and 370 euros less per month in constant 2010 prices (see Table 3). It is difficult to account for the differences in the consumption baskets between the old and the young just from the survey data. However, it is possible that when the employees retire, savings from some categories such as transportation or attires may be offset by increases in medical expenses. While pensioners are very likely to own a home and thus, able to cut down on rental expenses, the overall home ownership in Lithuania is also relatively high (see Figure 4). Furthermore, most home-owners in Lithuania do not have mortgage payments, unlike in other advanced economies where the mortgage payment explains a large part of expenditure gap between the old and the young. In addition, despite the accumulated wealth in the form of real estate, pensioners still reduce their spending significantly, suggesting limited mechanisms for consumption smoothing over the life cycle. Again, educational outcome is key in lowering the gap for pensioner.

Table 3. Lithuania: Gap Between Pensioners and Non-pensioners

Real monthly consumption expenditure (in 2010 constant euros) 1/	(1)	(2)	(3)	(4)
Pensioners 2/	-137.6*** (8.82)	-365.2*** (29.05)	-280.8*** (29)	-279.0*** (28.91)
Self-employed in agriculture 2/		-151.8*** (42.11)	-138.9*** (41.94)	-140.5*** (41.93)
Employees 2/		-145.2*** (29.76)	-152.5*** (29.59)	-153.0*** (29.58)
Age group	5.3 (4.25)	10.7** (4.28)	9.7** (4.16)	5.3 (4.41)
Rural	-29.7*** (7.74)	-70.6*** (6.78)	-29.0*** (7.05)	-28.8*** (7.04)
Household size	115.7*** (3.20)	117.6*** (3.27)	116.7*** (3.19)	115.6*** (3.19)
2016 (compared to 2008)	64.3*** (14.44)	16.5+ (9.35)	-2.5 (9.32)	-5.4 (9.44)
2012 (compared to 2008)	-97.7*** (7.60)	-80.6*** (7.63)	-98.1*** (7.7)	-98.7*** (7.71)
Educational level	74.8*** (3.19)		76.1*** (3.25)	75.4*** (3.25)
Own a home	71.1*** (13.21)			58.7*** (13.37)
Constant	81.8***	550.6***	266.4***	233.7***
Observations	15259	15259	15259	15259
Adjusted R-squared	0.257	0.227	0.26	0.261

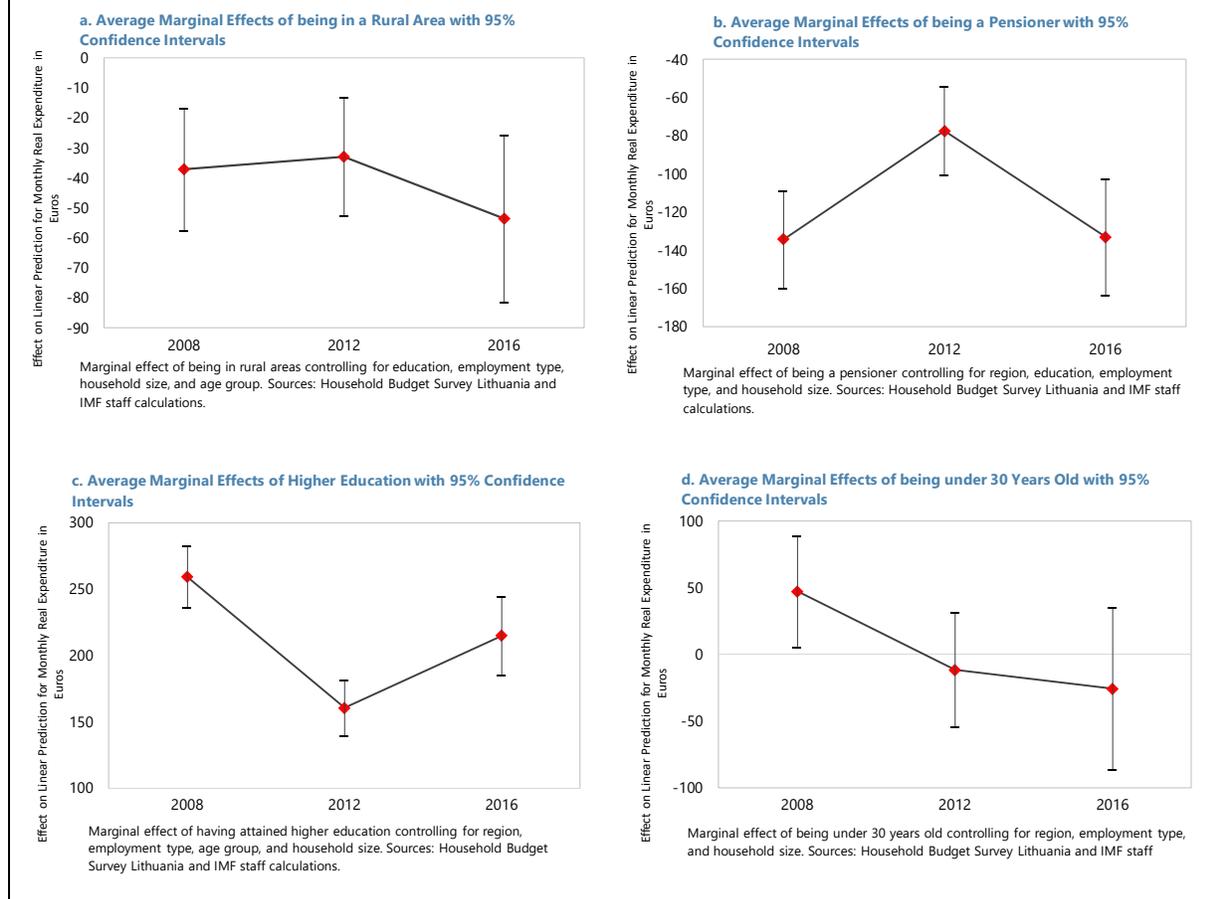
1/ Excluding observations for "Others" type of employment in the whole sample.

2/Except in regression (1), results are compared to self-employed individuals.

Robust standard errors in parentheses. + p<0.1, ** p<0.05, *** p<0.01.

8. The post-crisis recovery was uneven (see Figure 5). By looking at the interaction terms between years and certain household groups, we can compute the marginal impact by groups. Rural population have not benefited equally from the recovery. For example, whatever the amount of spending was cut due to the crisis by urban households, rural households of the same characteristics had to further cut spending by about 40 euros per month (see Figure 5a). By 2016, the gap had widened and households with the same characteristics in rural areas spent even less, controlling for the overall recovery. By 2016, purchasing power of rural households also did not reach their previous level in 2008 whereas that of urban households exceed it by around 3 percent. Meanwhile, for pensioners, because the benefits are linked to previous contributions before the crisis, the spending gap narrowed in 2012 while employment income was severely affected by the financial crisis (see Figure 5b). Although non-pensioners absorbed a large income shock, they still fared better than pensioners. However, by 2016, pensioners on average were spending around 140 euros less per month. The young and those with higher education weathered the crisis better (see Figure 5c and 5d). As usual, having a college degree or above could provide a significant cushion during and after the financial crisis. For those below 30 years old, the small positive gap in spending in 2008 has mostly been erased and their expenditures are now at the population average.

Figure 5. Lithuania: Marginal Effect from the Interaction between Year and Household Characteristics



C. The Lasting Impact of the Crisis

9. Lithuania’s population structure may have changed permanently after 2008. Household characteristics in the sample differed significantly between 2008 and 2012 but remained largely unchanged between 2012 and 2016 (see Table 4). Migration from rural to urban areas continued into 2016 although the magnitude was not comparable to the post-crisis years. Household size has become smaller with more one-person households or households without children. For households with children, having one child has become more popular as having more than one child seems to impose significantly more adjustments in per capita expenditure within the household (see Figure 6). While household expenditure dropped for everyone during the crisis, the impact was smaller for families with 3 or more children. The reasons could include their modest budget even before the crisis and the child benefits for low-income families with more children.

10. Other household characteristics are less affected by the crisis. Achievement in education has been broad-based. There was a significant reduction in number of household whose heads only have primary or secondary education, which partially explained the reduction in the marginal benefits of lower secondary education (see Figure 2). Employment shift proved more temporary (see Figure 7). While more people moved from being employed into retirement during the crisis, the

trend has somewhat reversed. However, many of those who retired during the crisis, especially before the statutory retirement age, have lost significant future pension benefits.

Figure 6. Lithuania: Household Expenditure and Number of Children

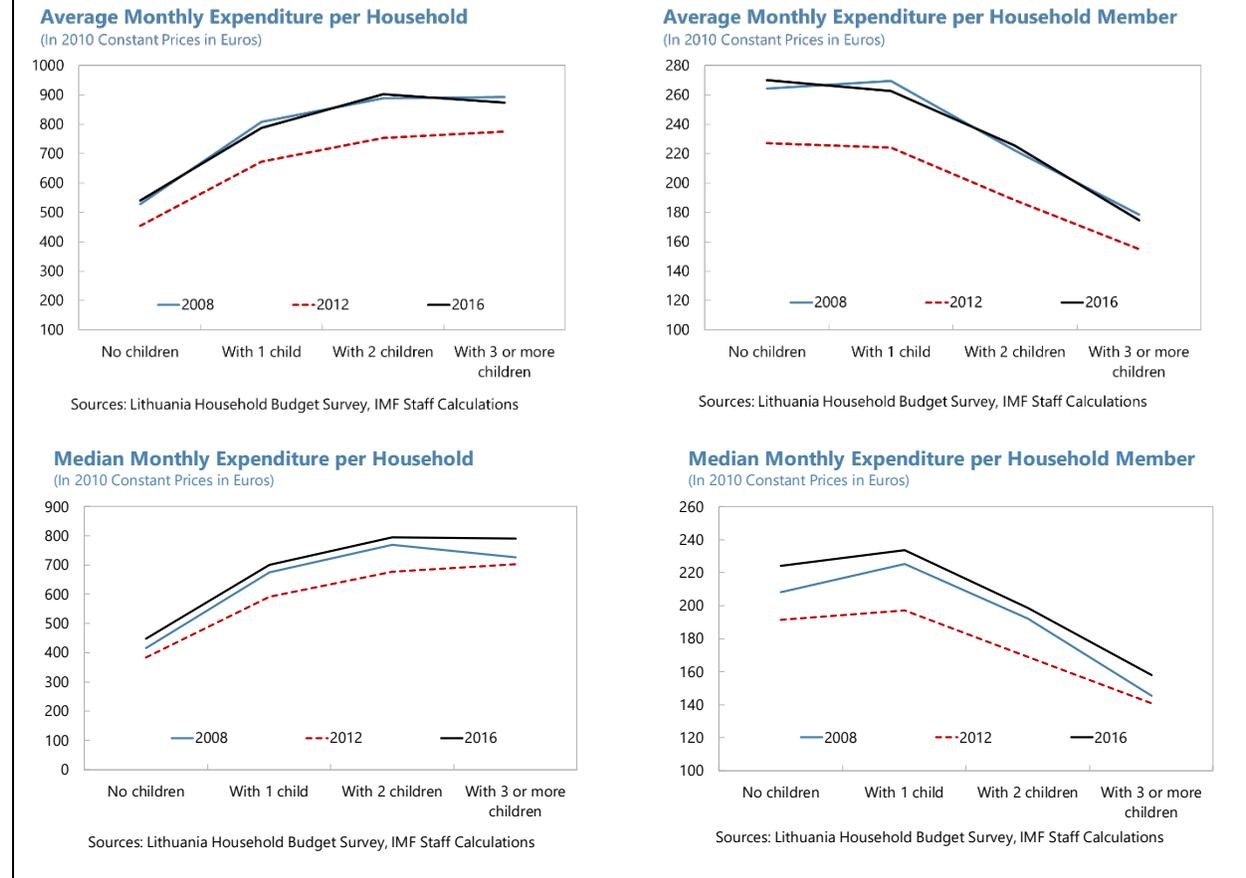
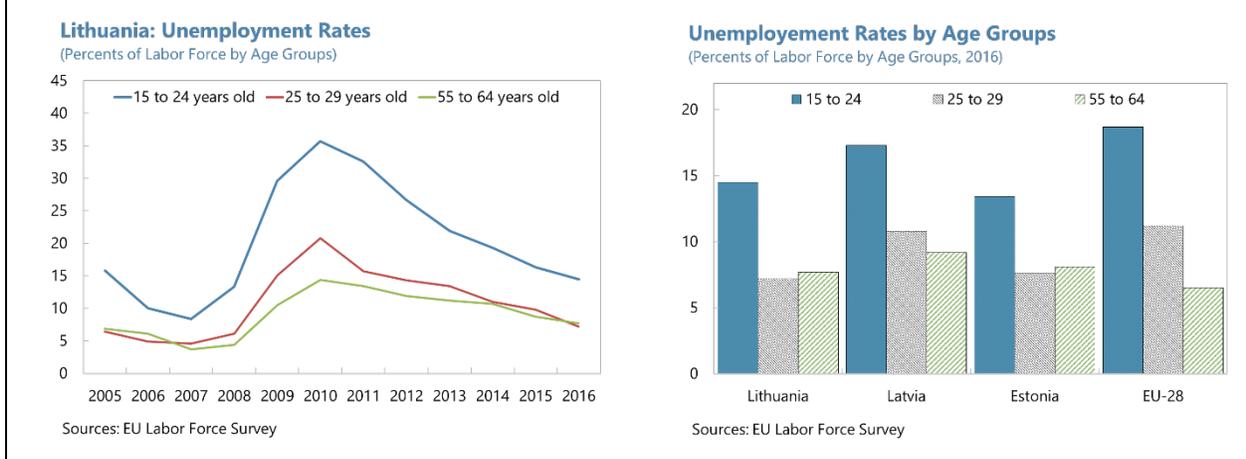


Figure 7. Lithuania: Employment has Recovered to Pre-Crisis Level, Similar to Neighboring Countries



11. There is no evidence of other channels, such as health and educational spending, that would result in a more persistent impact. Often, because of a financial crisis, households often cut down on expenditure, including on health and education expenditure that could have a long-term impact. However, in the case of Lithuania, there is virtually no adjustments in terms of health and educational expenditure, suggesting some flexibility in household budget to be able to preserve these spending priorities. Instead, the main categories that were cut were consumer goods.

D. Conclusion

12. There are persistent gaps in household expenditure across population groups. The financial crisis has exacerbated these gaps for rural areas, pensioners, and households with lower education achievement. One key equalizing factor is via higher level of education. Among the different levels of education, investing in completing the post-secondary degree and passing the “matura” exam would yield the highest annual return. Importantly, spending on health and education did not suffer during and after the financial crisis.

Table 4. Lithuania: Characteristics of all Households Interviewed in Each Survey

(in % of total sample, unless indicated otherwise)	2008	2012	2016
At risk of poverty 1/			
All households	23.9	21.7	22.9
Pensioners	46.5	40.5	41.7
Non-pensioners	13.8	11.9	13.2
Above 60	40.2	35.4	36.3
Below 30	16.8	16.3	20.9
Rural	27.6	29.0	30.3
Urban	21.8	18.2	19.3
Demographics			
Type of households			
One person household	19.2	25.7	24.7
Single adult with children	4.2	4.4	4.8
Couple without children	29.2	32.3	32.9
Couple with children	23.5	17.0	17.1
Other households with children	9.6	7.3	7.6
Other households without children	14.4	13.2	12.9
Statistics on children			
Households with 1 child	19.6	16.2	17.0
Households with 2 children	13.4	9.5	9.6
Households with 3 and more children	4.3	3.1	2.9
Households without children	62.7	71.2	70.5
Regional characteristics			
Urban	63.3	67.2	67.7
Rural	36.8	32.8	32.3
Specifically,			
5 largest cities	32.7	38.2	38.2
Other towns	30.5	28.9	29.6
Rural areas	36.8	32.8	32.3
Characteristics of head of household			
Education			
No primary, primary	12.4	7.6	7.5
Lower secondary	15.1	12.6	12.6
Upper secondary	25.2	29.5	31.7
Post-secondary non-tertiary	24.8	24.4	24.7
Post-secondary tertiary and higher	22.6	26.0	26.1
Employment			
Self-employed in agriculture	3.6	3.6	3.3
Employees	55.9	49.7	50.7
Self-employed	3.8	4.0	4.0
Pensioners	30.9	34.3	33.9
Others	5.8	8.4	8.1

Note: Highlighted cells signify that the difference between this survey and the previous survey is significant at at least 10 percent level.

1/ Defined as below 60 percent of median monthly expenditure