Labour Tax & Child Benefits Reform in Lithuania: For Better or Worse?

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Abstract

In 2019, Lithuania overhauled the country's labour taxation. Social insurance contributions paid by employers and employees were consolidated, and were accompanied by adjustments in gross wages and personal income tax rates, and increases in the minimum gross wage and the tax-free allowance. Simultaneously, the government increased the universal child benefit and, to a limited extent, the additional child benefit. Simulations based on the EUROMOD and QUEST models are used to assess the fiscal, redistributive, equity and macroeconomic impact of these reforms. Overall, the set of simulated changes marginally decreases the tax wedge, poverty and income inequality. The child benefits reform has a progressive impact on household disposable income. In terms of public finances, the labour taxation reform is estimated to be costly, with a small stimulating effect on the economy.

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Introduction

In 2018, the Lithuanian government adopted a six-reform package that covered labour taxation, pensions, education, innovation, healthcare and the fight against the shadow economy. This major tax system overhaul came into force on 1 January 2019 and consists of the consolidation of social insurance contributions paid by employers and employees, a shift of contributions to employees, and adjustments of the tax rates and tax-free allowance. The Government presented the tax reform as a measure to make the social insurance clearer and more attractive, to reduce the tax burden on labour and make labour taxation the most competitive in the Baltic States (Government of the Republic of Lithuania, 2018).

While the tax wedge[1] for low wage earners is relatively high[2], Lithuania's tax-to-GDP ratio is far below the EU average. In 2017, the tax-to-GDP ratio stood at 29.5% compared to the EU average of 40.2% (European Commission, 2018). This indicator determines the government's ability to finance its functions and depends not only on the general design of the tax system, but also on the prevalence of the shadow economy. In Lithuania, the occurrence of informal work and "envelope wages"[3] has been decreasing over the last years (State Tax Inspectorate, 2017). Nevertheless, these phenomena still limit the redistributive power of the tax and benefit system. Tackling the informal economy would help mitigate poverty and income inequality issues.

At the same time, spending on social protection benefits remained low (14.6% of GDP compared to the EU average of 27.1% in 2017) despite more than 80% of government redistribution being carried out through social transfers (European Commission, 2017). This again underlines the weak redistributive capacity of Lithuania's tax and benefit system, partly explaining the high poverty and income inequality. In Lithuania, the levels of poverty and income inequality reached their peak in recent years (Graph 1). In 2017, the at-risk-of poverty (AROP) rate in Lithuania was 22.9% – the third highest in the EU and the highest of the country in 12 years. The unemployed, single parents and pensioners represented the most vulnerable groups. For them the AROP rates reached 61.5%, 48.4% and 36.7% respectively, pointing to failures in the social safety net. In 2017, both the Gini coefficient and the S80/S20 indicator were the highest in the Baltic countries (Eurostat, 2019).

Graph 1: **Evolution of poverty and inequality indicators in Lithuania and the EU, 2005-2017**
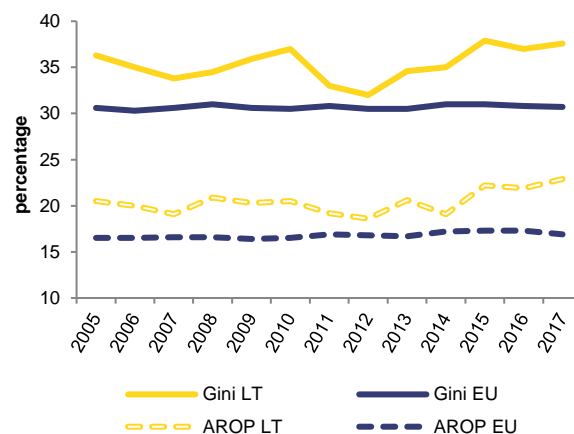
Source: Eurostat, EU-SILC.

The European Commission, OECD and IMF have stressed the need for Lithuania to enhance the redistributive capacity of the tax and benefit system. Moreover, the organisations have also pointed to the need to raise the adequacy of social assistance and unemployment benefits (European Commission, 2016; OECD, 2017; IMF, 2018). The 2019 Draft Budgetary Plan of Lithuania indicates that certain elements of the taxation reform, i.e. the adjustment of the tax-free allowance and the introduction of a second personal income tax (PIT) rate[4], are aimed at addressing the 2018 country specific recommendations from the European Council on reducing poverty and income inequality (Council of the European Union, 2018). In addition, consolidation of social insurance contributions is expected to raise employees' awareness of the negative consequences of "envelope wages" (Ministry of Finance of the Republic of Lithuania, 2019).

The economic literature does not provide clear evidence to support the advantages of social insurance contribution (SIC) shifts from employers to employees. There is no consensus whether formal legal incidence of a tax matters for its economic incidence (European Commission, 2015). However, studies suggest that transferring the tax burden to the worker might establish a clearer relationship between the contributions paid and the accrued rights to social benefits (Goudswaard and Caminada, 2015; Arpaia and Carone, 2004). Authors argue that, as such, social contributions start being perceived as a price (not as a tax) and this potentially leads to reduced distortions in terms of labour supply, labour costs and private savings.

Very few countries enforced the shift of the social contribution burden to the employees. This type of structural reform was implemented in Romania in 2018, but no other European country ventured to carry out such a policy change. A few South-American countries eliminated employers' contributions as part of a pension privatisation reform decades earlier, starting with Chile in 1981, followed by Peru and Bolivia in the 1990s[5]. Contrary to these cases, Lithuania was the only country that legislated the adjustment of gross wages so that net remunerations remained unchanged.

Previous to the adoption of the six-reform package, in 2018, the government replaced the additional tax-free allowance for children with a universal child benefit. The goal of this measure was twofold: on one hand, to ensure children would get financial support regardless of the parents' employment status, and, on the other hand, to tackle high child poverty.

In this brief[6], we analyse the fiscal, redistributive, equity effects of the labour taxation and child benefits reforms. In addition, we estimate the macroeconomic impact of the labour taxation reform. For these purposes, we use EUROMOD, the microsimulation model for the European Union Member States, and QUEST, the European Commission's dynamic stochastic general equilibrium model. Annex 1 describes the EUROMOD and QUEST models, and Annex 4 explains the main concepts used. This ex ante analysis covers the period 2019-2021. It is important to note that the assumptions used in the models for 2020-2021 are based on the economic forecasts made before the start of the COVID-19 pandemic. The economic context assumed is very different from the one experienced in the first half of 2020. Correspondingly, no policy responses to the COVID-19 pandemic were known at that time of the analysis and, therefore, were not available to include in the research. As such, the analysis provides a hypothetical evaluation of the impact of the tax and social benefit reforms, which took place in 2019, and their possible micro and macro impact under the assumptions of the economic growth in 2019-2021 with no interference of the pandemic.

Description of the 2019 reforms

According to the amended legislation, from 1 January 2019[7], the following changes were implemented:

- The social insurance contributions of employers were lowered from 31.2% to 1.77% (Parliament of the Republic of Lithuania, 2018a; State Social Insurance Fund, 2019a).

- The social insurance contributions paid by employees were increased from 9% to 19.5%.[8]

- Gross wages were indexed by 1.289 due to the consolidation of the social insurance contributions. The result of this is that the compensation paid by employers (wages plus social insurance) remains broadly unchanged.

- An income ceiling for social insurance contributions was introduced and set at 120 times the average monthly wage. The ceiling is to be gradually halved by 2021.

- The personal income tax rate was increased from 15% to 20% and a second tax bracket of 27% was introduced using as a threshold the contribution ceiling mentioned above (Parliament of the Republic of Lithuania, 2018).

- The maximum amount of the annual adjustable tax-free allowance was fixed at EUR 3,600 for 2019 and is set to increase in two steps to EUR 6,000 by 2021.

- The minimum wage was increased and indexed from EUR 400 in 2018 to EUR 555 in 2019.

- The replacement rates for social insurance benefits were reduced by law, in order to ensure that net benefits remain unchanged. The concerned benefits are: maternity (from 100% to 77.58% of an insured person's gross salary), paternity, childcare, sickness, unemployment benefits, and sickness benefit paid for caring for a sick family member (State Social Insurance Fund, 2019).

The labour taxation reform is closely linked to the pension system reform that was adopted at the same time in 2018. The reform aimed to cancel transfers from the State Social Insurance Fund (the first pillar of the pension system) to private pension funds (the second pillar of the pension system). As lower taxation implies higher disposable income, the government tried to nudge taxpayers to transfer their

extra euros to the private pension funds themselves, i.e. transfers from the State Social Insurance Fund were to be replaced by transfers from the pockets of the pension system participants (Ministry of Social Security and Labour, 2018). This component is not part of our simulations due to the behavioural component of the reform.

The government also reformed the following child benefits:

- The universal child benefit was introduced in 2018 to replace the additional tax-free allowance. The benefit was raised from EUR 30 to EUR 50 per child in 2019.

- The additional child benefit (means-tested for families having one or two children, but not for three or more) was set to EUR 20 for an eligible child, irrespective of their age (changed from EUR 28.50 for children up to 2 years old and from EUR 15.20 for children above this age).

The above-mentioned changes to the tax and benefit system were initiated during the period of economic expansion. Lithuania's GDP growth accelerated to 4.2% in 2017 and remained strong in 2018, reaching 3.6%. Unemployment dropped from 7.9% in 2016 to 6.2% in 2018. Furthermore, in 2016, for the first time, Lithuania managed to achieve a general government surplus amounting to 0.2% of GDP. It increased to 0.6% in 2018. During this period, general government debt remained below 40% of GDP and was on a downward path.

Simulated impact of the reforms in 2019

Changes to the labour taxation and the increase in the minimum gross wage as well as the affected social benefits were simulated in EUROMOD. The model uses 2016 EU-SILC data. Uprating factors are used to update incomes to 2018 values. The baseline scenario is modelled using the tax and benefit system as of June 30th, 2018.

In order to disentangle the impact of the various legislative changes, we simulated three scenarios: *Child benefits*, *Labour taxation* and the *Overall reform.* In the *Child benefits* scenario, we simulated the changes in the universal child benefit and the additional child benefit. In the *Labour taxation* scenario, we implemented the changes in the PIT system, the shift in social insurance contributions, the mandatory

indexation of gross wages[9] and the increase in the minimum wage. The entire impact of the above-mentioned scenarios is presented in the *Overall reform*. Annex 2 presents the simulated policies in detail. We first show the effect of all mentioned reforms on public finances, then focus on the impact on the tax wedge and later demonstrate the effect of the changes on poverty and income inequality.

A.   Effect on public finances

The overall budgetary cost of the simulated reforms amounts to EUR 753 million or 1.6% of GDP, i.e. the reforms are deficit-increasing. We estimate that the funding needed for the child benefits is EUR 148 million or 0.3% of GDP (see Graph 2), practically all of which is for the universal child benefit (EUR 139 million). Estimations by the national authorities point to lower costs of EUR 117 million or 0.24% of GDP (Ministry of Finance of the Republic of Lithuania, 2019a). This difference is mostly explained by varying assumptions on the take-up rate (eligible families applying for this benefit) and different data sources (survey versus administrative data).

Graph 2: **Budgetary impact of the reforms**
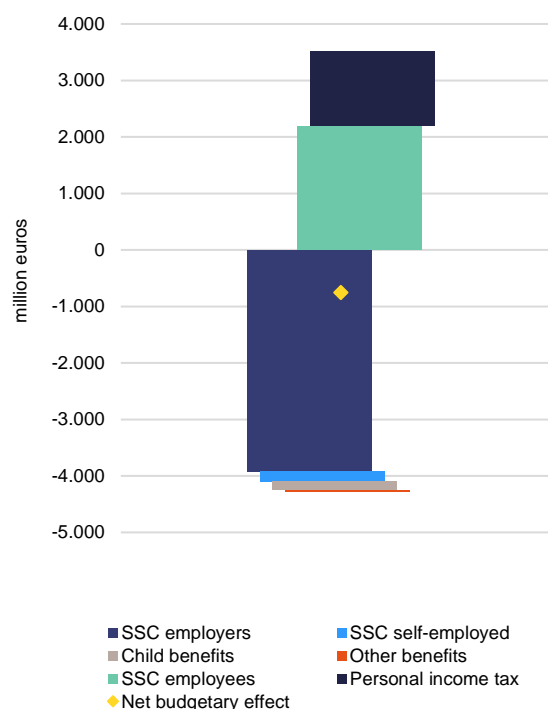
Source: Authors' calculations based on EUROMOD.

The total revenue losses stemming from the labour taxation reform amount to EUR 606 million or 1.3% of GDP. This overall effect derives from the decrease in receipts of social security contributions, which is only partially offset by higher personal income tax revenues. Due to the gross wage indexation and the increase in minimum wage, as well as the adjustment of PIT rates, revenues from personal income tax are expected to increase by EUR 1 327 million or 2.8% of GDP, which is in line with the calculations of the national authorities (Ministry of Finance of the Republic of Lithuania, 2018).

The simulated losses in revenue of social insurance contributions are estimated to reach EUR 1 910 million or 4.0% of GDP. This is slightly above the assessment by the national authorities (3.8% of GDP) (Ministry of Finance of the Republic of Lithuania, 2018). The difference mainly stems from the social insurance contributions paid by the self-employed due to differences in the data and methods used. The simulated revenue losses related to taxation of wages are in line with the assessment prepared by the national authorities.

The substantial cut in government revenues might limit the government's capacity to address high income inequality and poverty in the future. According to the 2019 Draft Budgetary Plan and the 2019 Stability Programme, the estimated losses were expected to be partially covered by additional revenues linked to improved tax administration (0.5% of GDP) and thanks to the termination of transfers from the Social Security Insurance Fund to private pension funds (0.4% of GDP). However, the first measure should be considered cautiously due to uncertain yields. At the same time, the second measure has a sizeable positive effect on the general government balance only in 2019 and 2020.

B.   Effect on the tax wedge

To better understand the impact of the reforms for different types of families, the tax wedge is calculated using EUROMOD's Hypothetical Household Tool (HHoT). In the baseline, the tax wedge increases with earnings. For a single low-wage earner (50% of the average gross wage), the tax wedge is 33.5%, and for high-wage earners (167% of the average gross wage), it is 42.1% (Graph 3). The tax wedge for families with children is lower due to child benefits[10] and social assistance payments.
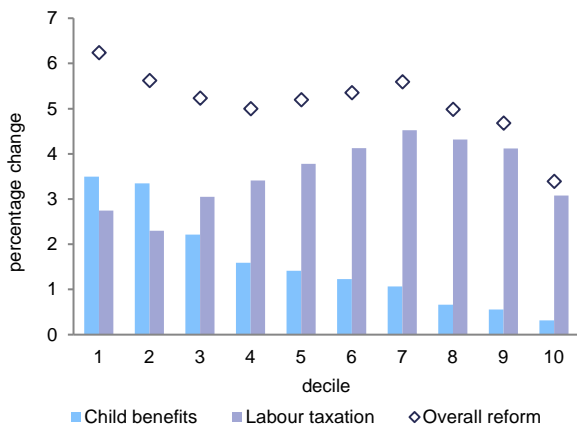
Graph 3: **Tax wedge: hypothetical household types**
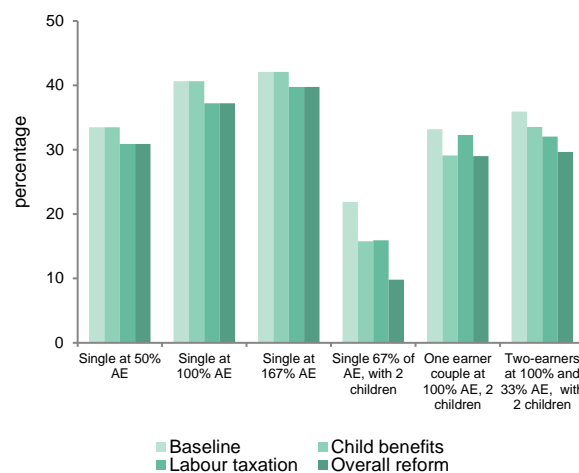
The *Labour taxation* reform reduces the tax wedge for the average single wage earner without children by 3.4 percentage points (pps). However, the impact for the low-wage and high-wage earners is noticeably smaller at 2.6 and 2.4 pps respectively. These figures are in line with the impact assessment initiated by the government (ESTEP, 2018).

Both the *Child benefits* and *Labour taxation* scenarios reduce the tax wedge for all simulated hypothetical families. The effect is stronger for single low-wage earners with two children (67% of average gross earnings): the tax wedge is reduced from 21.9% in the baseline to approximately 15.8% in both scenarios (for this group). The *Overall reform* brings it further down to 9.8%. For two-earner families, the *Labour taxation scenario* reduces the tax wedge more than for one-earner families as they are both benefitting from the higher tax-free allowance.

C.   Effect on disposable income, inequality and poverty

The *Overall reform* increases the equivalised disposable income on average by 4.7% (from 6.2% for the lowest decile to 3.4% for the top decile). The progressive impact is mainly driven by the *Child benefits* reform, as it particularly improves the financial situation of the lowest income deciles. These effects are topped up by the *Labour taxation* reform, which benefits mostly the households from the 6th to the 9th deciles (Graph 4).
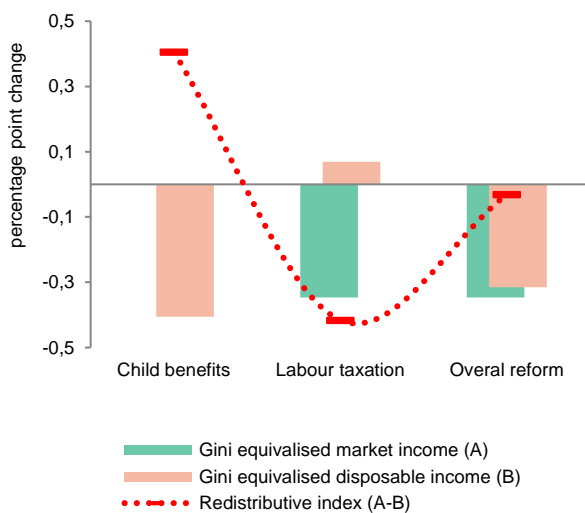
Graph 4: **Impact on mean equivalised disposable income, by decile**
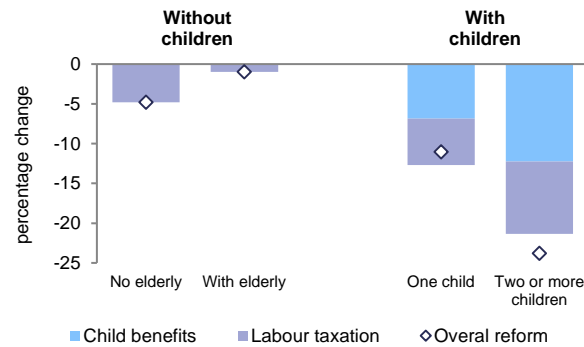

Source: Authors' calculations based on EUROMOD.

Graph 6: **Impact on at-risk-of-poverty rates, by household types**

Note: Poverty line is EUR 4,354 (60% of median equivalised annual disposable income).

Source: Authors' calculations based on EUROMOD.

The *Overall reform* has almost no impact on the redistribution of income[11]. However, this is the result of the opposing directions on inequality of the *Child benefits* and *Labour taxation* reforms. On the one hand, the changes in child benefits increase the redistributive capacity of the tax-benefit system and, therefore, reduce the disposable income inequality by 0.4 pps from 34.85%. On the other hand, the minimum wage increase reduced market income inequality by 0.35 pps, from 52.12% (Graph 5). This positive effect was more than offset by the regressive impact of the social insurance contribution shift, which raised disposable income inequality by 0.07 pps compared to the baseline.

Graph 5: **Impact on inequality**

Source: Authors' calculations based on EUROMOD.

The *Overall reform* reduces the at-risk-of-poverty rate on average by 2.1 pps (from 20.8% to 18.7%). Separately, the *Child benefits* reform reduces poverty by 0.9 pps, while the *Labour taxation* reform brings it down by 1.1 pps. For households with children, the total impact of the reform does not amount to the deconstructed effects of the two reforms because of interactions in the tax and benefit system. For example, for some households, the increase in disposable income from either of the reforms is not sufficient to lift the household out of poverty, while the income increase of the combined reforms brings that household over the anchored poverty line. The impact for adult households where at least one person is 65 years (or older) is limited because their main source of incomes are pensions, which are not affected by the reforms (Graph 6).

Evolution of the reform in 2020 and 2021

We simulated two additional scenarios adopted by the government that comprise the increases in the tax-free allowance and minimum wage as well as decreases in the threshold of the second PIT rate for 2020 and 2021. Further details of the policy changes are provided in Annex 2. According to the simulation results, the measures lead to additional PIT revenue losses of approximately 0.4% of GDP, in both 2020 and 2021. These estimations do not assume further increases in gross wages and are broadly in line with the assessment submitted by the national authorities to the European Commission (Ministry of Finance of the Republic of Lithuania, 2018).

These sequential changes increase disposable income, but mainly for the middle of the income distribution (Graph 7). The bottom decile is less affected, given the low share of wage-earners (2.8%). As EU-SILC does not capture well the highest incomes, the second PIT rate kicks in only in 2021 in the simulations, reducing the net wages of top earners.

Graph 7: **Impact on mean equivalised disposable income, by decile**
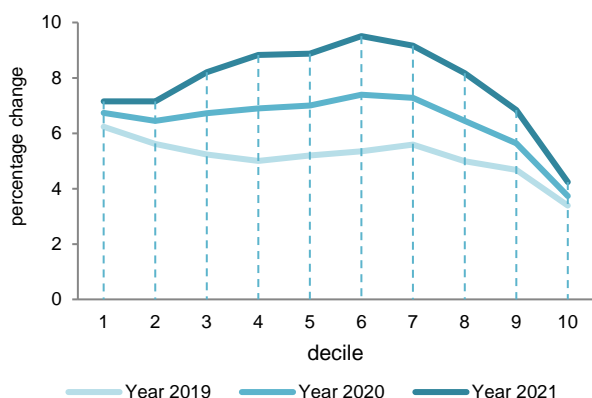
Source: Authors' calculations based on EUROMOD.

The tax wedge is further decreasing for almost all hypothetical households in 2020 and 2021, except for single parents with two children and earnings of 67% of the average wage. Due to the increase in the tax-free allowance, and therefore net income, single parents with two children earning 67% of the average wage would lose their entitlements to the social assistance benefit[12]. For this reason, the tax wedge is higher in those years (Graph 8).

Graph 8: **Tax wedge for different hypothetical families**
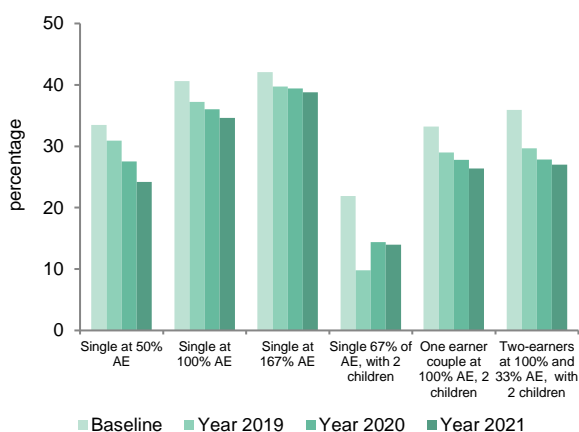
Source: Authors' calculations based on EUROMOD's HHoT.

Both market and disposable income inequality decrease due to different factors (Graph 9). Market income inequality is reduced due to the higher minimum wage, while the more generous tax-free allowance and the second PIT rate decrease disposable income inequality. Since the impact of the latter factors is stronger, redistribution of incomes is increasing over time.

Graph 9: **Impact on inequality**
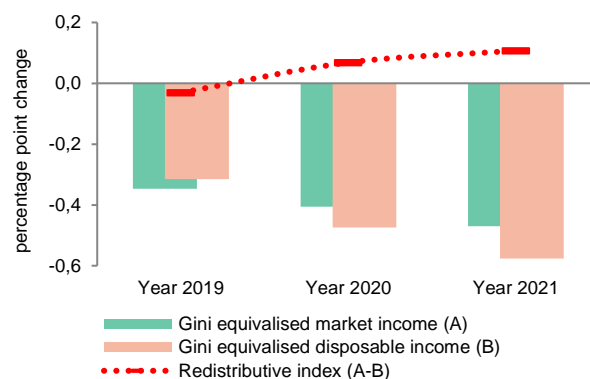
Source: Authors' calculations based on EUROMOD.

These sequential reforms further lower the at-risk-of-poverty rate. It decreases from 18.7% in 2019 to 18.3% in 2020 and 17.9% in 2021. Poverty is reduced the most among households with two or more children (by 7.8 pps in 2021 compared to 2.9 pps for the whole population).

Simulated impact of the reforms on growth and employment

This section focuses on the macroeconomic effects of the labour taxation reform and the minimum wage increase[13]. For this purpose, the QUEST global dynamic macroeconomic model was used, which can account for the second-round behavioural impacts of the measures implemented in 2019 (see Annex 1 for a description of the model). To be more precise, the following reforms were simulated: (i) a shock of the tax rates on labour for employers and employees (+14.7 pps on the employee side and -29.5 pps on the employer side) and (ii) a rise in wage mark-ups by 27% to account for the gross wage indexation element of the labour taxation reform, and an additional 2% wage-mark up rise for the minimum wage increase.[14]

In principle, firms can mitigate the increase in employee compensation by adjusting the legally

non-binding variable element of wages. However, the latest statistical data on wages and employee compensation points to a more than 30% increase in gross wages with stable employment figures (Statistics Lithuania, 2019). This suggests that, due to labour market tensions, Lithuanian firms were ready to pay their workers even higher wages beyond the new legislative requirements, as happened in Romania after a similar labour taxation reform was implemented in 2017 (Balcerowicz et al., 2019).

The tight labour market conditions are reflected in the QUEST model simulations. Using a variant of the QUEST model for minimum wage simulations, Pfeiffer et al. (2018) show that in a monopsony labour market, firms internalise the impact of their hiring on wages, in an attempt to increase profits by keeping the wage level low. However, due to the lack of labour force in Lithuania, a highly competitive labour market setting is used, i.e. firms take wages as a given when deciding about labour demand.

The model-based simulation indicates a close to 30% increase of real gross wages (see Graph 10). The shift of social insurance contributions from employers to employees allows firms to increase gross wages without further increasing the total compensation of employees and, hence, their costs. At the same time, workers at all skill levels can demand higher gross wages to compensate for the higher social insurance contributions they have to pay in order to protect their net wages. Moreover, due to the rising minimum wages, the most affected lower skilled employees can account for the highest, gross wage increase (over 30%). Annex 3 provides additional details.

Graph 10: **Macroeconomic impact of the reforms**
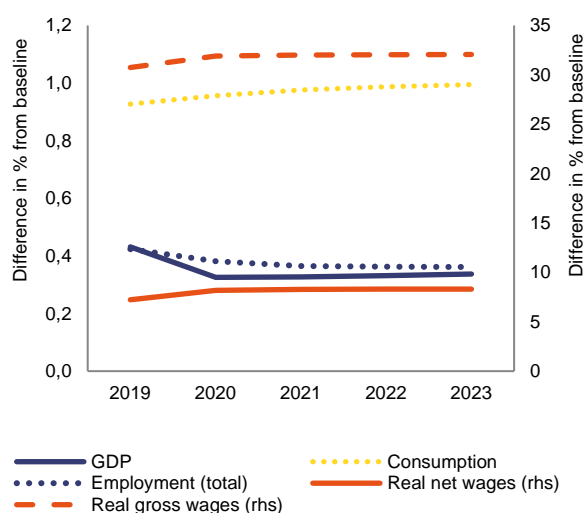
Source: Authors' calculations based on QUEST.

Overall, the measures have a small stimulating effect on the economy as the tax burden on labour is decreasing. GDP is expected to be up by 0.4% in the first year and stay around 0.3% above the baseline in the following four years. It should be noted that this analysis does not take into account the pension reform, i.e. decisions of the working population (not) to accumulate funds in the second pillar of the pension system at the expense of consumption.

Five years after the reform, aggregate employment is set to have increased by 0.4% while employees take home 7% higher net wages on average, which contributes to the 1% increase in private consumption. These effects are much smaller compared to the results of the impact assessment procured by the government; however, the latter study takes into account the whole package of six reforms (ESTEP, 2018).

The combined effect of the simulated reforms worsens the government balance by close to 1.5% of GDP. Note that the economic effect of these measures beyond the short-run horizon depends on the type of resources the government uses in the long-run to compensate for the missing tax-revenues. Analysing the effects of various debt-rules to balance the government budget goes beyond the scope of this analysis[15].

Conclusions

According to the simulation results, in 2019, the reforms decrease the tax wedge, but only marginally contribute to lowering poverty and income inequality. The progressive impact is mainly driven by the *Child benefits* reform, as it particularly improves the financial situation of the lowest income deciles. The *Labour taxation* reform, however, favours mostly the households from the middle and the top of the income distribution. Increases in the tax-free allowance and the minimum wage for 2020 and 2021 are expected to further decrease income inequality and the at-risk-of-poverty level.

Government revenue losses linked to the *Overall reform* are substantial. The budgetary cost of the *Child benefits* reform accounts for almost one fifth of the overall cost, i.e. the *Labour taxation* reform is the most expensive element of this package. For the latter, our estimations are in line with assessments of the national authorities. The 2020 and 2021 measures are set to impose an additional burden on

public finances. Decreased government revenues, in turn, might limit possibilities to address issues of income inequality and poverty in the future.

The *Labour taxation reform* has a small stimulating effect on the economy, due to the slightly decreasing tax burden. The results point to increasing employment and wages, which, through private consumption, are set to have a positive impact on GDP growth.

All results of this analysis should be seen as providing a hypothetical insight into expected impacts of the implemented reforms at the micro and macro levels under the economic conditions with no interference of the global health crisis.

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Annex 1: EUROMOD and QUEST models

EUROMOD is a tax-benefit modelling tool for the EU-28 countries. It allows the simulation of reforms of personal taxes and benefits and provides their fiscal/macro impact – through the use of statistical weights, defined by EUROSTAT – as well as indicators on their distributional impact, by household/individual groups according to socio-economic variables of interest. EUROMOD can be used to analyse the first-round fiscal impact of tax and benefit reforms on government budgets and on disposable income, as well as the effect of contributions and social insurance regulations. The model generates disposable individual and household incomes, applying countries´ tax codes and calculating theoretical benefit entitlements and tax liabilities. Importantly, the EUROMOD model directly embeds the interactions between the tax code and benefit system, which are generally absent from other models. The micro-data behind EUROMOD comes from the EU Statistics on Income and Living Conditions survey (EU-SILC) which is harmonised by Eurostat. EUROMOD takes some variables directly from the underlying EU-SILC data, such as demographic and labour market characteristics, gross market income and other incomes (pensions, incomes from other households, etc.), and some expenditures (housing costs including mortgage, life insurance payments, etc.). While demographic and labour market characteristics remain the same, uprating factors are used to bring the income values from the survey reference period up to the level of the year in which the tax and benefit system is coded. These uprating factors are typically index variables taken from Eurostat or national statistical offices such as the consumer price index, earnings increase or other legal variations in benefit amounts. In the present simulation uprating factors are used to update incomes to 2017 values. The baseline scenario is modelled using the tax and benefit system as of June 30th, 2017. Social insurance contributions are simulated based on the number of months in employment during the income reference period. Adjustments for tax compliance (social insurance, health insurance, income tax) are implemented in the case of self-employed in agriculture, living in rural areas with income level below the average gross wage (3,131 RON). The EUROMOD simulations are static and do not incorporate second-round and behavioural effects that may also affect tax receipts.

EUROMOD's extension Hypothetical Household Tool (HHoT) allows designing hypothetical households and generating data according to desired household characteristics. This data is then used to estimate the effects of baseline or reform systems on household disposable income. For more information please consult EUROMOD Hypothetical Household Tool (HHoT) – User manual (2017) and Hufkens et al (2018).

QUEST is the global macroeconomic model of the Directorate General for Economic and Financial Affairs (DG ECFIN). It is a micro-founded, structural macro-model in the New-Keynesian tradition with frictions in goods, labour and financial markets. It is the main macroeconomic model used by DG ECFIN to analyse the impact of fiscal and monetary policy scenarios, and structural reforms in the EU Member States (see, for instance, in 't Veld at al., 2018; Burgert and Roeger, 2014; Vogel, 2012). The model is calibrated to match the observed empirical ratios from EUROSTAT in terms of the main macroeconomic variables (e.g. investment, consumption to GDP ratios, wage share). In addition, we use information from the EUROMOD microsimulation database to pin down the baseline employment rates, tax wedges and skill-premiums. (For further descriptions and applications of the different QUEST model variants, see https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/economic-research/macroeconomic-models_en).

Annex 2: EUROMOD baseline and reform scenarios

	BASELINE	REFORM 2019	REFORM 2020	REFORM 2021
Gross wage (GW)	-	+28.9%	*	*
Minimum wage (MW)[16]	400€	555€	580€	600€
Average wage (AW)	808.7€	1,136.2€	1,215€	1,286€
Universal child benefit	30.02€	50.16€	*	*
Additional child benefit	28.50€ for children up to 2 years old 15.20€ for older kids	20.14€ for all children	*	*
Personal income tax	15%	20% and 27%	*	*
– Rates	n/a	AW*120/12	AW*84/12	AW*60/12
– Thresholds				
Basic tax allowance				
– Amount	– 380€	– 300€	– 400€	– 500€
– Withdraw rate	– 0.5	– 0.15	– 0.20	– 0.23
SIC employer				
– Pension	– 22.3%	– n/a	*	*
– Health	– 3%	– n/a		
– Maternity	– 2.2%	– n/a		
– Sickness	– 1.4%	– n/a		
– Unemployment	– 1.4% or 2.8%	– 1.31% or 2.03%		
– Accidents at work	– 0.18%	– 0.14%		
– Guarantee Fund	– 0.2%	– 0.16%		
– Long-term Employment Fund	– 0.5%	– 0.16%		
SIC employee				
– Pension	– 3%	– 8.72%	*	*
– Health	– 6%	– 6.98%		
– Maternity	– n/a	– 1.71%		
– Sickness	– n/a	– 2.09%		
SIC self-employed				
– Pension	– 22.3% + 3%	– 8.72%	*	*
– Health	– 3% + 6%	– 6.98%		
– Maternity	– 2.2%	– 1.71%		
– Sickness	– 1.4%	– 2.09%		
– Unemployment	– 1.4%	– 1.31%		
SIC credited				
– Pension	– 22.3% of MW	– 8.72% of MW	*	*
– Health	– 26.78€	– 31.09€		
– Unemployment	– 1.4% of MW	– 1.31% of MW		
Maternity & Paternity leave benefit	GW *100%	GW * 77.58%	*	*
Parental leave benefit	*Parental leave of 1 year:* GW*100% *Parental leave of 2 years (1st year):* GW * 70% *Parental leave of 2 years (2nd year):* GW * 40%	*Parental leave of 1 year:* GW * 77.58% *Parental leave of 2 years (1st year):* GW * 54.31% *Parental leave of 2 years (2nd year):* GW * 31.03%*	*	*
Unemployment insurance benefit Net minimum wage (NMW): Upper limit:	361€ *1st-3rd month:* GW * 50% + 30% * fix elem. based on MW and NMW *4th-6th month:* GW * 40% + 30% * fix elem. based on MW and NMW *7th-9th month:* GW * 30% + 30% * fix elem. based on MW and NMW AW * 75%	395€ *1st-3rd month:* GW*38.79% + 23.27% * fix elem. based on MW and NMW *4th-6th month:* GW*31.03% + 23.27% * fix elem. based on MW and NMW *7th-9th month:* GW * 23.27% + 23.27% * fix elem. based on MW and NMW AW * 58.18%	431€ *	463€ *

* The same as in 2019

Annex 3: QUEST simulation results (difference in % from baseline)

	Years				
	1	**2**	**3**	**4**	**5**
GDP	0.43	0.33	0.33	0.33	0.34
Employment	0.42	0.38	0.37	0.36	0.36
- low skilled	0.88	0.96	0.96	0.95	0.95
- medium skilled	0.41	0.33	0.31	0.30	0.30
- high skilled	0.38	0.37	0.35	0.35	0.35
Real gross wages	29.64	30.24	30.39	30.43	30.45
- low skilled	30.80	33.24	33.43	33.47	33.48
- medium skilled	30.74	31.90	32.01	32.04	32.06
- high skilled	28.83	28.92	29.10	29.15	29.16
Real net wages	6.26	6.88	7.00	7.03	7.04
- low skilled	8.19	10.21	10.37	10.40	10.41
- medium skilled	7.23	8.18	8.27	8.30	8.31
- high skilled	5.04	5.11	5.25	5.29	5.30
Consumption	0.93	0.96	0.98	0.99	0.99
Investment	0.19	0.33	0.37	0.37	0.35
Consumer prices, incl. VAT	0.17	0.11	0.10	0.09	0.08
Government balance (% GDP)	-1.49	-1.64	-1.74	-1.86	-1.98
Shock to average labour tax-rate on employees	14.71	14.70	14.70	14.70	14.70
Shock to average labour tax-rate on employers	-29.48	-29.48	-29.48	-29.48	-29.48

Annex 4: Definitions

Equivalised disposable income

Equivalised disposable income is defined as the total disposable income of a household adjusted for the household composition by taking into account economies of scale. In Eurostat wording, it is the "total income of a household, after tax and other deductions, that is available for spending or saving, divided by the number of household members converted into equalised adults; household members are equalised or made equivalent by weighting each one according to their age, using the so-called modified OECD equivalence scale". This scale assigns a weight of 1 to the household head, 0.5 to other adults (14 year-old or older) and 0.3 to children (younger than 14). The result of the calculation is attributed to every member of the household.

Deciles

Income decile groups are defined as groups of individuals with equal population size sorted by a characteristic of interest, e.g. equivalised disposable income. This means that the first decile represents 10% of the population with the lowest income i.e. an income smaller or equal to the first cut-off value, and the tenth decile represents 10% of the population with the highest income i.e. an income greater than the ninth cut-off value.

Gini coefficient

The Gini coefficient measures "the extent to which the distribution of income within a country deviates from a perfectly equal distribution. A coefficient of 0 expresses perfect equality where everyone has the same income, while a coefficient of 100 expresses full inequality where only one person has all the income". The Gini coefficient is a relative measure of inequality, which means that (1) the degree of inequality remains constant if we increase or reduce all incomes by the same proportion; (2) the degree of inequality increases if we increase the income of the rich by a higher proportion than that of the poor, (3) the degree of inequality decreases if we increase the income of the poor by a higher proportion than that of the rich. Gini coefficients in the above analyses are computed on the basis of equivalised disposable income.

At-risk-of-poverty rate

The at-risk-of-poverty rate is defined as the "share of people with an equivalised disposable income (after social transfer) below the at-risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income after social transfers".

Tax wedge

The tax wedge is expressed as a difference between labour costs of the employer and the net take-home pay of the employee. It measures the part of labour costs which is taken in personal income taxes, social insurance contributions (employee and employer) minus social benefits received.

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[1] The definition of the tax wedge is provided in Annex 4.

2 In 2017, the tax wedge for Lithuania amounted to 34.36% for a single earner without children with 50% of the average wage, compared to 32.47% in the EU (DG ECFIN Tax and benefit indicators).

[3] Envelope wages represent undeclared, cash-in-hand payments that are added to the formal wage based on an unwritten verbal contract between employers and employees.

[4] Lithuania is not the only Central and Eastern European country to re-introduce a progressive PIT schedule. In early 1990 Lithuania, Latvia and Estonia adopted flat tax schemes. Romania, Bulgaria, Hungary Slovakia, Czechia did that in early 2000 (Barrios et al, 2019). A decade later, Slovakia and Czechia re-introduced a second PIT rate (Czechia as a temporal measure, which is still in place). Later, in 2017 Latvia added a second bracket and so did Lithuania in 2018. Some degree of progressivity already existed in those countries because of a basic tax allowance, which was made progressive (phases out with increased earnings) in 2007 in Slovakia, in 2009 in Lithuania, in 2016 in Latvia and in 2018 in Estonia.

[5] The contributions to private pension funds were made compulsory and financed only by employees.

[6] This brief provides a broader ex ante analysis of the reforms. A shorter initial assessment was provided in the Country Report Lithuania 2019 (European Commission, 2019).

[7] It should be noted that some laws were amended again in December 2019 as previously scheduled changes to tax and benefit system could not be financed due to limited budget capacity.

[8] Due to the indexation of wages, it is not possible to see the effects of the reform on the tax burden by simply comparing the rates.

[9] Aside from the mandatory indexation, gross wages are assumed to be constant at the level of 2018. Only the minimum wage is adjusted.

[10] In our hypothetical simulations, all children are above 2 years old. However, according to the reforms, the tax wedge of families with children below 2 years old would be lower in the baseline scenario due to a more generous additional child benefit.

[11] The redistributive index is computed as the difference between market and disposable income inequality.

[12] The assumption is that earnings are being fixed to the baseline level (no wage growth is modelled) and that thresholds for assessing the eligibility for social assistance remain the same for all years.

[13] The macroeconomic impact of the child benefits reforms is not simulated due to the fact that, in QUEST, government transfers are not disentangled.

[14] This methodology avoids any double-counting of the second-round effects because EUROMOD is a static microsimulation model without any behavioural response from the economic agents. The QUEST model endogenously generates the behavioural impact of the measures on the main macroeconomic variables based on the agents' optimising conditions.

[15] The compensating debt-rules in the short-short term are switched off in order to see the direct budgetary effect of the reforms.

[16] The values of the minimum wage for 2020 and 2021 were selected by the authors based on average increases of this indicator in the past.

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