

### Introduction

A flexible and effective labour market is one of the major preconditions for sustainable economic development, particularly when a country's participation in the economic and monetary union is a barrier for a fast adjustment of its economy to macroeconomic shocks (since a single monetary policy for all countries cannot take into account economic problems specific to each individual country).<sup>15</sup> Under such circumstances, structural reforms become one of the most important policy measures that help the economy remain competitive, flexible and capable to adapt fast to the global economic environment. This Annex focuses on the labour market that is of vital importance to both consumers (income related to employment relationships account for the major share of disposable income) and businesses (their operating results largely depend on the labour force, one of the major production factors). No wonder that the labour market has an impact on the goods and services market, prices, competitiveness, life standard, etc.

The Annex focuses on two labour market institutions that have been broadly analysed in economic literature, namely active labour market policies (ALMPs) and unemployment benefits. The magnitude of the latter is usually estimated by employing the so-called replacement rate, which measures the share of the previously earned wage, which an individual who lost his job can expect to receive. Before introducing the results of the analysis that show the impact of these measures on Lithuania's economy and establishing their link to the new social model in Lithuania, some insights into the effects of such measures, which can be found in economic theory and empirical literature, are presented.

### 1. Transmission channels of the impact of labour market institutions on the economy

As the economic impact of labour market policies manifests in various ways, first it would be useful to discuss what the impact is in a closed economy, i.e. to abstract away from the impact related to international trade and the international capital market.<sup>16</sup> Higher unemployment benefits in a closed economy help improve job seekers' expectations about compensation as well as increase the employees' bargaining power, thus leading to the growth of wages and a decrease in the labour supply. By the way, benefits can also encourage participation in the labour market, as the right to receive them is acquired only through employment relationships. In such case, the labour supply increases. Finally, since tax revenues are used to cover benefits, an increase in the tax rate bears negative effects on economic activity.

Empirical studies, such as a research based on the data from 20 OECD countries (Layard *et al.*, 1991), reveals that the increase in replacement rates leads to the growth of unemployment. The increasing unemployment benefit duration rather than its amount has the strongest impact on the unemployment rate (Boeri, van Ours, 2008). Consequently, positive aspects of unemployment benefits (higher financial security, lower risks of changes in income, improved possibilities of preserving human capital amid decreasing pressure to take the first job offered) should not to be assessed separately; on the contrary, they should be assessed together with negative effects — a longer duration of the unemployment status, lower intensity of job search, higher wage pressures, sustainability of financing resources, and the potentially sluggish labour market.

Another labour market institution, ALMPs, is divided into training, employment subsidies, public work programmes, and activation, i.e. increasing incentives for participation in the labour market. The positive aspects of ALMPs are obvious: improvement and acquisition of skills demanded by the labour market, lower uncertainty regarding the employee's suitability, etc. The use of ALMPs is often a precondition for receiving an unemployment benefit. This is where the negative impact kicks in, i.e. job search intensity may decrease when participating in a public employment programme.

Empirical studies have failed to determine any robust impact of ALMPs. For example, when analysing unemployment dynamics in the OECD countries and the impact of labour market measures (Bassanini and Duval, 2006), it was concluded that unemployment benefits contribute to the increase in unemployment; however, the effects of ALMPs are not clear-cut. The research suggests that some types of ALMPs, such as labour market training, have stronger effects on the decrease in unemployment. Heckman *et al.* (1999) determined that ALMPs bear different effects on different employees' groups, yet the effects of ALMPs on employment prospects are modest. Research based on micro-level data reveal a positive effect, linked to activation measures (Boeri, van Ours, 2008), yet the results of micro-level data-based research are usually rather obscure.<sup>17</sup>

However, all the above-mentioned papers fail to recognise one significant aspect — the importance of a country's economic openness. The impact of labour market institutions depends on the level of economic openness, while economic openness can have important implications for the functioning of the labour market as well.

<sup>15</sup> It is applicable also when speaking about the period, when Lithuania's monetary system was based on the currency board arrangement, and the litas was pegged to the US dollar, and later — to the euro.

<sup>16</sup> It is assumed that the country is an autarky, i.e. it does not trade with other countries.

<sup>17</sup> Possible explanations include the following: a crowding-out effect (one employment programme participant that got a job reduces job finding odds for a non-programme participant), programme participant's decreased job search intensity, fiscal replacement effect (when a positive impact of ALMPs is basically offset by a negative impact related to a tax increase linked to the financing of the programme), etc.

## 2. Economic theory insights into the structural labour market measures of an open economy

Economists agree about the necessity of well functioning labour market institutions, but, as Blanchard (2006) accurately summarises, one thing is to know that they matter, and quite the other is to know exactly which ones matter and in what way. A conceptual understanding of the impact of labour market measures is necessary to assess the importance of structural reforms for the economy. Since Lithuania's economy is small and very open, this section discusses theoretical models of an open economy, namely insights from theoretical research on the impact of international trade on the labour market and the impact of the labour market on economic openness.

Felbermayer *et al.* (2011) state that, under certain assumptions, labour market tightness and the number of producers of intermediate goods do not have any effects on labour productivity, and, therefore, economic policy should be primarily used to reduce barriers to market entry and promote international trade. According to Dutta *et al.* (2009), even though the impact of international trade on the labour market largely depends on the nature of trade (i.e. on factors determining country's competitive advantage), in the long-run, trade liberalisation is related to lower unemployment rates. Other theoretical studies reveal that the relation between economic openness and the labour market may be far more nuanced. For instance, the work by Helpman and Itskhoki (2010) suggests that trade liberalisation may lead to lower unemployment, provided that the labour market in trading sectors is more flexible than in non-trading ones, and to higher unemployment, if the labour market in non-tradable sectors is more flexible. In a subsequent paper (Itskhoki and Helpman, 2015), authors emphasise that even though higher economic openness is often accompanied by employees' lay-offs and bankruptcies of the least productive enterprises, the negative effect is offset by the performance of the most-productive exporters. Another important finding of this research is that, with more intense international trade, adjustment costs are lower when the labour market is more flexible. Consequently, changes in the labour market, which help boost its flexibility, may speed up the adjustment to a more interconnected economic environment.

The question may also be analysed from another perspective, i.e. by looking at the impact of the labour market on the country's economic openness. For example, Felbermayer *et al.* (2013) emphasise that labour market institutions have an impact on terms of trade and, consequently, on trade itself. Thus, when considering labour market reforms, the impact on relative terms of trade should also be taken into account, as the terms of trade may prompt changes in the country's specialisation and the structure of the export sector.

Lastauskas and Stakėnas (2015) also analyse the effects of labour market institutions on the country's economic openness, yet, the economy in their model has a more complicated (sectoral) structure compared with the one in the study by Felbermayer *et al.* (2013).<sup>18</sup> According to their model, labour market measures induce changes to labour market tightness which, in turn, affects wages and prices. However, the impact on economic indicators depends on whether the market of homogenous economic goods is capable of absorbing the impact of labour market changes. The model was used for the empirical analysis of 15 European countries<sup>19</sup>; it showed that changes in labour market institutions would have heterogeneous effects on economies in the analysed sample. However, if labour market reforms were implemented simultaneously in all countries, their effects would be much more aligned, due to spillover effects that compensate each other.

Felbermayer *et al.* (2015) underline the role of spillover effects in another paper as well. The model demonstrates that unemployment benefits increase unemployment not only in the country undergoing a reform, but also in all its trading partners. It is important to note, however, that in order to make the effect close to its empirical counterparts, wages need to be quite rigid. However, theoretical literature increasingly comes to a conclusion that the impact of labour market measures should not be analysed separately, without linking it with countries with which the country undergoing a reform has economic ties.

## 3. Replacement rates and the impact of active labour market policies on Lithuania's economy

This section reviews empirical results from a study that models Lithuania's economy as part of the global trade network. The aim of the research was to find out the effects of the change in some labour market policies on Lithuania's economy. The impact was estimated both domestically and globally.

The empirical model is based on theoretical literature, suggesting that labour market policies affect labour market tightness, whilst the latter affects unemployment. As unemployment has an impact on income, prices, competitiveness, and economic openness, all these variables must respond to changes in unemployment. Taking this into consideration, the empirical macroeconomic model is built using real GDP, unemployment, the level of openness to international trade (international trade over GDP), and the real effective exchange rate.<sup>20</sup> Two institutional variables that characterise the labour market are also included: unemployment benefits (replacement rate) and expenditure on ALMP over GDP.

To find out whether Lithuania's (the economy of which is rather small) economic openness and integration into the global trade network may have effects on the efficacy of labour market reforms, three vector autoregression models have been estimated: 1) a basic model, which does not include variables characterising economies of Lithuania's trade partners; 2) a

<sup>18</sup> Unlike in the model by Felbermayer *et al.* (2013), their economy consists of two sectors — differentiated and homogeneous goods.

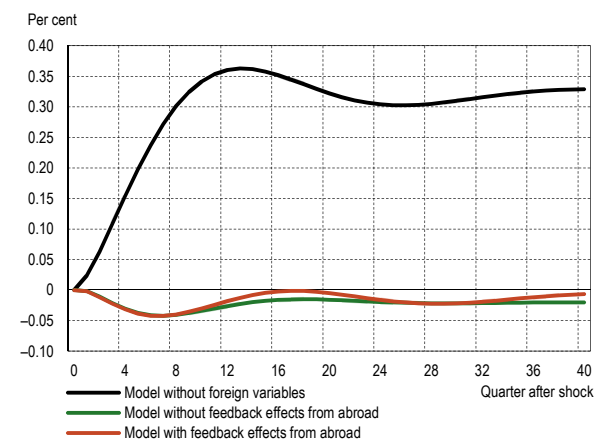
<sup>19</sup> The GVAR methodology applied in the empirical part of the research, *inter alia*, makes it possible to take into account economic interlinkages among countries.

<sup>20</sup> It is defined as a ratio of the domestic labour price to a weighted average of labour prices in trading partners.

model, which includes the above-mentioned variables, but does not account for feedback effects (variables characterising the economies of Lithuania's trading partners may affect Lithuanian economic variables but not vice versa); 3) a model that also allows for feedback effects.<sup>21</sup> The results are summarised by discussing the impact of the replacement rate and expenditure on ALMP on GDP, the unemployment rate, economic openness, and the real effective exchange rate.

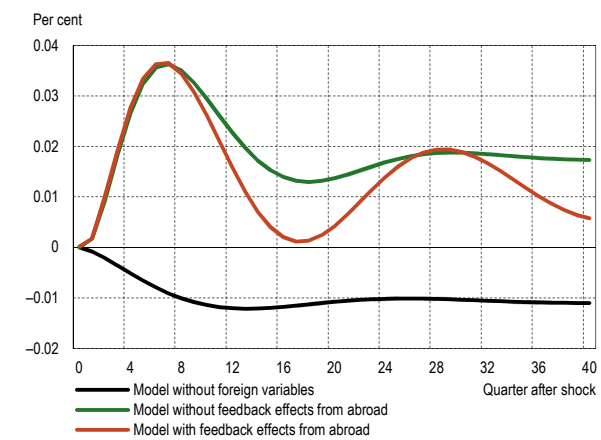
Chart A and Chart B show the impact that the unemployment replacement rate and expenditure on ALMP have on GDP. Excluding the impact of foreign markets, it may seem that higher unemployment benefits contribute to an increase in GDP, while expenditure on ALMP contributes to a decrease in GDP. However, the total foreign market impact outweighs the direct effects. The overall result is that unemployment benefits have almost no effect (or a slightly negative effect) on GDP, while the influence of changes in expenditure on ALMP is substantially positive. When estimating the shock caused by expenditure on ALMP, it was determined that a 1 per cent increase in such expenditure raises GDP by 0.035 per cent in two years after the shock. Though the impact on GDP exerted by the expenditure on ALMP may look insignificant, it should be evaluated taking into account the overall context: in 2013, expenditure on ALMP accounted for only 0.23 per cent of GDP; consequently, its increase by 1 per cent cannot cause a strong response in GDP. With regard to proposals concerning the new social model in Lithuania, expenditure on ALMP is likely to grow approximately by 25.5 per cent. If this turns out to be true, two years after changes in the expenditure on ALMP, the response in GDP would account for 0.89 per cent.

Chart A. Change in GDP due to 1 per cent increase in the unemployment replacement rate



Source: Bank of Lithuania calculations.

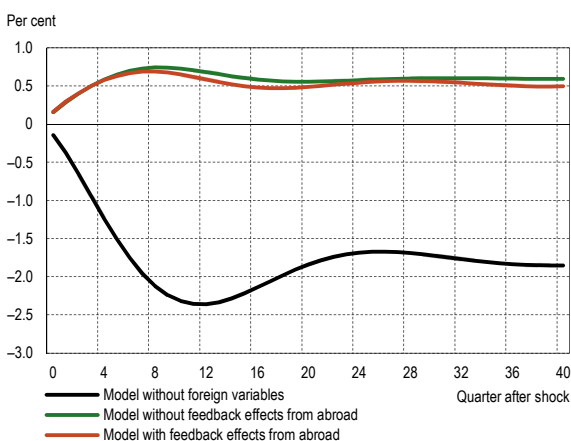
Chart B. Change in GDP due to 1 per cent increase in expenditure on active labour market measures



Source: Bank of Lithuania calculations.

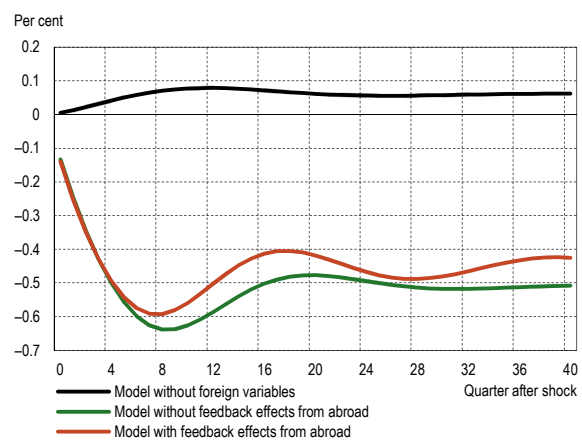
The effects of the replacement rate and expenditure on ALMP on the unemployment rate (see Charts C and D) basically replicate insights about the impact on GDP. The unemployment rate, excluding the impact of foreign variables, may go down due to an increase in unemployment benefits and remain broadly unchanged due to the changes in expenditure on ALMP. However, when simulating the impact of labour market changes on foreign markets and aggregate impact of spillover effects on Lithuania's labour market, a literature-proven effect is determined: by affecting job seekers' motivation and boosting additional financing burden, a higher unemployment replacement rate increases unemployment, while surging expenditure on ALMP decreases unemployment.

Chart C. Change in the unemployment rate due to 1 per cent increase in the unemployment replacement rate



Source: Bank of Lithuania calculations.

Chart D. Change in the unemployment rate due to 1 per cent increase in expenditure on active labour market measures

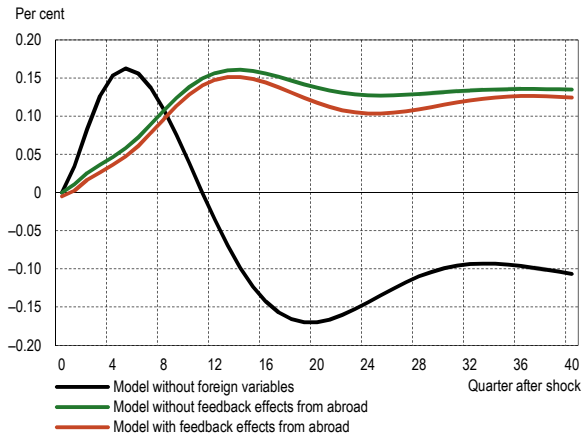


Source: Bank of Lithuania calculations.

<sup>21</sup> For more details, see Lastauskas and Stakėnas (2016).

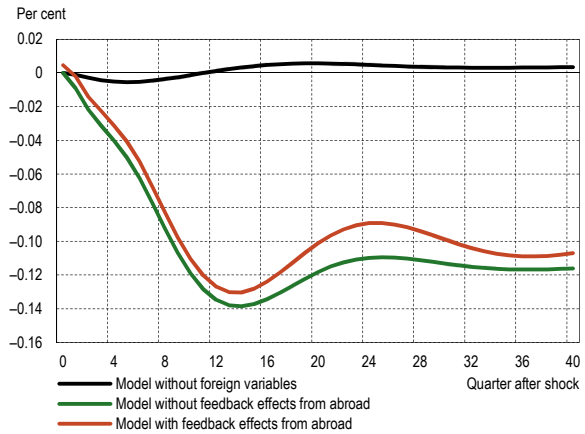
Impact on economic openness and competitiveness is summarised in Charts E, F, G and H. Economic openness (the ratio of the sum of export and import to GDP) increase is fuelled by unemployment benefits and decrease is driven by changes in expenditure on ALMP. This change can be explained by two aspects: unemployment benefits decrease GDP and, at the beginning, have a negative effect on competitiveness (see Chart E); ALMPs, on the contrary, firstly increase GDP and improve competitiveness of labour costs of Lithuanian exporters compared to other trading partners, but later decrease it (the result is similar to the J-curve effect, when the initial effect is later overridden by changes in the economic conditions). Spillover effects are very important for economic openness because of the impact on trade terms (the ratio of export and import prices), as the latter may be critical for the final effect of the labour market reform.

Chart E. Change in openness due to 1 per cent increase in the unemployment replacement rate



Source: Bank of Lithuania calculations.

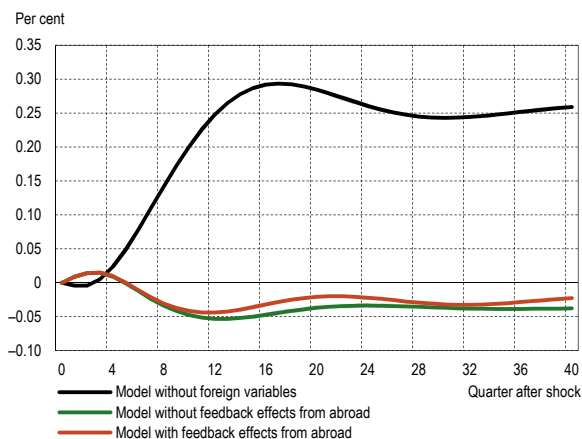
Chart F. Change in openness due to 1 per cent increase in expenditure on active labour market measures



Source: Bank of Lithuania calculations.

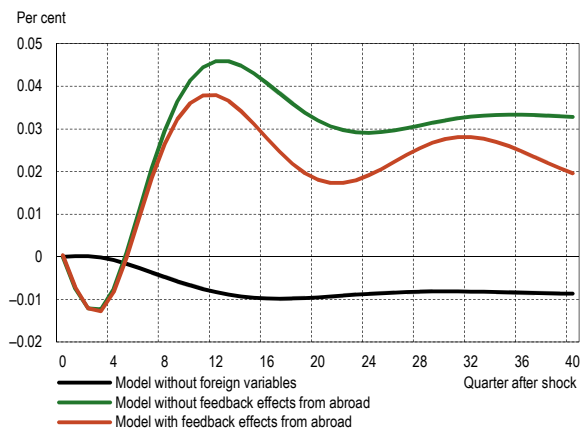
Interpreting changes in economic openness of a country, presented in Charts E and F, may be difficult not only because this variable depends on changes in the comparative basis (GDP), but also because it is impossible to determine the dynamics of the number of trading partners of all enterprises in the country (the so-called extensive margin of trade). To estimate this aspect, a satellite model is built, which shows that, among modelled macroeconomic variables, GDP is the biggest contributor to changes in the extensive trade margin.<sup>22</sup> So, an increase in unemployment benefits, decrease GDP and consequently lead to a decline in the number of trading partners of different Lithuania's economic sectors. As intermediate goods used in production account for a large share of the Lithuanian trade, this should be a strong argument for unemployment benefits not to be increased unduly.

Chart G. Change in the real effective exchange rate due to 1 per cent increase in the unemployment replacement rate



Source: Bank of Lithuania calculations.

Chart H. Change in the real effective exchange rate due to 1 per cent increase in expenditure on active labour market measures



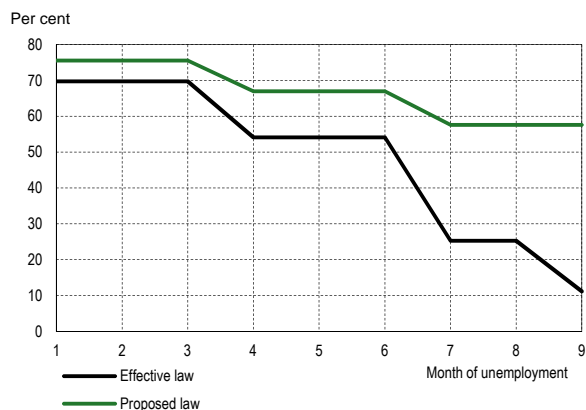
Source: Bank of Lithuania calculations.

#### 4. Changes in unemployment benefits and expenditure on ALMP foreseen in Lithuania's social model

The insights presented by the model that also allows assessing foreign markets' feedback effects may be used to estimate plausible effects of some of the components of the new social model in Lithuania on the country's economy. Out of the planned labour market reform, only the effects of the described labour market measures have been chosen for the analysis. A significant portion of the planned reform under the social model is difficult to quantify (such as the diversity of employment contract types, flexibility, bargaining power, etc.), therefore, this model cannot be used to estimate its impact. It

<sup>22</sup> In this case, an extensive trade margin was defined by using intersectoral data, i.e. it shows changes in the number of economic sectors of foreign countries, which trade with Lithuanian enterprises. For more information about the satellite model, see the article by Lastauskas and Stakėnas (2016).

Chart I. Dynamics of the unemployment replacement rate by benefit payout month



Source: Bank of Lithuania calculations.

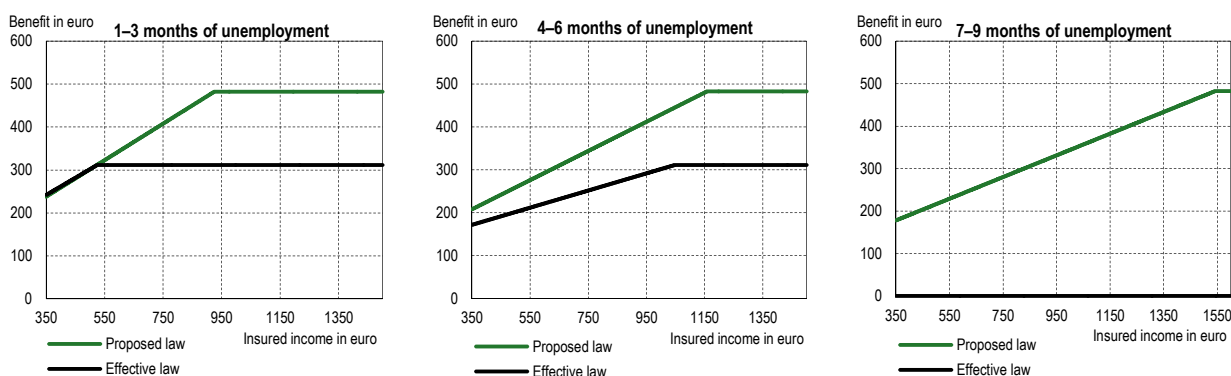
is obvious that assumptions and limitations of the model have to be taken into account to assess the results (other factors are deemed unaffected by changes in ALMPs and unemployment benefits).

When estimating potential replacement rate changes, a comparison is made between effective procedures for awarding unemployment benefits and procedures proposed in the draft law on the new social model in Lithuania<sup>23</sup>. The data by the Board of Social Insurance Fund (Sodra) of February 2016 on insured income is used, as well as data on the minimum monthly wage, state-supported income, insured income, and average wage in 2016. The results received are presented in Chart I: after the new procedure is implemented, the largest changes in the amount of benefits would be seen starting with the sixth month of unemployment. The change would be rather pronounced; moreover, a long duration of the unemployment benefit is an important factor governing the un-

employment rate. Obviously, when estimating the magnitude and duration effects of unemployment benefits on the economy, business cycle duration and public finance sustainability also have to be taken into account.

Chart J shows unemployment benefit amounts in absolute terms based on effective and proposed procedures. It is assumed that the work experience of an employee does not exceed 25 years. In addition, an income tax on unemployment benefits proposed in Annex III-6 of the report on Lithuania's social model has been employed, which is not provided for under the currently effective procedures. Similarly as in the case of the replacement rate, the largest gap between unemployment benefits under the effective and proposed procedures is seen starting with the sixth month of unemployment. Consequently, the motivation to search for a job would decrease not only for individuals with low, but also with average past income (due to a too strong response of the unemployment benefit to the income during the late phase of the unemployment period). Another problem that may arise due to the labour market reform model is the elimination of the employment experience importance for the unemployment duration. The underlying assumption seems to be that individuals with a long employment history, and hence older unemployed, have the same opportunities to find a job as the younger ones. There is no empirical proof for such an assumption.<sup>24</sup> Moreover, long unemployment benefit duration reduces job search motivation for younger individuals who have better chances of adapting to the labour market and changing their job profile, and increases their willingness to work illegally.<sup>25</sup>

Chart J. Unemployment benefits depending on unemployment duration and the amount of insured income received



Source: Bank of Lithuania calculations.

Source: Bank of Lithuania calculations.

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Changes in expenditure on ALMP were estimated based on a proposal to impose a 15 per cent income tax on unemployment benefits and use the revenues received to finance ALMPs. It is assumed that this would be an additional financing source for ALMPs. It is estimated that, with the said procedures in place, the expenditure on ALMP would have been higher by 25.5 per cent on average in 2010–2013. After applying the defined changes to labour market variables, responses of macroeconomic variables are determined (see Chart K). A model, which integrates the impact of Lithuanian economy on foreign economic variables along with the feedback effect, is used for estimation.

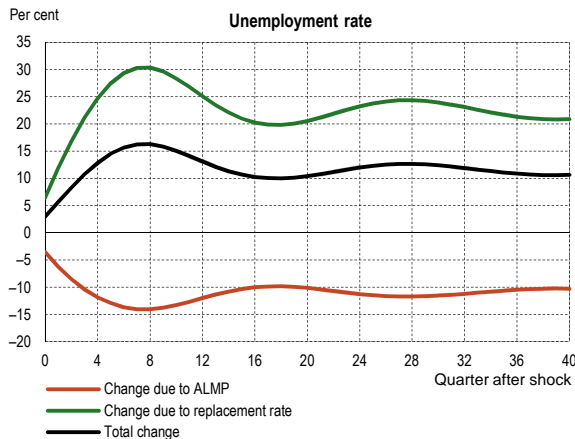
<sup>23</sup> The draft law is available at <http://www.socmodelis.lt>.

<sup>24</sup> Hall and Schulhofer-Wohl (2015) revealed that differences among job seekers determine different job finding probabilities. If we assume that chances of finding a job are equal, empirical results will not be reliable. Neumark *et al.* (2015) have empirically confirmed that finding a job is far more difficult for older women; discrimination against men on the grounds of age is less common.

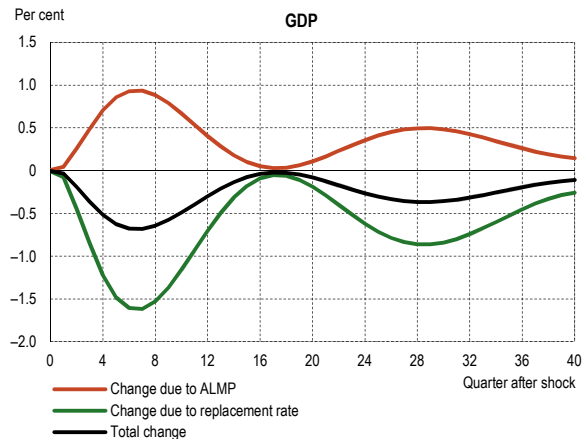
<sup>25</sup> Hartz reforms were implemented in Germany based on similar arguments. Well before the global financial crisis the reforms substantially reduced the unemployment benefits for long-term unemployed. In economic literature, Hartz reforms are often seen as one of the major factors that boosted Germany's resilience to the crisis, see Krebs and Scheffel (2013).

The results show that, in an approximately two-year period, changes in unemployment benefits and expenditure on ALMP would raise the unemployment rate by 15 per cent and make the GDP shrink by about 0.5 per cent.<sup>26</sup> In the longer run, the impact on unemployment would decline to around 10 per cent, while GDP may remain unaffected. Both elements of the reform have a positive effect on economic openness and competitiveness (of prices): the ratio of external trade volumes to GDP increases by 2 per cent, while real effective exchange rate decreases by about 0.5 per cent. All these results depend largely on the impact of unemployment benefits. Obviously, the total impact of the reform eventually depends on specific parameters of both reforms: in lowering the amount (or duration) of unemployment benefits or increasing expenditure on ALMP, negative effects on GDP and unemployment could be mitigated or even eliminated.

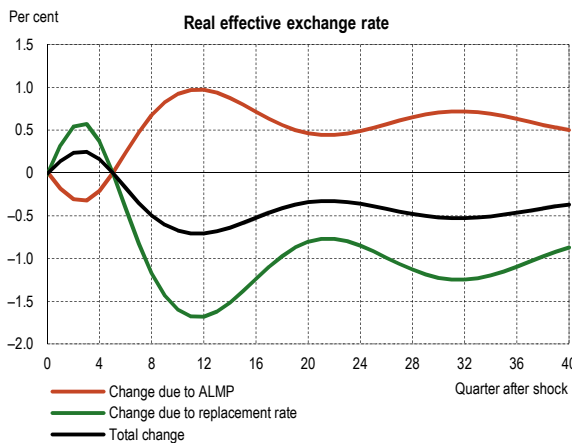
Chart K. Changes in macroeconomic variables due to changes in expenditure on active labour market measures and the unemployment replacement rate, estimated based on proposals of the new social model



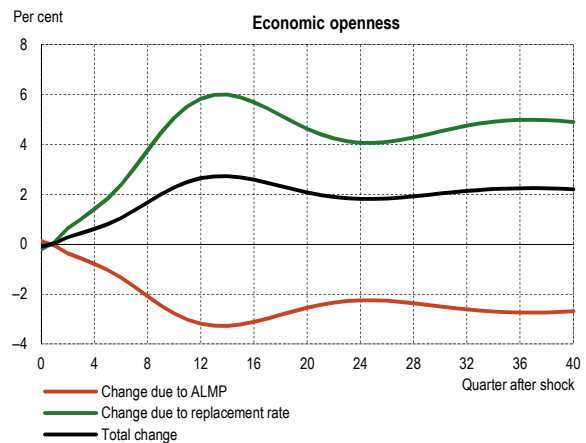
Source: Bank of Lithuania calculations.



Source: Bank of Lithuania calculations.



Source: Bank of Lithuania calculations.



Source: Bank of Lithuania calculations.

## Conclusions

Even though unemployment benefits help to reduce the income loss risk and increase financial security for the unemployed (an individual has more time to search for a job that better suits his/her skills), the negative influence of their change on income, unemployment rates and competitiveness should be taken into account as well. International trade only strengthens negative effects of changes in unemployment benefits; attention should be paid not only to the change in the amount of unemployment benefits, but also to the change in duration. A large increase in unemployment benefits may contribute to a long-term structural unemployment. A proposal not to link the benefit payout duration to employment history will hardly encourage young jobless individuals to search for a job more intensively. Moreover, an increase of the benefits to long-term job searchers not only would reduce competitiveness and increase unemployment, but also would have an opposite effect compared to the results of Hartz reforms that helped the German economy remain competitive.

One of the major conclusions of this analysis is that competitiveness at international level cannot be dismissed, particularly when analysing Lithuania's economy, the openness of which is above 50 per cent. Labour market reforms affect trading partners and these effects may potentially come back to Lithuania. A too high unemployment replacement rate may have a negative effect on competitiveness and increase economic openness due to a decline in GDP. Extensive margin of trade is likely to drop due to unemployment benefits. On the contrary, active labour market measures have a positive effect on both competitiveness and Lithuania's major trading partners. Thus, shorter duration of unemployment benefits, combined with more effective training for the unemployed people and improved activation policy, could lead to desirable macroeconomic results.

<sup>26</sup> Based on Eurostat data, the unemployment rate in Lithuania in 2016 was 8.8 per cent. Consequently, a 15 per cent increase could raise it to 10.12 per cent.

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