Between a risk society and a welfare state: social risk resilience and vulnerability to poverty in Lithuania

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Summary. *This paper looks into the role the tax-benefit system plays in mitigating widespread socio-economic risks and individual vulnerability to poverty. The drivers behind the changing role of the risk-mitigating social policies are analysed looking through the theoretical lenses of the risk society. The performance of the tax-benefit system in providing a safety net against income loss in cases of unemployment and childbirth is evaluated using the stress-testing approach proposed by Atkinson (2009). The method is applied on a Lithuanian case using the microsimulation model EUROMOD for a period of 2007-2012. The analysis suggests that the role of the welfare state shifts towards promotion of individual responsibility for risk management. The welfare state policies can produce substantially different levels of vulnerability to poverty among population groups facing different risks. In the context of the recent economic crisis in Lithuania, the protection provided by the welfare state declined, while the traditional mutual support among the household members played a major role in the risk management process.*
Key words: *vulnerability, poverty, risk, welfare state, Lithuania*

Introduction

A good crisis should not be wasted. The Great Recession of the recent years bears numerous lessons to be learned. The damaging effect of the instability in the global financial markets brought better regulation and macro-economic stabilisation mechanisms onto the political and academic agendas. However, the crisis did more than just destabilize financial markets and national budgets. The impact on households and individuals, both short and long-term, is more difficult to assess, but must not be overlooked. As admitted in the latest report by the European Commission (2014), growing social distress in employment and poverty are the result of both the crisis and the lack of resilience of the labour market and social institutions. It is the latter – the performance of social institutions in mitigating socio-economic risks – that comes under investigation in this paper.

The aim of the paper is to analyse the role tax-benefit system plays in mitigating widespread socio-economic risks and reducing individual vulnerability to poverty. The paper unites the academic literature on risk society, welfare state development and vulnerability to poverty.

The theoretical discussion in the first part of the paper builds on the idea that the latest economic crisis magnified the long-term challenges and transformations in the development of the welfare state. The emergence and expansion of the socio-economic risks is not accidental,

but is driven by structural factors that in turn put social protection systems under strain. These include, among others, demographic, family and community transformation, global macro-economic, technological and ecological change. We utilise the 'risk society' thesis pioneered by Beck (1992) and Giddens (1991) and further discussions on the role that risks and institutions for managing them play in the transformation of the modern welfare state. The focus is on the links between the emergence and expansion of risks, individualisation and welfare state development.

Despite of the long-term transformations of the welfare state, it is the recent social policy changes that affect individuals at risk in a direct and immediate way. In the second part of the paper, the importance of changes in the tax benefit systems and ways of monitoring these changes are discussed. An empirical illustration of 'stress-testing' the current tax-benefit system in Lithuania is presented. The approach was innovatively suggested by Atkinson (2009) with applications so far focused on social protection against unemployment (Figari et al. 2011; Fernandez Salgado et al. 2013). We contribute to further development of the method by expanding it to include the risk of income loss in the event of child birth and to evaluate the resilience provided by the tax-benefit system across the whole population of individuals covered by the public insurance. The analysed period of 2007-2012 covers the relatively generous pre-crisis tax-benefit rules, the economic crisis of 2009-2010 and the start of economic recovery in Lithuania in 2011-2012.

The paper concludes with a discussion of complementary insights into the development of the welfare state provided by the risk society thesis, empirical findings, limitations and the potential for extending the stress-testing methodology.

1. The risk society, individualisation and the welfare state

It is not uncommon to link the transformations of the welfare state to the changing nature and prevalence of risks (see e.g. Esping-Andersen 1999; Taylor-Gooby 2004). According to Esping-Andersen (1999: 32) the first step towards an understanding of the contemporary welfare state crisis must begin with a diagnosis of the changing distribution and intensity of social risks, as well as an examination of the role different agents play in managing them. The focus of this paper is on the latter. We start with discussing the theoretical links between risks and the changing role of the welfare state by looking through the lenses of the risk society perspective pioneered by Beck (1992) and Giddens (1991). According to Lupton (1999) this is one of the three main approaches to risk in modern sociology, standing next to the cultural/symbolic perspective on risk pioneered by Douglas and Wildavsky and Foucault's governmentality approach.

As Beck (1992) puts it, modern late-industrial societies are transitioning from an industrial society towards a risk society. In the latter the creation of social well-being is accompanied by the creation of risks. Beck does not say that the modern world is more dangerous compared to previous times. Rather the character of the threats that individuals face is changing. Nowadays we risk less in respect to natural hazards, but much more due to uncertainty created by our own social environment and the rapid development of science and technology. This idea is supported by Giddens (1991), who also points out that the feeling of insecurity is further magnified as both lay people and specialists think more or less all the time in risk categories.

Beck (2009) distinguishes between several types of risks: environmental risks, global financial risks, terrorist threats, biographical risks. Environmental risks and terrorist threats take

an important part of Beck's writing. Here our interest is on biographical risks, which are closely related to the individual life courses and to social policy.

According to Beck, a distinguished feature of biographical risks is that they are inseparable from the dynamics of individualisation (Beck 2009: 13). The process of individualisation means that individuals must produce their own biographies themselves, in the absence of fixed, obligatory and traditional norms and certainties and the emergence of new ways of life that are continually subject to change (Lupton 1999). Individuals are assumed to take on more responsibility for managing risks that are often outside of their control. Increasing responsibility is accompanied by a weakening of the traditional support structures, such as family, community or class:

> "The opportunities, hazards and ambivalences of biography which once could be coped within the family unit, in the village community, and by the recourse to the social class or group, increasingly have to be grasped, interpreted and dealt with by the individual alone" (Beck 2009: 75).

While in the process of individualisation, inequalities are to a lesser degree structured according to the traditional lines (such as social class), a division emerges between groups facing different degrees of risks. It is here that a link between the concepts of the risk society and the development of the welfare state can be found. According to Beck (1992), as the modern 'class society' transforms into a 'risk society', the main concern of the contemporary welfare state is not redistribution of wealth, but rather redistribution and management of risks. In other words, the primary aim of the social protection system has shifted from the passive collection of taxes and administration of social payments to an active management of risks. This is very much in line with the recent innovations in the sphere of social protection: active labour market policies, in work benefits, tax credits, privatisation of social insurance – policies that encourage labour market participation, active involvement in decision making and risk taking.

There are however concerns associated with the shifting focus of the welfare state away from the redistribution of resources and towards increasing reliance on the individuals' ability to make decisions on the complex matters that are often outside of their sphere of influence or expertise.

First, the individualisation thesis and the idea of discontinuity between the class and risk society are subject to criticism. For example, Scott (2000) questions Beck's efforts to distinguish between traditional class and risk society by suggesting that insecurity or risk is just a function of scarcity. Thus risks and disadvantages coincide, while wealth is a still important tool of preventing and controlling risks. The argument can be further backed up empirically. Dolls (2012) finds that those at the bottom of the income distribution are more likely to experience income volatility due to increased risk exposure and lower availability of buffers. Abbot et al. (2006) based on the review of empirical studies from the UK and the US concluded that broad structural factors are still important despite of the move towards individualisation.

The assumption of rationality and ability of individuals to take decisions on the matters beyond their control or competence is as well problematic. Increasing individual responsibility for managing risks enhances the sense of anxiety and requires more self-control and reflexivity. As it is well described by Scott (2000: 37): "we are forced to reflect where reflection was previously not required ('forced to be free')". One of the most telling examples of such forced reflexivity in the sphere of social protection is the privatisation of pension systems. While experts in economics, demography, sociology and other sciences struggle to come up with ways to effectively address the challenge of population ageing, lay individuals need to make life-long decisions on participation in the funded pension schemes and management of their pension funds.

The experience in Lithuania and other European countries where pension privatisation took place showed that the vast majority of individuals do not fully understand and do not manage actively their pension savings (see e.g. Viceira 2010).

To sum up, looking through the theoretical lenses of the risk society, the transformation of the welfare state is driven by the rapidly changing nature and prevalence of socio-economic risks and a shifting role of the welfare state towards redistribution of risks rather than wealth, withdrawing from passive social protection towards promotion of individual responsibility for risk management and more active, flexible and adaptive engagement with risks. There are however concerns associated with that shift, especially when we look closer into a still valid relation between risks and wealth, weakening of the traditional support structures, such as family, community or class, and the complexity of issues individuals are supposed to take informed decisions on.

2. Stress-testing the welfare state to monitor individual vulnerability

As discussed in the previous section, the changing role of the welfare state towards promoting individual responsibility for risk management goes hand in hand with a decline in income protection offered within the social protection schemes. Accompanied by the weakening of traditional support structures, such as the family or the community, this shift gives way to an increase in individual vulnerability to income shocks. These changes may remain unnoticed in times of economic boom or stability. The full extent of individual vulnerability is revealed and magnified as common economic shocks occur. The latest global economic crisis was an extreme example of a stress test of the welfare states. With a considerable time lag, as social statistics, survey data and research on the consequences of the crisis emerge, the extent of the damage on household and individuals becomes apparent. That is however a backwards looking analysis. Arguably, regular and forward looking analysis could help evaluate and monitor the development of welfare state policies in a more timely and systematic way. In this part of the paper the ways of measuring individual vulnerability in a timely way and with a focus on the functioning of the tax-benefit system are discussed.

According to Tandon and Hasan (2005), the problem of vulnerability to risks was analysed with increased frequency since it was brought into the spotlight by the 2000/1 World Development Report. A distinctive property of vulnerability analysis is its emphasis on the centrality of social protection and other risk-mitigating policies and their role in helping to avoid a constrained and difficult environment within which choices have to be made on important aspects of life (Tandon and Hasan 2005). While there is still no consensus on the definition or measurement of vulnerability (see e.g. Hoddinott and Quisumbing 2003), there is a general agreement on the importance of measuring vulnerability *ex-ante*, which distinguishes it from the typical backward-looking analysis (Calvo and Dercon 2007; Celidoni 2011). Hoddinott and Quisumbing (2003) distinguish between three principal approaches to the assessment of individual vulnerability: vulnerability as expected poverty, vulnerability as low expected utility and vulnerability as uninsured exposure to risk. The latter approach is an *ex-post* assessment of whether observed shocks generate welfare losses. Probabilistic vulnerability as expected poverty estimates are typically based on longitudinal income or consumption data (e.g. Pritchett et al. 2000; Kamanou and Morduch 2002; Calvo and Dercon 2005). The concept of vulnerability as low expected utility

represent a relative understanding of vulnerability as volatility of income or consumption over the life-course (see e.g. Foster et al. 2010a; Ligon and Schecter 2003).

While the discussed approaches have a strong potential for the evaluation of individual vulnerability to income shocks, the required longitudinal data is limited, unavailable or comes with a considerable time lag in many countries, including Lithuania. Also, the measures currently developed within the vulnerability approach are more suitable for analysing long-term trends in welfare state resilience and individual vulnerability, rather than regular monitoring of the most recent, current or planned risk-mitigating policy measures.

To avoid the above mentioned limitation of vulnerability analysis, a method of stress-testing the welfare state proposed recently by Atkinson (2009) is utilised. The method is designed to help assess the likely performance of the welfare state in providing an effective safety net. The approach is borrowed from the financial sector and utilises tax benefit micro-simulation techniques to model hypothetical shocks to income. The shocks can be simulated on the household survey data representative of the country's population or, if available, administrative micro data. It enables the examination of the likely impact of income loss on living standards, taking into account interactions between individual and household characteristics, and the design of the tax-benefit policy instruments.

The approach was so far used to analyse the welfare compensation for unemployment, modelling the impact of the Great Recession (Figari et al. 2011; Fernandez Salgado et al. 2013). It however should not be restricted to modelling the actual shocks and their effects. To monitor the extent of protection provided by the tax-benefit system, a hypothetical income shock can be simulated for wide population groups, focusing on the most recent or even planned tax-benefit rules. Also, the approach is not restricted to modelling income loss in case of unemployment only. Income loss related to childbirth, family dissolution, involuntary reduction of working hours, disability, or retirement may potentially be analysed, assuming that information needed for modelling related tax-benefit instruments is available in the data.

In the next section we implement the idea of using stress-testing to analyse individual vulnerability to severe income shocks caused by widely spread risks. The approach complements other types of vulnerability analysis, focusing on concrete socio-economic risks and on the functioning of the tax-benefit system in relation to them.

3. Stress-testing the Lithuanian welfare state: application and results

In this section the stress-testing approach is applied to analyse the role of the tax-benefit system in mitigating widespread socio-economic risks in Lithuania. The method is applied using the microsimulation model EUROMOD. The analysis focuses on the ability of the tax-benefit system to mitigate severe income shocks that push individuals and households into poverty.

Stress-testing using EUROMOD

EUROMOD is a static tax-benefit microsimulation model developed for the European Union (Sutherland and Figari 2013). EUROMOD models monetary social transfers, direct taxes and selected social insurance contributions according to the rules in place on the 30th June of each year. The labour market income and other non-simulated income sources are taken directly from the data and updated based on average growth by income source based on external statistics from

administrative sources or official projections. The input data for simulations is derived from the EU Survey of Income and Living Conditions (EU-SILC).

Using microsimulation presents both advantages and limitations for analysing individual vulnerability. To name the advantages, the functioning of the tax-benefit system is evaluated taking into account all its simulated elements rather than individual tax-benefit components targeted at addressing particular risks. In our case these are not only the social insurance unemployment or maternity benefits, but also other instruments, such as tax concessions, social assistance or universal benefits. The income sources of other household members are also taken into account, allowing for an evaluation of income protection provided within households.

Furthermore, the simulation of tax-benefit rules is not restricted to the year of data collection. This illustration is based on EUROMOD version G1.0 running on EU-SILC based data collected in 2008 and 2010 and referring to 2007 and 2009 incomes respectively. The simulations are carried out for a period of four years, covering the tax-benefit rules of 2007-2012. For countries where the policy rules are announced in advance, the planned tax-benefit policies can potentially be modelled even beyond the current year.

It should however be noted, that within the static microsimulation framework the demographic structure of the population is assumed to be fixed as recorded in the underlying micro data. This assumption should not be problematic in most cases, as major demographic shifts are unlikely to occur within a short time frame. Larger discrepancies may arise when considering the longer term or in times of rapid demographic change, e.g. fertility booms or high migration flows. Methodological changes in the survey may also be an issue. For example, the population census that took place in Lithuania in 2011 revealed important changes to the population structure. This was reflected when constructing the weights for the later waves of the EU-SILC data, but is not taken into account in this analysis. We however adjust for the changes in the labour market by modelling the relative net changes in employment levels as indicated in the latest aggregate statistics based on the Labour Force Survey (see Navicke et al. 2013).

EUROMOD is used in this exercise to model shocks arising from a temporary loss of employment and/or self-employment income in cases of unemployment or childbirth. The two income shocks are chosen as they are both temporary and modelled for Lithuania in EUROMOD. Importantly, there are both contributory and non-contributory social benefits targeted at mitigating the income loss caused by unemployment and childbirth in Lithuania. The analysis thus covers the functioning of both social insurance and social assistance systems in mitigating acute income shocks.

The income shocks are modelled among all the potentially vulnerable individuals who are insured against the analysed risks by means of social insurance. Those vulnerable to the risk of unemployment are insured individuals who are not currently unemployed, on maternity/paternity leave or in education and of the working age up to 57 years for men and 55 years for women (in accordance with eligibility for the early retirement pensions). Those vulnerable to the risk of temporary income loss due to the childbirth are insured women who are not in education and not currently on the maternity leave in the working age range up to 40 years (only about 2.5 percent of babies were born to women above age 40 in Lithuania during the period analysed). In both cases full benefit take-up and compliance with tax rules is assumed.

The vulnerability is conceptualised as expected poverty in the event of an income shock. An advantage of conceptualising vulnerability as expected poverty is that regular techniques of estimating and decomposing poverty risk indicators can be applied. In poverty analysis, the

Foster-Greer-Thorbecke (FGT) family of poverty indexes includes the headcount ratio if $\alpha = 0$, the poverty gap ratio if $\alpha = 1$, and the poverty severity if $\alpha = 2$ (Foster *et al*. 1984):

$$P_\alpha = \frac{1}{N}\sum_{h=1}^{Q}\left[\frac{(z - y_h)}{z}\right]^\alpha \quad (1)$$

In expression (1) Q represents the number of households whose income y_h is below the chosen poverty line z and N is the size of the population. The poverty gap may be estimated either taking the whole population N into account or among the poor. In the latter case the overall population N in (1) is replaced with a population of the poor Q.

Similar to other vulnerability analysis (Foster et al. 2010b, Celidoni 2011), we replace the actual household incomes with the possible income values for the household, $y_s^h = (y_{1,}^h y_2^h, \ldots, y_n^h)$, where s is the number of *possible states* that the household h could face. An assumption is made that an income shock is experienced by one household member at a time. However, in cases when there is more than one household member who might be subject to income shock, all the possible combinations, i.e. possible states, within the household are analysed by recalculating household income y_s^h each time. Thus the vulnerability measures V may be expressed as:

$$V_\alpha = \frac{1}{N}\sum_{h=1}^{Q_s}\frac{1}{S_h}\left[\frac{(z - y_s^h)}{z}\right]^\alpha \quad (2)$$

In expression (2) S_h is the number of possible states the household can face when modelling income shock; y_s^h is the recalculated income of the household if below the poverty line z in state s; and Q_s is the number of households whose income is below the chosen poverty line z in at least one of the states. The poverty line z is set at 60% of the household equivalised disposable income and fixing it before simulating shocks to income. In case of childbirth, the equivalised household size is re-calculated taking the new-born child into account. The expected poverty gap ($\alpha = 1$) and poverty severity ($\alpha = 2$) are estimated in the population of the expectedly poor, replacing N with Q_s in (2). The results are than decomposed by income quintiles fixed before the income shock and by source of income.

Vulnerability is estimated within one year after the shock occurs. As maternity (paternity) benefits cover a period of up to two years in Lithuania, we also include the second year after childbirth into the analysis. For the second year after childbirth partial recovery of lost income is simulated to capture the recent change in the benefit rules allowing receipt of labour market income together with maternity (paternity) leave benefit. In case of unemployment and for the first year after childbirth the full loss of labour market income is assumed.

Lithuanian context

When analysing the changes in vulnerability to poverty, it is important to take account of the national socio-economic conditions as well as of recent changes to taxes and benefits. The Lithuanian example is interesting in its own right as well as in the wider European context. Dolls (2012) finds that there is little stabilization of disposable income provided by the state in Eastern and Southern European countries, especially for the low-income groups. Lithuania is also among

the countries with above-average poverty risk rates both compared to the rest of the EU member states and among the 12 new member states. The welfare state in Lithuania possesses many traits of the conservative welfare state regimes, but is arguably shifting towards a more liberal model (Aidukaitė et al. 2012). The issues of individual vulnerability to income shocks and poverty risk in the Lithuanian context are thus highly relevant.

The onset of the analysed period in 2007-2008 in Lithuania can be characterised as a period of rapid economic growth with relatively generous levels of social transfers compared to the previous years. Hit by the global economic crisis in 2009, the economy contracted and the unemployment rates in Lithuania more than doubled compared to the previous year, and stayed at above 10% ever since. Similar to the numerous countries in the EU, the tax-benefit system in Lithuania experienced a period of austerity with most of the measures implemented between 2009 and 2011 (Avram et al. 2013). However, the economy started to recover since 2012.

Within the same period there were important changes to major social cash benefits: growth of pensions before 2009, temporary cuts to social benefits and pensions in 2010-2011 and a partial restoration of the latter in 2012. Unemployment, child and family benefits were subject to cuts within the period. With the adoption of the Temporary Law on the Recalculation and Payment of Social Benefits, starting from the 1st January 2010 the monthly unemployment insurance benefit was capped at around EUR190 per month for the entire period of benefit payment. According to the same law ceilings were reduced by 20 percent for all the three types of contributory benefits associated with childbirth: the one-off maternity and paternity payments, as well as the longer term maternity (paternity) benefit provided for childcare up to two years. Since 2008, the maternity (paternity) benefit was made more generous with replacement rates of 100 percent during the first year and 85 percent for the second year of receipt. The replacement rates of maternity benefits were gradually reduced thereafter and the duration of receipt became variable since 2012, i.e. one or two years with lower replacement rates if a longer duration period was chosen. Child benefits became means tested since the 1st March 2009; the eligibility criteria for this benefit were further tightened in 2010 and 2012. The impact of these changes on individual vulnerability to poverty will be analysed below, with more details on the implemented reforms provided when discussing the results.

The risk-of-poverty rate within the analysed period in the total Lithuanian population was relatively stable at around 19-20 percent, with lower levels among the prime age population aged 25-54, except for 2010 (see Table 1). The poverty risk estimates in the population of people

Table 1. ***Poverty risk rate at 60 percent of median equivalised income after social transfers, %***

	2007	2008	2009	2010	2011	2012
Total population	19.1	20.0	20.6	20.2	19.2	18.6
At-risk-of-poverty rate in prime-age population (25-54)						
Total	14.8	15.3	17.5	21.3	19.1	16.8
males	14.6	14.3	18.0	21.9	19.1	16.5
females	15.0	16.2	17.1	20.6	19.2	17.0
At-risk-of-poverty rate in the population vulnerable to modelled risks						
Total	12.8	14.0	14.7	16.2	16.4	17.2
males	12.4	13.7	13.3	14.7	15.2	16.0
females	13.3	14.2	15.9	17.6	17.5	18.4

Source: Eurostat, SILC: ilc_li02 (extracted on 20.12.13); own calculation for vulnerable population

subject to the modelled income shocks is lower compared to both the total and the prime age population, with an increasing trend over 2007-2012.

Results

Figure 1 shows vulnerability to poverty estimates due to an income shock caused by a temporary loss of employment and self employment income due to unemployment or childbirth. As it was described above, the vulnerability measures reflect the expected poverty risk, gap and severity had the income shock occured to any one of the household members.

Figure 1 reveals differences in vulnerability to poverty in the event of unemployment versus childbirth among the insured population and their household members. Vulnerability to poverty is significantly higher for those faced with unemployment. The dynamics of vulnerability to poverty trace closely the changes in the social transfer system. In the case of unemployment, the changes in vulnerability coincide with the changes to the basic part of the unemployment insurance benefit (the state supported income level gradually increased until 2009 and was fixed at around 100 EUR thereafter) as well as the decrease of the benefit's ceiling since 2010. Another factor of the gradual increase in vulnerability to poverty in case of unemployment in 2011-2012 is the effect of the fiscal drag on unemployment benefits caused by fixing both the basic amount and the ceilings in nominal terms in 2010. The severity of poverty, measured as poverty gap and squared poverty gap, follows a similar trend and can mostly be attributed to the same factors.

Lower vulnerablity to poverty is estimated among those insured who temporarily lose income due to childbirth. The levels of the expected poverty risk in this group is also considerably lower compared to the average poverty risk observed in the total or prime age populations within the

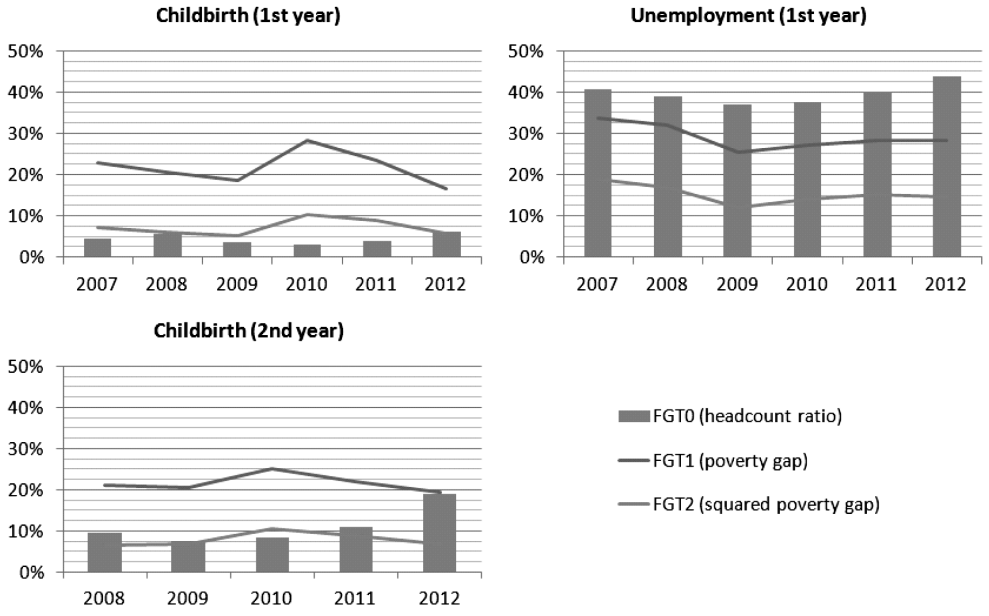

Figure 1. ***Vulnerability to poverty in the event of childbirth or unemployment measured using FGT class poverty measures***

Note. Poverty line at 60% of the median is fixed at the level before simulation of the income loss.
Source: own calculations

analysed period (see Table 1). Low vulnerability can be attributed to the receipt of contributory, but also non-contributory child and family benefits. The income of the partner may also play a role in mitigating the effect of the temporary income loss and will be discussed later. Vulnerability increases somewhat in 2011-2012 when the replacement rate of the maternity (paternity) leave benefit was reduced. Looking at the severity of vulnerability to poverty within this group, we observe an increase in 2010, which levels out again in 2012 at the higher level.

Looking at the second year after the childbirth, vulnerability to poverty was around or below 10 percent in 2007-2011, while in 2012 a significant increase of vulnerability within this group is observed, reaching a level similar to the average within the prime-age population. Again, the dynamics are expected looking at the changes to maternity (paternity) leave benefit rules for the second year of receipt: its replacement rate was reduced to 75 percent during the second part of 2010 and to a maximum of 40 percent in 2012.

Further decomposition by income groups and by contribution of the income components into the reduction of vulnerability provide a more detailed view and additional insights into the factors behind the vulnerability dynamics.

When analysing Figure 2 it should be noted that as the average poverty risk level in the population was around 20 percent in every year included in the analysis (see Table 1), the majority of those in the 1st quintile were below the poverty line before simulating income loss. We however see that in case of childbirth, the generous social insurance benefits together with the non-contributory child and family transfers help lift a fraction of those at poverty risk above the poverty line. This is true especially for the first year after childbirth. It can be seen that those insured who were above the poverty line before the childbirth are fully protected during the first year after childbirth. The worrying change however is the increase in the vulnerability to poverty

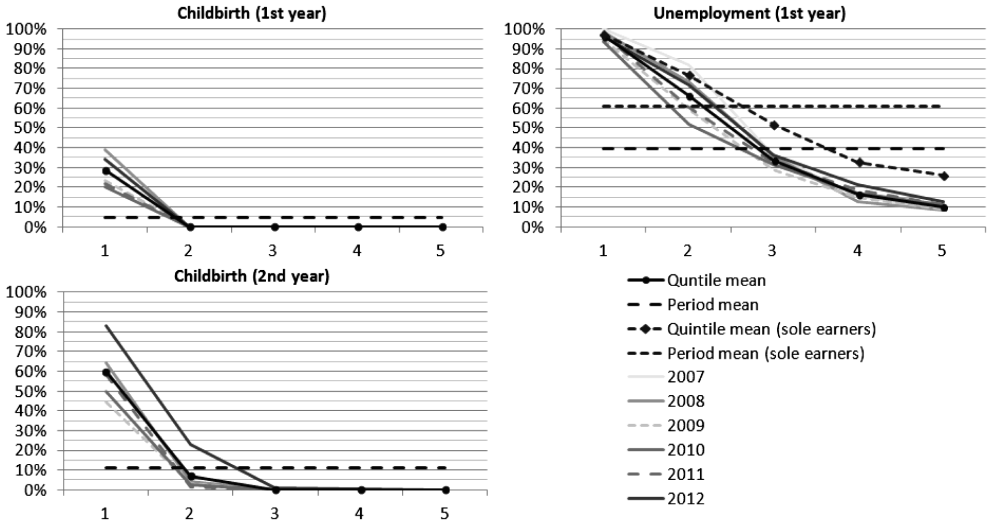

Figure 2. ***Vulnerability to poverty in the event of childbirth or unemployment by income quintiles***

Note. Equivalent income, quintiles fixed before the income shock, threshold of 60% median equivalised HDI

Source: own calculations

in the second quintile in 2012 during the second year after childbirth. This reflects the reduction in the maternity (paternity) leave benefit replacement rates since 2012.

A different picture emerges looking at the distribution of vulnerability to poverty in the event of unemployment. The population across the entire distribution is vulnerable to poverty when faced with unemployment of one of the household members, especially in households with a sole earner. Vulnerability to poverty is above the average in the population for the sole earner families irrespective of quintile. It is above the population average in the bottom three quintiles when there is more than one earner in the household.

In order to better understand the reasons for these different vulnerability profiles, we look into the benefit replacement rates, estimated using simulated data.

Figure 3 shows that replacement rates for maternity (paternity) leave benefits are proportional while in the case of unemployment insurance benefit they decrease rapidly with income. The figure also shows increasing generosity in both types of benefits until 2009, and a drop in replacement rates for unemployment benefits starting from 2010. We observe a drop in maternity (paternity) leave benefits since 2011 as the changes to tax-benefit rules are implemented as of 30th June in EUROMOD.

The differences in the replacement rates of maternity (paternity) leave versus unemployment insurance benefit are significant, especially for those receiving above average income. The low replacement rates in case of unemployment also reflect the shorter duration of benefit receipt compared to the maternity (paternity) leave benefit. The rapid reduction in the replacement rates of the unemployment benefits is thus the driving factor of the substantial vulnerability to poverty across the income distribution, especially within the sole earners' households (see Figure 2).

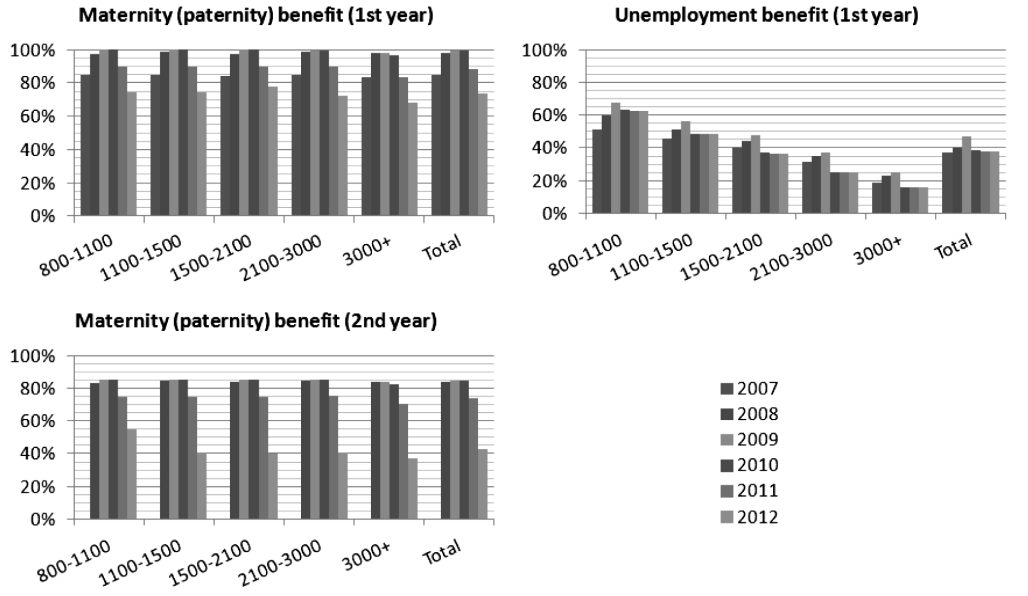

Figure 3. ***Gross annual benefit replacement rate by income group and total***

Note. Amounts of replaced income in national currency per month; income groups approximately correspond to the quintile distribution of employement income within the population of insured.

Source: own calculations

Aiming to single out the effect of the benefits on the reduction in vulnerability, we decompose our measures by income components, aiming to reveal their absolute and relative contribution to the reduction of expected poverty (Shorrocks, 2013). The focus is on four components of the disposable income: original income, taxes and social insurance contributions, benefits targeted at mitigating the income loss due to unemployment or childbirth and other benefits.

Table 2 shows the total reduction of vulnerability to poverty and its decomposition by income components. We see that in absolute terms original income plays a dominating role in mitigating income loss, especially in case of childbirth. This is mainly the original income of the partner or other household members of the insured and inter-household transfers. The difference in the importance of family support may be partly explained by the fact that in the case of childbirth the partners in our simulation are males, while the partners can be both male and female in the case of unemployment. The absolute contribution of the benefits aimed specifically at reducing the unemployment and child-birth related risks is consistently lower in the case of unemployment, ranging between 5.5 to 7.5 percent compared to a reduction of around 25.5 to 34.7 percent in the case of childbirth. In all three cases there is a reduction in the role of the benefits specifically targeted at mitigating income loss due to unemployment or childbirth during the period of 2010-2012. A significant drop in the absolute contribution of targeted benefits is observed in 2012 for the second year after childbirth. The relative contributions of these income components to the reduction of vulnerability to poverty display a similar trend.

Table 2. ***Decomposition of poverty risk by income components using the Shapley value, %***

Contribution	**Absolute contribution**						**Relative contribution**					
by source:	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Unemployment (1st year)												
Original income	-48.9	-48.8	-42.6	-43.2	-43.3	-43.7	82.6	80.0	67.5	69.3	72.4	77.8
Unemployment b.	-6.2	-6.1	-7.5	-6.9	-6.2	-5.5	10.5	10.0	11.9	11.0	10.4	9.9
Other benefits	-8.7	-10.3	-16.2	-15.9	-14.1	-10.4	14.6	16.9	25.7	25.5	23.5	18.6
Tax & SIC	4.6	4.2	3.2	3.6	3.7	3.5	-7.7	-7.0	-5.0	-5.8	-6.3	-6.2
Total reduction	*-59.2*	*-61.0*	*-63.1*	*-62.4*	*-59.9*	*-56.2*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Total FGT0	*40.8*	*39.0*	*36.9*	*37.6*	*40.1*	*43.8*						
Childbirth (1st year)												
Original income	-77.0	-71.2	-62.1	-63.2	-66.4	-70.3	80.6	75.3	64.5	65.2	69.1	74.8
Child / family b.	-25.4	-29.5	-34.7	-32.8	-29.7	-25.8	26.5	31.2	36.0	33.8	31.0	27.5
Other benefits	-3.3	-3.9	-6.6	-8.0	-7.1	-5.8	3.4	4.1	6.9	8.3	7.4	6.2
Tax & SIC	10.1	10.0	7.1	7.1	7.2	8.1	-10.5	-10.6	-7.4	-7.3	-7.5	-8.6
Total reduction	*-95.6*	*-94.5*	*-96.3*	*-96.9*	*-96.0*	*-93.9*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Total FGT0	*4.4*	*5.5*	*3.7*	*3.1*	*4.0*	*6.1*						
Childbirth (2nd year)												
Original income	:	-68.2	-58.2	-58.5	-62.0	-66.5	:	75.4	63.0	63.9	69.6	82.1
Child / family b.	:	-26.1	-31.2	-29.3	-24.5	-10.8	:	28.9	33.8	31.9	27.5	13.4
Other benefits	:	-4.8	-8.9	-10.4	-9.2	-7.7	:	5.3	9.6	11.4	10.3	9.5
Tax & SIC	:	8.6	5.9	6.6	6.5	4.0	:	-9.6	-6.4	-7.2	-7.3	-5.0
Total reduction	*:*	*-90.4*	*-92.4*	*-91.7*	*-89.1*	*-81.0*	*:*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Total FGT0	*:*	*9.6*	*7.6*	*8.3*	*10.9*	*19.0*	*:*					

Note: FGT0 – poverty headcount ratio using FGT measure with $\alpha = 0$. Category child/family benefits include all contributory maternity and paternity benefits, child benefit, birth grant; unemployment benefit includes unemployment social insurance benefit. Source: own calculations using DASP module in Stata

Conclusions

In this paper the role tax-benefit system plays in mitigating widespread socio-economic risks and reducing individual vulnerability to poverty was analysed. The paper unites the academic literature on risk society, welfare state development and vulnerability to poverty, contributing to the debate in several ways. First, it contributes to the understanding of welfare state transformation in the context of changing nature and prevalence of risks. Second, an innovative way of measuring the capacity of the welfare state to mitigate wide-spread socio-economic risks and reduce individual vulnerability is proposed and applied.

On a theoretical level and looking through the lenses of the risk society thesis, the role of the welfare state shifts towards redistribution of risks rather than wealth and promotion of individual responsibility for risk management. There are however concerns associated with that shift, especially when taking into account a still strong relation between risks and wealth, a weakening of traditional support mechanisms such as family or community, as well as the ability of individuals to make decisions on complex matters outside of their sphere of expertise.

The changing role of the welfare state towards promoting individual responsibility for risk management goes hand in hand with a decline in income protection through the systems of social protection. The changes may remain unnoticed, until the full extent of individual vulnerability is revealed as common economic shocks occur. There is, however, no need to wait for the next economic crisis. Instead, there is a need for measures capturing the changes in social protection policies and related shifts in the individual vulnerability to poverty in a timely manner.

As it was further demonstrated, an innovative stress-testing method proposed by Atkinson (2009) has a strong potential for assessing the likely performance of the most recent or planned tax-benefit policies in mitigating income shocks. The possibilities of the method for vulnerability analysis were illustrated using the Lihtuanian case and utilising tax-benefit microsimulation model EUROMOD. The application revealed considerable differences in the average levels and profiles of vulnerability across the Lithuanian income distribution. Withing the 2007-2012 period, those facing the risk of unemployment in Lithuania appear to be much less protected compared to those experiencing income loss due to childbirth. Both levels and profiles of vulnerability are closely related to the design of benefits directly and indirectly targeted towards mitigating the analysed risks. Thus, welfare state policies are capable of substantially alterning the vulnerability of population groups facing different risks, producing substantially different profiles of vulnerability among them.

Moreover, in the context of the recent economic crisis, the Lithuanian tax-benefit mechanisms failed to maintain income protection at pre-crisis levels. Faced with high pressures and with no counter-cyclical planning in place, cuts on social transfers were implemented. The resulting increase in vulnerability to poverty in cases of both unemployment and childbirth in Lithuania, was however counterbalanced by an important role traditional support structures still play in the risk management process. Contrary to previous literature which notes a wakening of the traditional support structures, this analysis shows that income security provided within the household still plays a major role compared to monetary social transfers in reducing individual vulnerability to poverty in Lithuania.

Further improvements to using stress-testing for the analysis of individual vulnerability to poverty could include the introduction of more elaborate probability terms in the calculations, taking individual risk probabilities into account. The scope of the analysis can potentially be

expanded by including more risks and using EUROMOD for a comparative research as it covers 27 EU member states.

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TARP RIZIKOS VISUOMENĖS IR GEROVĖS VALSTYBĖS: ATSPARUMAS SOCIALINĖMS RIZIKOMS IR SKURDUI LIETUVOJE

Jekaterina Navickė

Santrauka

Straipsnyje analizuojamas socialinių išmokų ir mokesčių sistemos vaidmuo mažinant socioekonominės rizikos poveikį individams, jų pažeidžiamumą dėl skurdo. Gerovės valstybės politikos pokyčių veiksniai ir kryptys aptariami rizikos visuomenės teoriniu požiūriu. Argumentuojama, kad gerovės valstybės taktika perorientuojama – atsisakoma turto ir pajamų perskirstymo ir pasirenkama rizikų valdymo strategija. Individualizacija ir asmeninės atsakomybės už rizikų valdymą akcentavimas yra naujos tendencijos socialinės apsaugos srityje. Empiriniu lygmeniu analizuojamas Lietuvos socialinės apsaugos išmokų ir mokesčių sistemos vaidmuo mažinant pažeidžiamumą dėl skurdo nedarbo atvejais ar gimus vaikui. Atliekant tyrimą taikyta Atkinson (2009) pasiūlyta atsparumo šokams testavimo metodika; analizuojamas 2007–2012 m. laikotarpis Lietuvoje. Tyrimas parodė, kad pažeidžiamumo dėl skurdo lygis ir jo pasiskirstymas yra glaudžiai susiję su socialinių išmokų sistemos dizainu. Pastarosios ekonominės krizės kontekste Lietuvos socialinių išmokų ir mokesčių sistemos apsauginė funkcija nedarbo ir vaiko gimimo atvejais mažėjo, perkeliant individams ir namų ūkiams didesnę atsakomybę už rizikų valdymą. Nepaisant teorinėje literatūroje nurodomo tradicinių pagalbos institucijų silpnėjimo rizikos visuomenėje, pajamų apsauga, teikiama namų ūkiams, atliko pagrindinį vaidmenį mažinant Lietuvoje individų pažeidžiamumą dėl skurdo nedarbo atveju ar vaikui gimus.

Pagrindiniai žodžiai: pažeidžiamumas, skurdas, rizika, gerovės valstybė, Lietuva.