MODELLING OF THE UNIVERSAL BASIC INCOME'S METHODOLOGY FOR UBIQUITOUS SOCIO-ECONOMIC TRANSFORMATIONS

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This paper systematically examines the structural model of Universal Basic Income (UBI) as an integral instrument for transformation of socio-economic structure facing the challenges of 4.0. industrial revolution. UBI is treated not only as a financial measure for increasing of well-being or reducing of social inequality, but as a complex economical tool for promoting innovation and increasing added value in the context of continuously digitalising environment. It leads to radical structural transformations in the main sectors of contemporary life. The idea of UBI serves as a unifying conception generalising all dimensions for social economic development and tending to ambient innovation society in the future. UBI is not a mechanically embedded system but an evidence-based phenomenon, a paradigm arising along the new logic of VUCA (Volatility, Uncertainty, Complexity and Ambiquity) contexts.

UBI in this research is presented as a general methodological complex leading to interdependently connected socio-economic reforms, as well as a new integrated financial instrument; a method for shaping of changes in the social fabric that benefit people's well-being and social security; a public governance mechanism driving the development of a competitive, sustainable economy in the age of digital technologies.

Microsimulation is a method illustrating the potential of the first attempts to model UBI in Lithuania. It leads to further empirical experiments leading to preparedness for changes approaching from the perspectives of the near future. Assessment of the impact of UBI for social sustainability and innovations is based on financial possibilities, income growth, monetary and fiscal policy, financial and social transformations.

Introduction

The conceptual approach of universal basic income (UBI) is a direct response to various socio-cultural, technological and political challenges affected by 4.0. industrial revolution. The scientific discourse directly links the concept of UBI to inevitability of socio-economic transformations in the context of a digital society and economy of innovations. The relevance of the UBI presupposes the possibility of using it as a social tool to increase the full potential of creativity and innovation in the circumstances of digital society. The idea of UBI implies holistic logic of global development, which provides a methodological basis for sustainable socio-economic transformations, complex solutions to social exclusion, sustainable regional development, public administration efficiency, reduction of centralised social policy implementation system service costs, and promotion of creating labour, social capital and social innovation. UBI is believed to be an effective tool for getting social security guarantees, promoting democratisation of labour relations, giving employees greater bargaining power in terms of careers, reducing working hours, guaranteeing the human rights of various vulnerable social groups, self-empowerment, giving opportunities to low-income workers to take more risk in their career development, spending more time for competence development, using opportunities of unpaid internships in NGOs and strengthening citizenship, tackling population aging and declining birth rates.[1]

UBI ideas are also significant in the context of modern climate change, various disasters, military conflicts, pandemics. Countries that are dependent on natural resources will need to move towards sustainable economic models in the long run. UBI could help provide safer conditions for workers and vulnerable social groups who could potentially be affected by the changes.[2] Although the idea of UBI is not new in the scientific discourse and has deep historical-philosophical roots, the novelty of the topic is presupposed by the possibility of interpretation in the context of changing challenges of the Fourth Industrial Revolution of the 21st century, which will inevitably affect the functioning of various social systems.[3] The UBI, like the essential components of the Fourth Industrial Revolution, e.g., digitisation, has a universal integral nature. This means that UBI can comprehensively address many interlinked sectoral challenges and pursue long-term socio-economic transformations and strategic projects for the future such as expanding the application of welfare technologies, ecotechnologies, and raising quality of life standards.

It should be noted that UBI ideas are increasingly being promoted by leaders of business structures, or even trade unions which have traditionally opposed UBI initiatives.[4] The aim of the article is to substantiate the relevance of the UBI idea in the context of new technological and socio-cultural changes by proposing a new concept of UBI financing and implementation perspective, based on the concept of financing mechanism based on monetary and fiscal policy instruments and funding sources, with the help of microsimulation method for predictive analysis of changes in Lithuanian social indicators. The following tasks are set to pursue the objective:

1) to analyse the peculiarities and essential principles of the UBI concept;
2) to reveal the significance of UBI in the context of the global megatrends;
3) to examine the links between UBI and economic growth processes;
4) to evaluate possible opportunities of UBI applicability in the analysis of changes in Lithuanian social indicators.

Methods of the article: the authors use the methods of scientific literature synthesis, generalization and critical analysis, modelling, and microsimulation with a static model.

Analysis of the peculiarities of the concept of Universal Basic Income

The peculiarity of UBI is the possibility to choose a creative solution according to abilities and demand. It provides an opportunity for development and creation, individual adaptation to the changing circumstances of life and the labour market, and creation of a model of quality of life. Ideologically, in the context of UBI, an individual could work for value and moral incentives, not for reasons of economic necessity or meeting basic needs, however, it is an alternative to economic solution in the context of digitisation and robotisation. Moreover, UBI is a model that cannot be differentiated into full or partial scope according to its scope and objectives. Applying UBI in part, for example, paying only to all children or only to groups at risk of poverty, would not be a universal, but a basic income which has long been used in the world. UBI is effectively implemented and applied in various countries and cities around the world. We could mention the state of Alaska, small-scale UBI pilot initiatives in Finland, Kenya, India (Madha Pradesh), the Netherlands (Utrecht), Namibia, Barcelona, Brazil, Finland.[5] On the other hand, it is noted that these studies are often limited by political, legal, and financial factors[6], for example, countries such as Switzerland have not implemented UBI, but an organisational referendum or the implementation of this idea should be pursued. There is also an active debate on UBI in South Africa[7]. The rationale for the UBI initiative in Finland was related to the objectives of the government, i.e., to modernise and simplify the social security system, modernise the traditional welfare state, adapt it to the ongoing changes in work and life, reduce bureaucracy and poverty levels. In the context of the pilot study, the basic income of 560 EUR was paid to a sample of 2000 randomly chosen unemployed Finns, 25–58 years of age, for two years.[8] The Finnish UBI pilot project is characterised by a national, legal, constitutional, and statutory experimental study.[9] UBI does not have a standardised application model, i.e., it is determined by different social contexts such as the standard of living, poverty and income inequality, peculiarities of the social security system, fiscal and monetary policy, level of the education system, and other different starting conditions. The results of the economic policy are transformed into complex indicators of education, health, culture, and social welfare. UBI research is very important not only for Finland but also for the whole Europe. UBI has been explored at EU level as an ideological construct, primarily to address poverty, exclusion and income inequality, as well as to establish a common European value of solidarity.[10]

Given the global situation, we could detect various, limited cases of implementation of UBI idea and studies confirming and partially confirming previous statements. The UBI programme in Alaska is considered a great success. Funding for this UBI programme has been linked to revenues from the oil sector. Damon Jones and Ioana Marinescu note that the programme has been particularly successful in reducing poverty, and no reduction in labour force participation has been identified. On the contrary, the National Economic Bureau study revealed that the UBI programme led to increased consumption costs which in part led to an increase in short-term work of almost 17 per cent.[11] A small pilot study was also carried out in 2008 in Namibia. Analysing the data from various studies, it can be noted that the UBI programme has significantly reduced poverty rates from 86 to 68 per cent in Namibia and reduced crime by as much as 36.5 per cent, as well as reduced the number of school drop-outs.[12] Evelyn Forget draws attention to the UBI programme in Canada: it lasted from 1974 to 1979 and ca. 1000 poor families participated in the programme in Dauphin, Manitoba. The results were extremely

significant. Poverty has practically disappeared, the number of individuals studying in higher education has increased, and the labour productivity of the population has increased.[13] On the other hand, cultural and social factors are related to the effectiveness of UBI implementation. Researchers Ann Helén Bay and Axel West Pedersen conducted a study in Norway in 2006 to determine the opinion of the electorate on UBI. On the basis of their research, it can be assumed that women would be more favourable to UBI idea than men. Individuals with lower education and lower income would be more supportive of UBI than those with higher education and higher income.[14] Despite the authors' point of view that UBI is an effective and efficient tool in postmodern society, they also identify the following main critical arguments:

1. **UBI universal implementation issues**. Researchers[15] note that implemented UBI initiatives do not meet the universal application criteria of this idea, as universal basic income means that it must be received by both the richest and those living in absolute poverty. However, the pilot studies identified target groups, and empirical evidence is not sufficient to objectively confirm the benefits of UBI. It is also noted that these studies were small in scale, therefore, their comprehension does not allow to make assumptions about the possible impact on the whole economic system or to form assumptions about their complex effectiveness at the state level.[16] Exceptions can also be made by linking them to different social groups. These exceptions are detailed by Van Parijs (2004),[17] distinguishing the following groups that most often raise various questions about the application of UBI to them: (1) Citizens; (2) Children; (3) Prisoners. An argument about prisoners is also relevant to persons with mental health disabilities and socially isolated people.

2. **The economic aspect of UBI and its significance for citizen motivation.** UBI has been criticised on the basis of various socio-cultural beliefs that allocating undeserved financial resources to individuals can demotivate them to take up some activity, and the implementation of the UBI idea is costly.[18] Demotivated citizens would not participate in the economy or participate to a very limited extent because their basic needs would be met and they would no longer be productive members of society. A decline in productivity could lead to reducing consumption and tax collection, thus weakening economic systems.[19] The idea that UBI could fragment society by forming the strata of the employed and the unemployed should be emphasised.[20] Consequently, UBI could limit the places of socialisation, the ability of employees to collectively identify problems and resist exploitation in an organised way (by forming trade unions, various councils).[21]

3. **The need for an appropriate political environment for UBI**. It is important to note that clientelistic relationships can limit the willingness of politicians to implement such universal programmes and take high risks.[22] Some authors[23] mention that it would be difficult to imagine the possibility of winning a political debate in the political field of Western democracy by offering everyone fixed benefits regardless of whether their citizens need them or not. On the other hand, the universal nature of UBI can be attractive to various social groups, and at the same time to potential voters, and it could attract populist attention. Implementation of UBI is also limited by political-ideological differences, different political-historical development of states, public opinion, and evaluation of the UBI idea.[24]

There is no doubt that the application of the UBI idea could contribute to the solution of various public administration and socio-economic problems. However, the implementation of the UBI idea can be challenging.

Feasibility study of Universal Basic Income implementation in Lithuania

The idea of using the UBI method is new and has not yet been studied in detail in Lithuania. From the perspective of Lithuania, we would see how UBI acquires expressions of "intuitive policy" and, at the same time, a populist tool when more and more financial instruments such as universal child benefits, etc., are the same, similar and coincide with the general UBI principles of application in different fields of public goods or services, although they are applied unrelated to integral growth in practice. This part presents the analysis of changes in Lithuanian social indicators performed with the help of the microsimulation method.

Such a research hypothesis is based on the analysis of possibilities of implementing the UBI model in Lithuania, applying the method of microsimulation using a static model. From a conceptual approach, two possible scenarios (2020R1 and 2020R2) are selected and presented, predicting how the universal basic income would be implemented in Lithuania in 2020: all residents (regardless of age) are allocated the UBI monthly amount of 700 EUR in both scenarios. Under this reform, the analysed scenarios eliminate non-means-tested benefits (universal child allowance, an additional child allowance, social benefit, lump-sum childbirth benefit, lump-sum maternity allowance, and childcare allowance for a pupil or student, childbirth allowance for two or more children). Insurance benefits and premiums continue to be paid to them in 2020R1 scenario, but are no longer paid in 2020R2 scenario. Also, in 2020R2 scenario no contributions to these benefits, except for old-age pensions, sickness benefits, and compulsory health insurance contributions, are paid.

The impact assessment of the effect of these scenarios on poverty and inequality is carried out in comparison with the situation in 2020 where COVID-19 measures have not been implemented (the baseline scenario contains tax-benefit rules that have not been supplemented by additional measures that have entered into force as temporary support/assistance to individuals due to the COVID-19 situation). Calculations of UBI are performed using the tax-benefit microsimulation model EUROMOD. EUROMOD is a static model that encodes basic tax-benefit rules for all EU Member States (including Great Britain). It is a model that links statutory tax and social benefit rules with representative micro-level survey data on households and their income structure.[25]

EUROMOD is a static model, i.e., the first-order effects are predicted here (how a particular policy works before human behaviour change). EUROMOD can be used both to assess the impact of consolidated tax-benefit policies and to understand the impact of tax-benefit reforms on labour incentives, the state budget, and income distribution.[26] The model analyses taxes, social security contributions, cash benefits and their interrelationships. To assess secondary effects (with behavioural changes), it can be supplemented by labour demand/supply components.

EUROMOD uses standardised Income and Living Conditions Survey (EU-SILC) population-based data, therefore, comparisons between countries are possible. Country-specific data (for example, certain types of benefits not available in other countries) are also provided here. The EUROMOD model allows for "policy swapping" where one party can "take over" the existing policies/rules of another country and perform simulations. In general, EUROMOD is more flexible than most national microsimulation models. This flexibility is necessary for consistency (between different countries), portability (components of tax-benefit systems) and the use of the model between many consumers.[27] As EUROMOD contains information on taxes and benefits in Lithuania since 2005 and

survey data are used to have the most up-to-date information for each year, information on basic amounts is updated annually (basic social variables, wage adjustments, harmonised index of consumer prices, etc. are updated). For this analysis, EU-SILC data of 2018 are used where incomes are updated up to 2020.

Methodology: assumptions, analysis, interpretation and limitations

The UBI reforms proposed for 2020 are modelled using the tax-benefit rules for 2020 encoded in the EUROMOD model.[28] In assessing the expected impact of the reforms, the following assu mptions about the economic situation in Lithuania and the dynamics of other benefits in 2020 are observed:

- Wages declined by –2.6 per cent in 2020, the average annual HICP inflation is 1.8 per cent;
- Employment rate is supposed to decline by –2.7 per cent while the unemployment situation is deteriorating and the unemployment rate is 9.7 per cent;
- The demographic situation is considered constant, no demographic adjustments are made;
- The amounts of social insurance contributions and benefits vary according to the expected change in insured income (salaries, etc.).

Interpretation and limitations of the results. The analysis is based on the EUROMOD model which operates based on the coded Lithuanian tax-benefit rules and the EU-SILC survey. EU-SILC data are used to calculate official Lithuanian poverty, inequality and other socio-economic indicators. However, the surveyed population may reflect the entire population with some errors (especially when looking at smaller population groups). Therefore, it is recommended to assess aggregate changes in benefit levels and distribution in the population with caution and relative sizes from the baseline scenario.

The estimated changes in poverty, inequality, and income distribution reflect the net impact of universal basic income reforms in the context of the projected economic situation in 2020 (see assumptions above), i.e., what is the likely impact of the proposed reforms, considering the forecast of the economic situation in Lithuania at that time. Other reforms that may enter into force during the same period are not considered. Therefore, it is recommended that projected changes in poverty and inequality be measured in percentage points from the baseline scenario and treated as an isolated effect of the proposed reforms. The submitted results are not a forecast of poverty, inequality, or income distribution in 2020.

The following *limitations of the analysis* should be borne in mind when interpreting the results: reforms are analysed on the assumption that they will work "as intended", i.e., non-withdrawal of benefits or concealment of income is not modelled, etc. The provision of UBI should not encourage individuals to hide their income, as regardless of the size of their existing income, a UBI is provided to all residents. The initial impact of reforms is modelled without regard to possible behavioural changes.

Results of the Universal Basic Income reform: Impact on poverty risk, inequality, income distribution

The potential impact of UBI is assessed comparing with the situation if this reform is not realised in 2020 (excluding COVID-19 measures). Figure 1 shows the net impact of the reforms on the at-risk-of-poverty rate[29] between different age groups (children, working-age, and the old-age) and the general population and changes in the depth of poverty in the general population.

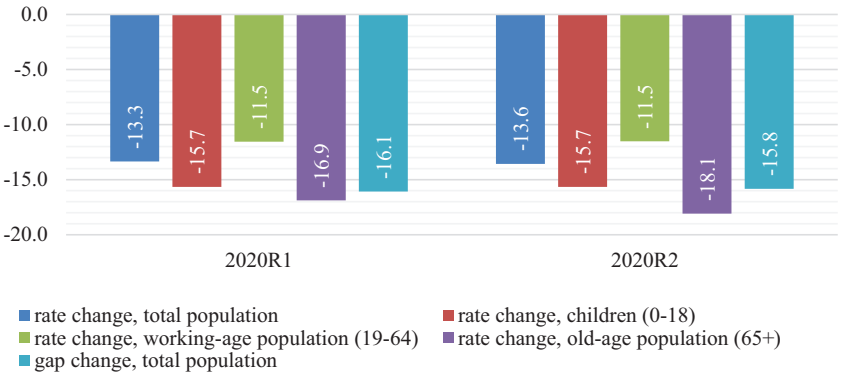


Fig. 1. Net impact UBI in Lithuania in 2020 on at-risk-of-poverty rate and gap, change in percentage points

Source: Calculated based on EUROMOD model and the EU-SILC survey data

It is observed that both scenarios have similar positive effects on reducing poverty in the general population. However, it is observed that the 2020R2 scenario has a better positive impact on poverty reduction for the elderly and, compared to the baseline scenario, the at-risk-of-poverty rate for this group is reduced by 18 percentage points (hereinafter referred as percentage points). Scenario 2020R2 differs from scenario 2020R1 in that this scenario no longer pays insurance benefits (unemployment, long-term work, maternity, paternity, childcare benefits) and contributions to these benefits but continues to pay old-age pensions, sickness benefits, contributions to them and compulsory health care insurance premiums.

It is important to note that the introduction of UBI significantly increases the at-risk-of-poverty threshold (*Table 1*). Because relative poverty is calculated as 60 per cent of the median population of equivalent disposable income, the poverty line increases almost one and a half times in the reform scenarios.

Table 1. At-risk-of-poverty rate, gap, and threshold in baseline scenario (2020) and its' change in reform scenarios in percentage points

	2020	2020R1	2020R2
Rate change, total population	20 %	–13.3	–13.6
Rate change, children (0–18)	16 %	–15.7	–15.7
Rate change, working-age population (19–64)	17 %	–11.5	–11.5
Rate change, old-age population (65+)	32 %	–16.9	–18.1
Gap change, total population	23 %	–16.1	–15.8
At-risk-of-poverty threshold, EUR:	418.37	1060.13	1053.26
At-risk-of-poverty threshold change in per cent:		153.4 %	151.8 %

Source: Calculated based on EUROMOD model and the EU-SILC survey data

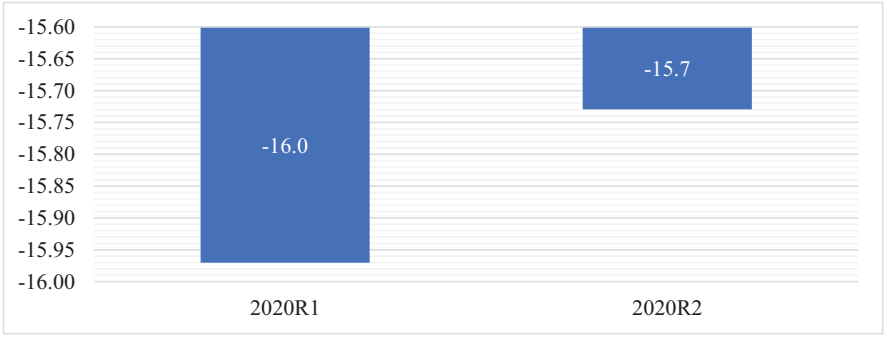


Fig. 2a. Net impact of UBI in Lithuania in 2020 on Gini coefficient, change in percentage points

Source: Calculated based on EUROMOD model and the EU-SILC survey data

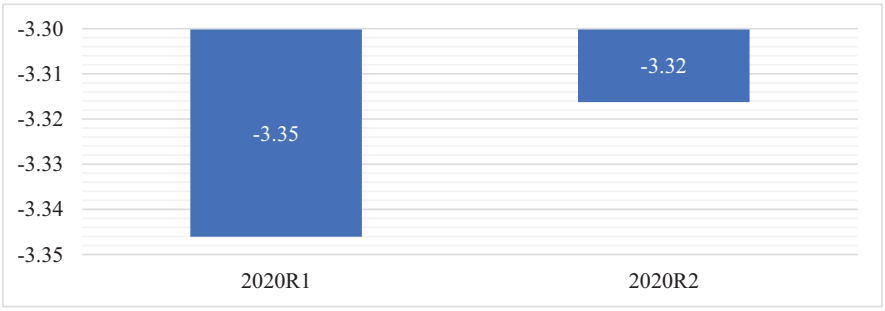


Fig. 2b. Net impact of UBI in Lithuania in 2020 on S80/S20, change in percentage points

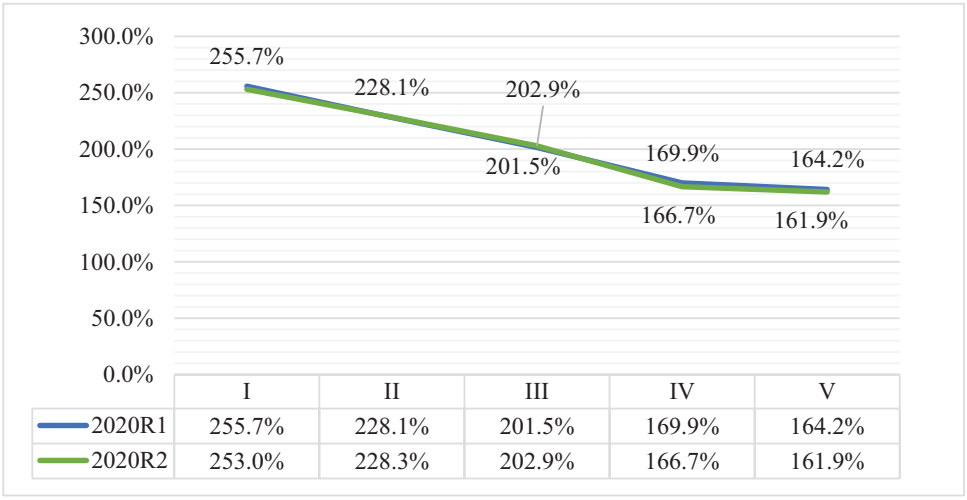
Source: Calculated based on EUROMOD model and the EU-SILC survey data

There is no absolute poverty in the country as the universal basic income is more than twice the size of minimum consumption needs (MVPD) which was 257 EUR in 2020. People whose income falls below 257 EUR are considered below the absolute poverty line.

Although the UBI raises the at-risk-of-poverty threshold, it makes a significant contribution to reducing the relative level of poverty. In the baseline scenario, a relative at-risk-of-poverty rate of 20 percent is projected, thus relative poverty remains just over 6 per cent of the total population in the reform scenarios. There is 7 per cent of at-risk-of-poverty gap in the 2020R1 and 2020R2 scenarios.

In both reform scenarios, we could observe reduction in inequality (*Fig. 21* and *2b*). Figure 2a presents the net decrease in Gini coefficient due to the introduction of universal basic income.

Both reform scenarios reduce Gini coefficient by about 16 percentage points (in baseline scenario Gini equals 34). The significant decline in Gini is because UBI is provided to all residents without evaluation of their income or wealth. It is important to note that old-age pensions are left in the scenarios. This means that the elderly not only receive



	I	II	III	IV	V
2020R1	255.7%	228.1%	201.5%	169.9%	164.2%
2020R2	253.0%	228.3%	202.9%	166.7%	161.9%

Fig. 3. Net impact of universal basic income in Lithuania in 2020 on household income in income quintiles, per cent

Source: Calculated based on EUROMOD model and the EU-SILC survey data

700 EUR/month, but they also get the old-age pensions which leads to an increase in their income compared to those who do not receive a pension and receive only UBI.

Figure 2b shows the S80/S20 income quintile ratio. The income quintile ratio (S80/S20) shows the ratio of the share of the 20 per cent of persons with the highest household income to the 20 per cent of persons with the lowest household income in the population of Lithuania.

We can see that the income gap between the lowest- and highest-income earners is reduced by more than 3 percentage points in both scenarios (in the baseline scenario S80/S20 is equal to 5.85). This decrease is linked to the above-mentioned provision that, in addition to UBI, old-age pensions continue to be paid, which increase the income of retired persons. Persons receiving old-age pensions tend to be concentrated in the lower income decile income, therefore, an increase in their income has a significant impact on reducing income inequality in the country.

Figure 3 presents the change in income by dividing the population into five groups with equal numbers of people (quintiles) where the first quintile illustrates the income of the poorest and the fifth quintile represents the population with the highest income.

It is observed that both scenarios have once again similar effects. The income of all quintiles is increasing but the largest increase is observed in the first quintiles where the income of the population doubles compared to the situation if there would be no basic universal income in 2020, but benefits such as social benefits, universal child benefit, additional child benefit, etc. would be paid. Table 2 presents the mean household income in the baseline scenario and change in reform scenarios by income deciles.

In the case of reforms, the relative increase in income will be felt most in the first three income deciles, for which income increases more than double. The relative income increase in higher income deciles

Table 2. Mean household income (EUR) by income decile in the baseline scenario and its' change in reform scenarios, per cent

	2020	2020R1	2020R2
1 decile	269	279.3%	278.7%
2 decile	475	232.2%	227.4%
3 decile	665	224.0%	229.2%
4 decile	907	178.9%	176.5%
5 decile	1083	161.0%	156.8%
6 decile	1236	167.3%	167.1%
7 decile	1517	147.4%	139.0%
8 decile	1705	131.2%	130.6%
9 decile	2213	101.6%	102.8%
10 decile	3548	60.2%	59.1%
Total population	1256	117.3%	116.9%
Poor	368	159.9%	157.3%

Source: Calculated based on EUROMOD model and the EU-SILC survey data

decreases as the highest-income households are concentrated there.

Table 3 shows expenditure on benefits by benefit type in baseline and reform scenarios. It is seen that in both reform scenarios means-tested benefits are no longer paid, while the cost of non-means-tested benefits increases significantly, due to UBI. According to the EU-SILC data, tentative estimates of UBI reform would cost just over 23 billion EUR per year in the initial stage if UBI starts to be paid to every citizen from their birth, later the UBI would return multiplied as a consequence and return of economic growth.

Conclusions

The traditional content of the UBI concept is being expanded and seen as one of the possible ways of addressing the challenges and needs of a globalised society, as a tool for the formation, regulation and development of changes and developments in the social structure, as a practical tool for systemic action which can also serve as a basis for strategic planning of public policies, and in particular financial policy-making.

1. UBI can be used as an instrument of public governance for political action, understood not only as a radical overhaul of financial mechanisms and the formation of new paradigms, or only as a means of reducing poverty, or a factor in promoting cultural educational activity. UBI creates a value system that allows to construct value orientations as a starting point for the transformation of public policies. In this respect, UBI has the structural logic of a new policy instrument that is in line with the direction of the social change in a digital society. In fact, UBI acts simultaneously as an ideological, theoretical-practical construct and concentrates within itself the expressions of the megatrends and consequences of globalisation. Such methodological integrity makes it possible to distinguish UBI as a new type of tool corresponding to

Table 3. Expenditure on benefits by type, mln. EUR

	2020	2020R1	2020R2
Means-tested non-pension benefits	250.72	0	0
Non-means-tested non-pension benefits	1274.89	24 158.55	23 740.21
Pensions	3824.24	3772.38	3772.38

Source: Calculated based on EUROMOD model and the EU-SILC survey data

the tendencies of modern society formation, its media hybridisation and information universalisation.

2. UBI is one of the possible alternatives to address the challenges and needs of a globalised society. When humanity reaches such a limit of economic and technological development, in which the utopia of universal distribution acquires the possibility of real, most realistic implementation in the information space, UBI is instrumentalised as a mechanism of organisation and regulation of the social state. In fact, UBI is seen as a complex political, financial, and public governance tool that integrates the attributes of modern society, competitiveness, quality of life into a single tool that is easily understood by all and can serve as a mechanism for implementing public policies.

3. UBI as a tool for the formation, regulation and development of changes and developments in the social structure. UBI effects modernisation of the labour market — part of UBI is used for training and retraining. UBI makes the labour market more flexible, active, creative, and competitive. UBI promotes job innovation and creation of skilled jobs. UBI also has an impact on demographic change: reducing dependence on physical employment, reducing the need to live in metropolises, migrating to other countries, as well as reducing the gap between urban and rural areas, increasing the potential for regional development, highlighting the potential for smart specialisation.

4. UBI, as a practical tool for systemic action, can serve as a basis for both strategic public policy planning and, in particular, financial policy-making. In the context of the global economy, financial policy is acquiring new models of socio-economic impact, a different budgeting structure that focuses on competitive and growing economic and social outcomes. The potential impact of UBI is on higher value-added, public sector services, money supply and demand offers new integrated approaches to macroeconomic analysis and forecasting in the global marketplace. UBI should be seen as a closer link between integrated financial mechanisms and socio-economic issues and quality of life, a potential tool for reducing corruption.

5. UBI acquires the role of an instrument for increasing competitiveness, and no less important — the status of a factor of increasing innovation potential. This means that UBI cannot be narrowly seen as a mere means of social exclusion or income redistribution, but should act as a mechanism to promote educational, cultural, creative, and, ultimately, innovation, producing ever more added value, new technologies and services and products based on them. UBI is a critical condition for developing an innovation economy by creating start-up ecosystems, creative communities, developing innovative regions, living labs, and more. UBI stimulates new business ideas, products, services, KIBS, creative industries. UBI increases the development of the third sector and raises new quality requirements for public services, creates preconditions for the transition to the community's smart management model.

6. Based on the results of the research on the UBI perspective in Lithuania, it can be stated that:

- Research based on a microsimulation with a static model illustrates the impact on significant social indicators, the changes of which completely eradicate absolute poverty in Lithuania, the change in average household income increases 2.8 times in the first decile, the poor — at 1.6 times, the at-risk-of-poverty rate increases 1.5 times due to overall increase in household income. Inequality decreases by 16 per cent.
- The effects of microsimulation on the growth of public income, eradication of absolute poverty, significant reduction of inequality and exclusion, and the growth of middle-class income create conditions

for the development and improvement of skills, competitiveness, cultural and all social needs.

- According to the study and calculations, the costs of UBI implementation in Lithuania would be 23.3 billion EUR but this amount would consist of the total annual money supply that would always be significantly lower in circulation depending on the turnover rate. Therefore, it can be reasonably stated that it would be in constant circulation at around 800–1000 million EUR, which would be hypothetical, depending on the turnover rate, approaching the current annual volume of currently paid benefits and other social benefits, the need for UBI funding for one year as a constantly renewing, circulating UBI cash flow in Lithuania based on Taylor and Basel methodology approved by Taylor.[30] The task of further research would be to substantiate the results of the implementation of the Taylor rules and the return on economic growth capital in Lithuania.

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UNIVERSĀLĀ PAMATIENĀKUMA METODOLOĢIJAS MODELĒŠANA VISPĀRĪGĀM SOCIĀLEKONOMISKĀM PĀRMAIŅĀM

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Kopsavilkums

Atslēgas vārdi: *universālais pamatienākums, ceturtā rūpnieciskā revolūcija, valsts pārvalde, inovāciju ekonomika*

Rakstā sistemātiski aplūkots universālā pamatienākuma (UPI) strukturālais modelis kā neatņemams instruments sociālekonomiskās struktūras pārveidošanai, saskaroties ar 4.0. rūpnieciskās revolūcijas problēmām. UPI tiek uztverts ne tikai kā finansiāls paņēmiens labklājības vairošanai vai sociālās nevienlīdzības mazināšanai, bet arī kā sarežģīts ekonomisks instruments inovāciju veicināšanai un pievienotās vērtības palielināšanai pastāvīgi digitalizētas vides kontekstā. Tas noved pie radikālām strukturālām pārmaiņām galvenajās mūsdienu dzīves jomās. UPI ideja kalpo kā vienojoša koncepcija, kas vispārina visas sociāli ekonomiskās attīstības dimensijas un virza uz visaptverošu inovāciju sabiedrību nākotnē. UPI nav mehāniski ietilpināta sistēma, bet gan uz pierādījumiem balstīta parādība, paradigma, kas rodas līdz ar jauno *VUCA* loģiku.

UPI šajā pētījumā tiek pasniegts kā vispārējs metodoloģisks komplekss, kas nodrošina savstarpēji saistītas sociālekonomiskās reformas, kā arī jauns integrēts finanšu instruments; metode, kā veidot pārmaiņas sociālajā struktūrā, kuras veicina iedzīvotāju labklājību un sociālo drošību; valsts pārvaldes mehānisms, kas veicina konkurētspējīgas un ilgtspējīgas ekonomikas attīstību digitālo tehnoloģiju laikmetā.

Mikrosimulācija ir metode, kas ilustrē pirmo mēģinājumu potenciālu, kā modelēt UPI Lietuvā. Tas ved pie tālākiem empīriskiem eksperimentiem, radot gatavību pārmaiņām, kas izriet no perspektīvām tuvā nākotnē. UBI ietekmes novērtējums attiecībā uz sociālo ilgtspējību un inovācijām ir balstīts uz finansiālām iespējām, ienākumu pieaugumu, monetāro un fiskālo politiku, finanšu un sociālajām pārmaiņām.