

Sustainable public finances - impact of universal basic income on economy: case study of Latvia

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Abstract

The aim of the research was to identify the feasibility of introducing Universal Basic Income (UBI) and the impact of its implementation on the economy of Latvia. Research methods – literature review, analysis, synthesis, calculation of relative values, comparison, calculation of multiplier effect. UBI definitions, studies and socio-economic issues related to basic income are analyzed and summarized in the article. Economic factors are determined to assess the impact of the introduction of the UBI on the economy of Latvia. The amount of UBI payable was calculated for three different forms and ways of payment. Costs of implementation of UBI on Latvia's budget were assessed. Fiscal effect of the implementation of UBI was determined. It is concluded, that the implementation of UBI would stimulate the economic growth, but it is not financially feasible due to strain on the budget.

Keywords

Budget, social protection, subsistence minimum, universal basic income

Introduction

Following the financial crisis in 2009, the Latvian economy is experiencing a period of economic growth. Economic prosperity and level of well-being of the population increase, but this does not mean that all socio-economic problems such as, for example, unemployment and poverty are also solved.

In the 21st century, economic growth is essentially driven by globalization and technology, including artificial intelligence and automation. Process automation has been going on for centuries. Although automation contributes significantly to the development of companies and countries, the consequences of automation are most often felt by workers, as the replacement of homogeneous jobs by automated techniques often leads to higher unemployment in the country. Such unemployment is called structural unemployment (Hughes 1984). Unemployment associated with technological development is called technological unemployment and it is a part of structural unemployment. British economist John Maynard Keynes (1963) describes technological unemployment as “unemployment due to our discovery of means of economizing the use of labor outrunning the pace at which we can find new uses for labor”. The notion that only homogeneous works are replaced is incorrect. With the rapid development of artificial intelligence, highly skilled professions are also at risk of automation and unemployment. Jobs with higher automation risk include: transportation, manufacturing, marketing, customer service. Jobs with the smallest automation risk are: management positions, education and health care workers, artists and media workers, handicrafts (Frey 2013).

Nowadays automation process increases and national economies develop, but high risks of unemployment and social inequality still remain. This means that the government should address the potential consequences of automation. Such a solution could be the introduction of a Universal Basic Income (UBI). But some critics of basic income compare automation problems today with the industrial revolution and believe that solutions to the consequences of automation, just as after the industrial revolution, will come naturally, while others believe the government should take the lead in solving the problem (Portnoy 2018).

The aim of the research is to explore the possibilities of applying the Universal Basic Income and the impact of its implementation on the economic development of Latvia. The hypothesis – it is possible to implement UBI in Latvia and it will facilitate to economic growth in the country. To reach the aim and prove the hypothesis, the following tasks were defined: analyze and summarize existing studies on Universal Basic Income; to develop models for the implementation of the UBI and to determine its implementation costs; to find out possible ways of financing the UBI and is it possible to implement it in Latvia.

1. Concept of the universal basic income

Fears about the impact of automation, digitalization and globalization on the labor market have attracted considerable attention in recent years to the idea of UBI as an opportunity to provide people with livelihoods if they lose their jobs (Tartabini 2018). UBI unconditionally provides safety for every individual (Van Parijs 2004). Simon Birnbaum (2016), associated professor in political science at Södertörn University, defines UBI as a periodic cash payment unconditionally delivered to all on an individual basis, without means-test or work requirement. The other definition given by Kimberly Amadeo (2019) is: “UBI is a government guarantee that each citizen receives a minimum income. It is also called a citizen’s income, guaranteed minimum income, or basic income”.

The basic income has the following five characteristics (Basic Income Earth Network 2019):

- periodic - it is paid at regular intervals;
- cash payment - it is paid in cash, allowing those who receive it to decide what they spend it on;
- individual - it is paid on an individual basis;
- universal - it is paid to all;
- unconditional - it is paid without a requirement to work or to demonstrate willingness-to-work.

The main idea of the UBI is that it is a certain amount of money paid to all citizens, regardless of their social status, employment or other indicators.

1.2. Studies about the Universal Basic Income – literature review

Although the concept of UBI is not new, several studies have been conducted in recent years on the theoretical aspects of UBI, its impact on the economy and poverty reduction.

Proponents of guaranteed income schemes argue that poor people will benefit more from unrestricted funds than from current welfare systems, which tend to have stringent requirements that often leave recipients trapped in poverty (Arnold 2018).

Most of the researches focuses on UBI pilot projects in advanced and developing countries. Both normative and practical considerations make UBI easier to defend as a tool of poverty alleviation in developing countries than as a tool to achieve social justice in developed ones (Ghatak and Maniquet 2019). A feature of advanced economies that distinguishes them from developing countries is the existence of well-developed, if often incomplete, safety nets (Hoynes and Rothstein 2019). Experiences from earlier basic income pilot projects in developing countries in its turn show the big role of politics (Banerjee et al. 2019). The importance of the political will in implementation of the UBI is also highlighted in many other studies. A large and growing body of country-studies have examined the details in many countries: US, UK, Finland, Sweden, Australia, New Zealand, finding that they are in general implementable, but require sufficient resources and political will (Chohan 2017). Demands and movements for UBI are important components of a "transitional programs" of governments suitable for the twenty-first century. Transitional demands do two things: they genuinely improve the lives of working people in the short-term and they operate rhetorically and ideologically to convince people (Sculos 2019).

Almost all studies try to answer the following questions: Is UBI an effective mean for radical poverty reduction (Lacey 2017)? What recipients would likely do with the incremental income? Whether this would unlock further economic growth, and the potential consequences of giving the money to everyone (Banerjee et al. 2019)? But answers are not always given to those questions.

UBI is mostly viewed as a tool for reducing poverty, but in some studies it is analyzed even as a tool for reducing inequalities in access to health services (Ruckert et al. 2017).

The studies also look for solutions for UBI funding and compare the options available. A UBI large enough to increase transfers to low-income families in advanced economies would be enormously expensive (Hoynes and Rothstein 2019).

Methods of applying Universal Basic Income differ from country to country. One of the studies which examines is it possible to implement UBI in UK, is the study of F.Joy Allahyar (2014) “Universal Basic Income. Could it be introduced in the UK?”. F.J.Allahyar has looked at UBI from 4 dimensions: philosophical / ideological; political; sociological and economic. The work as a whole was about the nature of basic income and opportunities for its implementation. The study offered a version that pays a certain amount of money to all citizens. The main conclusion was, that it is impossible to finance UBI without additional funding and without a budget deficit, but the implementation of the UBI would have positive impact on national economy (Paine 2010).

The Roosevelt Institute conducted a study on how the implementation of universal income could affect macroeconomics. To assess the macroeconomic impact of UBI, researchers developed three versions of unconditional payments: USD 1000 a month for all adults, USD 500 for all adults, and USD 250 for children. For each of these versions, macroeconomic effects were modeled using two different financing plans - allowing to increase the

government debt or increasing household taxes (Nikiforos 2017). The study has mainly examined the economic consequences of implementation of the UBI. Quantitative results related to the implementation of various universal income scenarios were considered in this study. The conclusions was similar to those made by F.J.Allahyar - it is impossible to finance UBI without additional funding, but the implementation of the UBI would have positive impact on national economy.

Coote and Yazici (2019) in their study “Universal Basic Income. A Union Perspective” sheds doubt on ambitious claims made for UBI. Arguments for and against UBI are given in this research. The main conclusion is, that “rapidly changing labor markets, inadequate welfare systems, poverty, inequality and powerlessness are complex problems that call for complex changes on many levels: there is no “silver bullet” of the kind that UBI is often claimed to be”. Making cash payments to all is no solution to poverty and inequality.

Laurinavicius and Laurinavicius (2016) from Vilnius University have conducted research about basic income implementation possibilities in Lithuania. The main conclusion after the study was, that currently it is not possible to implement the concept of basic income in Lithuania: the state social insurance fund budget would not be able to fund sufficient benefits, and the benefits that could be provided by the budget would not comply with the objectives of the concept of basic income.

As a basis for further research and calculations about the implementation of Universal Basic Income and its impact on economic development of Latvia will be the study conducted by Roosevelt Institute.

1.1. Guaranteed minimum income in Latvia

There is a guaranteed minimum income (GMI) level of EUR 53 per person per month in the Republic of Latvia. The councils of municipalities are entitled to set higher GMI levels for different groups of the population (Noteikumi par garantēto minimālo ienākumu līmeni 2012). Although municipalities may pay more, they rarely do this. For example, out of nine cities of national importance, only Riga, Jurmala and Daugavpils pay more than EUR 57 and Liepaja pays EUR 70 a month. From the 1st of January, 2020 the GMI level is expected to be raised from EUR 53 to EUR 64 per person per month (Public broadcasting of Latvia 2019). The GMI is a type of social benefit that may be similar to UBI. But there are significant differences between the two benefits. In comparison with GMI, UBI has some advantages and disadvantages. For example, UBI is paid to all citizens, thus relieving the administrative burden of state and municipal authorities, which examine whether households meet all the criteria for receiving municipal benefits. Reducing the administrative burden can reduce the costs that would otherwise be spent on the above administrative functions. In addition, citizens also have a smaller burden, because they do not have to submit an application showing their income structure and justifying their benefits. The disadvantage is, that the amounts of money paid to the wealthier cannot be diverted to people in greater need of state aid, because all citizens receive the UBI.

2. Evaluation of the possibilities to implement universal basic income in Latvia

One way to assess whether Latvia can introduce the UBI, is to calculate the value of subsistence minimum and take it as the basis for UBI calculation (**UBI model based on subsistence minimum**). The full subsistence minimum basket of consumer goods and services for one resident of Latvia was last calculated in 2013 and then it was EUR 253 per month. And the contents of this basket are outdated, too. Authors of the article tried to calculate future values for the full subsistence minimum basket of consumer goods and services using the relationship between it and inflation or GDP (see Figure 1).

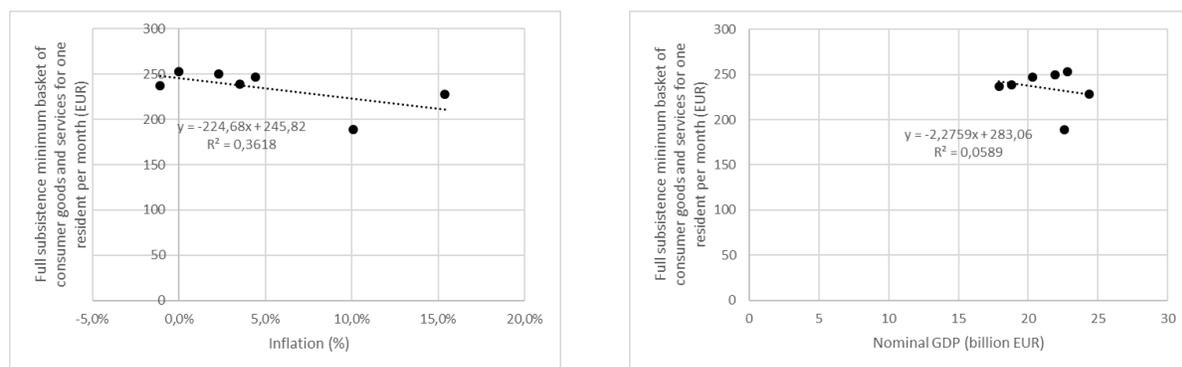


Figure 1. Relationships between full subsistence minimum basket and inflation or GDP

From the Figure 1 it is possible to conclude that there is no significant relationship between analyzed indicators and it is not possible to use regression models for forecasts. The R-squared value is -0,3618 and it means, that only 36% of full subsistence minimum basket variation can be explained by price changes. And similarly - the other R-squared value is -0,0589 and it means, that only 6% of full subsistence minimum basket variation can be explained by changes in GDP. The correlation coefficient was also calculated and it was -0,6015 (correlation between subsistence minimum basket and inflation) and -0,2426 (correlation between subsistence minimum basket and GDP). It means that relationship between those indicators is not very strong.

Because it was not possible to use liner regression model for full subsistence minimum basket calculation for years 2014-2018, then changes in the consumer price index were used to determine the forecasted value of subsistence minimum. Figure 2 shows the real and forecasted values of the full subsistence minimum basket of consumer goods and services.

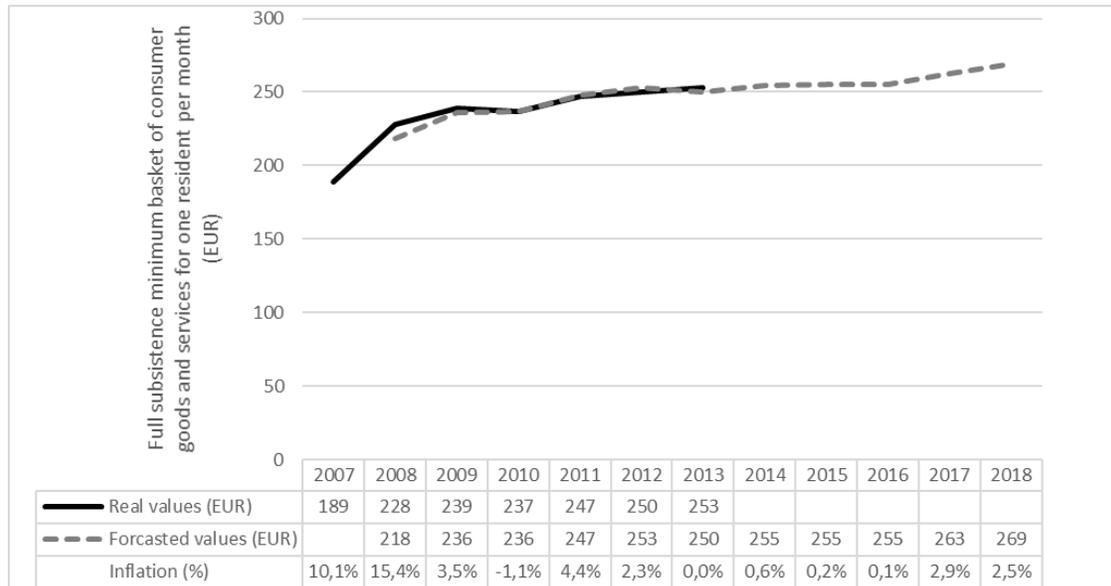


Figure 2. Real and forecasted values of the full subsistence minimum basket of consumer goods and services

From Figure 2 it is possible to see, that forecasted subsistence minimum for year 2018 is EUR 269. Data validation – the full subsistence minimum basket was also calculated for the years 2008-2013 and data were compared to the real data. The average error is only 1,38%. The model used to make forecast is plausible.

During the further study it was assumed that UBI would be paid to all residents of Latvia. Then it is possible to calculate the financial resources needed to provide all citizens with the UBI equal to the calculated subsistence minimum by multiplying the amount of population by the required amount of UBI and the number of months per year. The total population according to the data of the Central Statistical Bureau of Latvia (Central Statistical Bureau 2019) was 1 934 379 in 2018. Providing all residents of Latvia with a UBI for one month requires a sum of EUR 520 347 951, while providing all residents with the UBI over the year requires EUR 6 244 175 412.

Assuming that UBI would fully replace the government social protection budget, then social protection would require 47,99% of total consolidated general budget expenditure in 2018. Social protection expenditure already has the largest share in the general budget expenditure. In 2017, social security accounted for 30,83% of total budget expenditure and in 2018 social protection budget was EUR 3503, 25 billion (Central Statistical Bureau 2019). Looking at these numbers, it can be concluded that such an amount of UBI is not feasible within the Latvia's general budget, without increasing the revenues or government deficit, or redistributing expenditure.

The other way to assess possibility to implement the UBI, is look at Universal Basic Income, based on existing social protection expenditure in Latvia (**UBI model based on social protection / same amount for all inhabitants**). It means, that it is possible to calculate the amount of the UBI taking into account the social protection budget. Dividing the social protection budget by the total population and the number of months per year, we can get the UBI. The calculated value of UBI for one person per month then will be EUR 150, 92. Compared to the previously determined

subsistence minimum of EUR 269, this amount of UBI is EUR 118, 08 less, or by 43,90% lower than necessary subsistence minimum.

Experience in other countries shows that it is possible to define different levels of basic income depending on the age of the population (**UBI model based on social protection / different amount for children and adults**). If the amount of UBI is not the same for people of different age groups, then the UBI payable to part of the population would increase. By defining that population under working age will get half of the universal basic income that adults would receive, it can increase the basic income for the adults. But, as the share of population between 0 and 14 years of age in Latvia is small, then the increase of UBI for others will be relatively insignificant.

3. Scenarios for the implementation of the universal basic income

To find out the impact of UBI implementation on the economy of Latvia, the financing options of UBI should also be taken into account.

The authors have used the study of macroeconomic effects developed by the Roosevelt Institute as a basis for developing the scenarios for the implementation of the UBI. In the Roosevelt Institution study the scenarios were developed in which the way of financing was either budget deficit or tax increase. Scenarios for the implementation of the UBI are summarized in the Table 1).

Table 1. Scenarios for the implementation of the UBI

UBI model	Type of financing	Social protection budget + deficit	Tax increase
Subsistence minimum (EUR 269)		Scenario 1	Scenario 4
Social protection Same amount for all inhabitants		Scenario 2	Scenario 5
Social protection Different amount for children and adults		Scenario 3	Scenario 6

These three implementation models can be further used to determine the impact of UBI on national economy. For each of the above models, there are two forms of financing of UBI, thus, there are 6 UBI scenarios. These types of financing are: financing from the existing social protection budget and deficit building when needed or financing through increase in tax revenue.

Economic indicators to assess all scenarios were: GDP growth, tax revenue to GDP, tax revenue growth, government debt to GDP, and the direction of changes in unemployment and inflation. In Table 2 it is possible to see the calculation of the impact of the UBI on GDP and government debt in Latvia.

Table 2. Impact of the UBI implementation on the GDP and government debt in Latvia (authors calculations based on Central Statistical Bureau of Latvia data for year 2018)

Formula	Indicator	Values
Tr	Transfer payments (EUR)	1 949 618 270, 64
Y	GDP (EUR)	29 523 664 000, 00
MPC	Marginal propensity to consume	0,50418025
$\Delta Y = Tr \times \frac{MPC}{1 - MPC}$	Increase of GDP taking into account transfer payments multiplier (EUR)	1 982 492 685, 19
$Y_1 = Y + \Delta Y$	New GDP (EUR)	31 506 156 685, 19
$Y_{growth} = \frac{Y_1 - Y}{Y} \times 100\%$	GDP growth (%)	6,71
D	Government debt (EUR)	10 608 000 000, 00
$D_1 = D + Tr$	New government debt (EUR)	12 557 618 270, 64
$\frac{D_1}{Y_1} \times 100\%$	New government debt to new GDP (%)	39,86

GDP growth is estimated by applying a transfer payment multiplier. In scenarios where there is a general government deficit to finance UBI, it is assumed that the general government deficit is financed through external government debt. In order to assess the impact of UBI on the labor market, changes in unemployment rates are analyzed. The results of all calculations are summarized in the Table 3.

Table 3. Changes in the indicators of the Latvian economy depending on the scenario of implementation of the UBI (authors' calculations)

Number of scenario	1	2	3	4	5	6
GDP growth (%)	6,71	0	0	0	0	0
Tax revenue to GDP (%)	31,40	31,40	31,40	49,16	44,32	44,32
Tax revenue growth (%)	0	0	0	56,77	41,32	41,32
Government debt to GDP	39,86	35,90	35,90	35,90	35,90	35,90
Unemployment rate	?	—	—	↑	↑	↑
Inflation	↑	—	—	—	—	—

? – changes of value are not defined; — - value does not change; ↑ - value increases

Because the transfer payment multiplier was used to measure GDP growth, only in the first scenario GDP growth is observed. In the second and third scenarios, the overall household consumption does not increase, because already existing national transfer payments are used to finance UBI. As taxes are the means of redistributing income, in this case there is no fiscal effect on the introduction of UBI through tax increases.

In the fifth and sixth scenarios, the amount of UBI is determined by redistributing the existing social protection budget. In these scenarios, current social protection budget expenditures are assumed to remain at current levels and, in addition, UBI is financed by tax increases.

In 2018, the government budget tax revenue to GDP ratio is 31,40% (Main national accounts tax aggregates 2019). Changes in the ratio of tax revenue to GDP are observed in scenarios 4 to 6, because only in these scenarios taxes are used to finance UBI. The largest increase of tax revenues was calculated for the fourth scenario.

In the first scenario, to finance the introduction of UBI, a general government deficit is created, financed by an increase in external debt. In such a scenario, the government debt to GDP ratio would reach 39,86%, which would be an increase of 6,63 percentage points compared to the current government debt to GDP ratio. In the other scenarios, no change in government debt to GDP is observed as it is financed by existing funds or tax increases.

Unemployment rates would remain unchanged in the second and third scenarios, while in other scenarios it is not possible to forecast changes in the unemployment rate. In the first scenario, the unemployment rate could decrease as total consumption increases, which implies higher demand and consequently the need to produce more output which may require more labor. But there is another possible outcome - an increase in unemployment. Unemployment would increase if citizens did not look for work because they would receive a general basic income. In the fourth, fifth and sixth scenarios, the unemployment rate would increase as the population would receive an unconditional UBI.

Inflation is rising in the first scenario as total consumption is rising. In other scenarios, there would be no significant change in inflation as consumption does not increase because all additional income is covered by tax payments or the existing social protection budget.

Conclusions

The hypothesis is partially proved. It is not possible to implement UBI at the subsistence minimum level in Latvia, but implementation of the UBI will stimulate economic development of the country. The impact of UBI on national economy depends on the way in which it is financed. The greatest increase in GDP is observed when the budget is made with deficit.

In general, such forecast of the UBI implementation possibilities has some disadvantages, because it is not possible to include all factors influencing the national economy in the simplified model. The most significant changes are seen in the first scenario. In this scenario, GDP growth is very rapid, which is unlikely in the real world. The high GDP growth is due to the fact that the research does not take into account the indicators limiting GDP growth.

Changes in the values of other variables affecting GDP should also be included in the calculation in order to improve the research conducted and to determine the real impact of UBI on GDP. To improve the study of Universal Basic Income, it is necessary to look also at the social effects of UBI.

References

- Allahyar, F. J. Universal Basic Income: Could it be introduced in the UK? 2014. Retrieved from https://www.academia.edu/8447710/Universal_Basic_Income
- Amadeo, K. Universal Basic Income, Its Pros and Cons with Examples, 2019. Retrieved from <https://www.thebalance.com/universal-basic-income-4160668>
- Arnold, C. Money for nothing: the truth about universal basic income. *Nature*, 557 (7707), 626-628, 2018. <https://doi.org/10.1038/d41586-018-05259-x>
- Banerjee, A., Niehaus, P., Suri, T. Universal Basic Income in the Developing World. *Annual Review of Economics*, Vol. 11, 959–983, 2019. <https://doi.org/10.3386/w25598>
- Basic Income Earth Network. (2016). About basic income. Retrieved from <https://basicincome.org/basic-income/>
- Birnbaum, S. *Basic Income*. Oxford University Press, 2016. <https://doi.org/10.1093/acrefore/9780190228637.013.116>
- Central Statistical Bureau of Latvia. Statistical data, 2019. Retrieved from <https://www.csb.gov.lv/lv/statistika>
- Chohan, U.W. Universal Basic Income: A Review. University of New South Wales, Canberra. Discussion Paper, 2017. <http://dx.doi.org/10.2139/ssrn.3013634>
- Coote, A., Yazici, E. Universal Basic Income. A Union Perspective. Public Services International, 2019. Retrieved from http://www.world-psi.org/sites/default/files/documents/research/en_ubi_full_report_2019.pdf
- Eurostat database. Main national accounts tax aggregates, 2019. Retrieved from http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS471199_QID_37279760_UID_3F171EB0&layout=TIME,C,X,0;GEO,L,Y,0;UNIT,L,Z,0;SECTOR,L,Z,1;NA_ITEM,L,Z,2;INDICATORS,C,Z,3;&zSelection=DS-471199UNIT,PC_GDP:DS471199NA_ITEM,D2_D5_D91_D61_M_D995;D
- Frey, C. B. The future of employment susceptible to computerisation, 2013. Retrieved from https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf
- Ghatak, M., Maniquet, F. Universal Basic Income: Some Theoretical Aspects. *Annual Review of Economics*, Vol. 11, 895-928, 2019. <https://doi.org/10.1146/annurev-economics-080218-030220>
- Hoynes, H., Rothstein, J. Universal Basic Income in the United States and Advanced Countries. *Annual Review of Economics*, Vol. 11, 929-958, 2019. <https://doi.org/10.1146/annurev-economics-080218-030237>
- Hughes, J.J. *The Economics of Unemployment: A Comparative Analysis of Britain and the United States*. New York: Cambridge University Press, 1984.
- Keynes, J. M. *Essays in Persuasion*. New York: W.W.Norton & Co., 358-373, 1963. Retrieved from <http://www.econ.yale.edu/smith/econ116a/keynes1.pdf>
- Lacey, A. Universal basic income as development solution? *Global Social Policy*, Vol. 17 (1), 93-97, 2017. <https://doi.org/10.1177/1468018116684269>
- Laurinavičius, A., & Laurinavičius, A. The Concept of Basic Income: Global Experience and Implementation Possibilities in Lithuania. *Business Management and Education*, 14 (1), 50-63, 2016. <https://doi.org/10.3846/bme.2016.306>
- Nikiforos, M., Steinbaum, M., Zezza, G. Modeling the Macroeconomic Effect of a Universal Basic Income. Roosevelt Institute, 2017. Retrieved from <https://rooseveltinstitute.org/wp-content/uploads/2017/08/Modeling-the-Macroeconomic-Effects-of-a-Universal-Basic-Income.pdf>
- Noteikumi par garantēto minimālo ienākumu līmeni. Rules of the Cabinet of Ministers of Latvia N 913, adopted in Riga, on the 18th of December, 2012. Retrieved from [Likumi.lv https://likumi.lv/doc.php?id=253731](https://likumi.lv/doc.php?id=253731)
- Paine, T. The Project Gutenberg's Compilation of the Writings of Thomas Paine, 2010. Retrieved from <http://www.gutenberg.org/files/31270/31270-h/31270-h.htm#Elink2HCH0012>
- Portnoy, D. L. Human Motivation in the Fourth Industrial Revolution. Digital Culturist website, 2018. Retrieved from <https://digitalculturist.com/human-motivation-in-the-fourth-industrial-revolution78e82552030d>
- Public broadcasting of Latvia. Garantēto minimālo ienākumu plāno palielināt līdz 64 eiro, 2019. Retrieved from [LSM.lv https://www.lsm.lv/raksts/zinas/ekonomika/garanteto-minimalo-ienakumu-plano-palielinat-lidz-64-eiro.a333764/](https://www.lsm.lv/raksts/zinas/ekonomika/garanteto-minimalo-ienakumu-plano-palielinat-lidz-64-eiro.a333764/)
- Ruckert, A., Huynh, C., Labonte, R. Reducing health inequities: is universal basic income the way forward? *Journal of Public Health*, Volume 40, Issue 1, 3-7, 2017. <https://doi.org/10.1093/pubmed/fox006>
- Sculos, B.W. Changing Lives and Minds: Progress, Strategy, and Universal Basic Income. *New Political Science*, Volume 41, issue 2, 234-247, 2019. <https://doi.org/10.1080/07393148.2019.1595286>

Tartabini, V. Universal Basic Income: The problematic implementation of the policy with a focus on the current Finnish experiment started on the 1st of January 2017, proposals of innovative solutions for Finland to implement. *John Cabot University, International Affairs Seminar materials*, 6-7, 2018.

Van Parijs, P. Basic Income: A simple and powerful idea for the twenty-first century. *Politics & Society*, 32(1), 7-38, 2004. <https://doi.org/10.1177/0032329203261095>

Biographies

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Andis Romanovs, currently a master's student in economics at Riga Technical University, Andis Romanovs attained a bachelor's degree from Riga Technical University in economics in 2019. With professional experience in the field of tax, and more specifically - transfer pricing. His current academic interests include finance, welfare economics, fiscal policy and questions regarding wealth distribution.