Income Inequality in Bulgaria: Recent Trends and Factors

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Abstract

Income inequality in Bulgaria has been going through a process of dynamic changes in the last 30 years as a result of the socio-economic development of the country. Bulgaria has made a difficult but successful transition from planned to open market modern economy since 1990. However, certain institutional mechanisms such as the flat tax rate, have also contributed to the unequal distribution of income and wealth and have led to income inequality today. This paper identifies the main trends in inequality (measured trough the Gini index and income polarization) and some of the main factors, which have led to income inequality in Bulgaria in the last 30 years. The factors include inefficient educational system, high dependency on social transfers, unemployed and aging population, the unequal distribution of labor force in the regions and uneven distribution of investments, the flat tax rate and low skilled labor. All of them have been contributing to inequality in a very unstable macroeconomic environment shaped by the global financial and economic crisis 2007-2009 and the COVID-19 crisis in 2020-2021 and its economic aftermaths, including increasing inflation since the end of 2022. The analysis highlights that the polarization of income of the richest 20% and the poorest 20% of the population in Bulgaria is very high, while only 10 years earlier it has been equal to the average EU levels. The paper also recommends measures to be applied in order to reduce income inequality in the next decade and achieve social sustainability.

Keywords: poverty; inequality; Gini; sustainability; income

1. Introduction

Inequality of income is a major concern of society today. Many recent studies have been focused on finding the relationship between education inequality, income inequality and economic transformation (Makhlouf and Lalley, 2023). It has been suggested that the expansion of education can affect the structural transformation, and thereby the income distribution (Baymul and Sen, 2020). Furthermore, other recent literature shows that the degree of intergenerational (im)mobility can capture inequality of opportunity (see Aiyar and Ebeke, 2020) and also that there is a strong relation between inequality and economic growth (Madsen, Islam, and Doucouliagos, 2018). Hence, income inequality is tightly related to education and economic growth and it is higher in regions characterized by low growth and high poverty rates (Dollar, Kleineberg and Kraay, 2016).

In Bulgaria income inequality has been following the dynamic changes in the last 30 years as a result of the socio-economic development of the country, particularly the difficult transition from planned economy in the 90s to open market economy today. Bulgaria joined the EU in 2007 but even 16 years after being a full member of the European Union, inequality levels are increasing as the gap between the group with highest income and the group with the lowest income is widening. One of the main reasons for inequality in Bulgaria is the unjust distribution of income and wealth. Inequality throughout the last decades has increased amidst the global financial and economic crisis 2007-2009, the change in the tax system introduced in 2008, the growing share of the shadow economy and unofficial employment, the structure of the economy, the unequal distribution of labor force in the regions, the negative demographic tendencies, the COVID-19 crisis in 2020-2021 and its economic aftermaths, including increasing inflation since the end of 2022.

In his article *The Prose of Inequality: How Todays's Divided Society Endangers Our Future* Joseph Stieglitz identifies inequality as the main threat for the normal functioning of today's societies and when an individual falls within a group of lowest income that is a prerequisite for remaining there for an indefinite time (Stieglitz, 2012), i.e. the so called "poverty trap". Also, in historical perspective, inequality has been lowest from the end of the Second World War until the beginning of the 80s (Milanovich, 2020), which points to the fact that one of the main factors contributing to lower inequality is economic growth, combined with high quality education and high taxes to provide for government social transfers. Also, the opposite is true, Korinek and Stieglitz (2018) discuss artificial intelligence in the context of income distribution and unemployment. Their analysis as well as that of Piketty (2014) underline the fact that lowering inequality contributes to increasing economic growth.

In this paper we discuss the main trends and identify the reasons which have led to the increase in inequality in Bulgaria. Among the various endogenous and exogenous factors we highlight that those of greatest impact are the flaws in the educational system, the improper distribution of social transfers, the negative demographic tendencies, flat rate taxation instead of progressive taxation, the still unequal division between high-skilled and low-skilled labour due to lack of innovations and the overall slowdown in technological changes as well as gender inequality in wage payment rates. We also recommend measures to be applied in order to reduce income inequality in the next decade and achieve social sustainability. These are necessary steps as maintaining high inequality levels has the potential of slowing down economic growth, undermining social mobility and social cohesion, and finally it contributes greatly to alleviating the problems of health deterioration and decreasing life expectancy.

2. Methodology for identifying inequality

This article identifies the main tendencies and primary factors contributing to inequality in Bulgaria. By applying the methods of synthesis, induction and deduction, it analyses the indicators of inequality in Bulgaria and comments on the main trends as well as the factors which trigger the unequal distribution of income. The applied research methodology is based on analysis of Eurostat data on the Gini index as well as income polarization measured by the quintile ratio S80/S20. A regional country comparison is made with countries that have undergone similar transition changes for the last 30 years. The final part of the research identifies factors which have contributed to these values of the Gini and S80/S20 indices, such as education, social transfers, taxation policy, the participation in the labor force and the role of high-skilled and low-skilled labor as well as the payment differences between men and women.

3. Results

3.1. The Gini index and its implications

According to the Gini index, Bulgaria currently takes the last place in terms of inequalities in the EU. The statistical data shows that in 2011 Gini for Bulgaria was 35% while EU-average was 30.7%, so we might presume that inequality at that time was near the average of the EU. According to the World Bank data ten years later in 2021 Gini for Bulgaria increases by 10% and reaches 40.5%, while the EU-average remains the same. It deserves mentioning that in 2020 the countries with the lowest inequality are countries from the former Eastern European block, namely Slovakia with the lowest Gini 20.9%, followed by Slovenia with 23.4%, and the Check Republic with 24%.

The Gini coefficient for 2020 for Bulgaria is 40% (Eurostat, 2020), which is the highest rate among all EU member states and it takes the last place by this index. Among the countries on the Balkan Peninsular (Tab.1) Bulgaria also stands out with the highest inequality index. While the average Gini index for the countries neighboring Bulgaria is between 30% and 35%, in 2019 Bulgaria's Gini index is 40.8%. The main implication is that the higher inequality observed in Bulgaria is in comparison with countries that have similar economic development and that underwent similar transition period in the early 90s. In the group of Balkan countries only Bulgaria and Romania are EU member states, while the other countries are outside the union and have been also subject to political and socio-economic changes in the past decades. Nevertheless, it is evident that inequality measured through the Gini index there remains lower than in the two EU member states - Bulgaria and Romania.

Table 1: Gini index of Balkan countries for 2019

Country	Gini Index
Serbia	33.3%
Montenegro	34.1%
Albania	34.3%
North Macedonia	30.7%
Romania	34.8%
Bulgaria	40.8%

Source: Eurostat database (2020)

3.2. Income polarization

Another indicator that shows relatively objectively the difference between the incomes of the poor and the rich in a society is the quintile ratio S80/S20 – SILC of Eurostat. According to it, the difference between the income of the 20% of the richest Bulgarians and the 20% of the poorest Bulgarians in 2020 is 8.018 times. This is again the highest value among all EU member states. In 2019 this difference was a record high – 8.1 times. For comparison, the average European value of this difference is approximately 5.1 times.

The income polarization in Bulgaria is also one of the highest in the EU between the poorest 20% and the richest 20% of the population. Again approximately 10 years ago in 2001 the difference was near the average level in Europe. Since then, however, the average EU level remains constant like the Gini index, being approximately 5 times, while for Bulgaria it is increasing reaching 8 times in 2020.

The poorest 50% of the population possess only 16.5% of the national income (WIID, 2021). In comparison, two decades earlier in 2001 they possessed slightly above 20%. On the other hand, the richest 1% of the population possesses 18.2% of the total income, while in 2008 they possessed not more than 8%. In this sense, the richest Bulgarians possess more national income than the poorest 50% of the population (WIID, 2021), which is 55 times higher income of that 1% of the population.

In absolute numbers the average annual income of the poorest 50% of the population was 5 787 BGN (482 BNG per month), while the average annual income of the richest 1% was 320 000 BGN (26 666 BGN per month) (WIID, 2021).

If we make a comparison according to the quintile ratio S80/S20 for Balkan countries (Tab. 2) we will observe similar results to the ones represented by the Gini index (Tab. 1). Here again Bulgaria has the highest ratio. While for most Balkan countries the quintile ratio is between 5.5 times and 7 times, for Bulgaria it is 8.1 times.

Hence, the width of the interval between the income of the richest and poorest Bulgarians is higher than in many countries in the EU and on the Balkans. Again, in this group the other EU country with higher quintile ratio is Romania where it is 7 times and it comes next after Bulgaria.

Table 2: Quintile ratio S80/S20 for Balkan countries for 2019

Country	Quintile Ratio S80/S20
Serbia	6,4 times
Montenegro	6,7 times
Albania	6,3 times
North Macedonia	5,5 times
Romania	7 times
Bulgaria	8,1 times

Source: Eurostat database (2020).

According to the official database of WID (2021), income inequalities in Bulgaria are extremely acute. The most recent data is for 2019, showing that the poorest 50% of people in Bulgaria own only 16.5% of the total gross national income (GNI) that is created in the economy. By comparison, two decades earlier in 2001, they owned just over 20%, and in 1991 the share was approximately 24%. There is a redistribution of income from the majority to the minority at relatively higher absolute levels. This is a prerequisite for a serious and chronic problem with inequalities, which has been developing for the last 30 decades in the country (since the beginning of the transition to market economy in 1990). This respectively is a prerequisite for long term measures which should be implemented to decrease these high levels of inequality.

The WID (2021) also provides data for the other groups of society: the richest 1%, the richest 10% and the so-called "middle class", which makes up about 40% of the population according to the methodology used. According to the latest data for 2019, the richest 1% of Bulgaria's population owns 18.2% of the total income. For comparison, in 2008 they owned no more than 8%. The conclusion can easily be drawn that the top 1% of the richest Bulgarians have more national income than the 50% of the poorest Bulgarians. If we look at the richest 10%, we will find that they own as much as 43.5% of the national income in Bulgaria at the end of 2019, while in 2008 they owned 33%. The middle class, or the 40% of Bulgarians with average income, owns 40% of the national income in 2019, while in 2008 they owned 45.1%. The conclusion is that there is a decrease in the share of concentration of resources in 90% of Bulgarians at the expense of the remaining 10%.

If we look at the data in absolute terms (according to the SPS 2020), the amount of the average annual income of the 50% of the poorest Bulgarians for 2020 was BGN 5,787 or BGN 482 on average per month, while at the same time, the average annual income of 1% of the richest Bulgarians was approximately BGN 320,000 (an average of BGN 26,666 per month). The average annual income of the 10% of the richest Bulgarians for 2020 is BGN 76,269 (6,355 BGN per month), and the average annual income of the so-called "middle class" (40% of the population) was only BGN 17,547 (BGN 1,462 per month). This means that the top 1% receive 55 times more income compared to what the poorest 50% of Bulgarians receive. The top 10% receive 13 times higher income than the poorest 50% of Bulgarians (WID, 2021; Bulgaria).

Korak (2013) studies 22 countries (including Bulgaria) and finds that there is a positive correlation between high income inequalities in any one year and a strong correlation between parents' children's income (i.e., low income mobility). This result means that high inequality today implies that the children of the rich will have much greater opportunities tomorrow than the children of the poor. Not only can they count on a larger inheritance, but they will also benefit from better education, better social capital. This is precisely why intergenerational income mobility is so important, and in recent decades it has worsened almost everywhere, regardless of the type of national economy.

When observing the standard of the middle class in Bulgaria, the incomes of the middle class are not diversified and are heavily burdened by liabilities. The savings of the middle class are in checking or savings accounts, they do not own stocks. Their loans take up a large share of the household budget, i.e. debt is a significant component of gross income, which is potentially a significant problem for the ability to meet basic household needs. (BNB, 2021)

Social transfers are becoming increasingly important for reducing inequality in the country, with their influence progressively increasing over the years. The reasons for their increasing importance are due to several factors: first, the negative processes in the development of the economy as a whole and in the change of the demographic structure in the country; secondly, the emigration of young and capable population; thirdly, the ageing of the population and the increase in the number of persons at retirement age. In the period 2010-2018, the population aged 65 and over in Bulgaria increased by over 10%. But as of December 31, 2019, over 2/3 of pensioners have a total monthly income below the poverty line for the year.

The ISS draws attention to the fact that the costs of social assistance and insurance in Bulgaria (16.1% of GDP) lag behind the average for the EU (26.9%), which contributes to the high level of poverty in the country and is a prerequisite for considering and taking measures.

For this reason, the ISS considers it important to distribute transfers more efficiently and more fairly. On the other hand, the continuous provision of social benefits without creating opportunities for realisation in the labor market does not solve the problem of poverty and is decreasing motivation to actively participate in the workforce. Therefore, a balance needs to be found.

3.3. Factors contributing to inequality

The positive relation between income inequality and average years of schooling has been explored in a number of recent studies (Coady and Dizioli, 2017). This statistically significant and stable relationship has been explored to be particularly evident in emerging and developing economies and among older age cohorts. One of the main factors contributing to the increase in income inequality in Bulgaria is education, in particular the quality of education and its relation to the socio-economic environment, measured through the number of graduating students (table 3). In his study Wells (2006) suggests that even when access to schooling appears to be equal between the upper and lower classes, there is still potential for inequality. Similarly Breen and Chung (2015) observe that any feasible educational policy is likely to have only a minor impact on income inequality. On the other hand, Castelló-Climent and Doménech (2014) and other studies such as Rehme (2007), and Földvári and van Leeuwen (2014) find a positive relationship between education expansion and income inequality.

The improvements in the educational system provide for increased work opportunities and greater income, thus reducing income disparities. The different changes that have been introduced in the education system in Bulgaria since 1990 as well as the difficult access to education by marginalized lower income groups increases the prerequisites for rise in inequality levels. Table 3 illustrates that the number of students leaving school (primary and secondary) and finishing university level education gradually decreases for the last 5 years (2018 - 2022). Demographic factors additionally contribute to the negative tendency of lower birthrates and respectively decrease in the younger population (potentially to become part of the workforce) and increase in the older population with lower income (table 5).

Table 3: Number of graduating students for the period 2018-2022

	2018	2019	2020	2021	2022
Primary education	71 880	58 864	59 914	59 697	61 364
Secondary education	26 482	25 815	25 482	25 197	23 241
Higher education	54 480	51 464	46 355	47 284	48 776

Source: National statistical institute (NSI).

The poorest part of the population mainly consists of low income groups such as retired people, unemployed and poor households. Therefore, social transfers are an important factor for determining the level of inequality. However, constant increase in social transfers is not a sustainable fiscal policy and particularly when it is not encouraged by sustainable economic growth, which requires increase in the number and quality of the workforce. Table 4 shows that total income in Bulgaria has grown in the last 10 years by 64% but when we look into the structure of household income we observe that on average income from salaries is 54% of total household income while income from pensions reaches 34% in 2022, starting from 25% in 2013. This represents 32% growth for the last 10 years as share of pensions to total income and 100% growth in absolute value of pensions for retirement. The average monthly salary has reached 1497 BGN (765 EUR) starting from 505 BGN (258 EUR) in 2013, while the average monthly pension has increased from 242 BGN (124 EUR) in 2013 to 521 BGN (266 EUR) in 2022.

Table 4: Total income per household by type of income sources (2013-2022), in BGN

	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Total income	**11420**	**11666**	**11883**	**12112**	**12836**	**13450**	**14361**	**15088**	**16115**	**18556**
Gross income	10773	11255	11487	11694	12262	12853	13781	14543	15549	17964
Salary	6067	6327	6541	6579	6980	7461	8128	8461	9159	9994
Other than salary	431	403	380	352	297	157	122	99	102	147
Self-employment	779	872	859	749	865	940	916	935	839	866
From asset ownership	124	93	65	84	118	68	94	93	69	106
Pensions for retirement	2915	3010	3085	3357	3399	3678	3924	4348	4834	6261
Transfers for unemployment	76	64	48	47	46	46	39	69	64	61
Childcare transfers	85	103	111	94	91	178	179	177	148	155
Other social transfers	186	264	253	279	295	127	204	193	188	191
Regular transfers from other households	111	120	145	152	171	199	175	169	146	183

Income from sales	130	78	73	72	94	52	60	43	32	62
Other incomes	517	333	323	345	480	545	520	502	534	530
Savings	365	350	353	419	483	539	520	472	582	775
Loans	300	147	113	135	150	243	180	143	110	115

Source: National statistical institute (NSI).

On the other hand, the decreasing share of labor in the volume of factor productivity triggers the rise in income in the upper decile of the population, which adds up to increase in inequality. This is mainly due to technological progress and the introduction of artificial intelligence in the production processes (Gries and Naudé, 2018). According to statistical data for the countries in OECD, in the period 1995-2015 the share of jobs that require medium skills has fallen by 9.5%, while the share of high skilled labor has risen by 7.5%.

In the OECD the average tax rate on personal income has fallen from 62% in 1981 to 35% in 2015, while for the corporate taxes the decrease in taxes has changed from 45% to 26%. Hence, the fiscal policy which regulated income disparities in developed economies by 1995 no longer plays an important role. However, in Bulgaria a flat tax rate of 10% on income has been applied for the last 20 years, thus contributing further to increase in inequality.

Another serious influence is exerted by the demographic factor, which over the years has been characterized by a permanent tendency to decrease the number of the population and its ageing. This means that the group of employees over 54 is becoming a significant part of the workforce in today's societies, and its share will increase in the coming years. According to statistical data, the working force population (from 20 to 64 years old) in Bulgaria is numbering 4 104 060 in 2020 and 3 775116 only 2 years later in 2022 (table 5). By the year 2080 forecasts are that it will reach 2 512 739, which is approximately 40% decrease. Meanwhile, the number of young population (potential workforce) which totals 1 322 122 in 2020 (977 765 in 2020) will decrease by 2080 to 929 355, which is 30% decrease, while population over working age will be 1 430 223 in 2080 and compared to current numbers it will remain relatively the same .

Table 5: Population distribution by working age (2022), in BGN

Population		Men	Women
	6 447 710	3 099 503	3 348 207
Under working age	977 765	502 265	475 500
Working age	3 775 116	1 975 513	1 799 603
Over working age	1 694 829	621 725	1 073 104

Source: National statistical institute (NSI).

Inequality in marketable labor and education level in Bulgaria is increasing. The group of low-skilled workers is the most vulnerable. It can be supplemented with an analysis of inequality among the group of discouraged persons (not working and not looking for jobs). This group occupies a significant share of the working force population in Bulgaria, where people with primary and secondary education predominate again (see table 3). Hence, it should be considered as a significant problem as the wage premium, and thereby income inequality, tends to increase as the demand for educated workers grows faster than the supply (Atkinson, 2015).

Bulgaria is among the countries where poverty risk for the population is above the average level for the EU, especially among the unemployed and economically inactive people. According to economic status, in 2019 the risk of poverty in Bulgaria is highest for the unemployed 58.9%, pensioners 34.3%, and other economically inactive persons which are 29.8%. These trends give reason to conclude that economic activity and participation in the labor market reduce the probability of being at risk of poverty. The most significant changes in the structure of the unemployed are observed according to education. The share of university graduates is the lowest and changes little. On the other hand, the share of the unemployed with secondary education is increasing significantly.

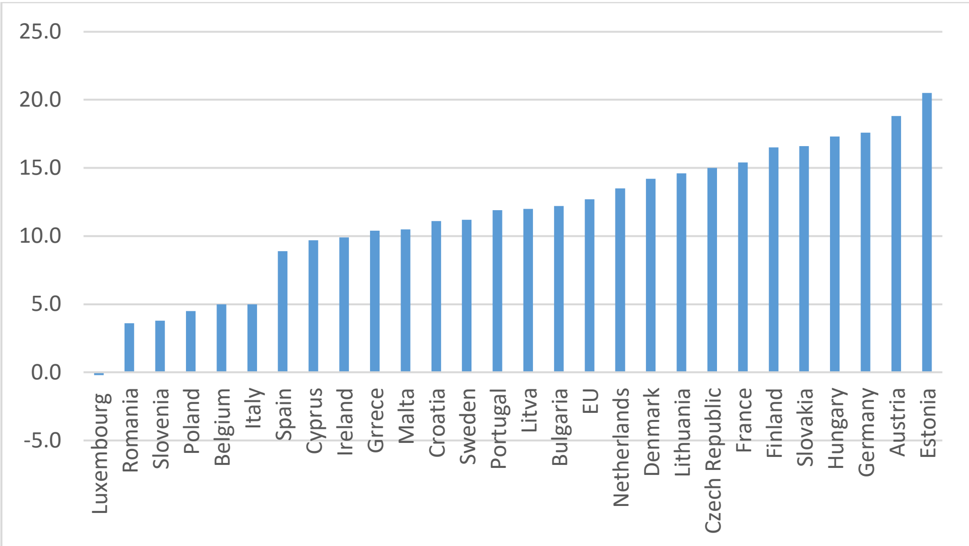
An alarming trend is observed among the unemployed with low education. They exit the labor market, which theoretically reduces inequality, but in practice generates other problems related to the possibility of working in the sphere of the hidden (shadow) economy.

The imbalance in the territorial distribution of the population is deepened by the uneven distribution of investments, particularly those in innovation and high technology. This also affects long-term sustainable development and holds back the country's overall economic growth. Territorial differences, together with socio-economic inequalities, are a cause and effect factor causing poverty. Currently, the northwestern region remains the least populated.

Due to the insufficient number of vacancies, the indicators of the labor market and poverty are the worst compared to the other regions.

In this sense, sustainable economic growth is achieved by developing activities with the potential to create new jobs and to attract high-tech companies to specific regions that assure high wages. Work is also needed through joint action of the social partners to increase understanding of the direct link between higher labor productivity and increased incomes.

Figure 1: Difference in wages between men and women as a percentage of the wage payment to men (EU)



Source: European Parliament database, 2020

Finally, another aspect that affects inequality is the fact that men's wages remain significantly higher than women's (Fig. 1) by about 12.2% for 2020 in Bulgaria, while for the EU on average women have received 12.7% less payment than men (according to data of the European Parliament). Yet the percentage of employed persons is the opposite: men - 54%, women - 46%.

4. Discussion

There are several recommendations to overcome inequality gaps in Bulgaria - economic growth, minimum wage rate relevant to the standard of living, progressive taxation, and improvement in education, particularly focusing on the link between business and the academia.

Firstly, the main factor which will have a significant impact on the reduction of inequality is economic growth achieved through innovation, particularly high technology and artificial intelligence. Recent studies have explored the relationship between innovation and income inequality (Antonelli and Gehringer, 2017), finding for example that while innovation contributes to decreasing inequality in lower income groups, it impacts on inequality in the top income groups (Aghion et al., 2015). In Bulgaria the process of innovation can be accelerated through better usage of the structural and cohesion funds of the EU for encouraging entrepreneurship and innovation. As suggested by Lee (2011) and Liu and Lawell (2015) innovation can impact on income inequality and this can be done through several mechanisms:

- Higher skilled workers tend to earn higher returns in more innovative regions;
- Knowledge spill overs: less skilled workers can learn from more skilled ones, thus increasing their productivity;
- Spatial agglomeration effects of innovation
- Technological change can produce changes in the employment shares and wages for different skill groups (skill-biased technical changing and task-based framework)

Another approach to reducing inequality is the minimum wages, which have to be kept in line with the standard of living and should reflect on the purchasing power of the population. For example, in a study based on data from OECD countries Litwin (2015) finds that increasing the minimum wage would help those at the low end of the income spectrum to see economic growth and this decrease will last until the minimum wage exceeds a maximum effectiveness value, at which point the effect starts to reverse itself. This is particularly important as one of the main consequences of inequality is the lack of proper access to education and healthcare, as well as the access to goods and services of primary need. In essence, there are studies which show that employment either increases with minimum wage (Adams and David, 2003) or respectively decreases (Card and Kruger, 1995).

Next measure to reduce inequality is progressive taxation. An important contribution in recent research is that flat tax rate favors the poorer quintiles but the richest quintile is the only group that increases its relative share of capital and income (Carneiro, Turnovsky and Tourinho, 2022). The net long-run effect is a mild increase in the overall growth rate, accompanied by a substantial increase in inequality. On the opposite, cutting the tax rate and allowing for progressive taxation equally increases growth and decreases inequality. The flat tax rate on incomes in Bulgaria in the last 30 years has been significantly detrimental to inequality levels allowing for their gradual rise. It has further worsened the situation of the poorest part of the population, thus widening the gap between the richest part of the population and at the same time increasing the share of the poorest.

Last but not least, traditional literature postulates that inequity can be significantly reduced by introducing improvement in education on all levels - primary, secondary and higher education (Becker, 1962). Focusing on the link between business and the academia and expanding the curricula to increase students' skills and make them adequate to the market requirements is a major step towards reducing inequality. Also, giving equal access to men and women to well paid jobs and career development is another element towards improvement in income levels and reducing inequality overall.

5. Conclusion

In Bulgaria income inequality has been following the dynamic changes in the last 30 years as a result of the socio-economic development of the country, particularly the difficult transition from planned economy in the 90s to open market economy today. Currently the polarization of income of the richest 20% and the poorest 20% of the population in Bulgaria is very high, while only 10 years earlier it has been equal to the average EU levels.

In this paper we discussed the main trends in income inequality by making a regional comparison and we also defined the main factors, contributing to the rise in inequality, identifying the reasons which have led to the increase in inequality in Bulgaria. We also recommended measures to be applied in order to reduce income inequality in the next decades and achieve social sustainability. These are necessary steps as maintaining high inequality levels has the potential of slowing down economic growth, undermining social mobility and social cohesion, and finally it contributes greatly to the deterioration of health and life expectancy.

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