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European Department

**Inequality, Poverty, and Social Protection in Bulgaria**

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**Abstract**

Absolute poverty has dropped markedly in Bulgaria but income inequality has increased substantially in the aftermath of the GFC. This increase is due to a rise in market income inequality that was compounded by a reduction in fiscal redistribution. The redistributive role of direct taxation has declined with the introduction of a flat tax and social spending is relatively low and decreasing (as a share of GDP), is concentrated on a few social risks, and experienced a decline in its redistributive efficiency. The COVID-19 crisis is likely to deepen income inequality, increasing the room for redistributive policies.

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## I. INTRODUCTION

**Over the past decade (2007-18), absolute poverty has dramatically declined in Bulgaria.**

Though it remains high by EU standards, the severe material deprivation rate<sup>2</sup> has fallen to almost 1/3 of its pre-Global Financial Crisis (GFC) level. However, as in the EU27,<sup>3</sup> the share of the population at persistent risk of poverty has increased. It is particularly high for the elderly and, to a lesser extent, children.<sup>4</sup>

**In the same period, income inequality has increased significantly and is now the highest in the EU.** This contrasts with the broad stability of income inequality in the EU27 and its decline for Central and Eastern European EU members (hereafter the New Member States – NMS).

**The increase in disposable income inequality was driven by an increase in market income inequality compounded by a reduction in fiscal redistribution.** As other EU countries, Bulgaria experienced an increase in market income inequality in the past decade. But unlike most EU countries, Bulgaria did not offset the rise in market income inequality by increased redistribution. Fiscal redistribution actually declined in Bulgaria and this contributed to the increase in inequality.

**High inequality may have economic, social, and political consequences.** While some inequality is inevitable in a market-based economic system, high inequality can erode social cohesion, polarize political preferences, undermine confidence in political institutions (IMF, 2017; Judt, 2010; Spence 2018; Stiglitz, 2013), and lower economic growth (Berg and Ostry, 2011; Ostry, Berg, and Tsangarides, 2014).

**The rest of the paper is organized as follows.** First it compares developments in inequality and poverty in Bulgaria in the aftermath of the GFC with peers (EU27 and NMS averages) and discusses the likely impact of the COVID-19. Second, it analyzes the role of fiscal policy choices in these developments, highlighting that the redistributive role of direct taxation has become very limited after the introduction of the flat tax in 2008 and that social protection expenditure recently declined (as a share of GDP) and is now comparatively low. Moreover, social protection expenditure is concentrated on a few social risks and has experienced a decline in its redistributive efficiency.

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<sup>2</sup> See Appendix I for the definition of the concepts used in this Working Paper.

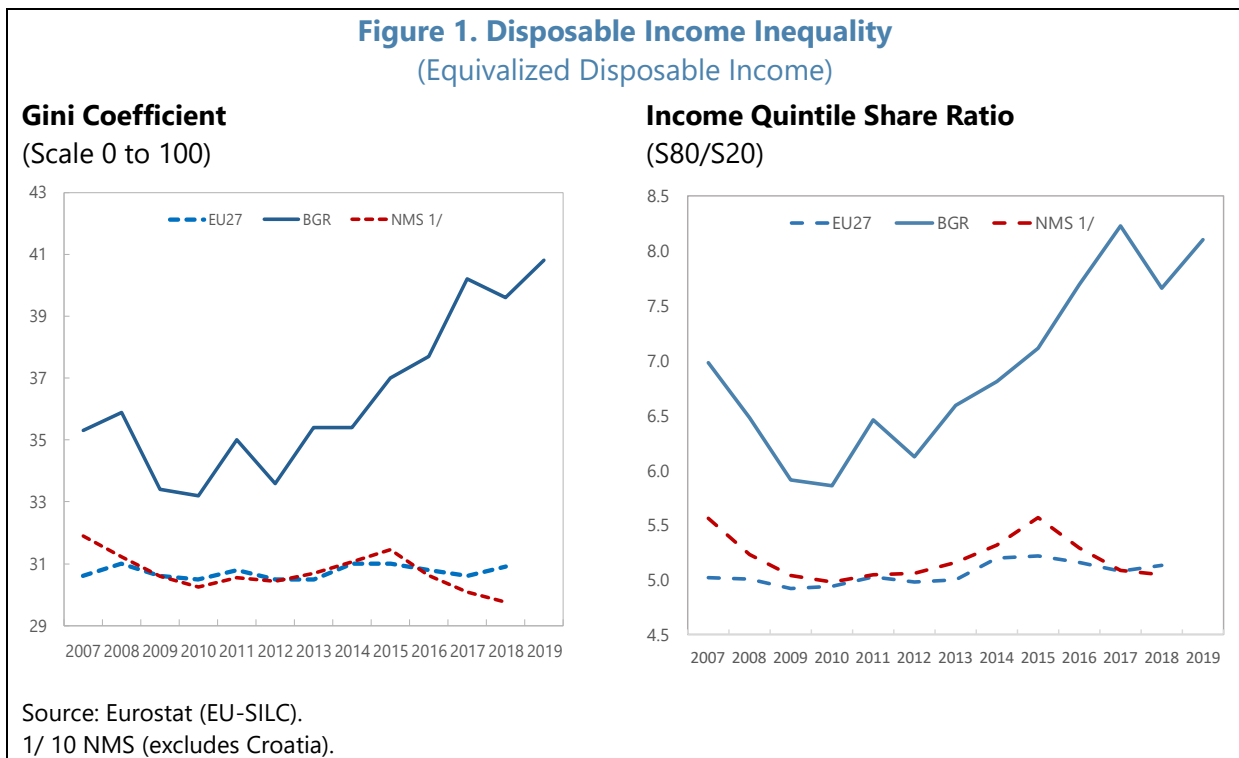
<sup>3</sup> EU27 includes the United Kingdom but excludes, due to data availability, Croatia.

<sup>4</sup> Children are defined as individuals 18 and below. This is consistent with the definition used for the various child benefits in Bulgaria.

## II. INEQUALITY AND POVERTY IN BULGARIA AND EUROPE

### A. Income Inequality

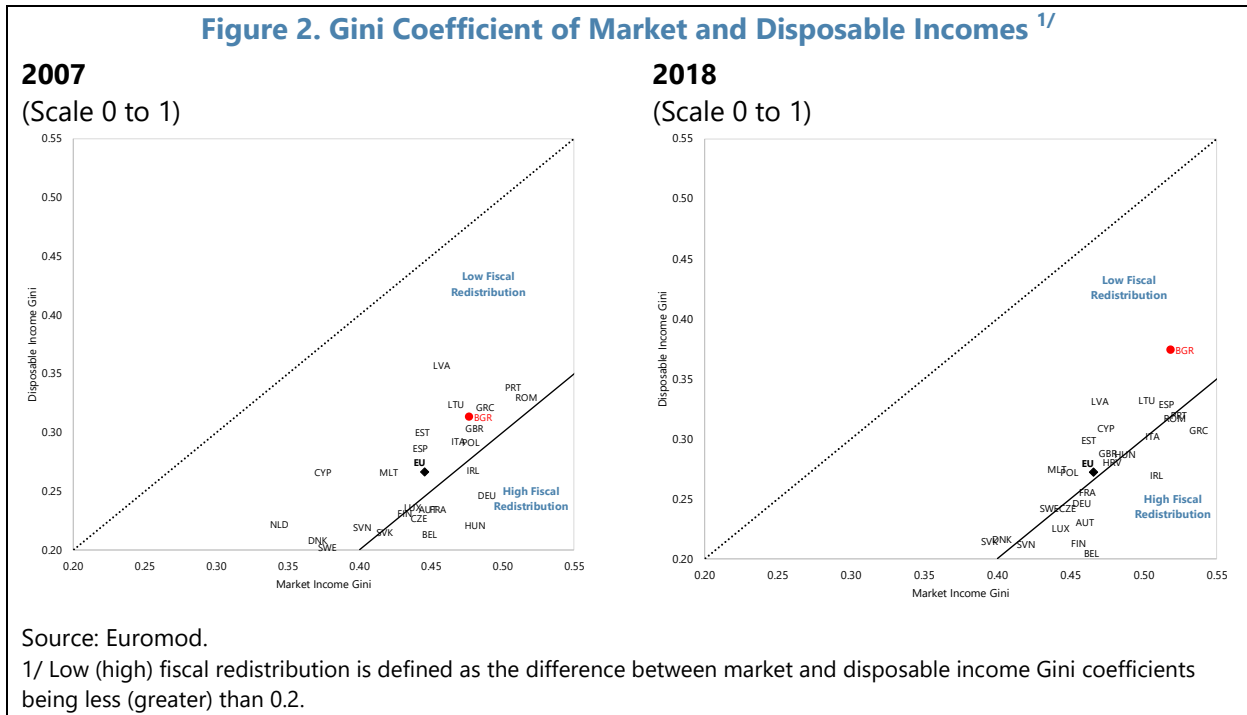
**Income inequality in Bulgaria has been rising in the aftermath of the GFC.** Different measures of income inequality (the Gini coefficient and the income quintile share ratio) point to a disposable income inequality that is persistently higher in Bulgaria than the EU27 average or NMS average (Figure 1). Moreover, while inequality was declining in the late 2000s, it increased noticeably in the following decade. The increase in inequality has been particularly strong in recent years contrasting with the decline in NMS and the stability in the EU27. As a result, since 2016, Bulgaria has the highest measure of inequality in the EU. This is due to an increase in market income inequality that was compounded by a reduction in fiscal redistribution:



- **As most EU countries, Bulgaria experienced an increase in market income inequality.** Market income inequality, which was above EU27 average in 2007, rose more than EU27 average in the next decade to become among the highest in Europe. However, in 2018, market income inequality in Bulgaria remains comparable to several other EU countries such as Greece, Ireland, Italy, Lithuania, Portugal, Romania, and Spain (Figure 2).
- **Unlike most EU countries, Bulgaria did not use fiscal policy to offset the increase in market income inequality.** Most EU countries increased fiscal redistribution to offset the rise in market income inequality allowing disposable market inequality to remain broadly

stable (Figures 1 and 2). In contrast, Bulgaria reduced fiscal redistribution. Thus, disposable income inequality increased more than market income inequality (Figure 2).

**Therefore, this paper analyzes fiscal redistribution in Section III, but it should be noted that other policies could help reducing income inequality.** In particular, adequate spending on education (a priority of the Bulgarian authorities) and health as well as appropriate labor-market regulations<sup>5</sup> foster an environment for a less unequal distribution of market income in the future (Blanchet et al., 2019).



## B. Poverty

**Absolute poverty has declined markedly during the past decade.** The share of the population suffering from severe material deprivation has fallen by almost 2/3 over the past decade. All age groups experienced a decline in severe material deprivation but the national average masks large differences across regions (Figure 8) and age groups. Despite a recent decline, half the population of the Pazardzhik region faced severe material deprivation in 2016. Severe material deprivation is also much higher for the elderly than for other age groups (Figure 3).

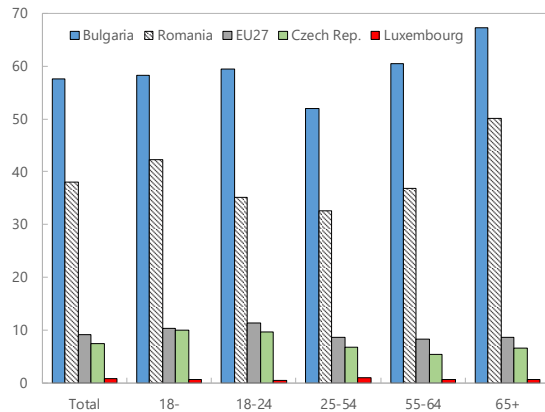
<sup>5</sup> See the Staff Reports for the 2019 and 2020 Article IV Consultations for a description of challenges in these areas and IMF recommendations.

**However, relative poverty increased during the past decade in Bulgaria and is particularly high for elderly and children.** The at-persistent-risk-of-poverty rate is higher in Bulgaria than the EU27 average and the gap has grown since 2007 (Figure 4; Appendix II). Old age and child poverty rates are particularly high. In 2018, more than one elderly out of five was at persistent risk of poverty compared to about one out of ten on average in the EU27. This rate increased significantly over the past decade, while it dropped for the EU27

**Figure 3. Severe Material Deprivation Rate <sup>1/</sup>**

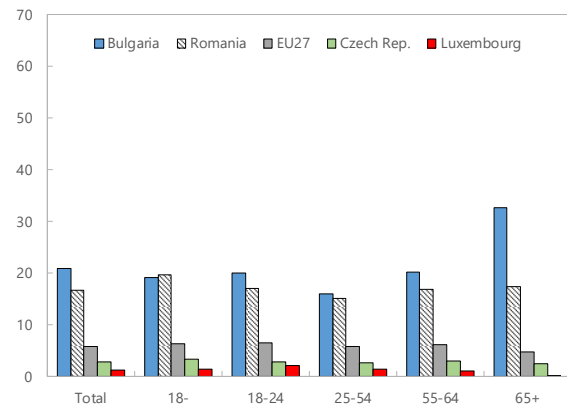
**2007**

(Percent of population)



**2018**

(Percent of population)



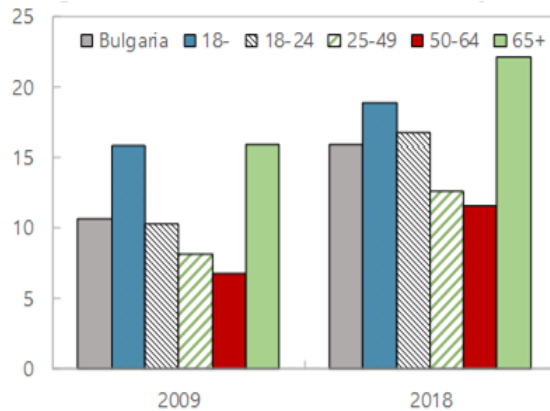
Source: Eurostat.

1/ See Appendix I for definition. Bulgaria is compared to the EU27 average, Romania (which has the second highest severe material deprivation in the EU), as well as Czech Republic and Luxembourg (which have the lowest severe material deprivation among, respectively, NMS and the EU countries).

**Figure 4. At-Persistent-Risk-of-Poverty Rates <sup>1/</sup>**

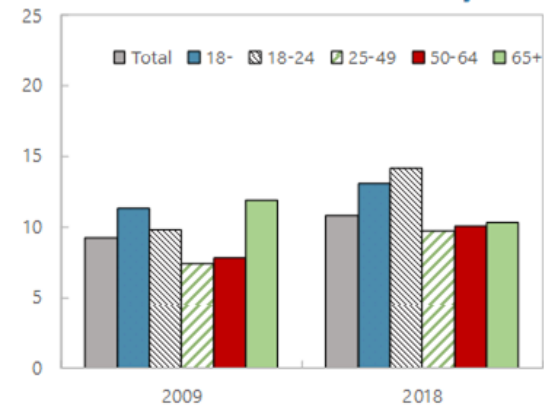
**Bulgaria**

(Percent of population)



**EU27 average**

(Percent of population)

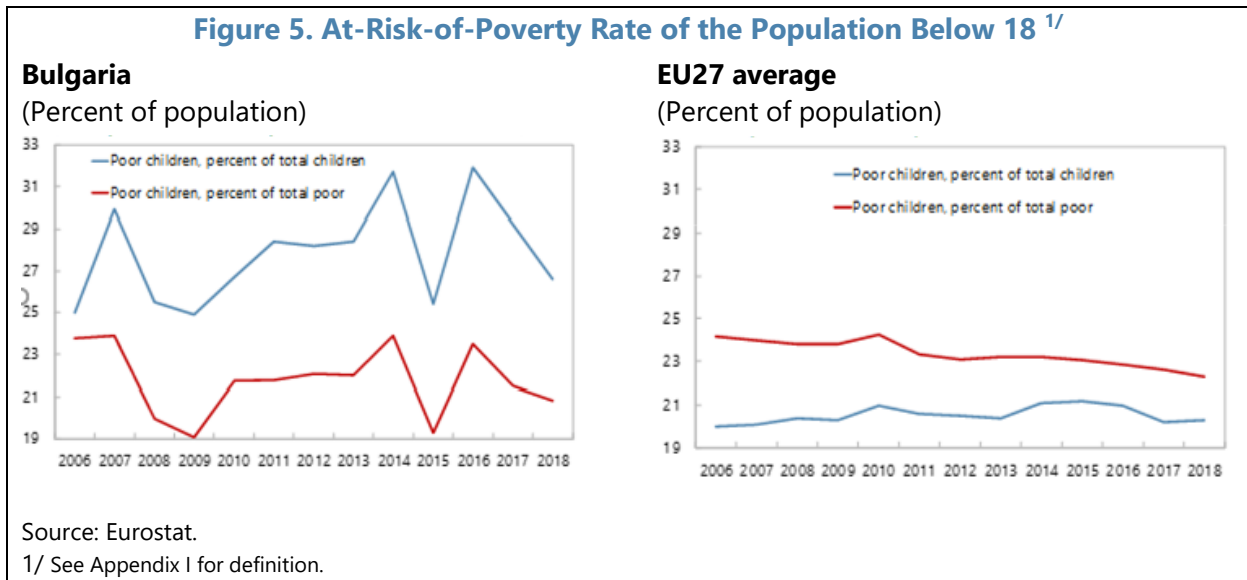


Source: Eurostat.

1/ See Appendix I for definition.



average.<sup>6</sup> At 19 percent, the at-persistent-risk-of-poverty rate of children is 6 percentage points above the EU27 average. As in the EU and other advanced economies (Unicef, 2016), child poverty increased over the past decade (though less than for any other age group) and is higher than national average (Figure 3). Moreover, Figure 5 shows that a larger share of children is at-risk of poverty in Bulgaria than in the EU27 average (about 1 out of 4 children vs. 1 out of 5 on average in the EU27).

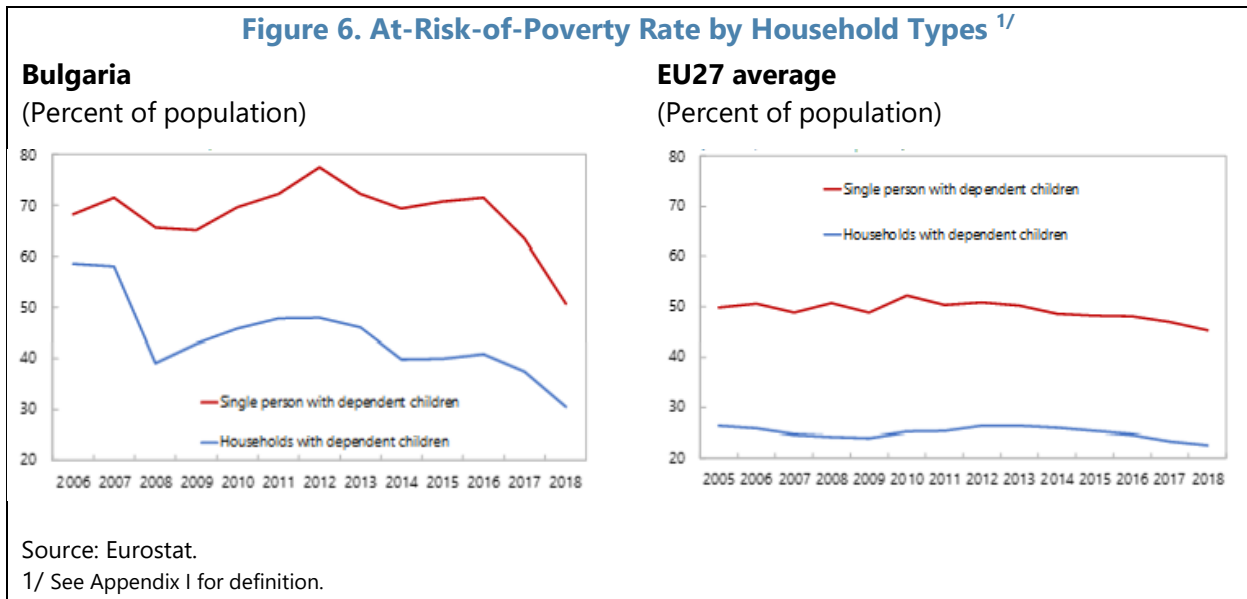


**Child poverty remains high despite a recent decline in the risk of poverty of single parent households.** Because child poverty is closely related to the employment status of parents notably long-term unemployment (Brady and Burroway, 2012; Esping-Anderson, 1999) and to single parenthood (Brady and Burroway, 2012), it should be addressed with labor and social policies that provide (i) adequate and affordable child care infrastructure to increase single parents' ability to work<sup>7</sup> and (ii) adequate protection against income losses associated with unemployment due to economic shocks, disease or disability. In this context, it is noteworthy that the risk of poverty of single parent households has recently declined in Bulgaria and is now comparable to the EU27 average (Figure 6). Nonetheless, at about

<sup>6</sup> As discussed in Section III, unlike what has been observed in most EU countries (Chen et al., 2018), the Bulgarian social protection system has not better protected the elderly's income from the impact of the GFC than those of working age population.

<sup>7</sup> In Bulgaria, the policies should focus more on the availability of childcare than on its cost. OECD data show that the net costs paid by parents for full-time center-based childcare, after any benefits designed to reduce the gross childcare fees, is lower in percentage of parents' wage in Bulgaria than on average in the EU for both couples and single parents ([https://stats.oecd.org/BrandedView.aspx?oeed\\_by\\_id=socwel-data-en&doi=b0781729-en](https://stats.oecd.org/BrandedView.aspx?oeed_by_id=socwel-data-en&doi=b0781729-en))

50 percent, it remains high and much higher than for households with two (or more) adults with children.



### C. Wealth Inequality

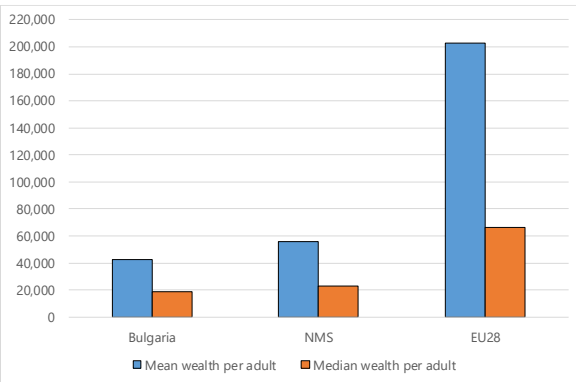
**Contrasting with income inequality, wealth inequality in Bulgaria is low by European standards.** Wealth level is also relatively low (Figure 7). These have two main implications:

- First, as wealth is more equally distributed than in many other European countries and is on average relatively small, it is unlikely that capital income played a major role in the high and rising income inequality. However, this may change in the coming years if the rapid rise of wealth in 2018 and 2019 continues.<sup>8</sup>
- Second, an adequate social safety net is crucial as most of the population cannot rely on their (low) financial wealth to absorb a shock affecting negatively their income. This was particularly visible during the GFC (Figure 8).

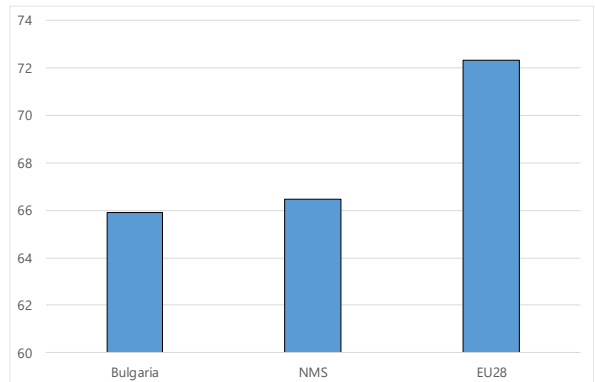
<sup>8</sup> After a relative stability since 2010, Credit Suisse (2019) estimates that mean wealth increased from USD 17,394 in 2017 to USD 42,686 in 2019 (and median wealth from USD 11,782 to USD 18,948). This recent increase can be observed in many countries.

**Figure 7. Wealth Levels and Inequality in the EU**

**Wealth levels**  
(2019, in USD)



**Gini Coefficient of Wealth**  
(2019, Scale 1 to 100)



Sources: Credit Suisse (2019) and IMF staff calculations.

**Figure 8. Regional Dispersion of Severe Material Deprivation and Average Income<sup>1/</sup>**



Sources: NSI, Institute for Market Economics, <https://www.regionalprofiles.bg/en/methodology/income-and-living-conditions/>, and IMF Staff calculation.

1/ Average income including cash income (salary and wages, pensions, social benefits, transfers from other households, proceeds from sales, etc.) and valued in-kind income.

### D. Poverty and inequality in time of crisis

**Poverty increased substantially during the GFC.** Figure 8, where each dot represents one of the 28 Bulgarian regions, points to a massive increase in absolute poverty in all regions during the GFC. At the national level, the national share of population suffering from severe material deprivation declined from 57 ½ percent in 2005–06 to 41.2 percent in 2007 but rebounded during the GFC to reach 45.7 percent in 2010 before declining to 20.9 percent in 2018.

**Like past pandemics, the COVID-19 is likely to deepen poverty and income inequality (Furceri et al. 2020).** Poverty is likely to increase as the pandemic and containment measures result in revenue loss due to an increase in unemployment and underemployment. Bulgaria experienced an increase of 2.2 percentage points in the unemployment rate between February and April 2020. This is more than the 0.2 percentage point increase for the EU average (Eurostat, 2020). Moreover, as the revenue loss will differ across segments of the population (e.g., affecting working age population more than retirees, younger workers more than older workers, and unskilled workers more than skilled ones), it is also expected to deepen income inequality (Addams-Prassl et al.). Indeed, the increase in unemployment differs across age and gender groups and the necessary containment measures constrain differently the capacity to work of some segments of the population (for example single parents may not be able to work when schools are closed).

**However, the poverty and inequality impact of the pandemic can be mitigated by fiscal measures.**<sup>9</sup> The Bulgarian government is supplementing the social protection system with various fiscal measures. Notably, it dedicates BGN 800,000 to provide food to people affected by the crisis and provides a one-off means-tested cash transfer of BGN 375 to parents who have been forced to take unpaid leave to care for their children during the state of emergency. Other measures aim at supporting employment and limiting dismissals. This is the case of the scheme under which the state covers 60 percent of the wages and social insurance for a three-month period and the support scheme for freelancers.

### E. Regional Inequality

**As many other countries,<sup>10</sup> Bulgaria experienced an increase in regional income disparity.** As reported in Figures 8 and 9, there are substantial differences across regions in average income per household members. The difference in the average annual total income per household member between the richest and the poorest regions has increased in recent years. Three distinct phases can be identified:

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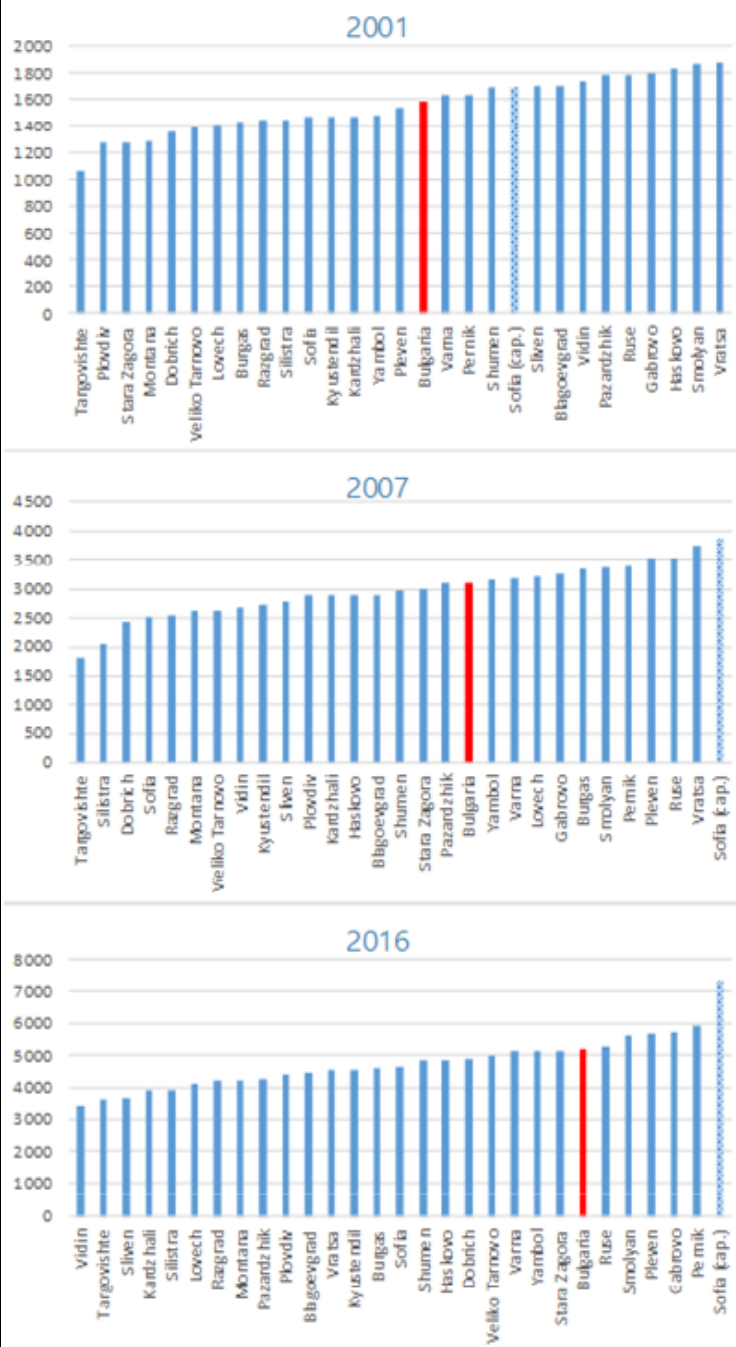
<sup>9</sup> The key economic responses governments are taking to limit the human and economic impact of the COVID-19 pandemic are summarized <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#B>.

<sup>10</sup> See Helpman (2018, chapter 7).

- Pre-GFC (2001–2006), the average annual total income per household in the richest region was on average 1.7 larger than in the poorest region (with annual ratio ranging from 1.5 to 1.8);
- During the GFC (2007–2012), the ratio increased to average 2.1 on average (with annual ratio ranging from 2.0 to 2.2);
- Post-GFC (2013–2016), the ratio increased further to an average of 2.3 (exhibiting more variation than previously as annual ratio ranged from 2.1 to 2.5).

**Despite the vast dispersion of average income across regions, there are no regional differences in the application of the relevant legislative acts governing social benefits.** Municipalities can implement social benefit policies, but they are in principle limited to in-kind benefits (Tosheva et al., 2018) including social housing. Given the vast dispersion in income across regions, the impact of social benefits on poverty and incentives is likely to differ across regions and there may be merit in investigating the introduction of some regional differentiation across regions or municipalities.

**Figure 9. Average Annual Income per Household Member <sup>1/</sup>**  
(In BGN)



Sources: NSI and Institute for Market Economics, <https://www.regionalprofiles.bg/en/methodology/income-and-living-conditions/>.

<sup>1/</sup> Income includes cash income (salary and wages, pensions, social benefits, transfers from other households, proceeds from sales, etc.) and valued in-kind income.

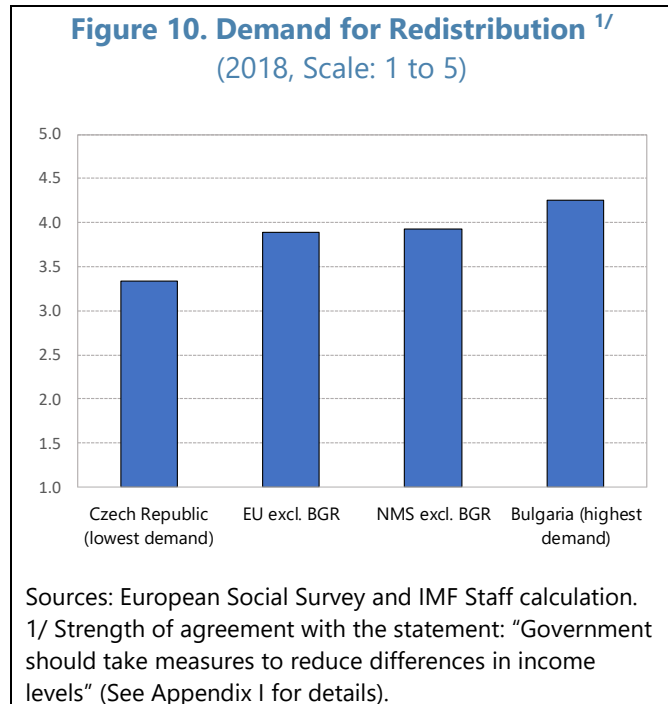
### III. FISCAL REDISTRIBUTION

#### A. Demand for and Supply of Fiscal Redistribution

**Against this background, the demand for redistribution is high in Bulgaria.** According to a recent survey, 91 percent of the Bulgarian perceive differences in income as too high (Eurobarometer, 2018). This is higher than the EU average of 84 percent. Moreover, the Bulgarian population has the highest demand for redistribution in the EU (Figure 10). Since 2006, when Bulgaria was first surveyed, demand for redistribution has been persistently the highest among EU countries except in 2012 (when Bulgaria ranked second after Portugal) and 2008 when several countries suffered from the GFC.

**Actual fiscal redistribution is comparatively low.<sup>11</sup>** Fiscal redistribution declined from near NMS average in 2007 to the second lowest in the EU (Figure 11). A decomposition of fiscal redistribution by instrument provides some insights for the drivers of such a change. This decomposition is done using the Euromod's tax-benefit microsimulation model (Appendix I; Sutherland and Figari, 2013), which provides estimates of the contribution of social contributions, direct taxes, means-tested social spending, and non-means-tested social spending to the reduction in the Gini coefficient between market income and disposable income.

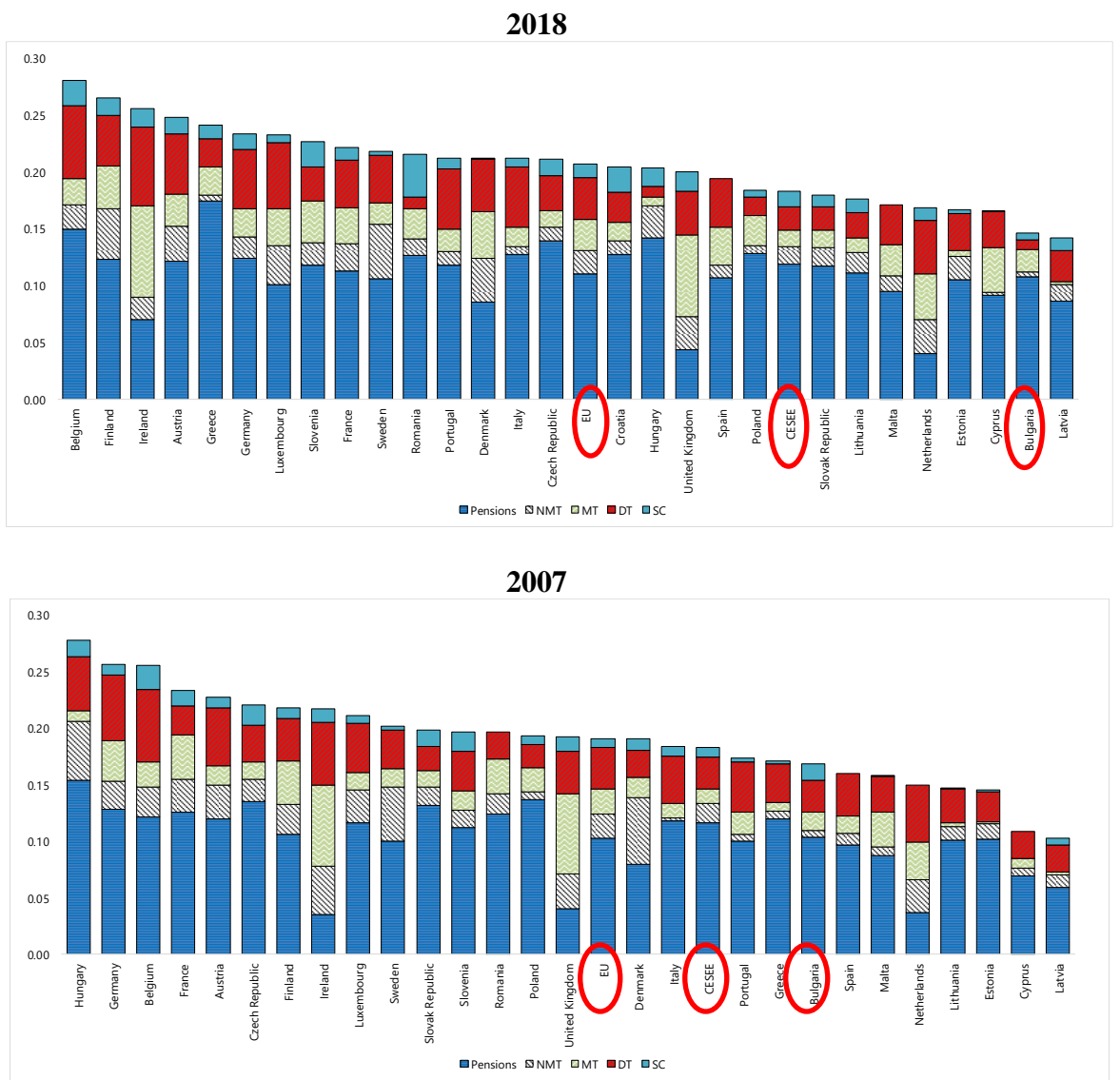
**With the introduction of the flat tax in 2008, the redistributive role of direct taxation has been significantly reduced and is now much smaller than in other EU countries.** Direct taxation is estimated to reduce the Gini coefficient (measured from 0 to 1) by 0.07 to 0.08 since 2008, about four time less than in 2007 (an impact of 0.029; Figure 11). This echoes developments in the 1990s. Cornia et al. (2004) estimate that the Gini coefficient of disposable income increased in Bulgaria from 25 in 1990 to 37 in 1995, an increase that was larger than in other European countries in transition except Moldova, Russia, and Ukraine. At the same time, the tax system was not contributing to redistribution. According to Milanovic



<sup>11</sup> Empirical literature finds support for the idea that inequality triggers more demand for redistribution but also highlights that demand for redistribution does not automatically lead to more actual redistribution (Olivera, 2015; Schmidt-Catran, 2016).

(1994), in 1989, the Gini coefficient before payroll tax (social security tax and wage tax withheld at source) was lower before than after payroll tax (24.5 vs. 25.6). Chu et al. (2004) also report that in the 1980s and 1990s, the large increase in the Gini coefficient was accompanied by a 12.6 percentage-point decline in the tax-to-GDP ratio. This decline was much larger than in Hungary (- 5.1 percentage points) and Poland (- 4.4 percentage points) and was primarily explained by a 9.6 percentage points drop in direct-taxes-to-GDP ratio.

**Figure 11. Decomposing Fiscal Redistribution by Instrument**  
(Reduction in the Gini coefficient, Scale: 0 to 1) <sup>1/</sup>, <sup>2/</sup>



Sources: Euromod and IMF Staff calculations.

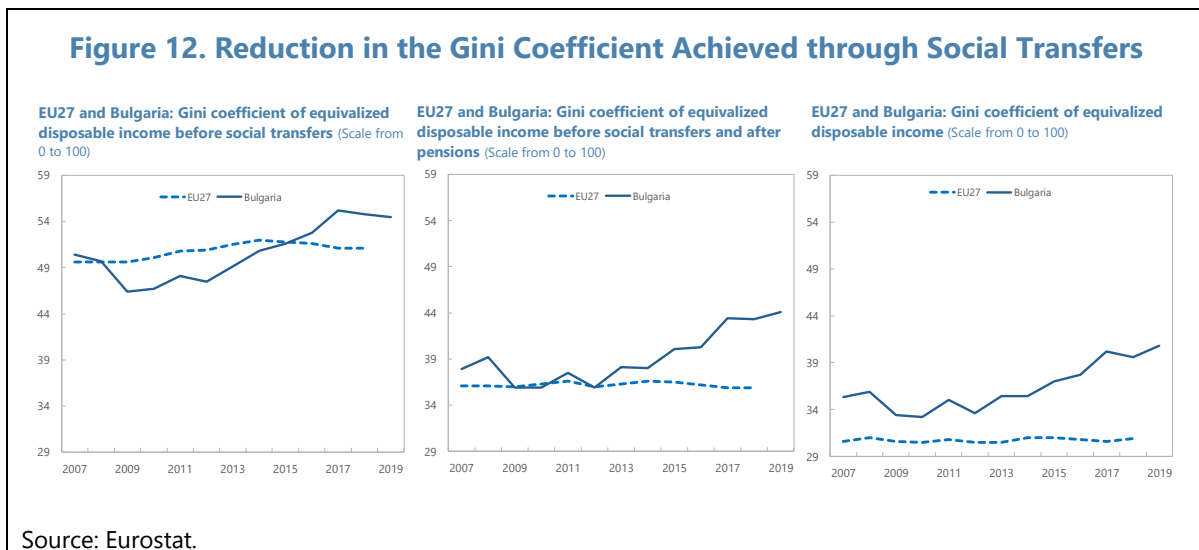
1/ SC= Social Contributions; DT=Direct Taxes; MT=Means-tested social spending; NMT=Non-means-tested social spending.

2/ CESEE are NMS excluding Slovenia (and due to lack of data Croatia in 2007).



**In this context, there is room to reinforce the redistributive role of taxation either through personal income taxes or social contributions.** This could be achieved in several (not exclusive) ways. First, direct taxation can be made more progressive by introducing an exemption threshold to the flat tax to exclude the poorest<sup>12</sup> or by introducing progressive tax rates for personal income tax. If the increase in progressivity is not seen as desirable politically or socially, there is room to levy more taxes in order to finance larger social protection spending. This could be done by increasing the flat tax rate, which at 10 percent is comparatively low. Finally, there is scope to use social contributions<sup>13</sup> for redistributive purpose, for example, by reducing contribution from lower wages and by increasing or eliminating the cap on contributory income (BGR 3,000 per month or about USD 1,710).<sup>14</sup>

**Moreover, the redistributive impact of social transfers is small.** In 2018, the redistributive impact of social transfers is the smallest in the EU (Figure 11) and it has declined since 2007. Figure 12 shows that, before social transfers, income inequality was lower than or equal to EU27 average up to the mid-2010s (left panel). However, it has increased since 2009 (shortly after the introduction of the flat tax) and surpassed the EU27 average in the second half of the 2010s. Pensions reduce significantly income inequality in both the EU27 and Bulgaria but less in Bulgaria than in the EU27 (middle panel). As other benefits have a smaller impact on inequality than pensions, the Gini coefficient of disposable income has been persistently above EU27 average and the gap is widening (right panel).



<sup>12</sup> Such threshold could also reduce the size of the informal economy.

<sup>13</sup> Revenue from social contribution are larger than revenue from personal income tax. They exceeded 7 percent of GDP in 2019, while revenue from personal income tax accounted for about 3 ½ percent of GDP.

<sup>14</sup> The cap on the contributory income results in a lower effective contributory rate for the high-income earners. It also results in a cap in several benefits such as the maximum pension (see below).



## B. Size and Design of Social Protection

As most of the fiscal redistribution falls on social benefits (Table 1), this section investigates three ways to increase their redistributive impact. First, it highlights that the efficiency of social benefits can be increased by improving the means-testing of social benefits. Second, reversing the decline in social spending (as a share of GDP), which is associated with the recent increase in inequality, could be considered. This could be achieved through a more systematic adjustment of the level of existing social benefits (notably minimum pension). Third, Bulgaria could consider broadening the social risks covered by the social protection system.

**Table 1. Reduction in Inequality by Fiscal Instrument**  
(2018, in percent)

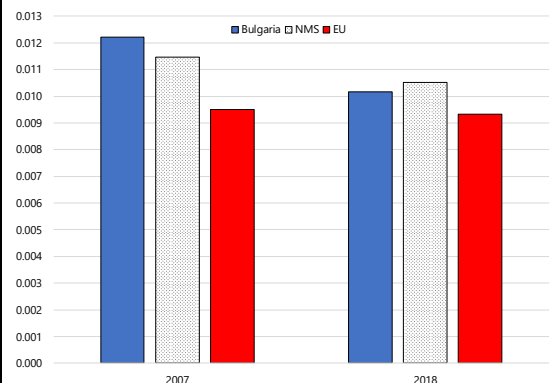
	Bulgaria	NMS	EU28
Taxation	10	17	23
Benefits	90	83	77
<i>Pensions</i>	74	67	54
<i>Other</i>	16	17	23

Sources: Euromod and IMF staff calculation.

### *Efficiency of social benefits*

**The efficiency of social benefits has declined below NMS average.** Following Hallaert and Queyranne (2016), efficiency is measured as the reduction in the Gini coefficient achieved by 1 percent of GDP in social benefits. By this measure, the efficiency of social benefits, which was above the NMS average in 2007 fell below NMS average by 2018 (Figure 13).<sup>15</sup> Due to diminishing returns in social benefits, comparing the efficiency of Bulgaria's spending to the EU average is less meaningful as non-NMS EU countries tend to spend a larger share of their GDP on social benefits spending (Figure 19). Therefore, Figure 14 provides an efficiency frontier analysis. Confirming the relative decline in efficiency, Bulgaria is further away from the frontier (solid lines) in 2018 than in 2007. While the

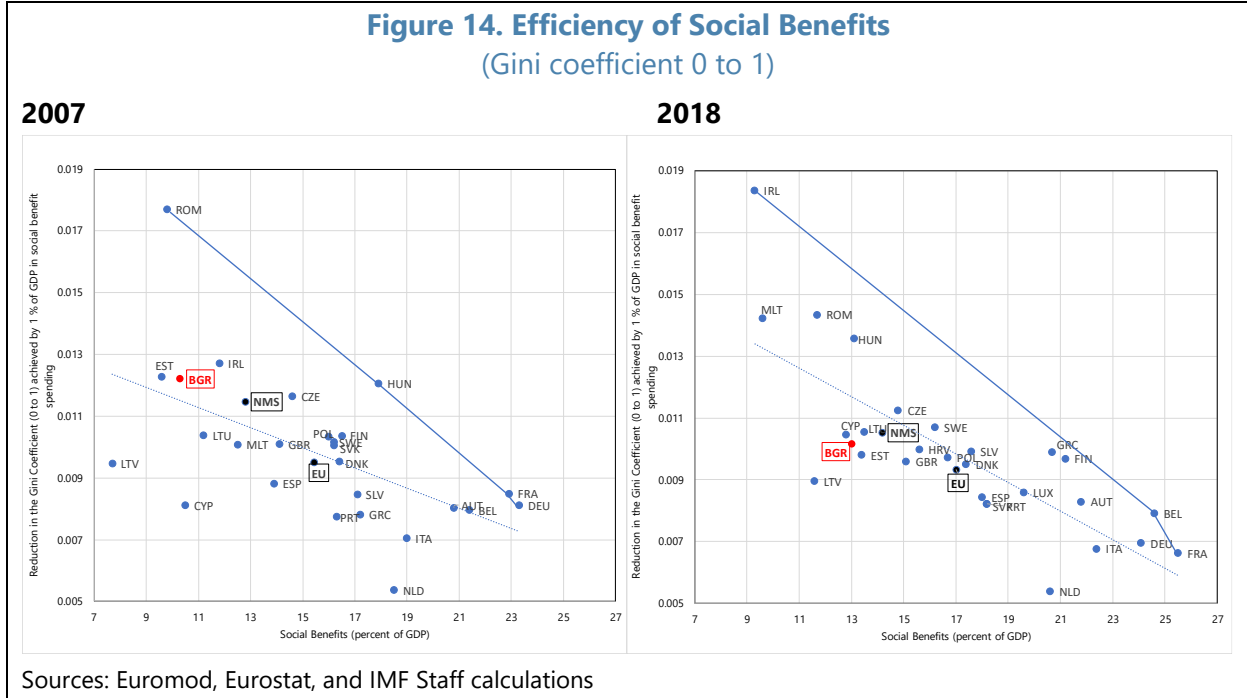
**Figure 13. Reduction in the Gini Coefficient Achieved with 1 Percent of GDP of Social Benefits**  
(Scale: 0 to 1)



Sources: Euromod, Eurostat, and IMF Staff calculations.

<sup>15</sup> Figure 13 uses the estimated reduction in the Gini coefficient from Euromod simulations. The Eurostat estimates underpinning Figure 12 also show that the efficiency of social benefits has fallen below NMS average (Appendix III).

efficiency of Bulgaria's social benefits was above average in 2007,<sup>16</sup> it is now below.



**Improving the allocation process of means-tested social benefits could increase efficiency.** Means-tested benefits are an important source of income for the poorest (Tasseva, 2016; World Bank, 2009) and account for most of the reduction in inequality achieved by non-pension transfers (Figure 11). In 2018, about 82 percent of the reduction in income inequality achieved through non-pension benefits is due to means-tested benefits. This is much more than the EU average of 58 percent. There are well-known pitfalls associated with means-testing (Gugushvili and Hirsch, 2014; Brady and Burroway, 2012) and they are particularly severe in Bulgaria. Tasseva (2016) documents that, in Bulgaria, means-tested benefits (i) reach a small proportion of poor households; (ii) had a high non take-up rate; and (iii) a large leakage rate (i.e., a large proportion of the recipients are neither poor nor entitled to receive the benefits). Procedures and screening criteria are complex. To capture the “needs” of the applicant, eligibility is not determined solely on the basis of the income level of the applicant but also considers several over factors such as property ownership and ability of relatives (including in-laws) to provide support. A simplification of procedures and criteria (i) could reduce the disincentive to apply for means-tested benefits and the risk to inappropriately disqualify recipients; (ii) could close the loopholes that allow non-eligible households to receive the benefits; and (iii) would have the additional advantage to reduce the administrative costs of means-testing.

<sup>16</sup> For a given level of social benefits, a country above (below) the trend line (dotted line) is more (less) efficient than peers.

**Adjusting the income-test level could also increase the efficiency of social benefits.** For example, child allowance has a relatively generous income test level. Tasseva (2016) estimates that child allowance benefits non-poor households with children as only ¼ of recipients are households in the two lowest income deciles. At the same time, she estimates that the child allowance does not reach about 30 percent of poor households with children and despite a generous income test level, about 19 percent of recipients are estimated to be non-eligible.<sup>17</sup> In this case, a reduction of the income-test level accompanied by an improvement in the allocation process could increase the efficiency of the child allowance and help reduce the relatively high child poverty rate.

**As a package, these reforms could have a limited fiscal cost.** Indeed, the cost increase from a reduction in the non-take up rate would be offset by the reduction in the leakage rate, the adjustment of the income-test level, and a reduction in administrative costs.

### *Comparatively low and declining spending on social benefits*

**Social benefits spending is comparatively small in Bulgaria.** As a share of GDP, spending on social benefits are 1 percent of GDP lower than in other NMS and at about 2/3 of the EU average (Table 2).

**Moreover, social protection expenditure declined more in Bulgaria than in other European countries in the aftermath of the GFC.** In both Bulgaria and the EU,

spending on social protection was at its peak in 2013 in part to address the impact of the GFC. The decline since 2013 is associated with an increase in income inequality in Bulgaria (Figure 15) but not in the EU27 or in NMS (Figure 1). This difference can be explained by two factors.

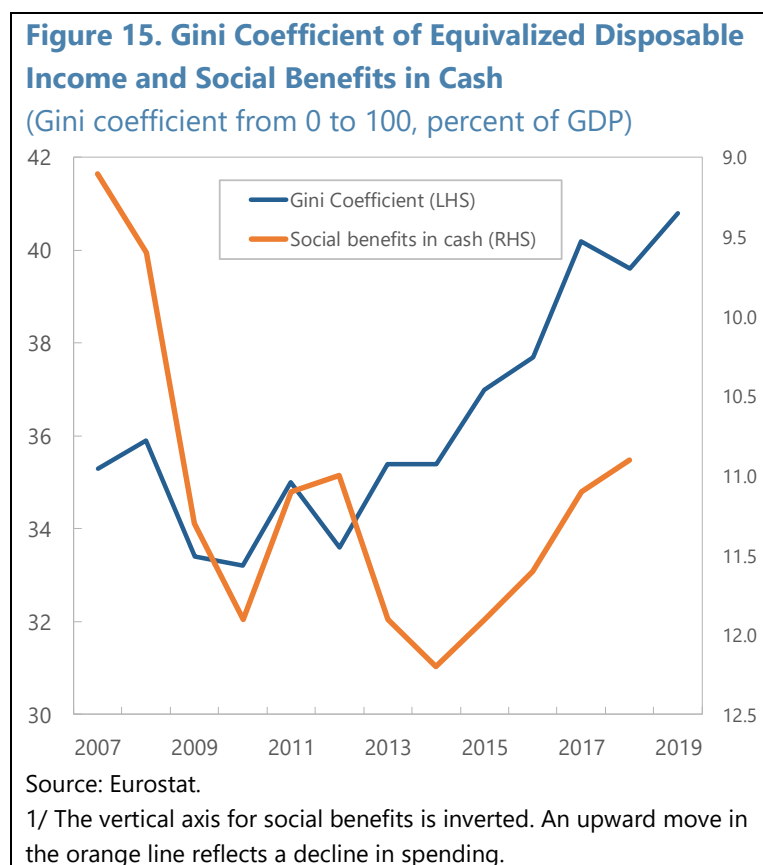
- *First, despite being much smaller, social protection spending declined more in Bulgaria than in the rest of the EU.* It was 1.5 percent of GDP lower in 2018 than in 2013 in Bulgaria, but 0.9 percent lower for the EU average and 0.8 percent on average in other NMS.
- *Second, while a large share of the decline in the EU spending was cyclical, in Bulgaria it was mostly structural and thus had a larger impact on inequality.* Over 40

	Bulgaria	Other NMS	EU28
Social benefits	13.0	14.6	20.4
o/w in cash	10.9	12.4	15.6
o/w in kind	2.1	2.2	4.8

Sources: Eurostat.

<sup>17</sup> World Bank (2009) with different estimate of disposable income and relative poverty line reports higher rates: it estimates that 60.6 percent of the poor do not receive a child compensation and that 69.9 percent of the individuals receiving a child compensation are not poor.

percent of the decline in EU spending on social protection is due to the reduction of spending on unemployment benefits. In contrast, in Bulgaria, where unemployment benefits account for a mere 0.1 percent of GDP, the reduction in social protection spending is explained less by automatic stabilizers than by the absence of indexation of social benefits and reduction in old-age spending.



**The absence of automatic indexation of social benefits contributed to the fall in social protection spending (as a share of GDP) and to the rise in inequality and in the at-risk-of-poverty rate.** With the exception of pensions (and to some extent the heating allowance)<sup>18</sup>, benefits levels are adjusted not by systematic statutory indexation but by discretionary adjustments. Many key social transfers (notably the guaranteed minimum income which serves as a basis for the calculation of many social assistance benefits<sup>19</sup>) were kept unchanged in nominal terms for several years (Table 3). Therefore, over the medium

<sup>18</sup> The increase in the heating allowance is determined by the Minister of Labor and Social Policy but is subject to a minimum increase.

<sup>19</sup> For details, see Tosheva et al. (2018) and Tasseva (2016).

term, social benefits increased less than wages, resulting in higher income inequality and relative poverty (Figure 16).<sup>20</sup>

**Table 3. Increase in Selected Social Benefits**  
(in percent, eop)

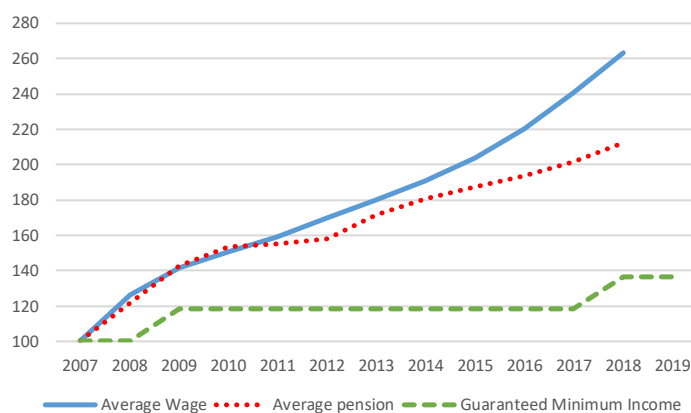
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Guaranteed minimum income	0	0	0	0	0	0	0	0	15.4	0	
Heating allowance <sup>1/</sup>	...	...	...	...	...	0	0.4	0.8	2.5	24.5	
Monthly child allowance <sup>2/</sup>	Family with one child	...	...	...	...	0	5.7	0	8.1	0	
	Family with two children	...	...	...	...	0	70.0	0	6.9	0	
Pensions	Minimum	0	0	6.6	3.4	3.0	1.9	2.5	23.9	3.8	5.7
	Average	1.3	2.2	0.7	18.3	3.3	4.0	2.4	5.9	3.8	7.3
	Maximum	0	0	0	10.0	9.1	8.3	0	0	0	31.9
Memorandum item											
Maximum insurance income	0	0	0	10.0	9.1	8.3	0	0	0	31.9	

Sources: NSSI, Ordinances of the Minister of Labor and Social Affairs, Social Security Budget, and Reports to the State Budget Act.

1/ 2015 refers to winter 2015/16.

2/ Amount of monthly allowance for raising a child until completion of secondary education, but not more than 20 years of age.

**Figure 16. Growth in Wages, Nominal GDP, and Key Social Benefits**  
(Index 2007=100) <sup>1/</sup>



Sources: NSI, NSSI, and Ordinances of the Minister of Labor and Social Affairs.

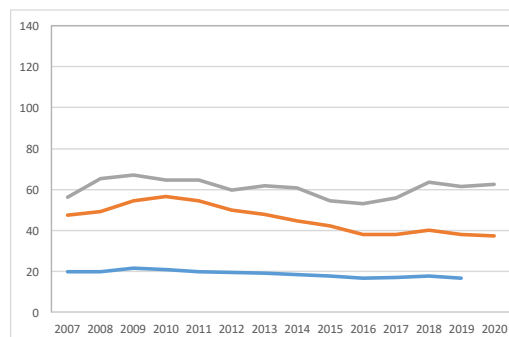
<sup>20</sup> The guaranteed minimum income and, thus, social assistance benefits also lagged nominal GDP in the past decade. Thanks to the indexation rule, average pension grew over the medium term faster than nominal GDP, but not since 2015 contributing to the drop in social protection spending as a share of GDP in the second half of the 2010s.

**The reduction in old-age spending is another key driver of the decline in social protection spending.** Old-age spending declined from 10 percent of GDP in 2014 to 8.9 percent of GDP in 2018 contributing to about 79 percent of the decline in social protection spending over the period. A rapidly ageing country like Bulgaria faces the challenge of ensuring the financial sustainability of its pension system, while providing adequate pensions to avoid old-age poverty. Bulgaria has given priority to financial sustainability through a deindexation of pensions in the early 2010s followed by a pension reform implemented starting in 2016. As a result:

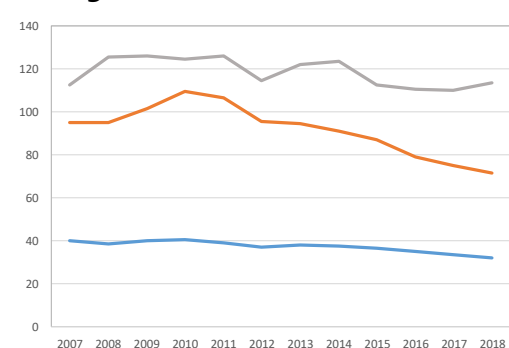
- *Access to pension has been reduced.* The recent pension reform increased the retirement age and the required retirement contribution. The number of pensioners has been declining since the introduction of the pension reform despite the ageing of the population.
- *Pensions are low compared to wages* (Figure 17). Pensions are the only social benefit to be subject to automatic indexation. However, the indexation (currently based half on past inflation and half on projections of contributory income) has been suspended for several years at the beginning of the 2010s and did not prevent the average pension growth to lag wage growth. As a result, in the past decade, average pension declined from being close to the minimum wage to about 70 percent of minimum wage. In addition, pensions are subject to maximum and minimum levels which are not indexed. This absence of automatic and systematic indexation of minimum and maximum pensions results in irregular adjustments (Table 3)<sup>21</sup> and explains why minimum pension, which was received by 36 percent of pensioners in 2018, was equivalent

**Figure 17. Pension vs. Wages and Poverty Line (in percent)**

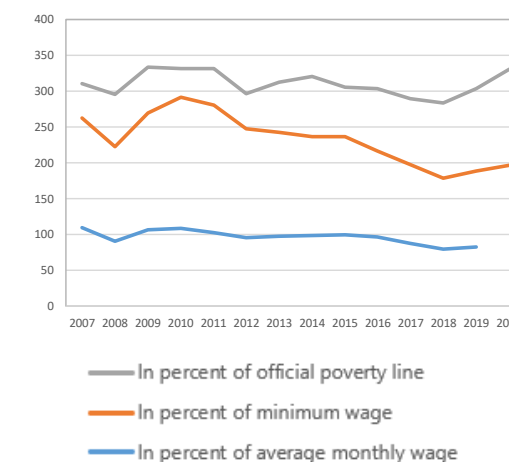
#### Minimum Pension



#### Average Pension



#### Maximum Pension

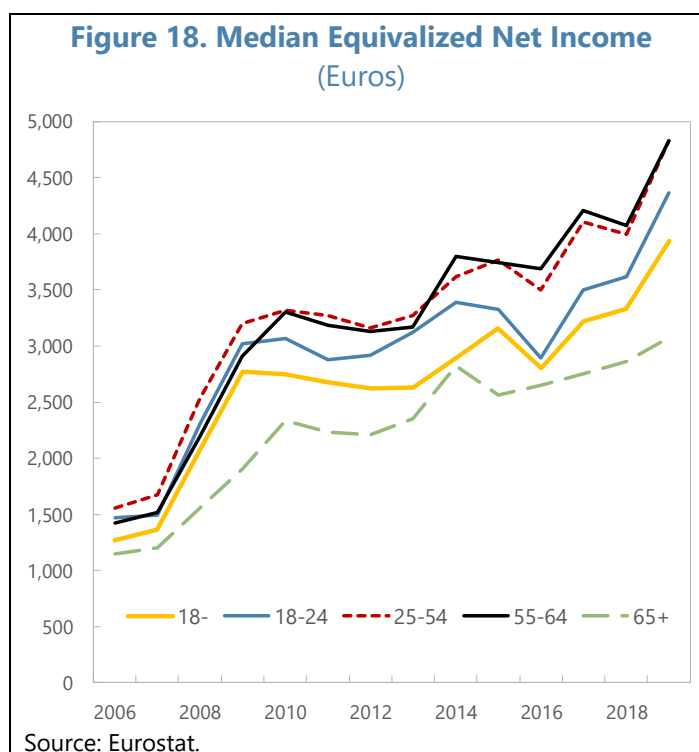


Sources: NSI, NSSI, 2020 budget, Ministry of Labor and Social Policy, and IMF staff calculations.

<sup>21</sup> The level of the minimum pension is determined yearly as part of the Social Security budget. The maximum pension is set at 40 percent of the maximum contributory income which is also determined on a yearly basis.

to 57 percent of minimum wage in 2010 but only 38 percent in 2018 and is persistently below the official poverty line.

**In this context, many pensioners continue to work to supplement their pension** (but are not eligible to unemployment benefits when they lose their job). This reduces the impact of low pensions on old-age poverty and income inequality but did not prevent the real disposable income of the elderly from growing less than the income of other age groups (Figure 18).

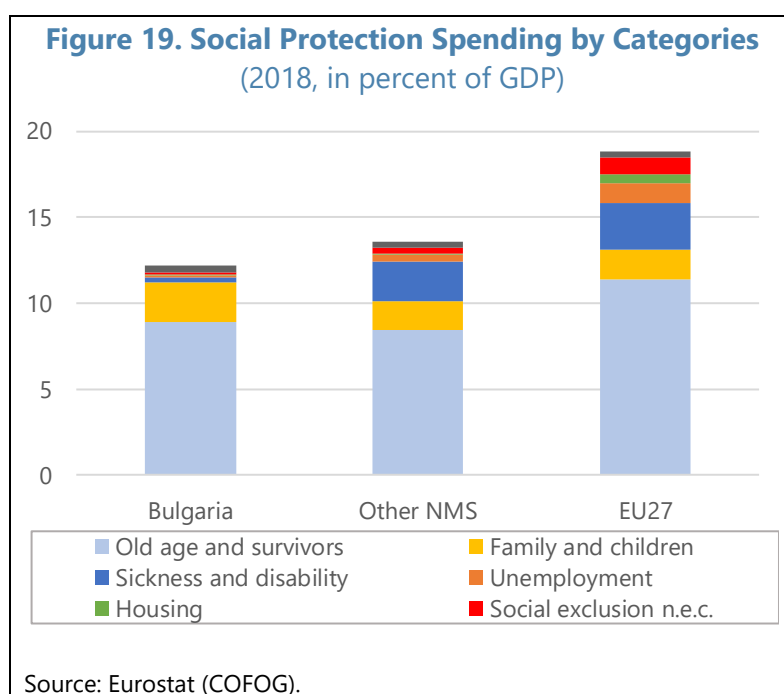


### *Concentration on a few social risks*

**Social protection is more concentrated on a few social risks in Bulgaria than in peer countries** (Figure 19). “Old age” and “family and children” account for 92 percent of total social protection spending. This is significantly more than in the NMS (75 percent on average) and the EU27 (70 percent on average).<sup>22</sup>

<sup>22</sup> Eurostat classifies spending on disability pensions (periodic payments intended to maintain or support the income of someone [...] who suffers from a disability which impairs his or her ability to work or earn beyond a minimum level laid down by legislation” as “disability” when it is granted to “someone below the legal/standard retirement age” (Eurostat, 2016). In Bulgaria, about 20 percent of beneficiaries of a disability pension are above the legal retirement age. In that case, the spending is classified as “old age.”

**The narrow concentration of social protection spending implies that the population receives only a limited protection against other social risks.** In a country where wealth levels are relatively low, individuals who experience shocks could easily fall into poverty if the social protection is limited. For example, spending on unemployment benefit is very limited in Bulgaria (Figure 19) for two main reasons. First, eligibility criteria are stringent<sup>23</sup> and only 32 percent of the registered unemployed received unemployment benefits (2007–19 average).<sup>24</sup> Second, the unemployment benefit is provided for a relatively short period of time (from 4 months to 12 months) which depends of the length of contribution history.<sup>25</sup> As described in Chen et al. (2018), an insurance-based unemployment system whose benefits depend on employment history provides little protection to younger workers and contributed to the rise of youth poverty in the EU during the GFC. In Bulgaria also youth poverty increased more than for other working age workers and is now above the national average (Figure 4).



<sup>23</sup> To be eligible to unemployment benefits, an unemployed must be registered to the employment agency, not be entitled to an old-age pension, and have contributed for at least 12 months during the last 18 months.

<sup>24</sup> As non-eligible unemployed have little incentives to register, the share of total unemployed receiving unemployment benefits is smaller.

<sup>25</sup> For eligible unemployed, the unemployment benefit is equal to 60 percent of the average contributory income over the last 24 months (subject to a minimum and a maximum daily rate). It is granted for 4 months if the contributory history of the unemployed is 3 years or less. To receive the benefit for the maximum 12-month period, a contributory history of over 15 years is required.



#### IV. CONCLUSION

**Disposable income inequality in Bulgaria is rising and has become the highest in the EU.** Unlike most EU countries, Bulgaria did not offset increase in market income inequality. Actually, fiscal redistribution declined and is now among the lowest in Europe. This decline (which is due to the introduction of the flat tax and to low and declining social spending, whose efficiency has fallen below NMS average) contributed to a significant increase in disposable income inequality.

**Poverty is also among the highest in the EU.** The share of population facing severe material deprivation, despite having dropped markedly, is still 3.6 times higher than the EU average, and, at 32.7 percent, is particularly high for the elderly. One elderly out of four is at persistent risk of poverty compared to about one out of ten on average in the EU. Children's poverty rate, which was similar to old-age poverty in 2009, increased less than for any other age group in the past decade but remains a concern given its high level.

**As prior pandemics, the COVID-19 will to affect inequality and poverty.** The expected drop in activity and increase in unemployment and underemployment is likely to increase absolute poverty despite the mitigating measures put in place by the authorities. As the revenue loss associated with the economic impact of the pandemic and containment measures will differ across groups, the pandemic is likely to affect revenue distribution and thus the income inequality.

**There are multiple ways to reduce inequality and poverty.** Adequate spending on education and health as well as appropriate labor-market regulations would foster an environment for a less unequal distribution of market income in the future. This could be complemented by measures to increase fiscal redistribution such as (i) increasing the redistributive role of taxation; (ii) addressing issues with the means-testing of social benefits to increase efficiency; and (iii) reversing the recent decline in social protection spending. fiscaly

**These measures can be fiscally neutral.** The Bulgarian authorities have demonstrated a commendable fiscal prudence and are committed to fiscal responsibility. Increasing fiscal redistribution can be consistent with these priorities. An improvement in the efficiency of social protection schemes and an increase in the redistributive role of taxation can be designed to be fiscally neutral. Reversing the recent decline in social protection spending would align Bulgaria with NMS average. It would increase spending by 1 percent of GDP, an amount that can be covered by improved revenue mobilization.<sup>26</sup>

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<sup>26</sup> The Staff Report for the 2020 Article IV Consultation describes several options for improving revenue mobilization. They include increasing property tax revenue (which is 1.7 percent of GDP lower than EU average) and reducing the sizable VAT compliance gap.

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## APPENDIX I. SOURCES AND DEFINITIONS

### I. SOURCES

#### *European Union Statistics on Income and Living Conditions (EU-SILC)*

The EU-SILC is a panel survey conducted in the EU and other European countries, whose micro-household data underpin both the Eurostat *Income and Living Conditions* (ILC) database as well as the OECD *Income Distribution Database*.

The survey provides both cross-sectional data pertaining to a given time or time-period as well as longitudinal data pertaining to individual-level changes over time, observed periodically or over a four-year period.

(See <https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions>).

It has been noted that the comparability issues posed by differences in data collection across countries (for example, including reliance on household surveys as opposed to ‘register’ data) as well as the allowance for different concepts of self-employment income are addressed in the survey by conceptual harmonization of target variables and the so called “ex ante output harmonization model” employed by Eurostat (Eurostat, 2007). Limitations still exist, including the exclusion of social transfers in kind from disposable income, the exclusion of capital gains, and the restriction of the data to the population living in private households.

#### ***EUROMOD***

EUROMOD is a multi-country tax-benefit microsimulation model that simulates a standard set of tax and benefit instruments to analyze the impact of actual, proposed, alternative and hypothetical national policies on household incomes, work incentives, and government budgets of 27 EU countries both individually and at the EU-level.

EU-SILC data constitutes a majority of the micro-data input on individual and household circumstances and ensures comparability at that level.

Data limitations preclude the model from considering benefit non-take-up and tax evasion, and although corrections are included in countries where these phenomena are widespread, further technical refinement is needed before the possibility of an overestimation of taxes and benefits can be rejected.

Additional descriptions on methods and data are available in Sutherland and Figari (2013) and at <https://www.euromod.ac.uk/using-euromod/statistics/>.

### *European Social Survey (ESS)*

The ESS subjects itself to extremely stringent sampling and collection design, data processing, and quality assessment checks, recognizing that quantifying such concepts as preference or attitude are particularly prone to survey design error, non-representative sampling errors, or timing and national context biases. To this end, the ESS employs periodic reports on measurement quality and equivalence of survey responses vis-à-vis the concept of interest, frequent nonresponse bias analyses, response rate floors, and monitoring and recording of contextual data taken from national media

([https://www.europeansocialsurvey.org/methodology/ess\\_methodology/monitoring\\_national\\_contexts.html](https://www.europeansocialsurvey.org/methodology/ess_methodology/monitoring_national_contexts.html)).

The demand for redistribution reported in this paper is the strength of the agreement with the statement “The government should take measures to reduce differences in income levels.” Five possible answers are possible (Disagree strongly, Disagree, Neither agree nor disagree, Agree, Agree strongly) which are each assigned score ranging from 1 to 5.

Additional descriptions on methods and data are available at <https://www.europeansocialsurvey.org/data/>.

## **II. DEFINITIONS**

### *Classification of the functions of government (COFOG)*

The classification of the functions of government was developed by the OECD and published by the United Nations Statistical Division as a standard classifying the purposes of government activities.

This paper relies heavily on the social protection division (divisions describe the broad objectives of government), which includes sickness and disability; old age; survivors; family and children; unemployment; housing; R&D; social protection and social exclusion not elsewhere classified.

Additional descriptions are available at [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Classification\\_of\\_the\\_functions\\_of\\_government\\_\(COFOG\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Classification_of_the_functions_of_government_(COFOG)).

### *Equivalent Disposable Income*

Statistics on disposable income refer to the total income of a household available for spending or saving, divided by the number of household members converted into equivalent adults by Eurostat. People with missing values for equivalent disposable income as well as those living in collective households and in institutions are excluded from calculations. The equivalence scale considers:

- the first household member aged 14 years or older as 1 person;
- each other household member aged 14 years or older as 0.5 person;
- each household member aged 13 years or younger as 0.3 person.

### *Gini coefficient*

One of the most common measures of inequality, the Gini coefficient is advantageous in that it is independent of the sample mean and population size, symmetrical, and sensitive to transfers of income from the top to the bottom of a distribution. Unless otherwise specified, figures and tables referencing Gini coefficients in this paper refer to the Gini of equivalized disposable income. The indicator is based on the European Union Statistics on Income and Living Conditions (see above).

### *Income quintile share ratio (S80/S20 ratio)*

The income quintile share ratio or the S80/S20 ratio is a measure of the inequality of income distribution. It is calculated as the ratio of total income received by the 20 percent of the population with the highest income (the top quintile) to that received by the 20 percent of the population with the lowest income (the bottom quintile). All incomes are compiled as equivalized disposable incomes.

### *At-Risk-of-Poverty Thresholds and Rates*

The relative at-risk-of-poverty threshold is defined as 60 percent of the national median equivalized disposable income. This is also the threshold used in Bulgaria to define the poverty line.

The **at-risk-of-poverty rate** is then calculated as the proportion of persons with an equivalized disposable income below that threshold. Where figures for subgroups exist, they are calculated based on the poverty threshold for the entire population.

The **persistent at-risk-of-poverty rate** is with an equivalized disposable income below the at-risk-of-poverty threshold for the current year and at least two out of three of the preceding years.

### *Severe material deprivation*

The severe material deprivation rate represents the proportion of people living in households that cannot afford at least four of the following nine items:

- mortgage or rent payments, utility bills, hire purchase instalments or other loan payments;
- one week's holiday away from home;
- a meal with meat, chicken, fish or vegetarian equivalent every second day;
- unexpected financial expenses;
- a telephone (including mobile telephone);
- a color TV;
- a washing machine;
- a car; and
- heating to keep the home adequately warm.

For additional descriptions on methods and data, see Eurostat (2019).

### ***Social protection spending***

Eurostat is the main source for the comparison of social protection spending. Data are compiled according to the European System of Integrated Social Protection Statistics (ESSPROS), which provides a coherent comparison between European countries of social benefits to households and their financing, thus making an international comparison of the administrative national data on social protection possible.

ESSPROS is built on the concept of **social protection**, or the coverage of precisely defined risks and needs associated with (i) sickness/healthcare and invalidism; (ii) disability; (iii) old age; (iv) parental responsibilities; (v) the loss of a spouse or parent; (vi) unemployment; (vii) housing; and (iv) social exclusion.

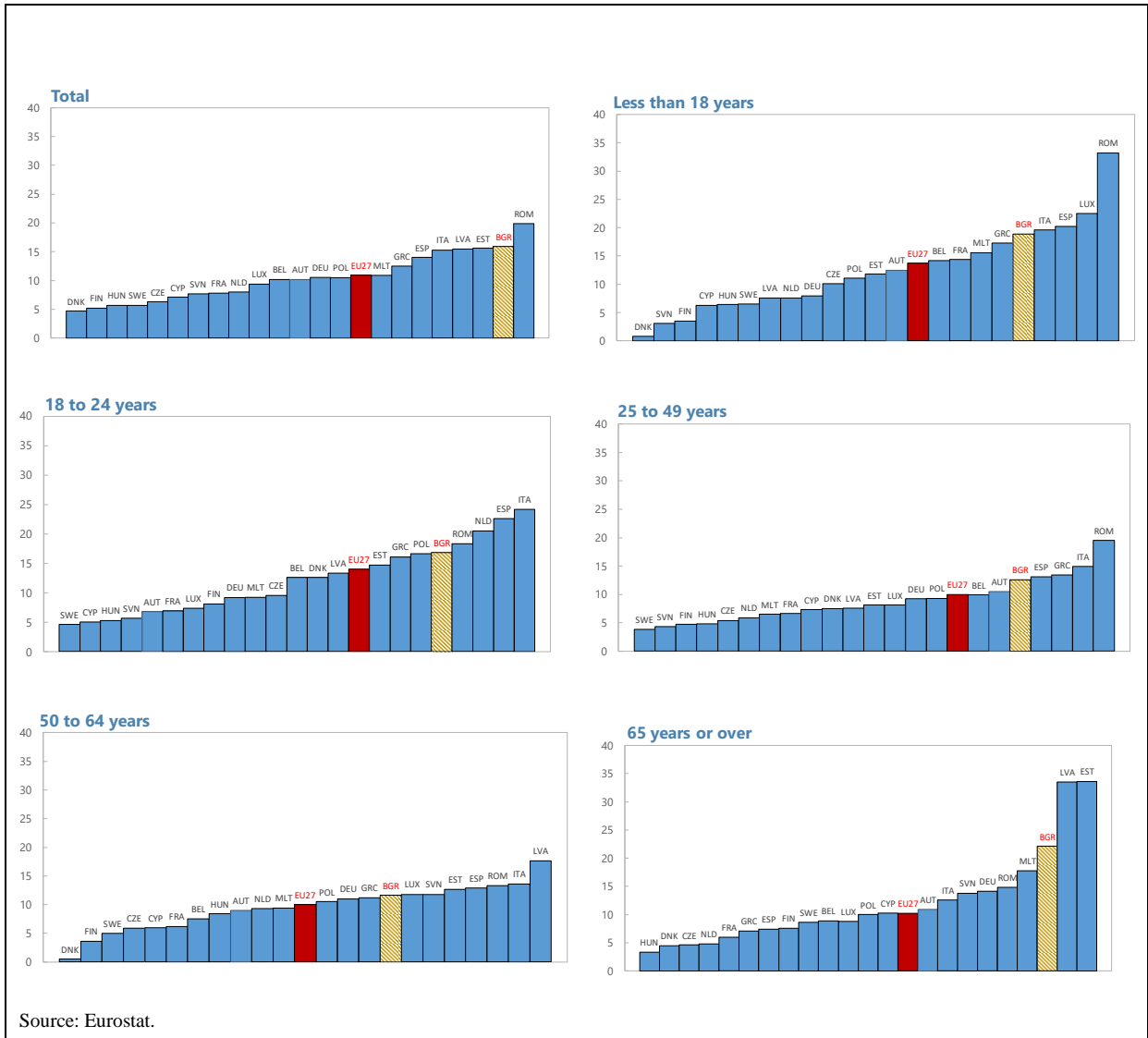
Social protection spending is the outlay for social protection interventions. It consists mainly of:

- **social benefits, or transfers in cash or in kind**, to households and individuals with the aim to relieve them of the burden of a defined set of risks or needs;
- administration costs, or costs of managing or administering the social protection scheme; and
- other miscellaneous expenditure by social protection schemes (payment of property income and other).

Additional description is available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Social\\_protection](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Social_protection). The ESSPROS system is described in the “[European system of integrated social protection statistics - ESSPROS Manual and User Guidelines](#)” (Eurostat, 2016).



## APPENDIX II. AT-PERSISTENT-RISK-OF-POVERTY RATE BY AGE GROUPS IN EU COUNTRIES (2018)



### APPENDIX III. ALTERNATIVE ESTIMATES OF THE EFFICIENCY OF SOCIAL BENEFITS

Due to differences in methodology (Appendix I), Eurostat and Euromod provide somewhat different estimates of the reduction in the GINI coefficient achieved by social benefits. These differences affect the measurement of the efficiency of social benefits (measured as the reduction in the GINI coefficient achieved by 1 percent of GDP in social benefit).

As shown in the charts below, Eurostat estimates result in a higher redistributive power of social spending than Euromod simulations but the trends are similar. In both cases, the efficiency of social benefits:

- declined in Bulgaria and in NMS between 2007 and 2018;
- was higher in Bulgaria than NMS average in 2007;
- was lower in Bulgaria than NMS average in 2008.

