Ukraine Poverty and Shared Prosperity Update 2016-2019[1]

Welfare levels of Ukrainian households have rebounded following the 2014/15 economic and security crisis. Between 2016 and 2019, real per capita incomes grew at 13 percent per year while per capita consumption grew at an annual pace of eight percent. Income and consumption growth were strong across the board, but stronger still for better-off households and those living in big cities. The share of the population in poverty or highly vulnerable to poverty decreased from 43 percent in 2016 to 25 percent in 2019. Poverty remains however higher than in the pre-crisis period. According to the most recent data (2019), poverty is highest in rural areas, in households with many children headed by a little-educated person, and in one-person households consisting of a mostly female pensioner. Living in a household headed by a pensioner is a strong correlate of poverty in Ukraine: Accounting for 30 percent of all households, they account for 46 percent of all the poor.

The growth in real incomes was mainly driven by an increase in labor income and pensions. Employment bottomed out in 2017 and increased substantially after, while real wages grew by 47 percent on the back of substantial increases in the minimum wage. Pensions too increased in real terms but remain lower than what they were before the crisis. Though the increase in labor incomes and pensions almost fully explain the growth in total household incomes since 2016, their role differed substantially across income groups. For households in the top 60 percent of the national income distribution ("T60"), increased labor incomes explain almost all of the growth in total income, with pensions only playing a minor role. For households in the bottom 40 percent of the national income distribution ("B40"), pensions were the main driver of real income growth, with labor incomes playing a secondary role.

Lagging labor income growth for the B40 can be explained by unfavorable demographics and stagnating employment rates. With ageing and emigration, the share of working-age adults in Ukraine's population is declining. While this is a national trend, the decline in the share of working-age adults is more outspoken at the bottom of the income distribution, acting as a demographic drag on labor income growth. Employment rates, which have increased substantially for the T60 between 2016 and 2019, appear to have decreased among lower-income households, holding back the labor income growth from higher real wages. Understanding the constraints to employment among workers from lower-income households is a priority for research but cannot be done with the currently available data.

Faster income growth at the top of the welfare distribution resulted in an increase in inequality. The bulk of the increase in inequality between 2016 and 2019 is due to an increase in pure within-group inequality. Population ageing, increasing spatial disparities (from a low base and mainly driven by rapid income growth in big cities) and changes in the labor market have contributed to the increase in inequality over this short time-period.

While the household welfare trends observed between 2016 and 2019 are undoubtedly positive, there are concerns on the sustainability of its drivers. Household welfare gains driven by increases in pensions and minimum wages can only be sustained as long as fiscal space is available. Ukraine has a history of boom and bust, whereby pro-cyclical economic policies boost household welfare during periods of expansion and amplify household income contractions during downturns. Escaping from this boom-and-bust cycle will require adopting sound fiscal policy and completing key reforms to support economic growth and private sector job creation, while continuing to improve the efficiency of social spending.

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1. Introduction

From an economic point of view, the last decade was largely a lost one for Ukraine. Total economic output stagnated between 2010 and 2019, and GDP per capita increased only on behalf of a shrinking population. Ukraine's weak economic performance resulted in increasing gaps with other countries in the region. While GDP per capita in the ECA region (IDA and IBRD only) grew at 2.6 percent per year in real terms between 2010 and 2019, Ukraine's GDP expanded at less than one percent per person per year (Figure 1). The modest growth resulted in modest poverty reduction, with the share of the Ukrainian population with consumption below the international upper middle-income poverty line of US$5.5 a day decreasing from 5.3 percent in 2010 to 2.5 percent in 2019.

Figure 1. GDP per capita level and growth in the ECA region
(*2019 GDP per capita in constant 2010 US$ and growth in GDP per capita 2010-2019*)
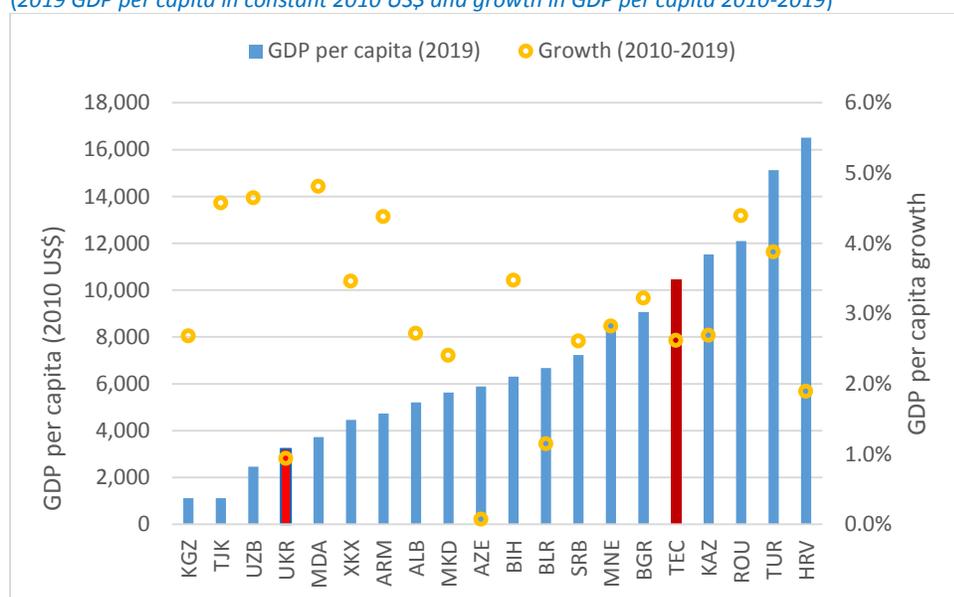
Note: Growth rates are shown on the right-hand-side axis. "TEC" refers to the average for the ECA region (IDA and IBRD only). *Source:* WDI, 2020.

The overall picture of economic stagnation is largely due to a sharp economic contraction during the political and security crises of 2014/15. The Maidan revolution in early 2014, the annexation of Crimea and the separatist conflict in the Donbas region, which was the mining and manufacturing heartland of the country, wrought havoc on the economy, with GDP contracting by almost seven percent in 2014 and 10 percent in 2015 (Figure 2). Poverty increased sharply following these events and, depending on the poverty line, has yet to return to its pre-crisis level. Beyond the crisis years economic growth was positive but, with the exception of 2011, relatively low for a country with fairly low baseline levels of economic prosperity.

Figure 2. Volatile economic growth
(Real *GDP growth in Ukraine, 2010-2019*)
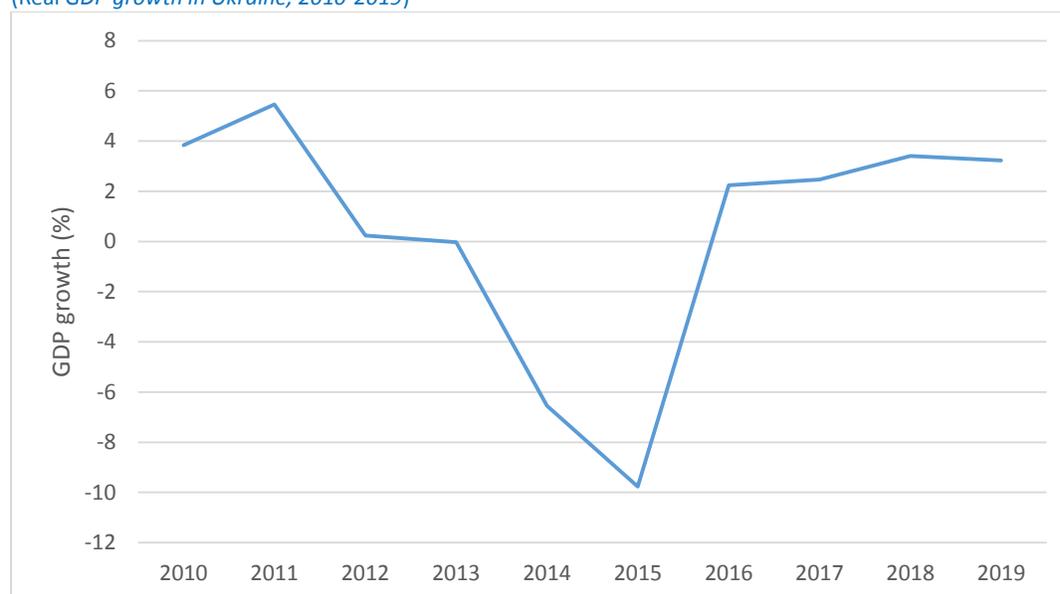
Source: WDI, 2020.

This note takes a closer look at the main trends in poverty and equitable growth between 2016 and 2019. Two previous notes focused on earlier periods (2008 – 2013 and 2011 - 2016, respectively) and results from these earlier notes will be compared with the updated results presented in this note. This Note proceeds as follows: The next section presents the main trends in terms of poverty and shared prosperity between 2016 and 2019. Section 3 explores, in a descriptive fashion, the drivers of the main trends. The final section concludes.

2. Main poverty and shared prosperity trends, 2016-2019

Household living standards rebounded strongly following the sharp decline in 2014/15. Between 2013 and 2016, household income per capita declined at an annual rate of 11 percent in urban areas and seven percent in rural areas. The recovery between 2016 and 2019 followed a similar pattern, with incomes per capita growing at 15 percent per year in big cities, 14 percent per year in smaller cities, and 10 percent per year in rural areas (Table 1). Overall, average household income per capita increased at 13 percent per year, between 2016 and 2019, while consumption grew at eight percent per year. There were no marked spatial differences across the four big macro-regions, with per capita income growth varying from 12 percent per year (East) to 14 percent per year (Center)[2].

Table 1. Strong growth in real income per capita between 2016 and 2019

	2016	2019	Annual growth (%)
Big city	40,790	62,430	15.2%
Small city/town	36,347	53,698	13.9%
Countryside	37,656	50,216	10.1%

[2] The HLCS data contains data on 25 *oblasts* (regions). Given that there are doubts on the representativity of the survey at the oblast-level, we follow the approach used in the 2016 SCD of classifying individual oblasts in larger macro-regions. The West region consists of the oblasts of Lviv, Rivne, Volyn, Ternopil, Ivano-Frankivs'k, Transcarpathia, Chernivtsi, and Khmelnytsky. The Center region consists of Zhytomir, Vinnytsya, Kiev City, Kiev, Cherkasy, Kirovohrad, Chernihiv, Poltava, and Sumy. The East region consists of Donetsk, Luhansk and Kharkiv. The South region consists of Odessa, Mykolayiv, Kherson, Zaporizhzhya, and Dnipropetrovsk.

West	37,490	54,551	13.3%
Center	39,996	59,268	14.0%
South	36,780	53,168	13.1%
East	38,602	54,534	12.2%

Note: Annual Incomes expressed in 2019 UAH. Source: HLCS, 2016; 2019. WB staff calculations

Though income and consumption growth were strong across the distribution, they were stronger for higher income households. Between 2016 and 2019, incomes grew at 10 percent per year for the bottom quintile and 15 percent for the top quintile (Figure 3). This patterns also mirrors the downturn of 2014/15, when better-off households experienced a stronger drop in income and consumption than low-income households. Generally speaking, the recovery between 2016 and 2019 has been a mirror image of the downturn between 2013 and 2016: Groups that experienced the strongest contraction in welfare during the crisis also experienced the strongest increase in welfare during the recovery. An exception to this is the Eastern "macro-region", which experienced the sharpest downturn during the crisis and also rebounded somewhat slower after the crisis (Table 1). The Eastern region had however already been growing relatively slowly since the early to mid-2000s[3].

Figure 3. Strong household income and consumption growth
(*Growth incidence curves, 2016-2019*)
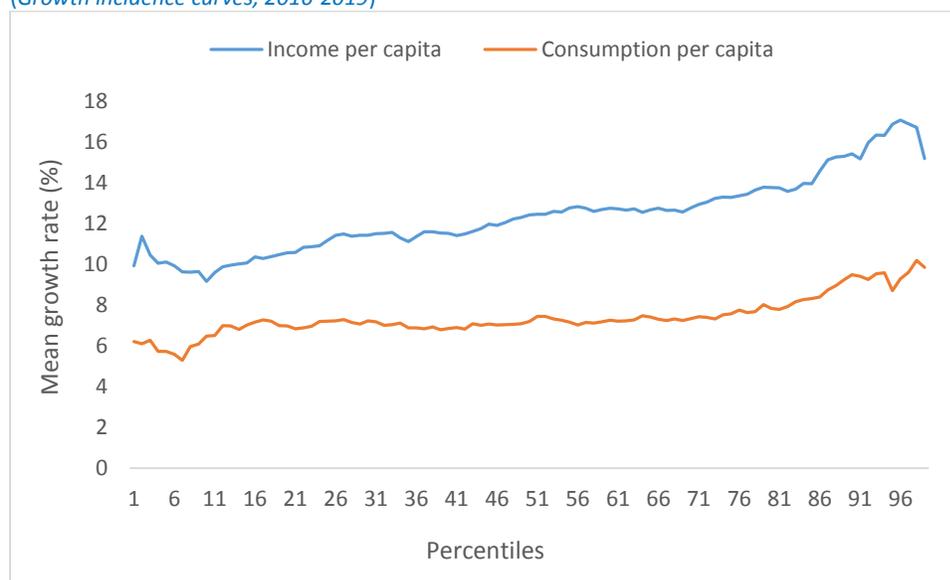
Source: HLCS, 2016; 2029. WB staff calculations

Poverty decreased substantially since 2016 though remains higher, depending on poverty line, than before the crisis. The monitoring of poverty in Ukraine is complicated by a preponderance of poverty lines (Box 2). Using the international upper middle-income poverty line of US$5.5 per day (in 2011 PPP), poverty

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[3] In 2004, the three eastern oblasts accounted for 23.4 percent of total GDP in Ukraine. By 2013, before the crisis started, this share had declined to 20 percent. In 2018, with a share of Donetsk and Luhansk oblasts not under government control (and hence not accounted for in official statistics), the share stood at 13 percent (based on SSSU regional accounts data).

more than doubled from a low base from 2014 (2.5 percent) to 2015 (6.3 percent) and fell back to 2.5 percent by 2019 – similar to its pre-crisis level. Using the *cost-of-basic-needs* poverty line developed by the World Bank, moderate poverty increased from 15 percent in 2014 to 27 percent in 2015 before declining to 20 percent by 2018 (Figure 4)[4]. Based on the actual Subsistence Minimum (SM), poverty tripled from 17 percent in 2014 to 52 percent in 2015 and fell back to 22 percent by 2019.

Figure 4. Despite recent decreases, poverty remains higher than in the pre-crisis period
(*Estimated poverty rates based on different poverty lines, %*)
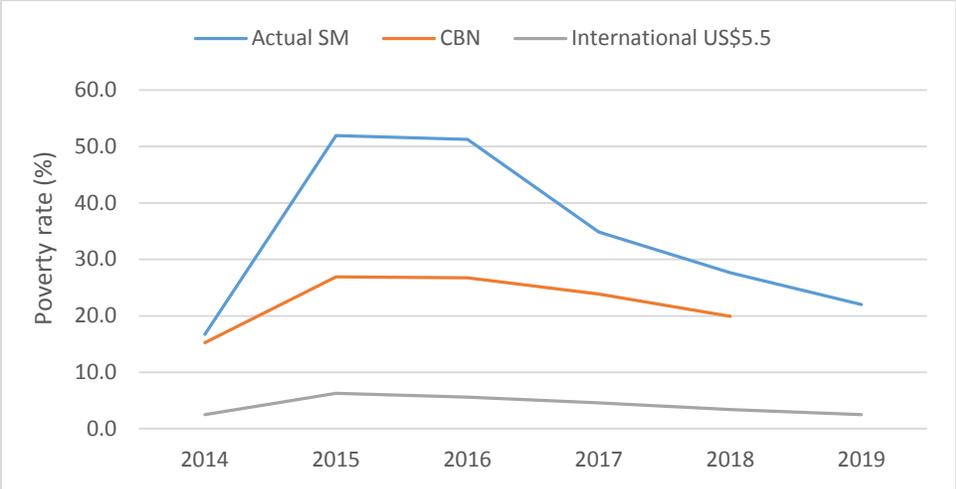
Source: HLCS, 2014-2019. WB staff calculations

An arguably preferable way to look at changes in household welfare is to look at different economic classes. The share of population in poverty or highly vulnerable to poverty (defined as consumption below US$10 per person per day in 2011 PPP – UAH83 per day in 2019 prices) decreased from 43 percent in 2016 to 25 percent in 2019 (Figure 5). At the other end of the spectrum, the share of the population that is "economically secure" (defined as per capita consumption above US$15 a day in 2011 PPP) increased from 21 percent in 2016 to 38 percent in 2019 – still lower than its level before the crisis. The share of people who are neither economically secure nor at immediate risk of falling into poverty remained largely constant at 36 percent. While these are positive trends, it also highlights the continued vulnerability of large parts of the Ukrainian population to income shocks.

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[4] Due to data limitations, we cannot calculate the CBN poverty rate for 2019.

Box 2. Poverty measurement in Ukraine

The statutory subsistence minimum (SM) is the official poverty line used in Ukraine. Households with per capita incomes below the statutory SM are considered poor and are eligible for a variety of social assistance programs. The statutory SM is a policy tool set by the Council of Ministers but does not have a constant purchasing power: Between 2010-2013 it grew faster than general inflation, boosting the incomes of those who rely on programs linked to the SM. However, after the recession in 2014 and especially in 2015 when inflation accelerated significantly, the SM was almost frozen in nominal terms, leading to a marked reduction in real purchasing power of the statutory SM. As a result of the variable benchmark, poverty based on the statutory SM decreased during the crisis, even though all other indicators of welfare suggested a stark deterioration.

To address the divergence between the growth of the statutory SM and the CPI, the SSSU started to report the so-called 'actual' Subsistence Minimum. The actual SM is calculated as the SM basket inflated by the respective price changes. The actual SM grew much faster than general inflation in 2015, leading to a tripling of poverty rates from 2014 to 2015.

While the actual SM has the virtue of being based on a properly priced basket of goods and services, it is not based on the actually observed consumption patterns of the poor[5]. To address this, the World Bank developed a *cost of basic needs* (CBN) poverty line for Ukraine based on the 2012 HLCS. The CBN poverty line amounted to UAH2,325 per adult equivalent per month in 2018, higher than the statutory SM of UAH1,710 but lower than the actual SM of UAH3,263. While the CBN poverty line would be our preferred benchmark of poverty, the 2019 HLCS Public Use File does not contain the variables required to apply the CBN methodology to the data. As a result, the remainder of this note will mainly use the actual SM as the poverty line.

The poverty lines with constant purchasing power show a largely similar trend since the start of the HLCS surveys in 2002. A sharp and sustained reduction in poverty between 2002 and 2012 (with a temporary interruption during the international financial crisis), followed by a spike in poverty during the 2014/15 crisis, after which poverty reduction continued (Figure 6). Poverty rates will have increased again in 2020 because of the economic fallout from the COVID-19 pandemic.

Figure 6. Poverty measured by different poverty lines
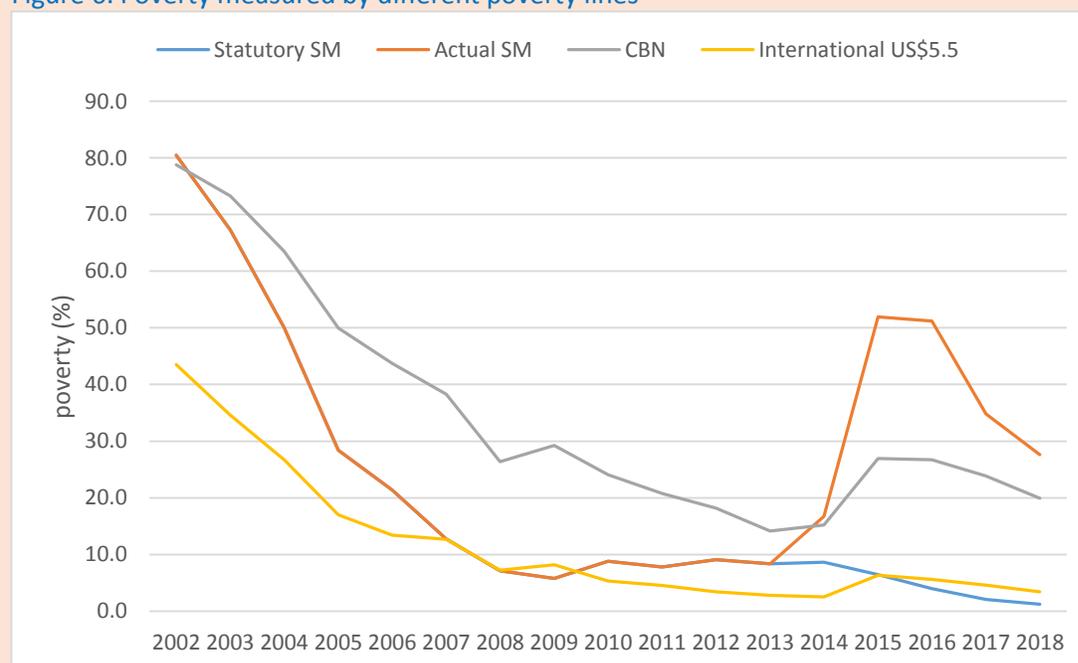
Source: HLCS, 2002-2018. WB staff calculations

Figure 5. Welfare growth, though vulnerability remains high
(*Share of population by income class, %*)
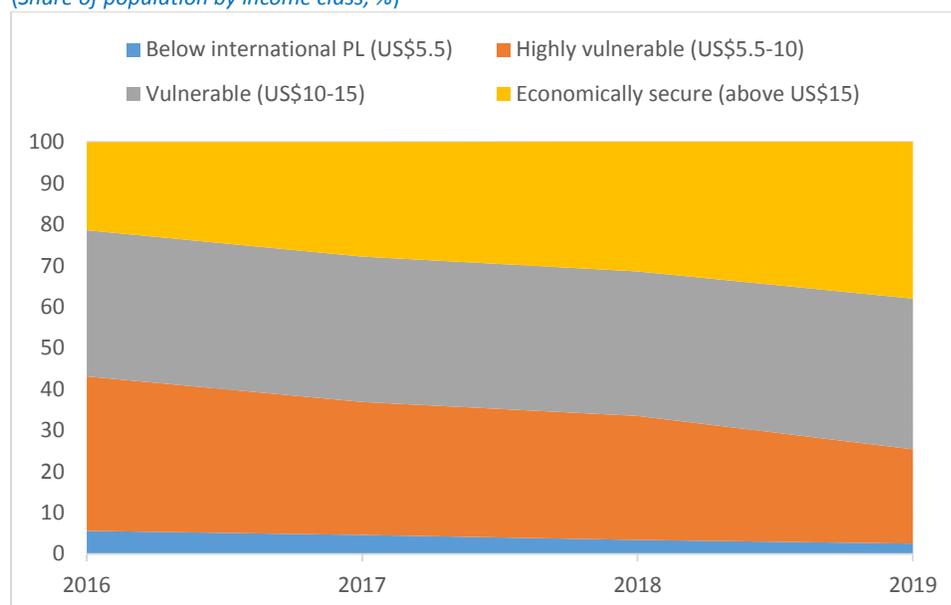
Source: HLCS, 2016-2019. WB staff calculations

Poverty, as measured by the actual Subsistence Minimum, decreased across the board between 2016 and 2019. Poverty decreased in all regions and most in big cities, followed by small cities and rural areas. In line with low levels of labor mobility in Ukraine, virtually all reduction in poverty can be accounted for by changes within geographical units (within rural areas, within a certain region, etc.). Population shifts across geographical units did not contribute to poverty reduction for the simple reason that there were almost none. The reduction in poverty was weakest for single-member households, reflecting the dependence of single-member households on pensions (the bulk of single-person households consist of a single pensioner, most likely a woman). Households headed by a retired person account for 46 percent of all the poor in Ukraine (see 2019 poverty profile in Annex 1).

Before the global COVID-19 pandemic struck, poverty rates were projected to further decline to 18-19 percent in 2020. The pandemic has however exacted a heavy toll on Ukraine's economy, with GDP projected to have decreased by 5.5 percent in 2020 and private household consumption by 7.3 percent[6]. According to an EBRD survey, 16 percent of workers in Ukraine lost their job between the onset of the pandemic and August 2020 and 35 percent of respondents reported to be in a lower income bracket in August 2020 than in February 2020[7]. Depending on the scenario, the poverty rate in Ukraine (based on the actual SM) could increase by between 5 and 13 percentage points relative to a counterfactual of no COVID in 2020 (Box 3).

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[5] The SM is a cost estimate of a set of food products to ensure normal functioning of a human body and health and a minimum set of non-food goods and services essential to satisfy basic social and cultural needs of a person. It is a normative basket.
[6] World Bank, 2020.
[7] Based on a survey conducted in August 2020 in 14 countries in the ECA region by EBRD and the ifo institute. Indicators for Ukraine were kindly provided by EBRD upon request.

Box 3. Estimating the poverty impacts of COVID-19 in Ukraine

To estimate the poverty impacts of COVID-19, we conducted a micro-simulation based on three alternative scenarios. In the first and most basic scenario, household incomes decrease by 7.3 percent in 2020, in line with the projected decrease in private consumption in 2020. This is applied uniformly to all households. In a second scenario, labor incomes in 2020 decrease in proportion to the expected contraction in agriculture, industry, and services (as estimated by World Bank, 2020). Households thus experience different contractions in labor income depending on the employment structure in their region[8]. Non-labor income is split in two parts: Pensions and other non-labor income. Pensions increase in line with the actually observed increase in pensions in 2020, while other non-labor income is decreased by 2.5 percent (the observed decline in remittances in the first three quarters of 2020). Scenario 3 is the same as scenario 2 but also brings in the job losses estimated from the EBRD survey. In this scenario, we randomly allocate job losses to 16 percent of workers. Their labor income turns to zero.

The base year for the simulations is 2018. The 2018 HBS dataset contains more variables than the 2019 dataset and allows for a more precise simulation. In a first step, the 2018 income levels are updated to 2019 using the 2019 growth in private consumption (scenario 1) or detailed information on the growth in wages, pensions, and remittances (scenarios 2 and 3). The imputed 2019 income levels are then updated to 2020 using projections of consumption, wage, pension and remittances growth that were conducted before the pandemic struck. This is the 2020 counterfactual (no-COVID) scenario. This 2020 counterfactual scenario is compared with the three COVID scenarios to estimate the poverty impact of COVID. Simulation results are shown in Table 2.

Table 2: Simulated poverty impacts of COVID-19

	2018 (actual)	2019 (simulated)	2020 counterfactual	2020 COVID	Impact
Scenario 1	27.6	21.3	18.9	23.9	5.0
Scenario 2	27.6	22.3	18.3	25.3	7.0
Scenario 3	27.6	22.3	18.3	31.3	13.0

Notes: Numbers in Table show poverty rates based on the actual SM. Impact 1 shows the increase in poverty relative to a 2020 counterfactual without COVID. Impact 2 shows the increase in poverty relative to 2019. Source: HLCS, 2018. World Bank staff calculations.

The first thing to note in Table 3 is that the simulated poverty rate for 2019 is close to the actual poverty rate (from the 2019 HBS) of 22 percent, giving at least some support to the underlying parameters used for the simulations. Depending on the scenario, poverty rates were projected to further decline to 18-19 percent in 2020 in a counterfactual "non-COVID" world. Due to the COVID shock however, poverty rates are estimated to be between 5 and 13 percentage points higher than what they would have otherwise been. Scenario 3, which assumes that 16 percent of workers lose their jobs, estimates the highest poverty increase due to COVID. Based on discussions with Ukrainian researchers and World Bank economists based in Ukraine, scenario 2 appears to be the most likely scenario: A seven percentage point increase in poverty relative to a 2020 counterfactual and a three percentage point increase year-on-year.

The profile of the new poor (those who are pushed into poverty because of COVID) differs from that of the pre-crisis poor. While the single largest share of the "traditionally poor" are pensioners, the new poor are most likely to live in households with a (previously) wage-employed head. The new poor are also more likely to be urban and to live in larger families headed by a working-age head. Single-parent households are also overrepresented among the new poor. Annex 2 contains more details on the profile of the new poor.

Given the faster income growth at the top of the distribution, income inequality increased. The Gini

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[8] Given that the data do not include information on sector of employment at the individual and household level, we cannot shock labor income at levels lower than the region.

coefficient increased from 22.4 in 2016 to 25.5 in 2019 while the ratio of the 90th to the 10th percentile increased from 2.65 to 3.13 over the same period. The increase in inequality after 2016 follows a period during which inequality gradually decreased to its 2016 low. Though inequality remains low, it is bound to be substantially underestimated given the well-known failure of household surveys in capturing households with the highest earnings or wealth.

Figure 6. Income inequality increased after 2016
(*Gini coefficient of inequality*
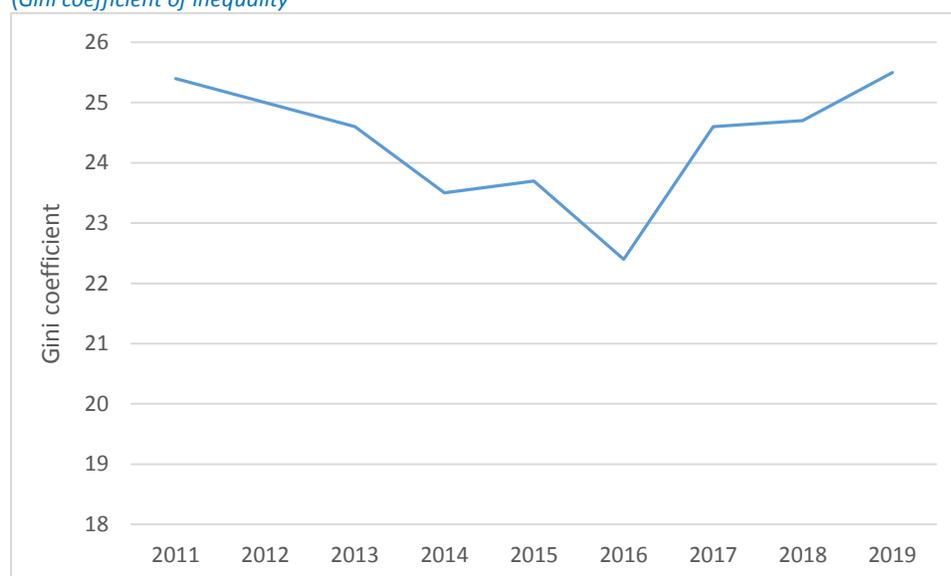
Source: HLCS, 2011-2019. WB staff calculations

3. The drivers of observed welfare and inequality trends

The recovery in household welfare following the 2014/15 crisis was underpinned by positive labor market developments and increases in the real value of pensions. Labor force participation and employment rates bottomed out in 2017 and have been increasing since (Figure 7). In absolute terms, 422 thousand more Ukrainians were working in 2019 than in 2017 and the unemployment rate decreased from 9.5 percent in 2017 to 8.2 percent in 2019. Real wages, which had taken a bit hit during the crisis years, increased by 47 percent between 2016 and 2019 (Figure 8), mainly on the back of a doubling of the minimum wage[9]. It was however not until 2018 that real wages had overtaken their pre-crisis 2013 high. Wages increased in all sectors but mostly in the public sector, which is linked to the large increase in the minimum wage over this period.

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[9] The minimum wage was doubled in 2017 and increased by 16 percent and 12 percent in 2018 and 2019, respectively. In real terms, the minimum wage was 97 percent higher in 2019 than in 2016. The minimum wage affects the average wage as wage agreements with unions tends to be affected by the level of the minimum wage.

Figure 7. Labor force participation and employment bottomed out in 2017

(LFP and employment rate, %)
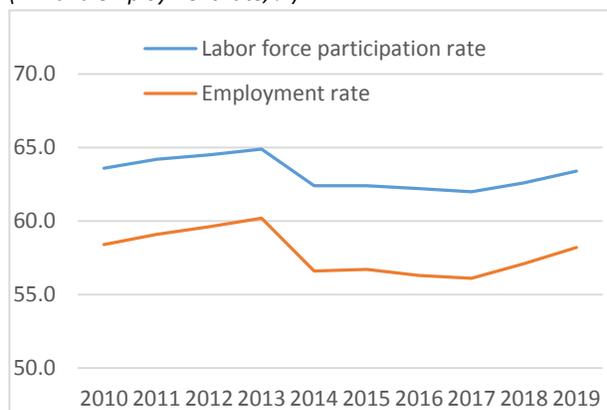
Source: SSSU website, 2020.

Figure 8. Real wages recovered strongly after the 2014/15 crisis

(Index of real wages; 2009=100)
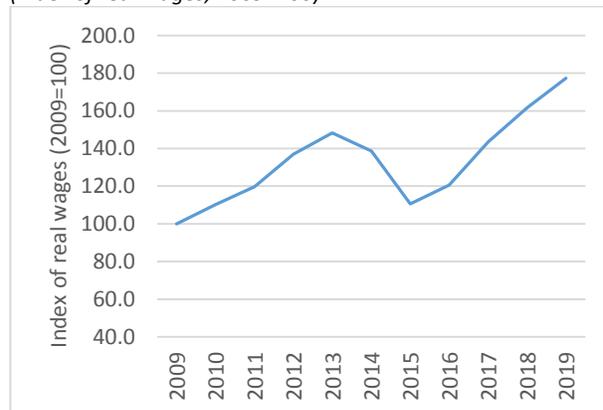
Source: SSSU website, 2020.

Pensions increased in real terms between 2016 and 2019 but remain lower than they were before the crisis. While high inflation between 2014 and 2016 eroded the real value of pensions, the 2017 pension reform introduced a formula to index pensions based on wage growth and inflation. As nominal wages substantially outpaced inflation, real pensions increased (Figure 9). The average pension remained however lower than the actual subsistence minimum. The statutory subsistence minimum also lost much of its value during the crisis, and, in contrast to pensions, remained almost flat in real terms in between 2016 and 2019. Accounting for inflation, the statutory subsistence minimum was lower in 2019 than in 2002. The low value of the statutory subsistence minimum effectively condemns older people who do not meet the eligibility criteria for the minimum pension guarantee to a retirement in poverty[10].

Figure 9. Pensions have been increasing since 2016

(Index of real pensions, 2011=100)

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[10] The minimum pension guarantee is granted only to pensioners who have reached 65 years of age and have completed 30 contribution years for women and 35 years for men. These eligibility criteria are restrictive in regional comparison (ILO, 2020).
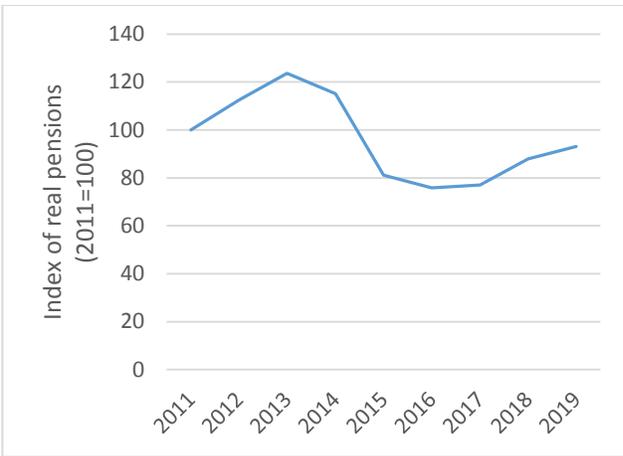
Source:

Wage and pension growth explain much of the increase in per capita incomes between 2016 and 2018[11]. For the top 60 percent ("t60", the population in the upper 60 percent of the per capita income distribution), real per capita income increased by 27 percent between 2016 and 2018, almost entirely driven by growing labor incomes (Figure 10). Per capita incomes of the bottom 40% ("b40") increased by 20 percent over the same period, driven by growth in pensions, labor income, and other private incomes (which include remittances). Comparing the drivers of income growth between the bottom and the top quintile highlights the different patterns of income growth for low- and higher-income households: For the bottom quintile, labor income contributed only marginally to the growth in total income; rather, pensions and other private incomes drove the bulk of the total income growth between 2016 and 2018. For the top quintile in contrast, labor income growth accounted for all of the total income growth (Figure 11).

Figure 10. Labor income and pensions were the main drivers of per capita income growth
(*Decomposition of per capita income growth between 2016-2018*)
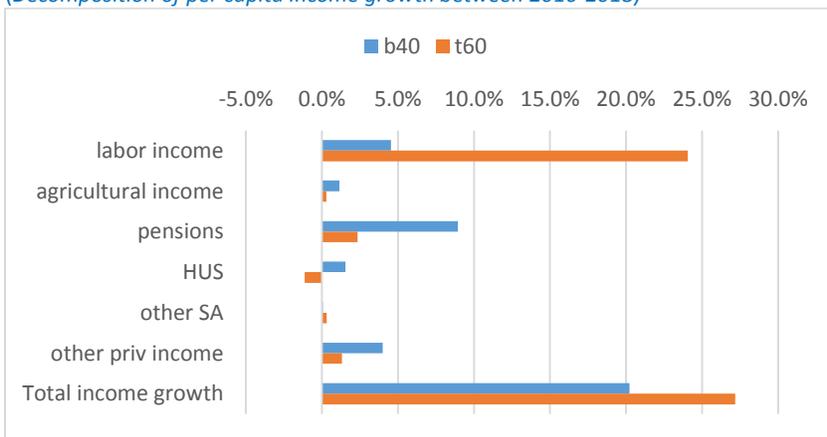
Source: HLCS, 2016-2018. WB staff calculations

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[11] The 2019 HLCS public datafile has too few variables to extend the decomposition to 2019.

**Figure 11. Income growth of the bottom quintile was driven by pensions; for the top quintile, by labor income**
(*Decomposition of per capita income growth between 2016-2018*)
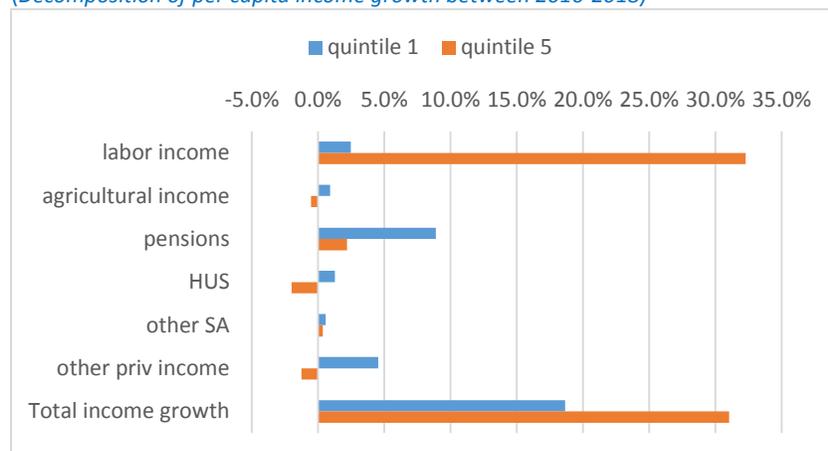
Source: HLCS, 2016-2018. WB staff calculations

The available data only allow a very partial assessment of why low-income households derived such a small share of their income growth from labor[12]. A first explanatory factor is the difference in demographic composition between lower and higher income households. While low-income households are larger, they contain fewer working-age adults and more dependents (children under 18 and people over 60) compared to better-off households (Table 3). As a result, low-income households are relatively more dependent on pensions, which have grown slower than wages over the period considered (2016-2018/9). Low income households also have fewer employed members: Households in the bottom quintile had on average 0.82 employed members in 2019, compared to 1.68 employed members in the top quintile. This is a second explanatory factor: People of working-age in low-income households are less likely to be employed and more likely to be in the "other" category, which includes the options of "housewife" and "unemployed".

Table 3. Demographic composition and labor status of households, by quintile

	Q1	Q2	Q3	Q4	Q5
HH demographics:					
HH size	3.35	3.18	3.09	3.00	2.68
Children (#)	0.94	0.78	0.67	0.62	0.33
Working age (#)	1.77	1.72	1.90	1.86	1.91
Elderly (#)	0.63	0.68	0.51	0.52	0.43
As shares (%)					
Children	*24.1*	*21.0*	*19.0*	*17.1*	*9.5*
Working age	*50.7*	*49.8*	*58.1*	*61.0*	*71.0*
Elderly	*25.2*	*29.2*	*22.9*	*21.9*	*19.5*
Social-economic status					
Wage employed	0.74	1.01	1.29	1.29	1.59
Self employed	0.08	0.08	0.08	0.08	0.09

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[12] The available microdata do not include individual labor indicators (though these variables were collected during the survey).

Pensioner	0.73	0.76	0.54	0.49	0.30
Other	1.66	1.2	1.07	1	0.61

Source: HLCS, 2019. WB staff calculations

While rising real wages increased labor incomes of both lower and higher-income households, this effect was counteracted by worsening demographics and declining employment rates among the B40. The strong growth in labor incomes among the T60 was the result of both real wage growth and increases in the employment rate (Figure 12). Real wage growth also boosted the labor incomes of the B40, but slightly declining employment rates made that total labor income did not grow as strongly for the B40[13]. The declining share of the working-age population also was a significant drag on labor income growth for the B40, reducing labor income growth by 19 percent (vs 7 percent for the T60). The available data do not allow investigating the reasons for the differential trend in employment rates for the B40 and T60 -though this would seem to be an important research question going forward.

Figure 12. Demographic and employment drag constrain labor income growth of the B40
(Shapley *decomposition of per capita labor income growth between 2016-2018, in 2011 UAH)*
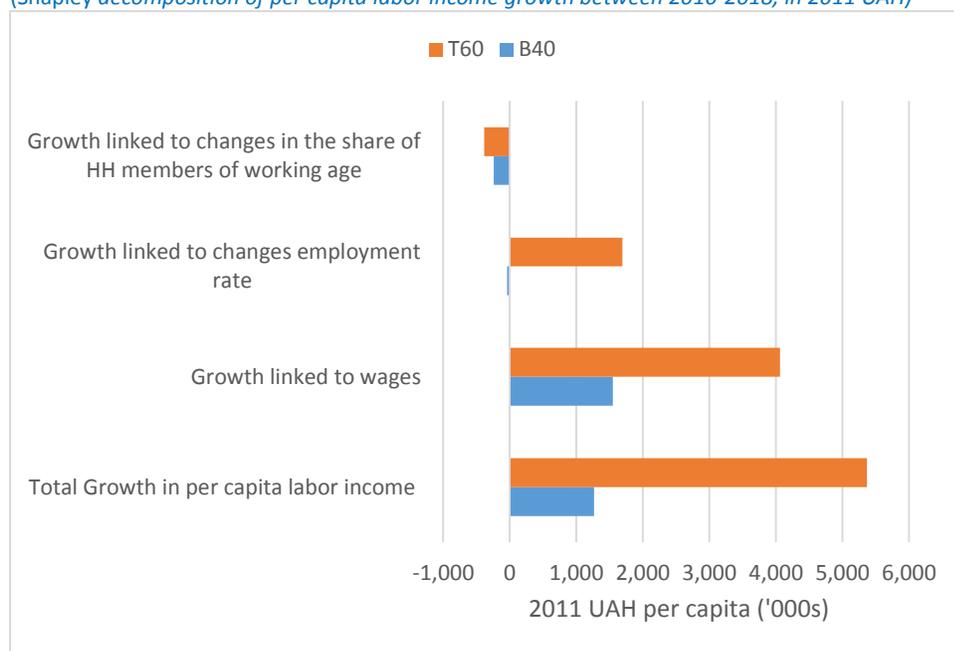
Source: HLCS, 2016-2018. WB staff calculations

Given lagging labor income growth, the share of labor income in total income decreased among lower-income households. While in 2016 households in the B40 derived on average close to 35 percent of their income from labor, this had dropped to 31 percent by 2018 (Figure 13). The importance of pensions grew in parallel, from 32 percent in 2016 to almost 35 percent in 2018. Income shares of T60 households displayed the opposite pattern, with the labor income share growing and the pension share decreasing.

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[13] The number of employed household members in B40 households decreased between 2016 and 2019, while it increased for the T60 households.

Figure 13. The labor income share decreased for the B40
(Share of total income by source, *2016-2018, %*)
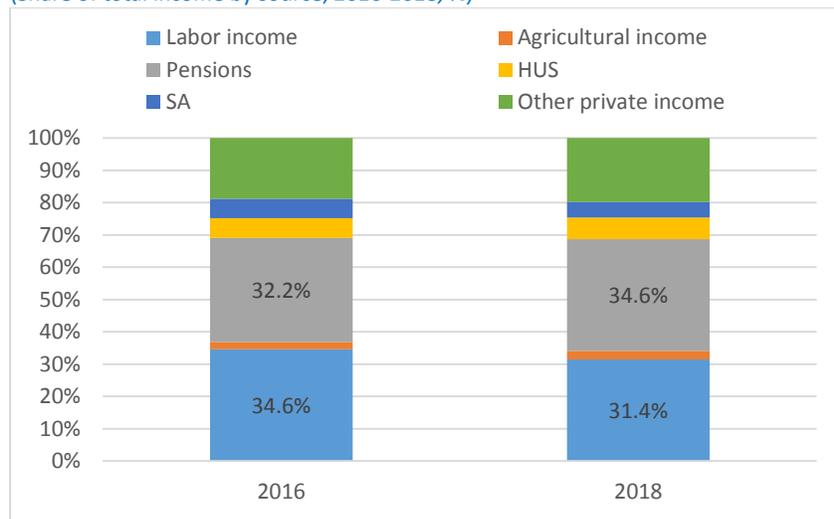
Source: HLCS, 2016-2018. WB staff calculations

To investigate the observed inequality trend, we take a closer look at three potential explanations for the increase in inequality. The first relates to population ageing and the associated changes in household composition. Changes in the relative numbers of older and younger people can affect relative wage rates, benefiting younger households (those with working-age adults) more than older households. Incomes of the elderly also tend to be lower than the average, and a higher group of people in the elderly category can increase income disparities in the population as a whole. The second potential explanation concerns rising spatial disparities. The 2014/15 security crisis has severely affected the economies of the eastern oblasts, accelerating a relative decline that had already started well before the conflict. In contrast, Kyiv and surrounding oblasts have been growing relatively rapidly. Increasing spatial disparities would push the overall inequality rate upward. A third potential explanation refers to changes in the labor market. The different recovery in employment between 2016 and 2019, as described in the previous section, is likely to have contributed to the increase in inequality. The investigation of this channel is somewhat complicated by the lack of labor market variables in the public microdata. As a result, we focus here on a variable called "socio-economic status of household head", which has four different categories (wage employed, self-employed, retired, other, with the last category including options such as student, housewife, unemployed, etc.).

To assess whether these potential explanations hold water, we decompose the change in inequality between 2016 and 2019 into different components[14]. Intuitively, a change in inequality can be decomposed into three components: a change in within-group inequality, a change in between-group inequality, and changing population shares. In a dynamic analysis, each of these components can change: Total inequality could change if inequality increases faster within some groups (increase in "pure" within-group inequality), if average income growth varies across groups (change in between-group inequality), and/or if there are population shifts between groups. All else equal, a population shift from a low inequality to a high inequality group would push up overall inequality, while a population shift from a low-

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[14] For the decompositions, we use the Mean Logarithmic Deviation (MLD) as indicator of inequality. The MLD is additively decomposable, whereas the Gini coefficient is not.

income group to a higher-income group would depress inequality (as a bigger share of the population would enjoy higher incomes). The formal decomposition is detailed in Annex 3.

Overall, the lion's share of the inequality increase between 2016 and 2019 is due to an increase in "pure" within-group inequality, seemingly dismissing the veracity of the three potential mechanisms (Table 4). The dominance of within-group inequality changes is however expected given the short time frame of the analysis (2016-2019) and the longer-term nature of the three potential channels (population ageing, for instance, does not happen overnight). The decompositions provide partial evidence for the importance of the three hypothesized channels.

Table 4. Summary of the decomposition of the increase in inequality

	(1) changes within	(2) pop. share within	(3) pop. shift between	(4) changes between
Spatial decompositions				
Oblasts	0.742	0.000	-0.035	0.293
Big city, small city, rural	0.865	0.001	-0.025	0.158
Decomposition by age and dependency ratio				
Age household head	0.861	-0.064	0.172	0.031
Dependency ratio	0.850	-0.080	0.292	-0.062
Decomposition by socio-economic status				
Employment household head	0.724	-0.013	-0.298	0.587

Notes: Age of household head has 3 categories (under 18, 18-59, 60 and over). Dependency ratio is classified into 4 categories (0-0.25; 0.25-0.5; 0.5-0.75; 0.75-1). Socio-economic status has 4 categories (wage employed, self-employed, pensioner, other). Oblasts include all 25 oblasts of Ukraine. Changes are shares of total change in inequality. Column (1) is the share of the increase in aggregate inequality that is due to pure within-group inequality changes. Column (2) is the share of the increase in aggregate inequality that is due to changes in population shares of subgroups with different inequality levels. Column (3) is the share of the increase in aggregate inequality that is due to population shifts across subgroups with different income levels. Column (4) is the share of the increase in aggregate inequality that is due to changing disparities in income levels across subgroups. A positive sign means the mechanism is dis-equalizing; a negative sign means the mechanism is equalizing. Source: HLCS, 2016; 2019. WB staff calculations.

Population ageing: Decomposition by age of household head and dependency ratio

Population ageing is exerting an upward pressure on income inequality. The share of households headed by an older person (60 years and more) increased from 34 percent in 2016 to 40 percent in 2019. Given that incomes of households headed by an older person are lower than the average, ageing has increased welfare disparities across age subgroups. The population shift to the oldest subgroup (that is, ageing) explains 17 percent of the increase in inequality (column (3) in Table 5), while increasing welfare disparities between age groups explains a minor 3 percent (column (4) in Table 5). The decomposition by dependency rate shows a similar story: The share of people living in households with high old-age dependency rates (high share of elderly persons relative to household size) has increased, nudging overall inequality upwards given relatively low income levels in households with high dependency rates. Overall, the shift of the population to households with higher dependency rates explains 29 percent of the increase in inequality between 2016 and 2019 (Column (3) in Table 4). Population ageing will continue to exert an upward pressure on inequality in the coming decade.

Spatial disparities: Decomposition by oblast and rural vs. urban areas

Spatial disparities have increased from a low base and have pushed up aggregate inequality. Though the bulk of the rise in inequality comes from within-oblast inequality changes, increasing welfare disparities across oblasts also played a role, explaining 29 percent of the aggregate inequality increase (Column (4) in Table 5). The increasing spatial disparity is in large part due to welfare levels in Kyiv city increasing much more rapidly vis-à-vis the rest of the country. Population shifts across oblasts were minor and tended to have an equalizing effect (negative sign of the coefficient in Column (3)), indicating that the few people who migrated moved away from relatively poor oblasts.

Decomposing inequality by locality (rural, small town, and big city) paints a largely similar picture. As incomes have grown faster in big cities than in smaller cities and rural areas (see Table 1), spatial income disparities have increased, explaining 16 percent of the increase in inequality between 2016 and 2019 (Column (4) in Table 5). Population shifts were inequality-reducing (negative sign of the coefficient in Column (3)), as a small fraction of people moved away from small cities (which had the lowest average incomes in 2016) towards bigger cities.

Labor market developments: Decomposition by socio-economic status household head

Changes in the socio-economic status of the household head explain a significant share of the observed increase in income inequality. Overall, 29 percent of the increase in inequality is due to increased disparities across socio-economic groups, though this is itself the result of two counteracting forces. On the one hand (and as seen earlier), wages have risen substantially faster than pensions, leading to increased income disparities between socio-economic subgroups and hence higher inequality. On the other hand, the share of household heads who are employed has increased between 2016 and 2019 which, given the high relative mean welfare of the employed, has tended to decrease inequality (more people in the higher income group). Given that the first channel dominates, the net result is an increase in inequality across socio-economic groups. Getting more people employed would have a downward influence on inequality.

4. Conclusions

Welfare levels of Ukrainian households have rebounded following the 2014/15 economic and security crisis. Between 2016 and 2019, real per capita incomes grew at 13 percent per year while per capita consumption grew at an annual pace of eight percent. Income and consumption growth were strong across the board, but stronger still for better-off households and those living in big cities. The share of the population below the actual Subsistence Minimum, which we use as a poverty line, decreased by close to 30 percentage points to 22 percent in 2019, but remains higher than in the pre-crisis period. The decrease in poverty was widely shared. According to the most recent data (2019), poverty is highest in rural areas, in households with many children headed by a little-educated person, and in one-person households consisting of a mostly female pensioner. Living in a household headed by a pensioner is a strong correlate of poverty in Ukraine: Accounting for 30 percent of all households, they account for 46 percent of all the poor.

While the household welfare trends observed between 2016 and 2019 are undoubtedly positive, there are concerns on the sustainability of its drivers. Household welfare gains driven by increases in pensions and minimum wages can only be sustained as long as fiscal space is available. Ukraine has a history of

boom and bust, whereby pro-cyclical economic policies boost household welfare during periods of expansion and amplify household income contractions during downturns. Escaping from this boom-and-bust cycle will require adopting sound fiscal policy and completing key reforms to support economic growth and private sector job creation, while continuing to improve the efficiency of social spending and implementing adopted health and education reforms.

Annex 1: A 2019 Poverty Profile

Household Characteristics	Subgroups	Poverty Headcount Rate	Population share	Poverty share	Mean monthly income per AE (UAH)
	Total	22.0	100	100	5,690
Region	West	20.7	26.4	24.8	5,647
	Center	20.9	34.0	32.3	5,995
	East	23.3	14.8	15.6	5,350
	South	24.2	24.8	27.2	5,518
Location	Big City	14.8	39.0	26.2	6,342
	Small town	25.7	27.6	32.3	5,446
	Rural	27.4	33.2	41.3	5,127
Characteristics of household head	Female, 18-29	32.3	3.3	4.9	5,429
	Female, 30-58	18.1	27.2	22.9	5,624
	Female, 59 and over	31.3	19.4	27.7	5,036
	Male, 18-29	24.5	3.3	3.6	6,211
	Male, 30-59	17.6	34.2	27.3	6,152
	Male, 60 and over	24.8	12.6	14.2	5,516
Education of the head	Higher education	14.1	51.6	32.3	6,362
	Secondary education	30.7	48.3	67.0	4,975
	No education				
Social-economic status household head	Wage-employed	12.5	53.8	30.6	6,339
	Self-employed/employer	26.0	4.1	4.9	6,166
	Retired	32.9	30.8	46.1	4,805
	Other	36.0	11.3	18.4	4,831
Household size	1	31.6	7.9	11.3	5,452
	2	19.7	26.4	23.4	6,241
	3	18.9	31.6	26.9	5,719
	4	25.4	20.5	23.4	5,077
	5 or more	24.6	13.5	15.0	5,222
Number of children 0-18 years old	0	20.1	48.3	44.2	6,245
	1	19.0	37.9	32.7	5,335
	2	35.3	12.4	19.9	4,795
	3 or more	50.1	1.4	3.8	3,984

| Type of household | Household with children | 23.4 | 53.0 | 56.1 | 5,207 |
| | Household without children | 20.6 | 47.0 | 43.9 | 6,232 |

Note: Poverty based on the actual SM of UAH3,661 per month in 2019. Source: HLCS, 2019. WB staff calculations

Annex 2: The profile of the new poor

The graphs below compare the profile of the poor in the absence of the COVID-19 shock with the profile of the new poor. The new poor are defined as people living in households that would be above the poverty line in the absence of COVID but are pushed below the poverty line due to the COVID-19 shock. Compared to the "traditionally poor", the new poor are:

- More likely to be urban (big cities and small towns)
- Far more likely to live in households headed by a (previously) wage-employed person
- More likely to live in large households
- Slightly more likely to live in the western and eastern oblasts, less likely to live in southern oblasts

Figure 14. The new poor are more likely to live in big cities

(Distribution of the poor by locality)
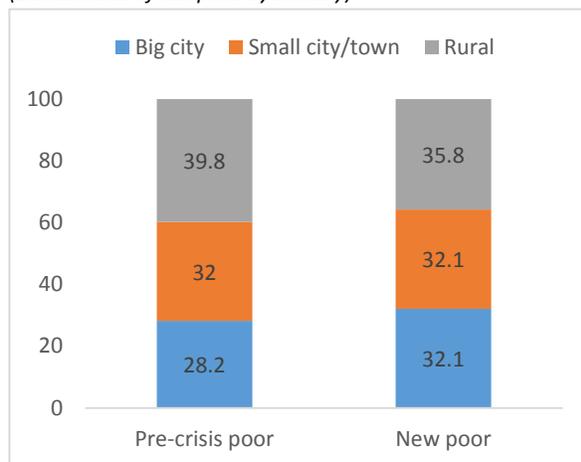
Source: WB staff simulations based on 2018 HLCS.

Figure 15. The new poor are more likely to live in households headed by wage-employed person

*(Distribution of the poor by socio-economic status HH head)*
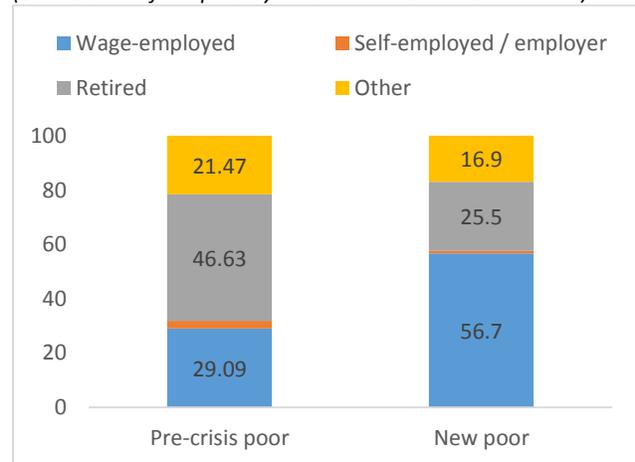
Source: WB staff simulations based on 2018 HLCS.

Figure 16. The new poor are more likely to live in large households

(Distribution of the poor by household size)

Figure 17. The new poor more likely to live in western and eastern oblasts

(Distribution of the poor by region)
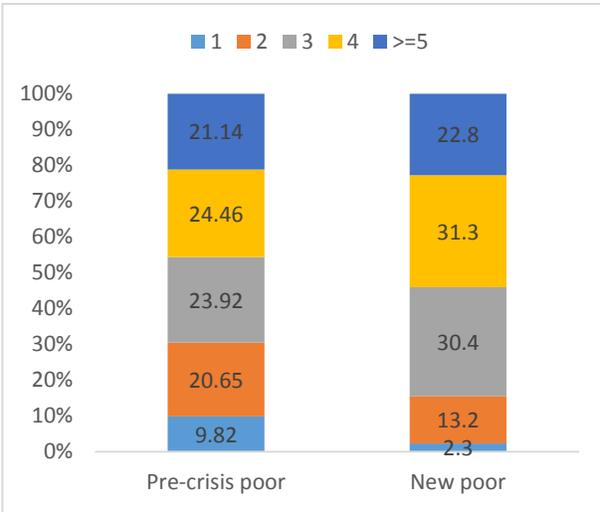
Source: SSSU website, 2020.
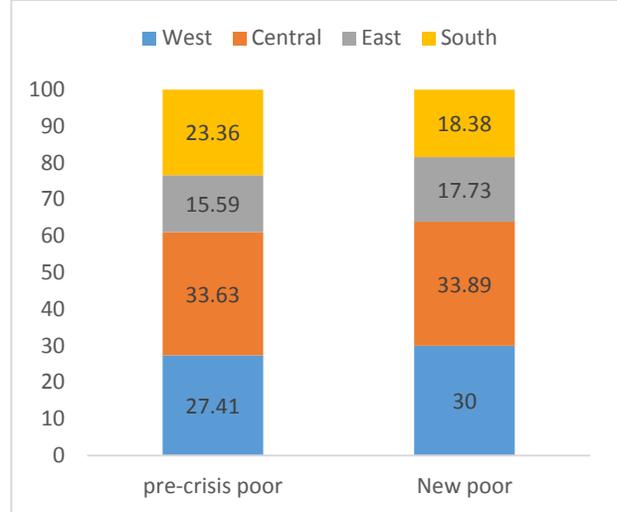
Source: SSSU website, 2020.

Annex 3: The decomposition of the inequality change

We use the mean logarithmic deviation (MLD) as inequality measure, I. Following Jenkins (1995), we decompose the change in aggregate inequality, ΔI, into four components to analyze the impact of structural changes on the trend in income inequality. Assume the population of size n is divided into K mutually exclusive sub-groups. Suppose the kth group has n^k members, and group mean income μ^k. The following definitions are useful for the decompositions:

$$v^k \equiv n^k/n \quad \text{the population share of group } k.$$

$$\lambda^k \equiv \mu^k/\mu \quad \text{group } k\text{'s mean income relative to the population mean.}$$

Table : Decomposition of Mean logarithmic deviation (MLD)

$$I = \frac{1}{n}\sum_i \log\left(\frac{\mu}{y_i}\right) = \sum_k v^k I^k + \sum_k v^k \log\left(\frac{1}{\lambda^k}\right)$$	
applying the difference operator to both sides:	
$$\Delta I = I_{t+1} - I_t = \Delta\left(\sum_k v^k I^k\right) + \Delta\left(\sum_k v^k \log\left(\frac{1}{\lambda^k}\right)\right)$$	
(1) $\displaystyle = \sum_k v_{t+1}^k \, \Delta I^k$	intertemporal changes in within group inequality,
(2) $\displaystyle + \sum_k I_t^k \, \Delta v^k$	effects of changes in the population shares of the groups on the within- and between-group inequality components,
(3) $\displaystyle + \sum_k \log\left(\frac{1}{\lambda_t^k}\right) \Delta v^k$	
(4) $\displaystyle + \sum_k v_{t+1}^k \, \Delta\log\left(\frac{1}{\lambda^k}\right)$	changes in the relative incomes of the groups.[15]

References

ILO (2019). Future of the Ukrainian Pension System. Geneva: International Labor Organization.

World Bank (2020). Ukraine Macro Poverty Outlook (October 2020). Washington DC: The World Bank.

Jenkins, S.P. (1995). "Accounting for Inequality Trends: Decomposition Analyses for the UK, 1971- 86". *Economica* 62(245): 29-63.

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[15] The aggregation weights are final period values for v^k and base period values for I^k and λ^k. An alternative decomposition switches around these final and base period values (Mookherjee & Shorrocks, 1982). Mookherjee & Shorrocks (1982) and Jenkins (1995) adopt a compromise and use an average of base and current period values.

Mookherjee, D. and Shorrocks, A. (1982). "A decomposition analysis of the trend in UK income inequality". The Economic Journal 92(368): 886-902.