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Poverty, Vulnerability, and Household Coping Strategies during the 2015–16 Recession in Belarus

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Abstract

This paper examines the impact of the recent recession in Belarus on poverty and broader measures of household welfare and compares the recent recession episode to previous economic crises in Belarus. The paper constructs a measure of vulnerability to poverty, based on an estimated probability of falling below the national poverty threshold not exceeding 10 percent, which is estimated for each year of the household survey data between 2014 and 2017. The analysis finds that the recession of 2014–16 was qualitatively different from earlier recent crisis episodes (2008–09 and 2010–11) in that it affected low-income households to a much greater extent, and the negative welfare effects lingered. The paper also documents that although the recession did not result in a substantial increase in absolute poverty by the official definition, it led to a considerable increase in the share of households that are vulnerable to poverty. The greater degree of vulnerability is also evident from the growing share of the population that faced a risk of poverty within a year (going in and out of poverty). Household types for which the impact of the recession was most pronounced are households with multiple children, single-parent households, residents of rural areas, as well as those who were not employed, partly employed, or low-skilled employees. Coping strategies that were employed by the population were largely related to reducing expenditures and, among vulnerable households, food expenditures in particular, as well as drawing down on their savings.

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Poverty, Vulnerability, and Household Coping Strategies during the 2015–16 Recession in Belarus

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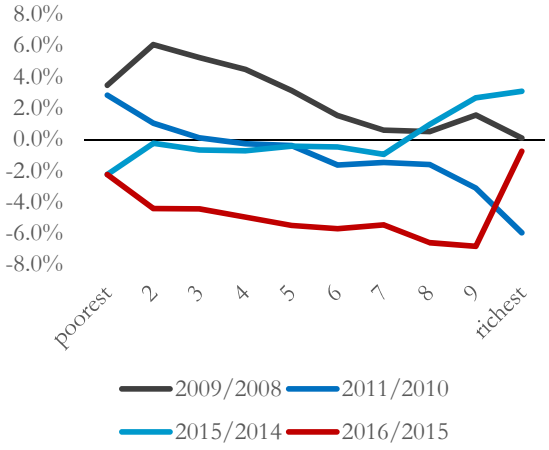
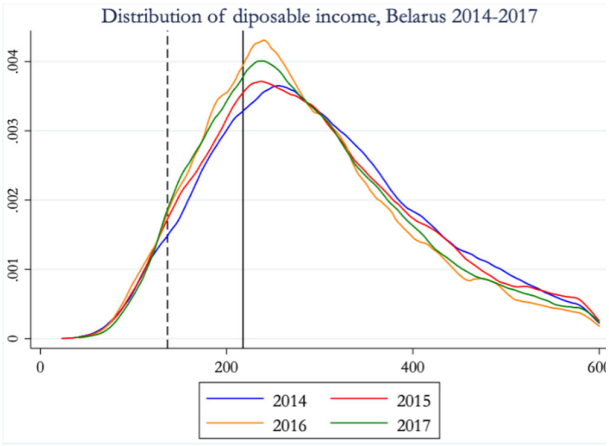
1. Introduction

Belarus experienced three major crises recently: an echo of the Great Recession in 2009, an extensive currency crisis in 2011 and a deep recession in 2015-2016 triggered by the recession in its major trade partner, the Russian Federation. Those crises affected the Belarusian population differently. In 2009 and 2011 the declines in real income were negligible (Bornukova, 2012), and affected mostly the richer deciles (Cojocaru and Matytsin, 2017). In 2015-2016 the situation changed: real incomes dropped significantly, and the low-income deciles were affected as much as (and in the early part of the recession, more than) the higher income households (Figure 1). As a result, the distribution of the population substantially shifted towards lower income cohorts, implying the population's increased vulnerability to poverty.

Figure 1: Changes in real disposable income during the recent crises, by decile



(a) Growth incidence curves by deciles for crisis years



(b) Income distribution by BYN in prices of 2014

Note: Disposable income is defined as total expenditure + in-kind income + privileges. Vertical lines are average poverty lines for 2014–2017: dash line – official poverty, solid line – moderate poverty.
Source: Authors' calculations based on annual HBS.

Meanwhile, social policy in Belarus lacks automatic stabilizers as there are few measures designed to support the population during an economic crisis. Most of the social support is transferred to the population through the system of pensions and child-related benefits, that are pro-cyclical in nature, being directly or indirectly linked to the wage level. As the system of social support to the unemployed is rudimentary, only provisions of the targeted social assistance are available for households affected by negative economic shocks as a direct means of support from the state. As a result, a deep long-term recession is linked with a high risk of increasing poverty. Notably, the official poverty rate increased only marginally throughout the crisis. However, as this paper will document, the degree of vulnerability of households did increase considerably.

The purpose of this paper is to provide a detailed account of the welfare effect of the most recent recession, which appears to have affected households differently, and to a much greater degree than the previous three economic crises. The rationale for undertaking this analysis is to aid our understanding of how future negative shocks may affect household welfare in Belarus, and which coping strategies households have at their disposal, as the reform agenda remains unfinished and the economy remains vulnerable to external shocks.

We start by documenting the fact that real incomes during the crisis declined more for those socio-economic groups which had lower incomes before the crisis. Households in rural areas and small cities, people without higher education, and households with multiple children are among the most affected by the crisis. Since the official poverty measure does not capture this fact well, we construct the vulnerability measure defined as over 10 percent risk of getting into poverty. We show that during the crisis the share of the vulnerable almost doubled from 16.1 percent to 29.4 percent.

We go on to analyze the dynamics of subjective financial well-being and coping strategies as reported by the households. People mostly cite inflation, decrease in salaries and loss of employment as major reasons for the well-being deterioration during the crisis. Cutting expenditure is the most popular reported coping strategy, and only few are relying on government or attempting to find new sources of income. We explore the expenditure data to verify that cutting expenditure was an almost universal response to crisis. The bottom income deciles mostly cut expenditure on food (possibly replacing it in part with in-kind income); while the top deciles were able to cut down expenses on purchase of durable goods. Other households relied to a large extent on cutting their consumption of utility services. Finally, we show that many households not only reduced their expenditure on savings during the crisis but also consumed their previously accumulated savings. However, savings as a coping mechanism are available for the middle-class, not for the mostly affected bottom income deciles.

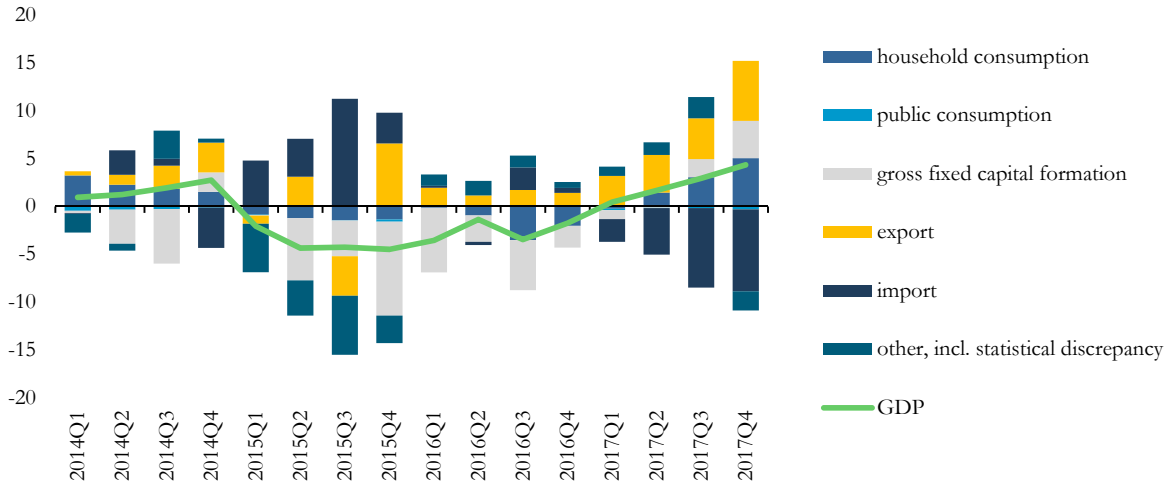
The rest of the paper is organized as follows: section 2 presents a brief overview of the recent macroeconomic environment, while section 3 looks at how the macroeconomic developments translate into household income dynamics and composition during the recession. Section 4 reviews the poverty dynamics in Belarus and develops a concept of poverty vulnerability, based on the probability of falling into poverty. Section 5 analyzes household self-reported well-being changes and coping strategies, as well as presenting an analysis of expenditure and saving changes during the crisis. Some concluding remarks are outlined in section 6.

2. Macro-Economic Environment

Belarus suffered a series of economic crises during the last decade. Triggered by external shocks, they were rooted in overheated domestic demand, while the absence of adjustment of economic policy led to the recurrence of crises. However, the crisis of 2015-2016 differed in this regard from the previous ones. This time economic authorities pursued a policy of macroeconomic stabilization, which allowed them to balance external demand and curb inflation. This revision of economic policy also implied a sluggish economic recovery as long-term economic growth rates are undermined by structural weaknesses of the Belarusian economy. As a result, the effect of the 2015-2016 crisis and post-crisis recovery on the welfare of the population differed significantly from the previous crisis events.

The recession of 2015–2016 resulted in the contraction of domestic demand. The macroeconomic adjustment to the new environment took place largely via a reduction in investments. Falling economic activity, however, also caused a decrease in household consumption. The main driver of economic growth during the post-recession period was the external sector. On the one hand, falling domestic demand led to a reduction of imports. On the other hand, the real devaluation of national currency and improved external environment stimulated export growth. As a result, it was export-oriented businesses that supported economic recovery in the beginning of 2017. Later, in the second part of 2017, recovery was also supported by domestic demand. There was an increase in investments, on the back of local budget expenditure, and household consumption (Figure 2).

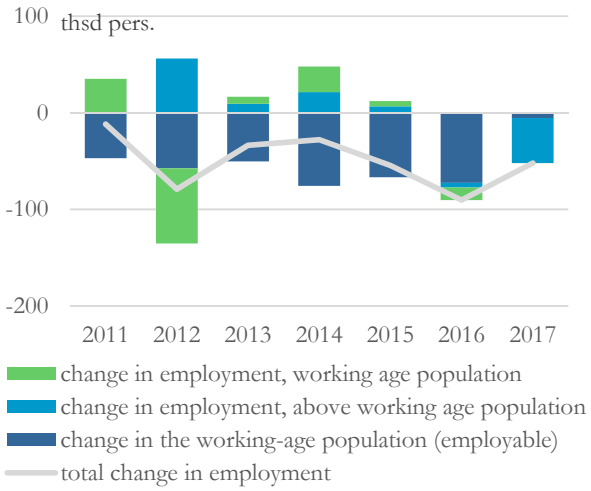
Figure 2: Decomposition of economic growth (Q12014 – Q42017)



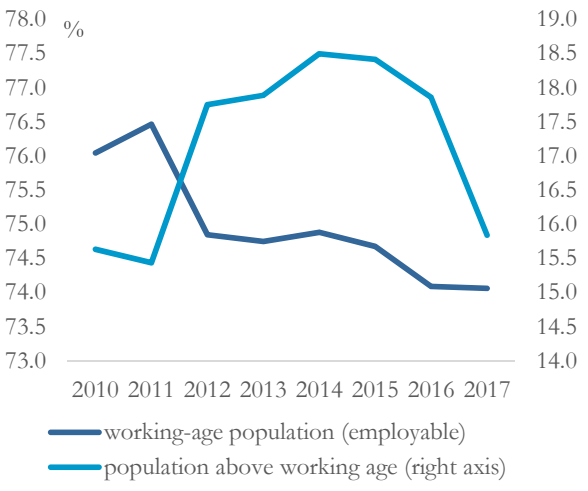
Source: Shymanovich, Shcherbina, Chubrik (2018).

The fall in household consumption in 2015–2016 was related to the developments in the labor market. One characteristic of the recession was falling wages – a dynamic that was observed for more than two years starting with the second half of 2014. In addition, the economic crisis was accompanied by falling employment, which was related, in part, to demographics, as the share of working age population in Belarus was shrinking. Prior to the crisis this trend was offset by the growing economic activity of the population of pensionable age. The economic recession revised this trend and accelerated the employment contraction over and above the demographic factors. In particular, a sharp contraction of employment occurred in 2016, as the influence of demographic factors was exacerbated by the reduced employment rate of the working-age population. In 2017, the demographic factor was offset by the pension age increase. The flipside of the pension age increase was a fall in economic activity of the pension age population. At the same time, the employment rate of the working-age population remained rather stable during the recent crisis. As a consequence, the unemployment rate was only 5.8 percent[3] at the peak of the crisis in 2016, and it declined to 5.6 percent in 2017.

Figure 3: Employment dynamics of the working age and above working age population



(a) Change in employment, thsd pers.



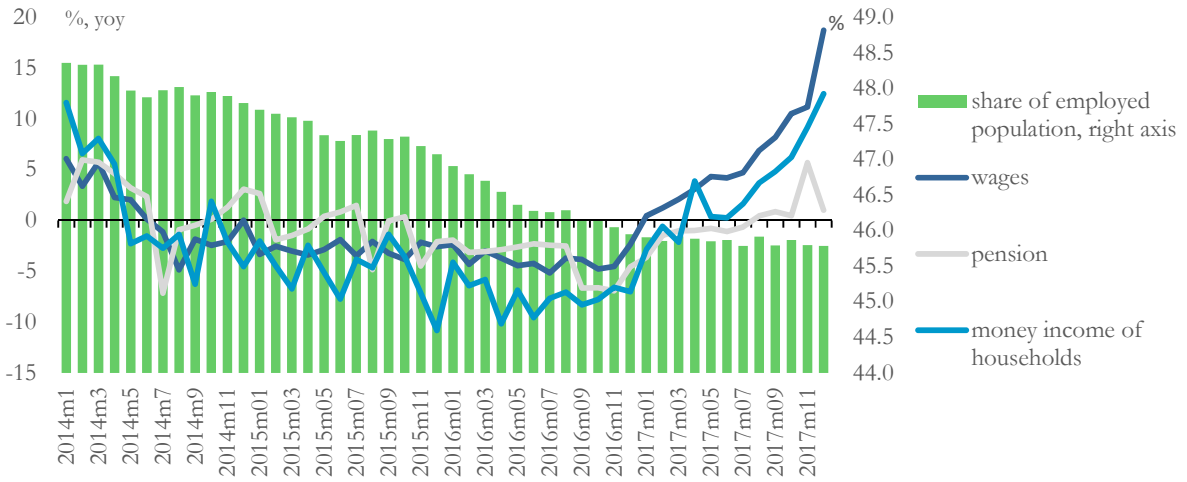
(b) employment rate, %

[3] Unemployment estimates from the labor force survey according to ILO methodology are only available since 2016 in Belarus, and as such we are not able to compare with the pre-crisis levels.

These trends of wages and employment reduction were not uniform across the territory of Belarus. In Minsk, the crisis-adjustment occurred through employment more than in other parts of the country, while local labor markets outside Minsk relied more on wage cuts (Chubrik, 2019).

The negative effect of labor market trends on cash incomes (Figure 4) of households was partly offset by public transfers that are less subject to the volatility of the business cycle. Real pensions as well as social benefits were falling at much lower rates than wages. The flipside of this rigidity was a much lower pace of recovery of pensions in 2017 in comparison with the wages. In general, wages grew very rapidly in the second half of 2017, and it was only partly related to the economic recovery. Another factor determining the rapid increase in wages was a short-term stimulation of the economy that targeted average wage levels of BYN 1,000 by the end of the year (Kruk, 2018).

Figure 4: Employment and cash income of households



Source: Shymanovich, Shcherbina, Chubrik (2018)

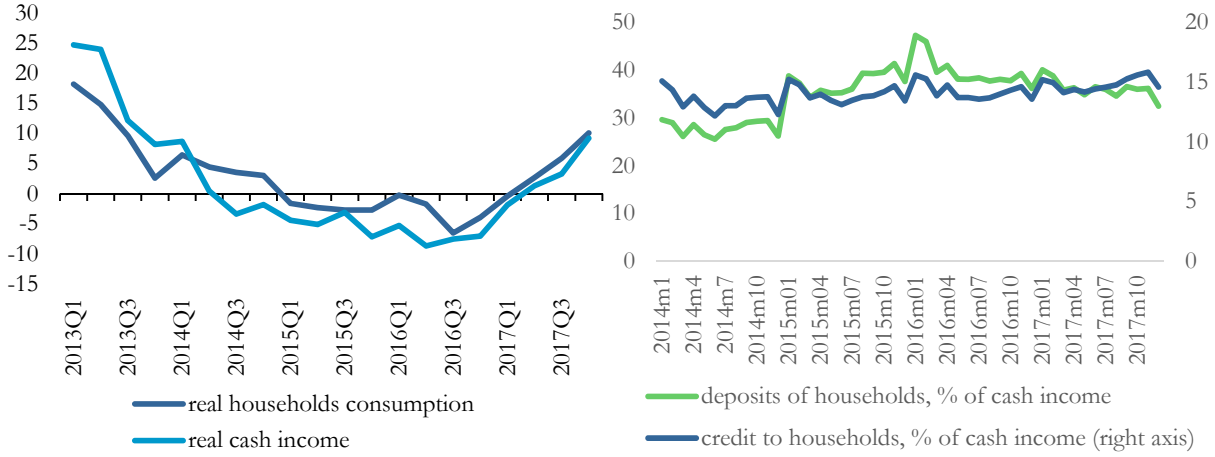
However, the dynamics of household incomes do not correspond fully to the dynamics of household consumption (Figure 5). The scale of consumption reduction during the crisis years was much lower than the scale of income reduction, and it started with a half-year delay. This difference can be attributed to savings behavior. The volume of bank deposits stopped growing in the second half of 2015 and steadily diminished afterwards if measured in relation to the cash income of the households. The spike at the beginning of 2016 is explained by currency exchange rate movements: as most of the deposits were denominated in US dollars, the depreciation of the national currency was reflected in their growth if measured in relation to incomes in Belarusian rubles.

An additional piece of evidence suggesting that households used up their savings during the crisis comes from the currency market data. In 2015, households became net sellers of foreign currency, selling US$130 million (for comparison, households bought US$1,385 million in 2014). This tendency continued in 2016 and 2017, when households sold US$1,895 million and US$1,759 million, respectively, according to the National Bank of Belarus. The currency sold may have come from cash and deposit savings as well as from remittances. Since the majority of remittances to Belarus come from Russia, and Russia also experienced an economic crisis following a major devaluation in 2014, remittance inflows to Belarus in 2015 and 2016 dropped to US$932 million and US$937 million in 2015 and 2016 compared to US$1,231 million in 2014 (World Bank, 2019).

Furthermore, the faster recovery of consumption in comparison to income is believed to be supported by consumer lending. Chubrik (2018) argues that consumer lending accounted for 1.2–1.5 percentage points

increase of household consumption in the second to fourth quarters of 2017. Consumer lending in 2017 was supported by simplified procedures of applications for consumer loans, as well as falling interest rates.

Figure 5: Difference in dynamics of consumption and income: role of savings and loans

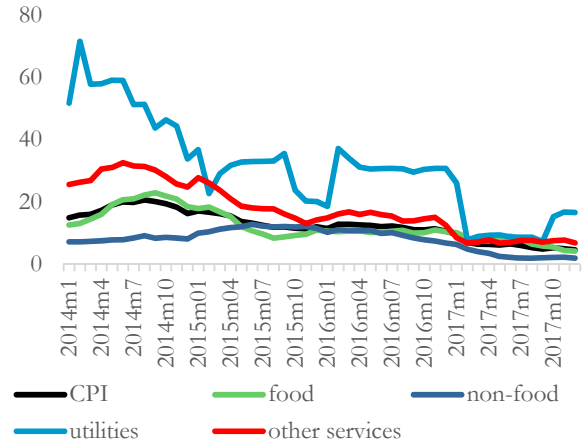


(a) consumption and income, growth rates, % yoy (b) households savings and credit

Source: Belstat, NBB, own estimates.

The reduction of interest rates in 2017 was a result of the balanced macroeconomic policy that was run by economic authorities during the period of stagnation. It resulted in inflation rates that were unprecedentedly low for Belarus (Figure 6). Moreover, overall growth of consumer prices in Belarus in 2015–2017 was to a large extent determined by the increase in the state regulated utility tariffs – part of the policy aimed at increasing cost coverage by tariffs, which was implemented very gradually due to potential negative effects on vulnerable groups of the population (Bornukova, Chubrik, Shymanovich, 2017).

Figure 6: Inflation rates, % yoy



Source: Own estimates based on Belstat data.

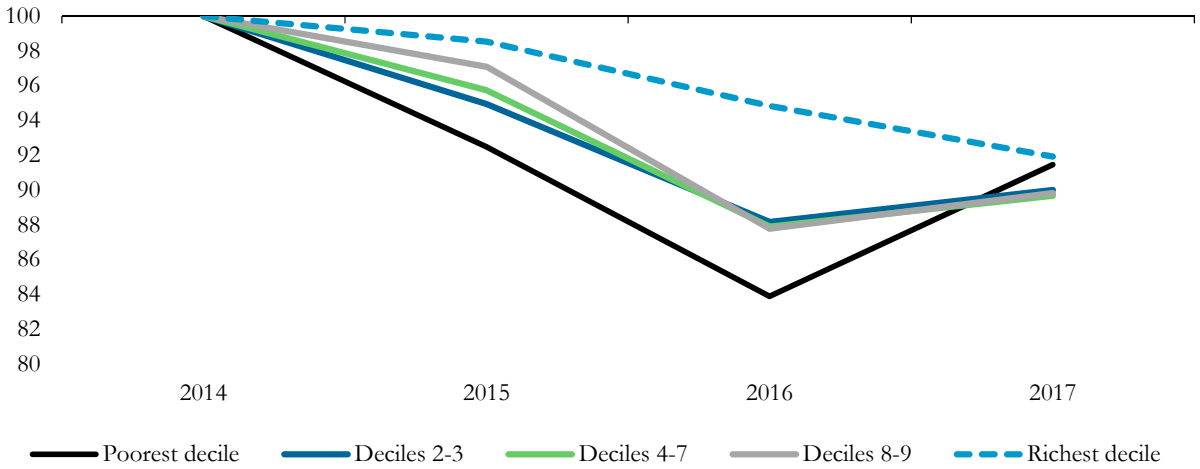
3. Cash Income and Poverty Dynamics

3.1. Cash income

As we noted in the previous section, the 2015-2016 crisis was different from the previous 2009 and 2011 episodes. Inter alia, one of the key differences manifested itself in the fact that the latest recession affected the poorest deciles the most, while higher income households suffered welfare losses to a smaller degree, and later into the crisis. Figure 7 illustrates this point in more detail. It shows the evolution of real cash income (which includes all types of cash incomes like earnings, dividends, government transfers and other sources)

relative to the starting point of 2014, which is normalized to 100. As we can see, the poorest decile indeed experienced the sharpest drop in real cash income, which also came at the very beginning of the crisis. The poorest decile was also the first to recover from the crisis, and the recovery appears to be quite rapid. Deciles 2-9 were also heavily affected by the crisis, and did not manage to recover fully by the end of 2017. The richest decile, by contrast, experienced the least income decline during the crisis, and still no recovery in the second part of 2017.

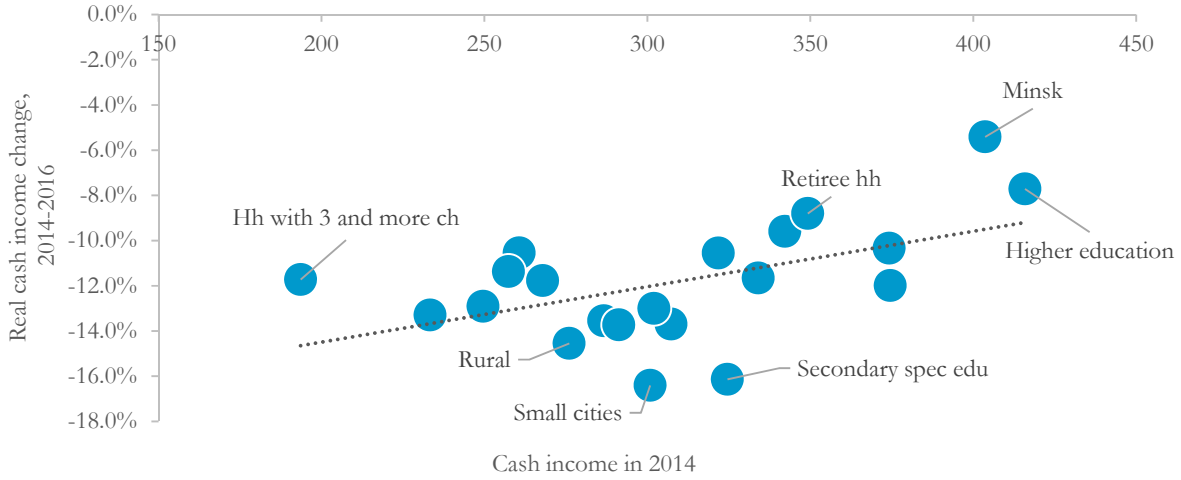
Figure 7: Cash income by deciles of disposable income, in real terms, 2014 set to 100



Note: Cash income measured in real 2014 roubles per capita, with the 2014 level set to 100.
Source: Authors' calculations based on quarterly HBS.

Consider Figure 8, where each circle represents a socio-economic group as defined through residence, education, age, labor market status and household composition. As we can see, income changes differed significantly for different socio-economic population groups. There is also a positive relationship between income growth rates and pre-crisis income levels -- groups with the highest income level in 2014 experienced milder income declines during 2015-2016. For example, the residents of Minsk, one of the highest-income groups, only experienced 5.4 percent income decline. On the other hand, people residing in small cities and rural areas experienced 16.4 and 14.6 percent declines in incomes correspondingly. While people with higher education faced an income decline in the magnitude of 7.7 percent, for people with secondary specialized education the decline was 16.1 percent.

Figure 8: Real income change during crisis (2014-2016) for major socio-economic groups positively depends on initial level of income

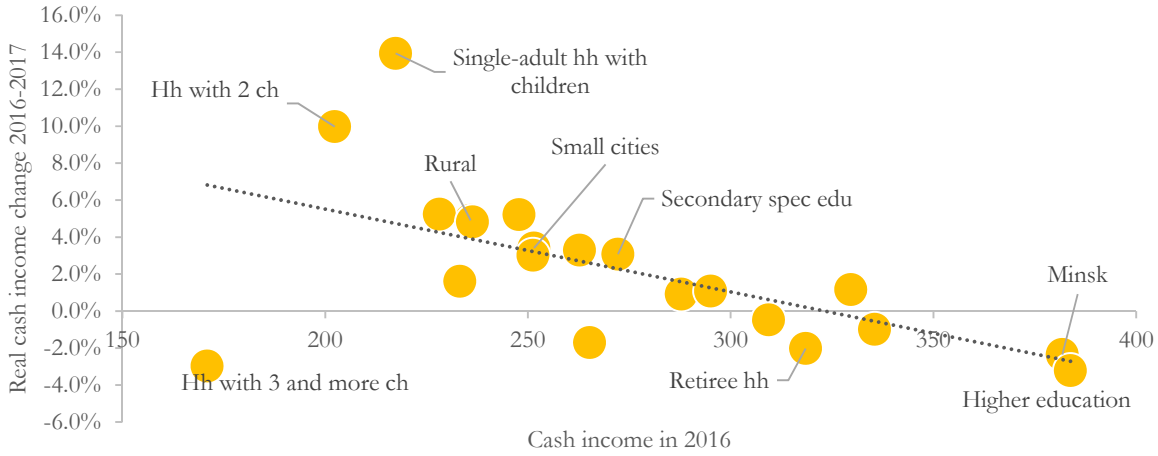


Note: Cash income and change in cash income are measured in real 2014 roubles per capita.

Source: Authors' calculations based on quarterly HBS.

The recovery in 2017 had a different dynamic: incomes of the lower-income groups were recovering faster. There is a negative relationship between real income growth rates in 2017 and real income level in 2016 (Figure 9). The higher-income groups like those with high education levels or residents of Minsk continued to experience income declines in 2017. The lower-income groups, like households with 2 children, single-adult households with children, or residents of rural areas and small cities enjoyed recovering incomes in 2017. The only exception here is households with three and more children that continued to experience income declines even in 2017.

Figure 9: Real income change during recovery in 2017 for major socio-economic groups negatively depends on initial level of income



Note: Cash income and change in cash income are measured in real 2014 roubles per capita.
Source: Authors' calculations based on quarterly HBS.

3.2. Absolute and moderate poverty

The crisis of 2015-2016 had a substantial effect on the well-being of the low-income population, but it was not accompanied by a corresponding increase in the poverty headcount. The official absolute poverty rate increased slightly only up to 5.9 percent in 2017 from 4.8 percent in 2014. Our calculations based on individual budgets of subsistence minimum (MSB) show that the poverty increase started in the 1st quarter of 2015 (from 5.3 percent in 2014), and culminated in the 4th quarter of 2016 (7.4 percent). The scale of the poverty increase was rather similar for all social groups vulnerable to poverty risk: households with children, citizens residing in rural areas, the non-employed, the partly employed, as well as individuals with relatively low levels of education (see Annexes, Table A2). In addition, a substantial poverty risk increase occurred among those who were employed, reflecting the deterioration of the labor market. Social groups that were not affected by the crisis in terms of official poverty rates were the residents of Minsk, persons with high educational attainment, and retirees.

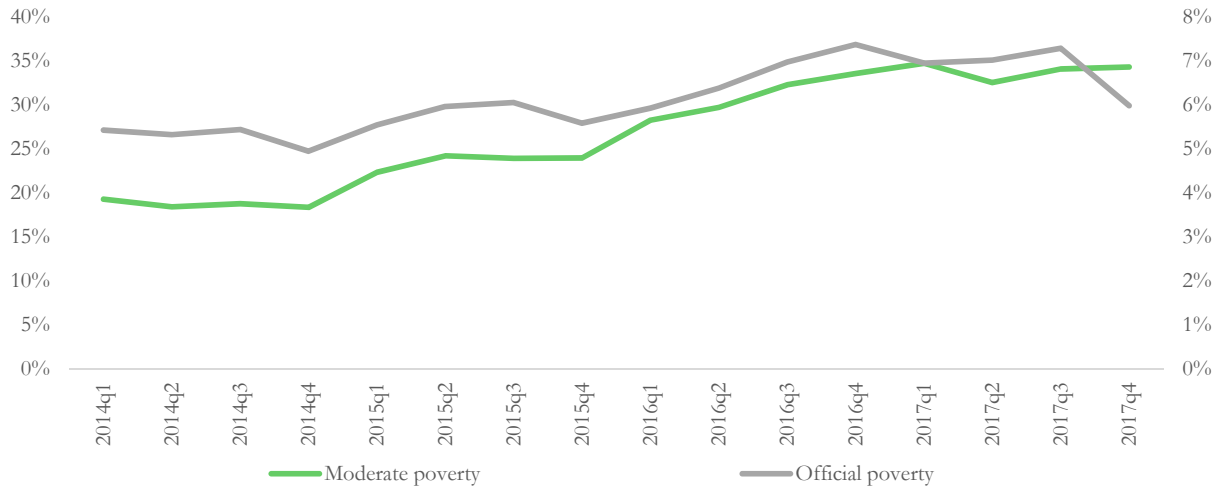
A more notable increase in poverty risk was observed if one considers those who were affected by poverty for at least one quarter within a year. The share of the poverty-affected population grew from 10.5 percent in 2014 to 13.3 percent in 2017 (Figure 10), as there was a substantial increase in the number of those who went in and out of poverty within a year.

In contrast to official poverty measured by the line set at the level of subsistence minimum, moderate poverty rates, which are based on the line equal to minimum consumption budget (MCB), increased substantially during the same period. The minimum consumption budget, unlike the official poverty line, takes into account not only the physical needs, but also the socio-economic needs of the population. In the last quarter of 2017, the MCB was 68 percent higher than the effective official poverty rate (329 BYN versus 196 BYN).

The MCB is used as a criterion of access to certain privileges, in particular privileges on real estate construction or purchase for young families.

In 2017, one-third of the population had disposable incomes below the MCB, compared to 18.7 percent of the population in 2014. The scale of this poverty increase corresponds with the results of the poverty analysis based on the cost of basic needs approach, presented in Mazol (2017). An increase in the risk of moderate poverty was observed for every social group, irrespective of the initial level of poverty.[4] Nevertheless, the magnitude of the increase of the poverty risk was lower than average for residents of Minsk, for the working age population with high educational attainment, and for households without children (see Annexes, Table A3). On the contrary, residents of small cities (defined as cities with a population not exceeding 100,000) faced the highest moderate poverty risk increase. As a result, the level of moderate poverty in small cities caught up with the one of rural areas in 2017.

Figure 10: Official and moderate poverty rates, 2014-2017



Note. See methodological notes on definition of poverty concepts.
Source: Authors' estimates based on quarterly HBS data.

3.3. Vulnerability

While official poverty did not change substantially during the crisis, this need not indicate that the degree of vulnerability to poverty risk or financial distress of the population throughout the recession remained unchanged. For instance, as discussed in the section above, moderate poverty increased significantly during the 2015-2017 crisis. Hence, the share of people whose income is above the official poverty line, but very close to it, is increasing. Second, many households go in and out of official poverty during the year. In 2017, 13.4 percent of the population lived below the official poverty line during at least one quarter, while the official poverty rate for the year was 6.8 percent. In other words, official poverty numbers do not fully reflect poverty risks and income insecurity.

To assess the population poverty risks better, we construct the measure of vulnerability following Lopez-Calva and Ortiz-Juarez (2013). We model the probability of being poor (by the official definition) as a function of certain socio-economic characteristics such as age, residence, socio-economic status, household type, and

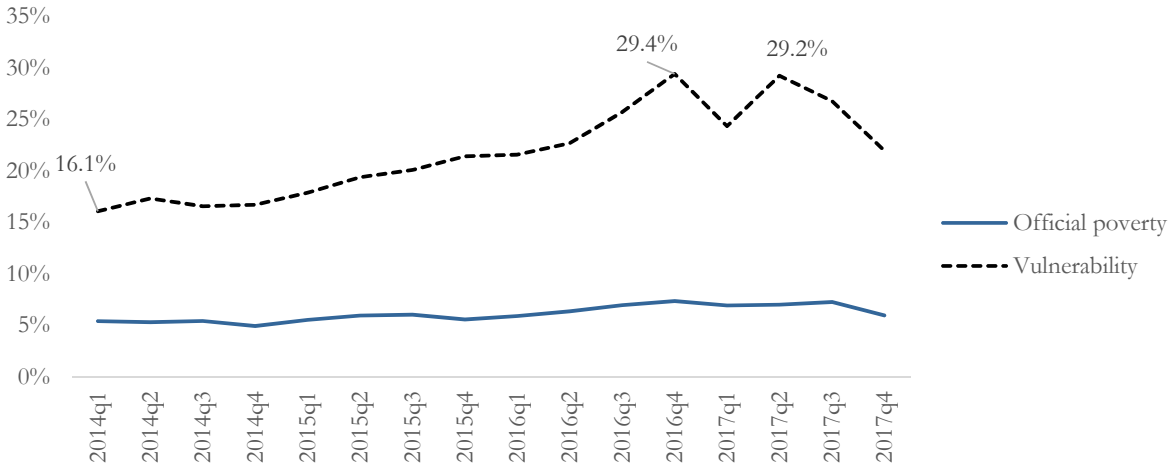
[4] The profile of the population below the moderate poverty risk threshold is broadly similar to that associated with the official poverty threshold and corresponds to the poverty profile revealed in Mazol (2017).

education (see summary statistics in Table A15). Particularly, we estimate the following probit model for each quarter in the 2014q1-2017q4 sample (see Table A16 for the full regression output):

$$Pr(officially\ poor_t = 1) = f_t(residence_t, age_t, occupational\ status_t, household\ type_t, education_t)$$

where f is the cumulative distribution function of the standard normal distribution. Estimation of the equation for each period separately allows certain factors to affect the probability of being (officially) poor differently each period. For example, if the crisis affected the population in rural areas more, the rural residence status would have a greater impact on the risk of poverty in crisis periods. After the probability function is estimated, we define vulnerability as having a probability of being poor in excess of 10 percent.

Figure 11: Official poverty and vulnerability, by quarter, 2014-2017.

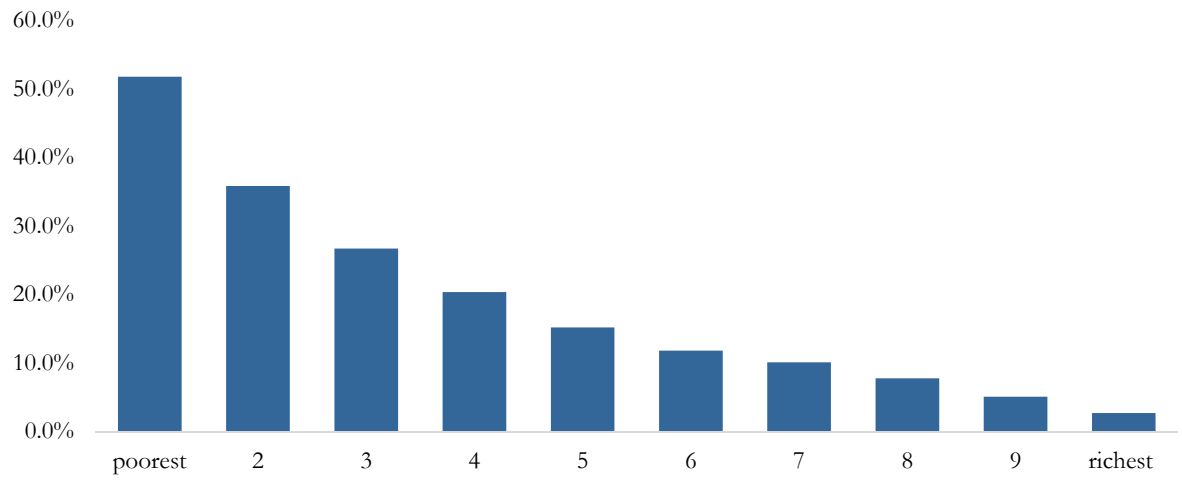


Note: Cash income is measured in real 2014 roubles per capita and converted into an index with the 2014 level set to 100.
Source: Authors' calculations based on quarterly HBS.

The average vulnerability level, as defined above, during the period 2014q1-2017q4 is 21.7 percent (Figure 11). Unlike the official poverty measure, vulnerability grows substantially during the crisis. Vulnerability starts growing at the onset of the crisis from 16.1 percent in the beginning of 2014, and it almost doubles to the peak 29.4 percent in the fourth quarter of 2016. By the end of 2017 the vulnerability level still has not recovered to the pre-crisis levels, suggesting that the crisis has a long-lasting impact on the well-being risks for the population.

The vulnerability measure does not take income levels into account directly, but it is still highly correlated with income. As we can see from Figure 12, vulnerability levels decline monotonically from poorest to richest decile. For the poorest decile the vulnerability level is 51.8 percent, meaning that more than half of those in the bottom decile have a probability of falling into poverty in excess of 10 percent. For the second decile the share of vulnerable population declines to 35.9 percent, and in the top decile it is only 2.7 percent of the total.

Figure 12: Vulnerability rate by decile



Source: Authors' calculations based on quarterly HBS.

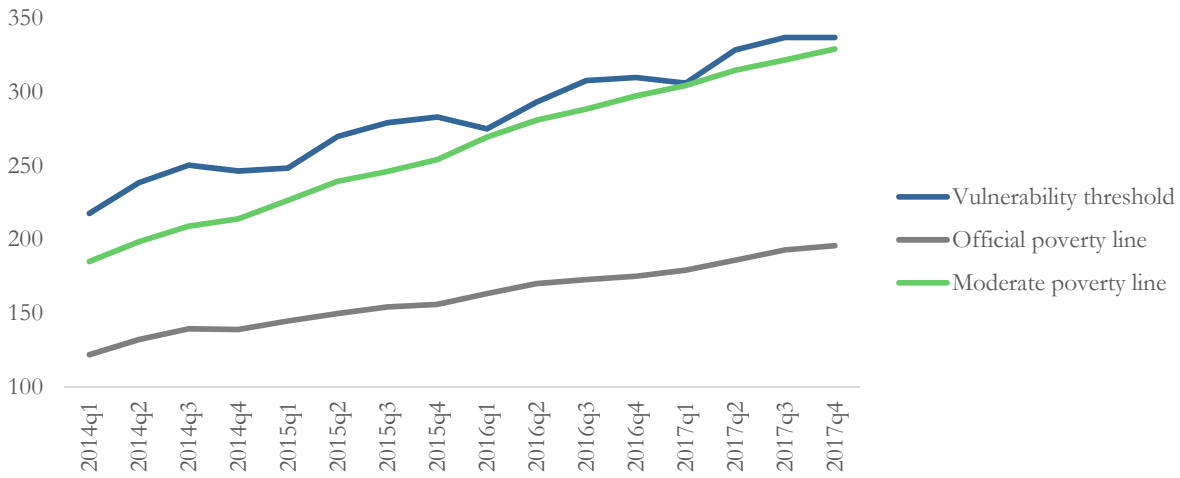
The vulnerability measure allows identifying the most vulnerable groups of population (see Annex, Table A4 for details). Those residing in small cities and rural areas have average vulnerability levels of 27.0 and 37.5 percent correspondingly. During the crisis vulnerability levels in those areas surpassed 40 percent. Despite low pre-crisis vulnerability levels, residents of large cities also saw their vulnerability increase to over 30 percent of that group. Vulnerability is naturally high for those partially employed or non-employed, and it increased to the 50 percent level during the peak of the crisis. Similar vulnerability levels and dynamics can be observed among individuals with low levels of education. Across the age distribution, children are the most vulnerable group, with average vulnerability of 51.3 percent; and going as high as 74.3 percent at the peak of the crisis. Accordingly, households with children, especially households with two children, households with three and more children, and households with children and a single adult also have high vulnerability levels – 42.3, 89.7 and 65.1 percent, going up to 60.7, 90.6 and 72.7 percent correspondingly during the crisis. Retirees and retiree households do not fall into the vulnerable category as the minimal pension is above the official poverty line.

Following Lopez-Calva and Ortiz-Juarez (2013), we also estimate the vulnerability threshold in disposable income. We estimate the following regression (see Table A17 for full regression output):

$$\log(Disposable\ income) = f_t(residence_t, age_t, occupational\ status_t, household\ type_t, education_t)$$

where the set of the explanatory variables is the same as in the probit regression above, and the functional form is linear. We use the average values of the explanatory variables in case the probability of poverty is equal to 10 percent and the coefficients from the second regression to estimate the corresponding vulnerability threshold in the disposable income. The vulnerability threshold can be seen to track, roughly, the evolution of the minimum consumption basket threshold throughout the 2014-2017 period, and, while being a bit higher at the beginning of 2014, by the end of 2017 the monetary values of the MCB and the vulnerability threshold are roughly the same (Figure 13). This can be seen to suggest that the MCB threshold is not just a threshold corresponding to a broader measure of welfare, vis-à-vis the official poverty line; it is also congruent with an empirical concept of vulnerability of falling below the official poverty line, as measured by the probability of falling below the official poverty threshold of above 10 percent.

Figure 13: Vulnerability threshold and the official and moderate poverty lines, current prices BYN



Note. Vulnerability threshold is estimated as an average predicted income for the probability of being poor in the interval between 0.09 and 0.11. Official poverty line varies with the individual's age, the figure represents the average for the HBS quarterly samples.
Source: Authors' calculations based on quarterly HBS 2014q1-2017q4

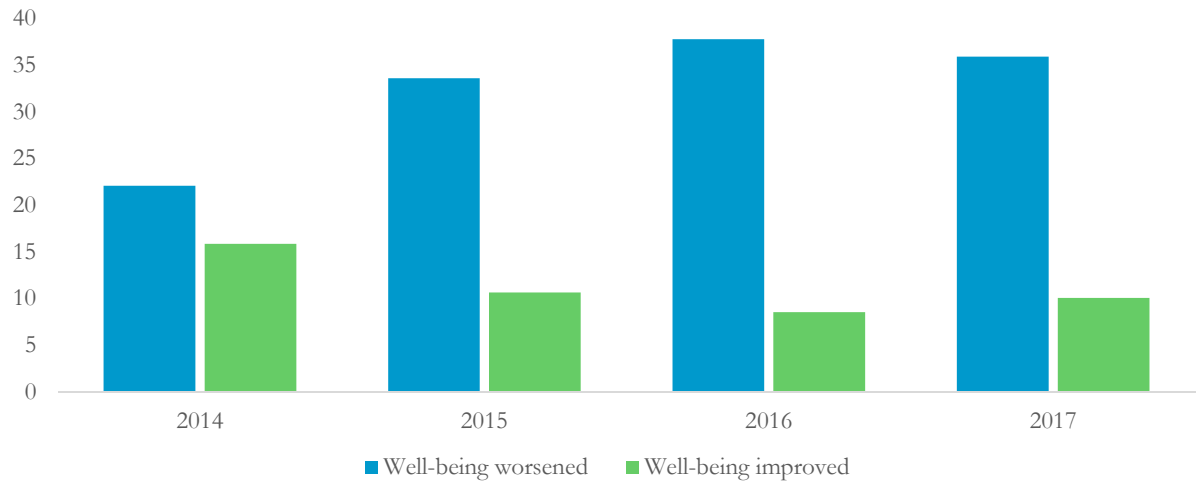
There is some, but not complete overlap between vulnerable and moderately poor groups. We find that 6.7 percent of the population are both vulnerable and moderately poor; these people reside predominantly in rural areas; have low education and typically live in households with children. At the same time, 8 percent of the population are vulnerable but not moderately poor; these are mostly the people with low socio-economic standing (rural area residents; low-educated; partially employed or non-employed) and relatively high incomes (most of them come from the 4^{th}-7^{th} disposable income deciles). Also, 12.6 percent of the population are moderately poor, but not vulnerable; these are mostly employed, working-age people from large cities, who are not predicted to be vulnerable based on their socio-economic characteristics, but fall into moderate poverty due to low wages.

4. Main Reasons for Well-Being Deterioration and Coping Strategies Reported by Households

4.1. Change in the well-being of households and reasons for its deterioration

Households are asked on an annual basis about changes in their well-being over the past year and reasons behind its improvement or worsening. The households' assessment of their financial well-being changes is consistent with the recession-induced increase in the vulnerability discussed in the previous section. Pre-recession, in 2014, 22 percent of households reported that their well-being deteriorated compared to the previous year, but the size of this group increased sharply to 34 percent in 2015 and to 38 percent in 2016. Consistent with these trends, the share of households who report that their well-being improved vis-à-vis the past year fell from 16 percent pre-crisis to only 8 percent in 2016 (Figure 14).

Figure 14: Self-reported well-being changes of the households (share of households, %)

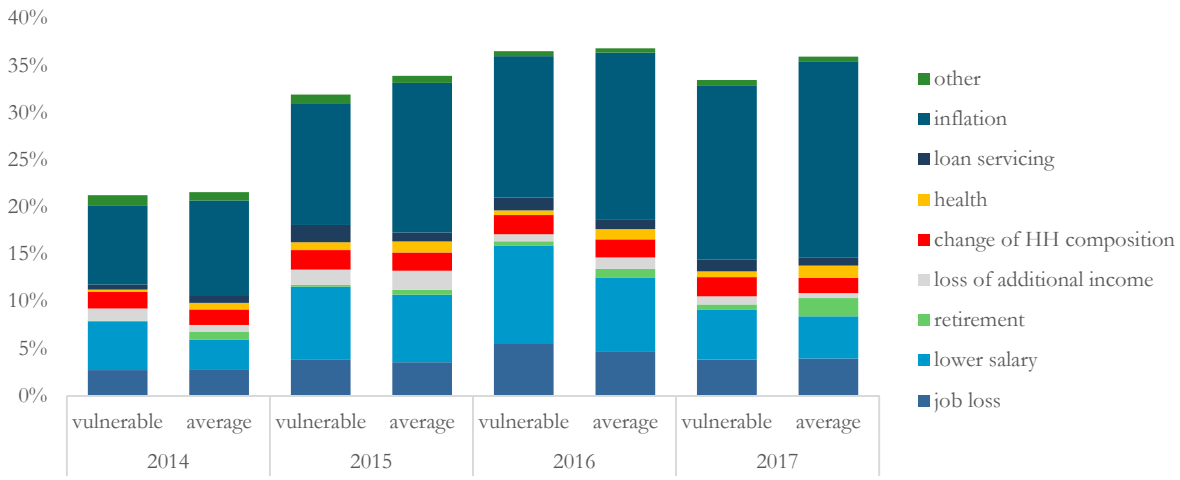


Source: Authors' estimates based on HSS data.

The main factor determining the reduction of the well-being of the population is inflation, which exceeded the growth rate of nominal income and thus led to a reduction in real incomes. However, in 2015–2016 significant contributors to the deterioration of well-being were loss of employment and falling nominal wages, the latter registering a particularly sharp reduction. Post-recession, in 2017, these trends were less pronounced and the inflation-related reduction in real incomes became again the dominant reason of well-being loss for the population. Note, in particular, that this is against the background of relatively low inflation rates in 2017, but wages did not start registering increases until the second half of 2017.

Individuals vulnerable to the risk of poverty appear to be more affected by nominal cuts in wages than the population on average – a tendency that was exacerbated during the crisis, especially in 2016. They also faced a higher risk of losing their job compared to other population groups, although by 2017 these differences leveled off (Figure 15). In other words, the crisis resulted in the increased share of those who lost jobs or suffered a deterioration of terms of employment among vulnerable groups of the population. The effect of the crisis on the poor (based on the official definition) through loss of labor income is even more pronounced. Those below the poverty threshold had a substantially higher than average risk of losing their jobs and of falling nominal wages (see Annex, Table A6). Moreover, the risk of losing one's job among the poor in 2016 was higher than the nominal wages reduction risk, stressing the severity of possible well-being losses for poor households.

Figure 15: Factors of well-being worsening by vulnerable and non-vulnerable groups, % of respondents



Source: Authors' estimates based on HSS data.

There were differences in the way the crisis affected labor income of different social groups:

- Job losses were more commonly reported as a factor of well-being deterioration by individuals with high education levels rather than those with secondary specialized education or lower education levels. On the contrary, the latter faced a higher risk of falling nominal wages.

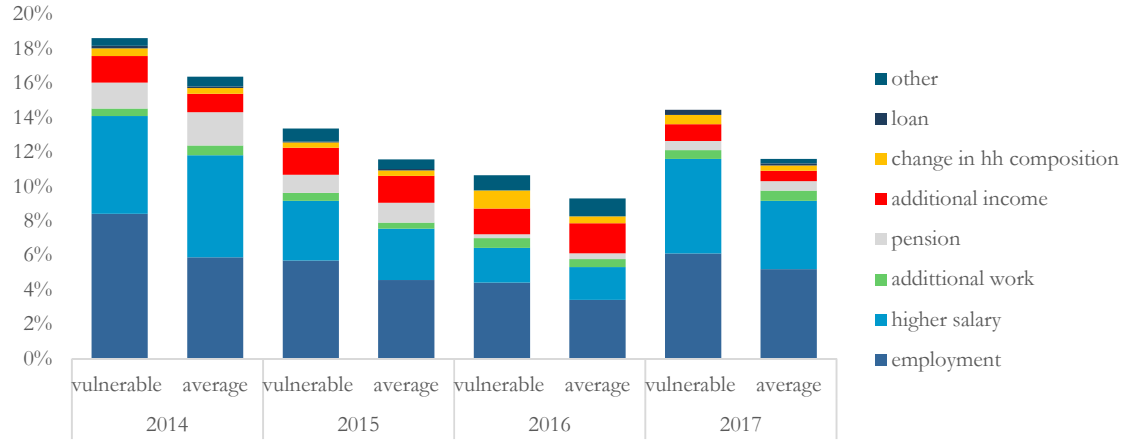
- Those identified as partly employed faced a higher risk of well-being reduction due to loss of job or nominal wages reduction than other social groups. On the contrary, retirees were mostly affected by real decreases in their income (pensions) that took place in 2016 and 2017.

- Households with children appeared to be more exposed to the risk of nominal wages reductions, on average, while single parent households were also vulnerable to inflation, as they have fewer possibilities to optimize their consumption structure compared to larger households with more diversified income sources and larger scale effect.

The economic recovery of 2017 allowed to moderate some of the losses for affected households. Well-being improvements were reported by 11.8 percent of households -- significantly higher than in 2016 (Figure 16). In particular, a larger share of the population reported well-being gains from improved terms of employment and higher wages. Still, the share of those benefiting from wage increases in 2017 was lower than in the pre-crisis period. Moreover, the difference between the share of the population enjoying well-being improvements in 2014 and 2017 is related pensions -- given a slower pace of pensions recovery compared to wages, fewer opportunities for continued employment in retirement age during the crisis, and the increasing pension age, only a small share of the population indicated pension as a key factor behind their well-being improvements.

In general, a higher share of vulnerable households report well-being improvements compared to non-vulnerable households (Figure 16). Most of the difference is related to employment (including better terms of employment). This tendency was observed both pre-crisis and during the crisis years. However, in the post-crisis 2017 year there are also differences related to wages -- 5.5 percent of respondents vulnerable to the risk of poverty reported well-being gains due to wages increase in 2017 (3.4 percent among non-vulnerable households).

Figure 16: Factors behind well-being improvement, vulnerable and non-vulnerable groups, % of respondents

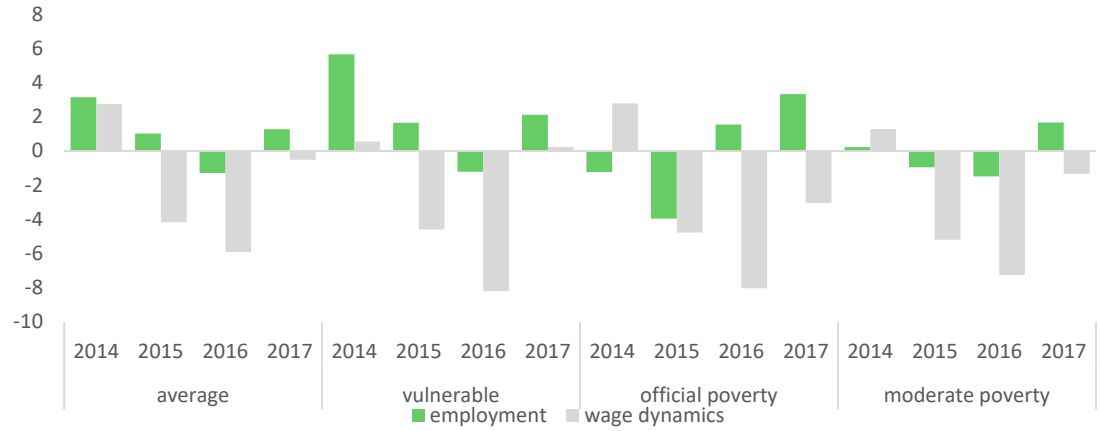


Source: Authors' estimates based on HSS data.

If we aggregate the responses on well-being improvement and worsening related to employment and wages, we can see that the effect of employment during the crisis was quite small, while wage dynamics contributed much to the deterioration of well-being of the population (Figure 17). Furthermore, it appears that those below the poverty threshold, as well as those who are vulnerable to poverty, suffered from falling nominal wages more than the population on average. Among the poor, according to the official definition, there was also a shift towards a more negative assessment of changes in the employment status.

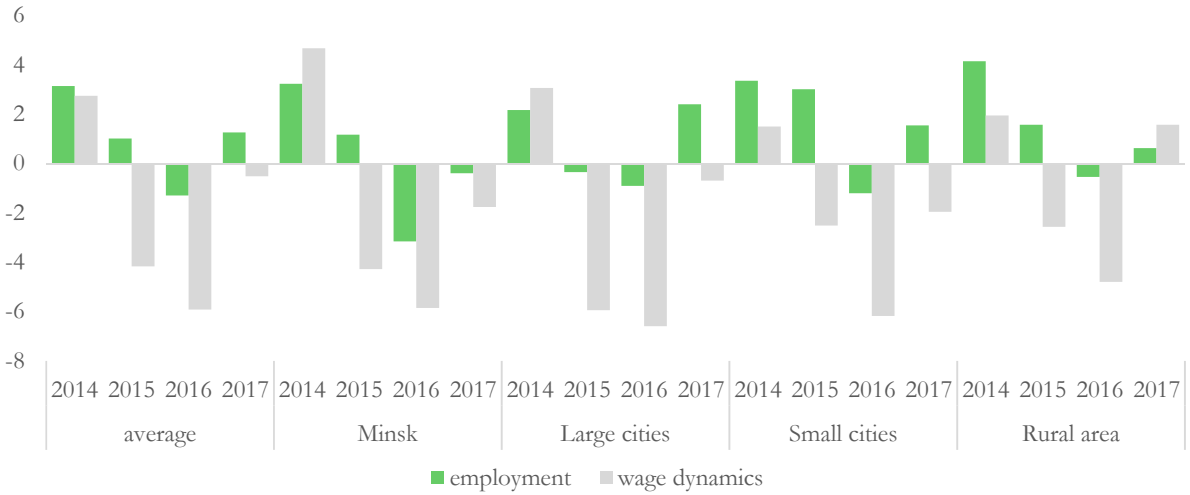
The majority of the differences highlighted above are related to the specifics of regional economic development, and the way the crisis affected different sectors. Industrial and construction sectors suffered most from the crisis, leading to the fall in in economic activities in large cities. While labor market in Minsk is more flexible and reacted through employment reduction, in other cities employers, often state owned enterprises, tended to reduce wages more. In small cities and rural area labor demand was weak prior to crisis therefore it did not affect employment income in these areas that much (Figure 18).

Figure 17: Balance of responses on the positive and negative role of employment and wages in well-being changes



Note. Balance of responses is a difference between the share of population which marked change in wages (employment status) as a key factor of the well-being improvement and the share of population that named change in wages (employment status) a factor of well-being deterioration.
Source: Authors' estimates based on HSS data.

Figure 18: Balance of responses on the positive and negative role of employment and wages in well-being changes by place of residence



Source: Authors' estimates based on HSS data.

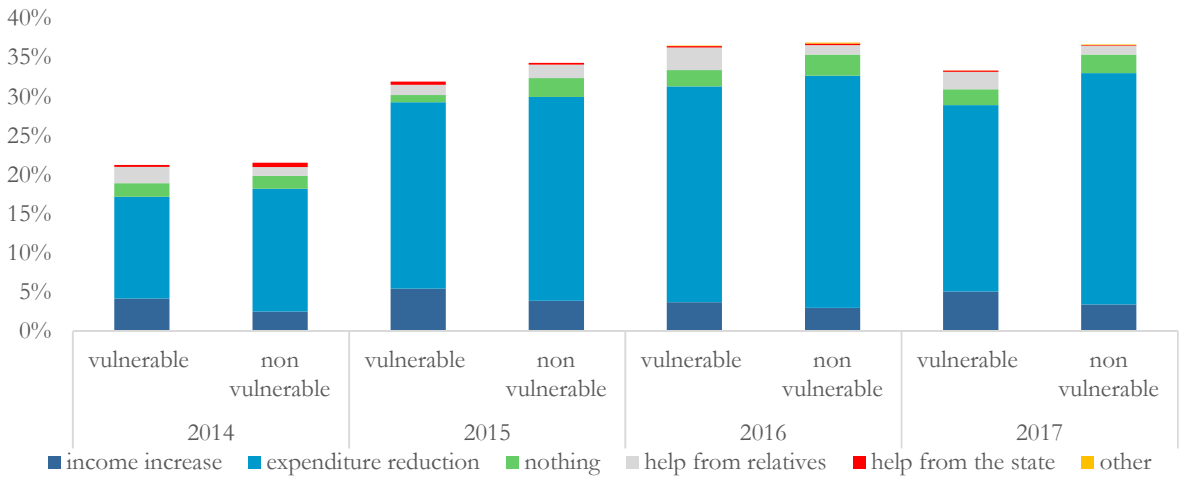
4.2. Reported coping strategies

Respondents who were faced with a reduction in their well-being, were asked what coping strategies they used in order to adapt to the new circumstances. The most common strategy is reducing expenditures. During the crisis, 79 percent of those experiencing a reduction in well-being (29 percent of the population overall) had to cut expenditures.[5] Strategies, related to the search of possibilities of increasing income were employed by only 8.6 percent of those who faced a well-being reduction in 2016 (3.2 percent of total population). They were more common at the beginning of the crisis (employed by 4.2 percent of the population and 12.4 percent of those suffering a worsening of well-being), as employment possibilities were not that scarce, and again became more common with the onset of the economic recovery in 2017. Other strategies, including reliance on help from relatives or the state, are generally not common, and households did not increase their reliance on these coping strategies during the crisis.

Households vulnerable to the risk of poverty appear to rely to a greater extent on coping strategies related to the search of opportunities for additional earnings than the average household (Figure 19). Pre-crisis, in 2014, 19.7 percent of those in the vulnerable group tried to increase their income from employment or self-employment to compensate their worsened well-being. The narrowing labor market opportunities during the recession meant that they had to rely more on expenditure reduction than on active coping strategies, which for low income households can affect their ability to satisfy basic needs and may aggravate their living conditions. Households vulnerable to poverty had to rely also on help from relatives much more often than the average household.

[5] For comparison, 71 percent of those experiencing a reduction in well-being in 2014, and 15 percent of the population overall reported a reduction in expenditures before the recession.

Figure 19: Coping strategies applied by vulnerable and non-vulnerable population, % of the respondents



Note. Only those respondents who reported deterioration of their well-being where interviewed about coping strategies.
Source: Authors' estimates based on HSS data.

There are some differences in the choice of the coping strategies by type of residence or household composition (see Annex, Table A8). For instance, active search for additional income was typical for residents of large cities in 2015 that were affected more than other territories at the onset of the crisis. Another consequence of the negative effects of the crisis in large cities early on was the rapid increase in the share of urban population in large cities cutting expenditures (in small cities this is more pronounced in 2016). In contrast with the urban population, rural households report less well-being deterioration during the crisis and therefore cut expenditures less often.

Across household types, presence of children in the household increases the likelihood of searching for additional income, especially among households with 3 or more children, while at the same time reducing the frequency of relying on cutting expenditures. This could be due to the fact that poverty and vulnerability rates among households with three and more children leave them with only limited possibilities for expenditure reduction and pushes adults towards a more active search for additional employment income. Single parent households are another vulnerable group that tend to rely more on search for additional earnings, and on help from relatives, compared to other households. Retirees, on the other hand, predominantly rely on cutting expenditures, as other strategies are often not available for them. In the next section we explore self-reported coping strategies in detail, exploiting micro data on incomes and expenditures.

5. Effects of Separate Coping Strategies

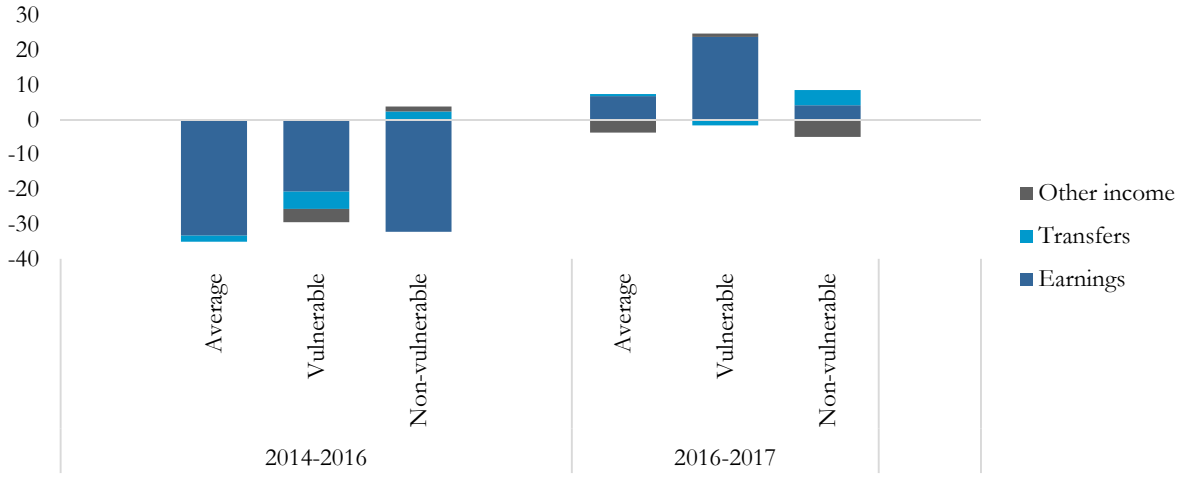
5.1. Non-labor income: Role of public transfers and in-kind income

As we have noted before, the vulnerable and the lower-income population groups were among the most hurt by the crisis. By default these groups are the target for social policy. However, they do not report that they can rely on the state when their financial well-being deteriorates and data on households' income in the form of government transfers supports this thesis. It appears that government transfers did not help mitigate the effects of the crisis.

Over 95 percent of the average decline in cash income in 2014-2016 can be explained by the decline in earnings – wages, entrepreneurial income and other earned income. Government transfers and other types of income (including capital income like rent income and dividends) account for less than 5 percent on average, although they may be more important for certain groups. For those vulnerable to poverty, the drop

in earnings explains only 70 percent of the decline in cash incomes, while falling government transfers in real terms and declines in other income are also quite important (Figure 20). For the non-vulnerable, government transfers and other types of income actually grew during the crisis times. The positive dynamic of other types of income is mainly driven by top income deciles that enjoyed higher dividends during the crisis due to higher interest rates.

Figure 20: Decomposition of real cash income change during the crisis (2014-2016) and the recovery (2017)



Note: Absolute income change is measured in real 2014 roubles per capita. The income change could be explained by both the income dynamics for the vulnerable and non-vulnerable groups and by the change in the composition of those groups from one period to the next – during the crisis poverty risks and the vulnerable group expanded, and it could be the influencing factor for the change in income structure of the vulnerable population.
Source: Authors' calculations based on quarterly HBS.

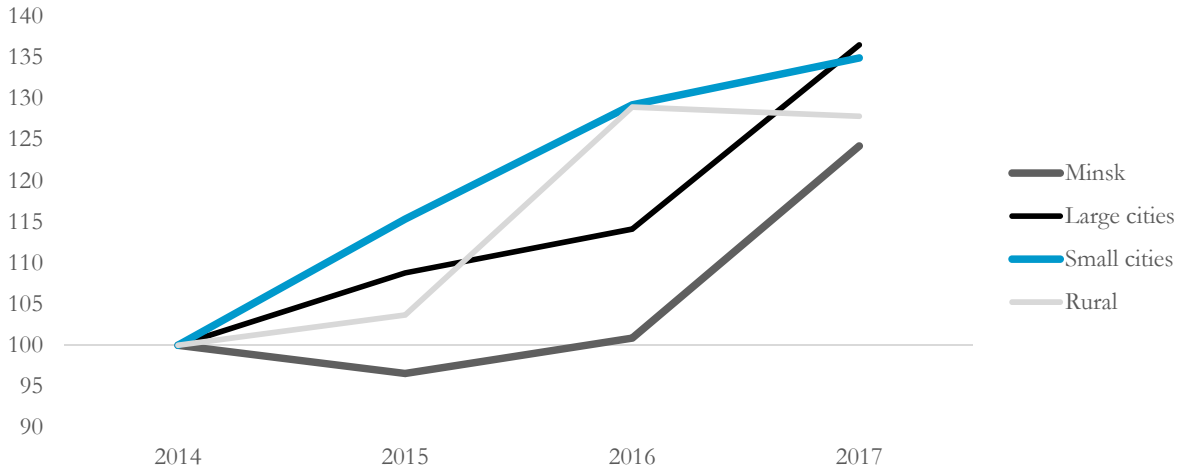
Government transfers did not help vulnerable households to smooth declining incomes during the crisis; moreover, the decline in transfers exacerbated the decline in earnings and other types of income. During the recovery, transfers also did not play a positive role for the vulnerable – the restoration of incomes was predominantly led by earnings and, to a much smaller extent, by other types of income. For the non-vulnerable, on the contrary, other income sources were declining in 2017, reflecting lower interest rates in the aftermath of the crisis.

The reason why government transfers were not able to help smooth declining incomes among vulnerable households is due to the fact that the design of government transfers is mainly age-based, with the two largest programs being age pensions and benefits for children. While these programs contribute significantly to poverty and inequality reduction (Bornukova et al. 2017), they are not designed to react to the crisis efficiently, as they are not needs-based. Moreover, their size depends on the average wage, making them pro-cyclical. The automatic stabilizer programs like the unemployment benefit or the needs-based assistance to the poor exist, but they are small in size and in coverage, hence have very little effect on income smoothing during the crisis. Those below the official poverty line can apply for the needs-based, targeted assistance to the poor. But it is available for a limited time only (often it is in the form of one-time assistance, or at maximum could last for six months during a given year), and the size of the assistance is quite modest. For example, in 2016 only 3 percent of the population were covered by the needs-based assistance to the poor, and the average monthly size of the assistance was roughly 20 percent of the minimal consumption budget.

Given the deficiencies in the safety net's ability to provide counter-cyclical support, households were actively relying on in-kind income as a mechanism of income and consumption smoothing during the crisis (Figure 21). In-kind income can be quite substantial, averaging around 5 percent of cash income. Without in-kind

income, official poverty would be on average 2.8 percentage points higher, and for rural residents – 5.9 percentage points higher.

Figure 21: In-kind income, in real terms, 2014 set to 100



Note: In-kind income is measured in real 2014 roubles per capita and converted into the index with the 2014 level set to 100
Source: Authors' calculations based on quarterly HBS.

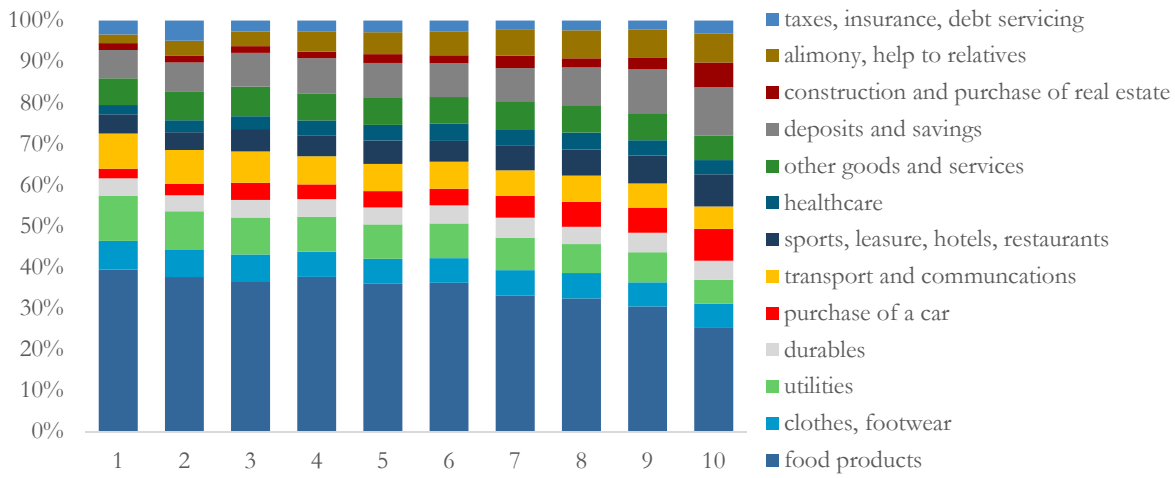
In-kind income was particularly important for the vulnerable groups during the crisis: residents of small cities and rural areas, non-employed and retirees increased their in-kind income by more than 20 percent during the crisis. Only Minsk residents did not increase their in-kind income during the recession, while other socio-economic groups, including the residents of large cities, relied on in-kind incomes to smooth income fluctuations during the crisis. Households with children increased their in-kind income to a limited extent (the increase is lower than average); this might have to do with lower availability of spare time among these households.

5.2. Consumption

Households reported reducing expenditures as the main instrument of adjustment to the crisis environment. There are differences across social groups in what types of expenditures households cut. Better off households adjust through reducing their savings and purchases of durable goods, while less wealthy households have to cut their consumption. Household micro data support this view.

The structure of household expenditure does not differ significantly across the population, highlighting the low level of inequality in Belarus (Figure 22). Only the richest 10th decile stands out, as it spends a significantly lower share than the population on average on food and much more on savings, investments and the purchase of personal cars (Shymanovich, Chubrik, 2019). The bottom decile spends a higher share of income on food, as well as basic services such as utilities, public transportation and communication services. Differences between the 2nd and 9th deciles are not very large, but they increase with disposable income. The main difference is related to the falling share of food in households' expenditures with growing household incomes. We focus our analysis of the consumption behavior during the crisis on the expenditures of the 1st and 10th deciles. Other deciles we will aggregate into three groups, representing 2nd and 3rd deciles, from 4th to 7th deciles, and 8th and 9th deciles.

Figure 22: Structure of household expenditure by decile



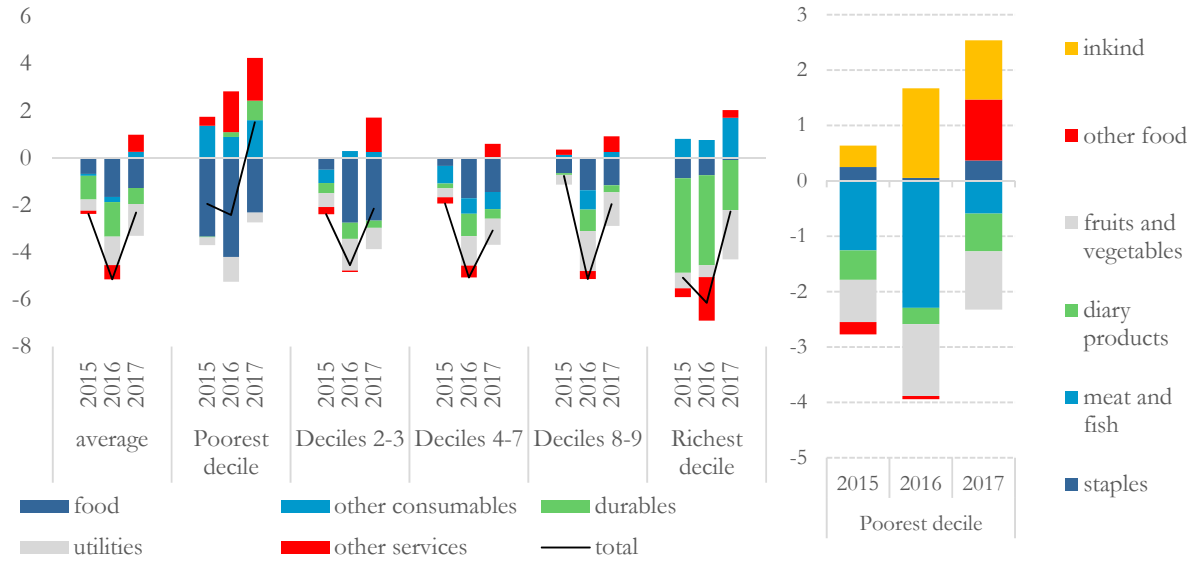
Source: Authors' estimates based on HSS data.

As food is a main line of households' expenditures and their share in total expenditures depends on the well-being of the household, food consumption was most affected by the crisis, with households either cutting their expenditures on food items, or switching to cheaper items. In relative terms, the downward adjustments in food expenditures were the largest for the bottom decile, and become progressively smaller (although still negative) as we move up the income distribution (Figure 23).

In addition to cutting food expenditures, the recession years are also characterized by reductions in expenditures on utilities across the whole distribution, but with higher income households adjusting their utilities expenditures to a greater extent, as many households in the bottom decile are either already consuming the minimum necessary energy amounts for basic needs, or lack the ability to make energy efficiency increasing alterations.

The population vulnerable to the risk of absolute poverty reduced mainly food expenditures, not adjusting expenditures on utilities, public transportation, communication and other basic services in contrast to other population groups. Households from the richest decile, for the most part, did not have to reduce their expenditure on food. They adjusted their consumption largely through reducing in 2015-2016 expenditures on durable goods and services (communication, culture, leisure), which are more salient in the consumption of households in the top decile relative to lower income households.

Figure 23: Decomposition of consumption change in real terms compared to the level of 2014, %



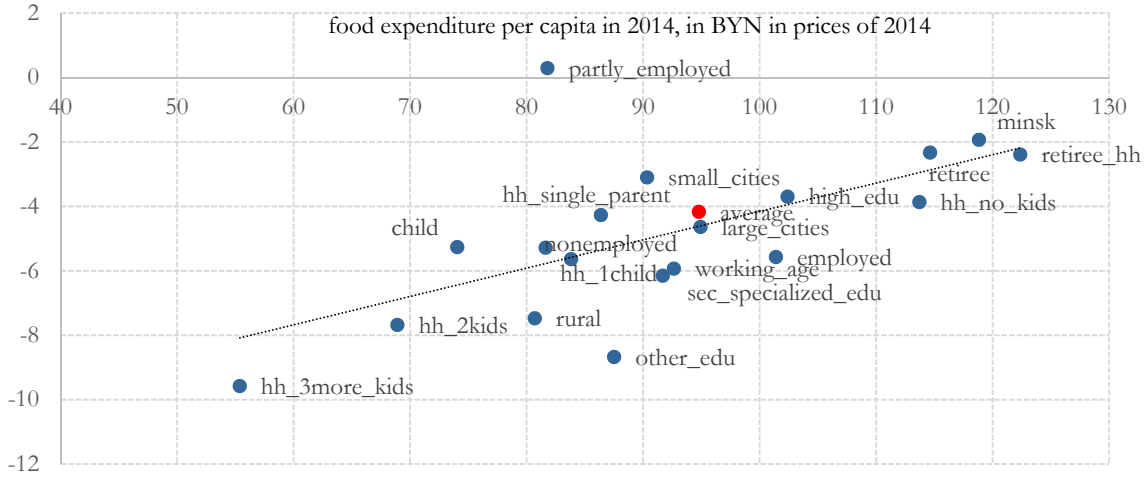
Total consumption by deciles

(b) Food consumption by the 1st decile

Note. See Methodological notes for description of the procedure applied to estimate real consumption.
Source: Authors' estimates based on HSS data.

Across different types of households, the most severe cuts in food expenditures during the recession were observed among households with two or more children (Figure 24). It should be noted, that these households have the lowest level of per capita expenditures on food among the analyzed social groups, in part because of the economies of scale in these households and the significant role of in-kind income from subsistence farming. This is worrisome, as it may be indicative of worsening nutrition in households with children, although we cannot confirm this with the data at hand. A significant reduction of expenditures on food was also observed among the working age population with a low level of education, i.e., the low paid labor force, and in the rural population, who have a very high probability of being poor. In contrast, such groups as residents of Minsk, retirees, households without children, working age population with a high level of education, that have a very low risk of poverty, spend on food much more than the average household and did not cut these expenses substantially during the crisis.

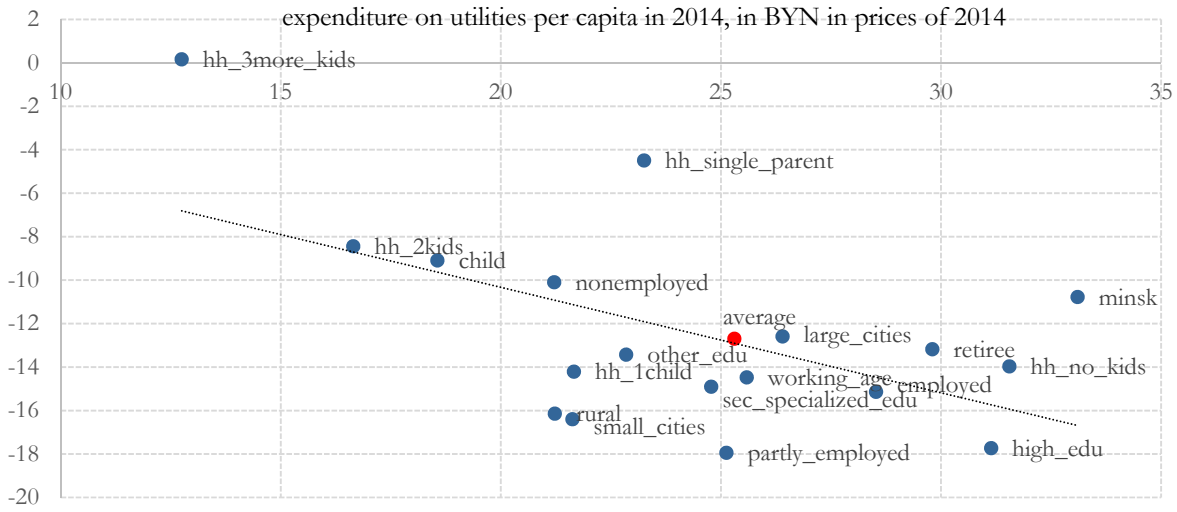
Figure 24: Real change in food consumption during crisis (2014-2016) for major socio-economic groups depending on initial level of food consumption, %



Source: Authors' estimates based on HBS data.

In the case of utilities expenditures, the situation is reversed. Population groups with a low vulnerability to poverty cut the consumption of utility services the most. Residents of Minsk, well-paid employees with high education, and households without children spend more on utilities than the population on average, so they have more room for optimizing the use of utility services. They are also better off, on average, and can afford investments in energy, heating and water saving technologies. Residents of rural areas and small cities also registered a significant reduction in utilities expenditures, which could be due to their greater ability to adjust consumption of utilities in individual houses, relative to apartment blocks in large cities. Households with two or more children were among those who adjusted their consumption of utility services to a smaller extent than the average household (Figure 25).

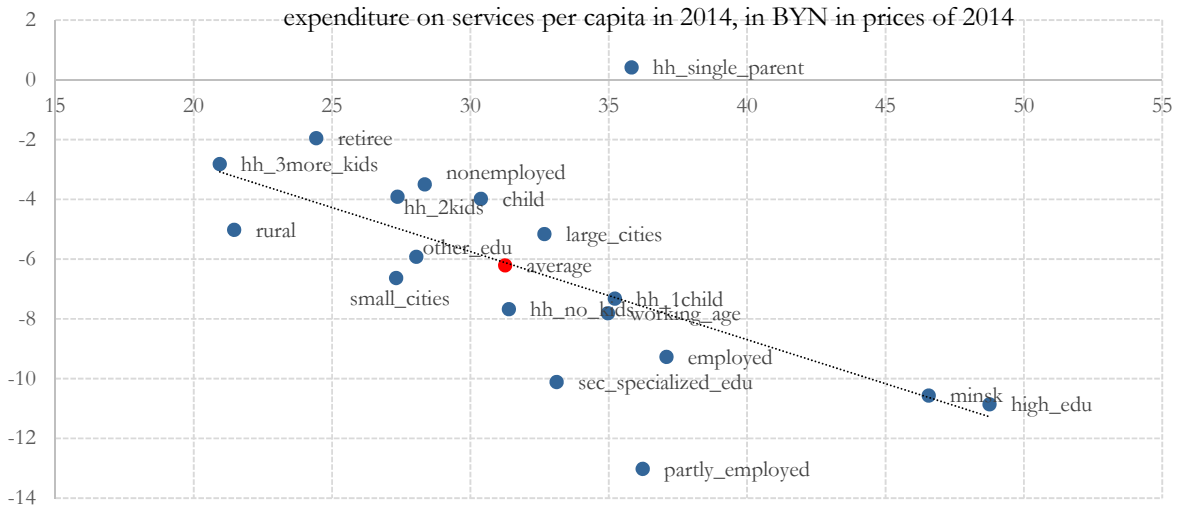
Figure 25: Real change in utilities consumption during crisis (2014-2017) for major socio-economic groups depending on initial level of food consumption, %



Source: Authors' estimates based on HSS data.

Among the relatively well-off population groups, another line of expenditures that underwent adjustments during the crisis was communication services, as well as culture, sports and recreation services, as in these households the consumption of these services is higher (Figure 26). Those who are employed, those with high or secondary specialized education, and residents of Minsk recorded the largest reductions in these expenditure categories. Households with children, retirees as well as non-employed spend much less on these services, and adjusted them during the crisis years to a much smaller extent compared to the population on average, despite significant price increases.

Figure 26: Real change in services consumption during crisis (2014-2016) for major socio-economic groups depending on initial level of food consumption, %



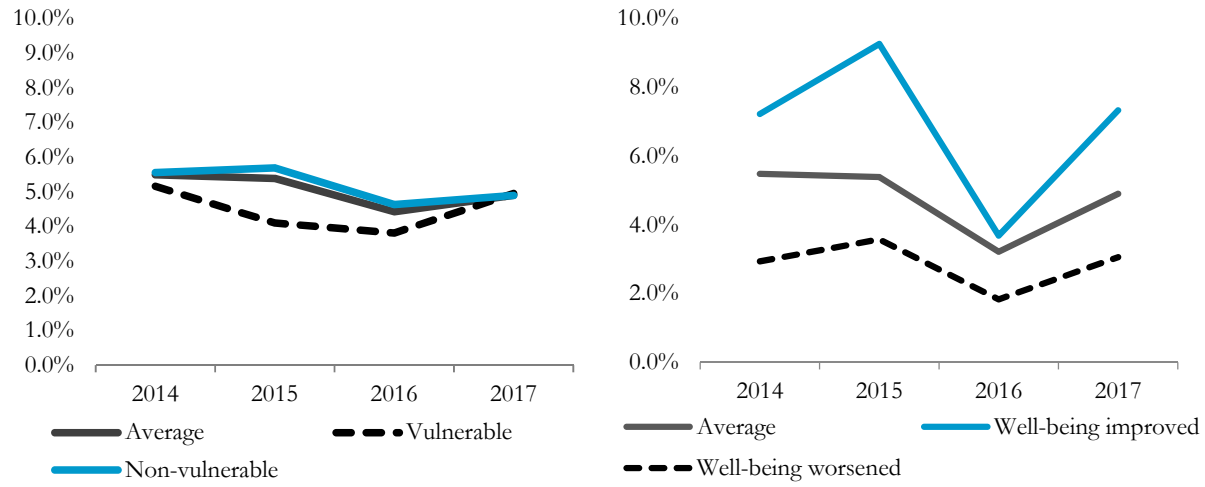
Note. Services exclude utilities, education and healthcare.
Source: Authors' estimates based on HSS data.

5.3. Savings

Precautionary savings could be an important consumption smoothing mechanism for households, and as such, the evolution of saving (and dissaving) during the crisis is of interest to this inquiry. Unfortunately, the HBS data do not have data on the savings stock or loans taken, but do have data on saving, dissaving and loans paid. In 2014, 42 percent of the population reported positive net savings, while 19 percent of the population dissaved (negative net savings). In 2016, at the height of the crisis, only 35 percent of the population saved a portion of their incomes, while the number of those who dissaved increased to 24 percent. Those with relatively higher incomes also had the highest dissaving rates in 2016 (32 and 38 percent for 8-9th and 10th decile correspondingly).

In other words, while savings are an important insurance mechanism, they are available mostly for the well-off households that were able to accumulate significant funds in the pre-crisis period. Indeed, in the pre-crisis year 2014 only 23 percent of the poorest decile reported savings, and they amounted only to 2.5 percent of their disposable income, while 49 percent of the top decile had savings amounting to 4.3 percent of their disposable income on average. While many households engaged in dissaving before the onset of the crisis, and even more so during the economic recession, average net savings rates and shares of saving in disposable income remained positive for almost all socio-economic groups.

Figure 27: Saving share for different groups of population



Note: Net saving share in disposable income
Source: Authors' calculations based on quarterly HBS.

The vulnerable population had slightly lower saving shares on average, and experienced a somewhat sharper savings decline during the crisis (Figure 27). In 2016, those in the vulnerable group were saving only 3.8 percent of their disposable income, while the non-vulnerable saved 4.6 percent. Differences are more pronounced if we compare those who reported experiencing either improving or worsening material well-being. Those reporting worsened well-being also have lower saving shares, but the decline in the savings share in this group was not very pronounced during the crisis. Those who experienced job losses had particularly low saving shares, dropping to mere 0.8 percent in 2016. Those who were coping with the worsened well-being through the decrease in expenditure or through the help from the relatives also had very low or even negative saving shares (1.9 and -3.3 percent correspondingly in 2016). Those who report improvements in well-being have a significantly higher savings share (7.2 percent in 2014), but also experienced a very sharp decline in savings during the crisis (to only 3.7 percent in 2016).

Dissaving was also a significant mechanism in alleviating poverty. The official poverty headcount would be 0.6 percentage points higher, and moderate poverty would be 2.6 percentage points higher in 2016 if people did not have access to the previously accumulated funds. The effects on moderate poverty were especially pronounced for the partially employed (4.4. p.p.), non-employed (3.3 p.p.) and households with children and a single adult (3.9 p.p.).

6. Conclusions

The recent two-year recession in Belarus had several salient features related to its welfare impact on households across Belarus, which are worth considering when thinking about mitigating negative income shocks on low-income households in the future. First, in contrast to the previous crisis events, the economic recession of 2015–2016 affected material well-being of the whole population including that of low income households; indeed, its impact was much more regressive than that of the previous two crisis episodes, when disposable incomes contracted more among higher income households. If we define a number of socio-economic groups based on characteristics such as residence, household composition, education and labor market status, those groups that had lower cash income before the recession in 2014 (i.e. groups that can be thought of as having a lower socio-economic status) experienced a more negative change in their cash incomes, on average, throughout the crisis.

Second, the notable welfare impact of the recession was not captured in the dynamics of the poverty rate. While it increased slightly by one percentage point between 2014 and 2017, the share of households with incomes below the minimum consumption basket, as well as the share of households vulnerable to poverty,

defined in this paper as households whose probability of falling below the national poverty threshold is in excess of 10 percent, nearly doubled.

Third, reliable strategies for households to cope with negative income shocks, barring reducing expenditures, appear to be few. Households rely on in-kind income, which can be substantial, at 5 percent of cash income on average, and it does have an impact on the poverty headcount. However, there do not appear to be many opportunities for employing active coping strategies such as searching for additional income or employment, while government transfers also do not appear to be providing the necessary counter-cyclical mitigating effects to households that are vulnerable to the risk of poverty.

The most immediate policy considerations should focus on the design of the overall safety net, to ensure that it provides an adequate coverage and targeting. The recently completed Commitment to Equity analysis (Bornukova et al., 2017) finds that while government transfers contribute significantly to poverty and inequality reduction, they are not designed to react to the crisis efficiently, as they are (i) not needs-based and (ii) linked to average wages, and hence pro-cyclical. The automatic stabilizer programs like the unemployment benefit or the needs-based assistance to the poor exist, but they are small in size and in coverage; hence, they had very little effect on income smoothing during the crisis (in 2016 only 3 percent of the population were covered by the needs-based assistance to the poor). Ongoing work on commitment to equity for children (Bornukova et al., 2019) highlights important omissions and drawbacks in coverage of some of the vulnerable groups such as households with three or more children, and single-parent households. This analysis shows that categories such as households with 3 or more children and single-parent households were among the ones that suffered the most acute reductions in cash incomes during the recession years, despite already low income levels, on average, prior to the recession. Making changes to the design of the safety net to ensure that groups such as these do not fall through the cracks is important for their ability to cope with future income shocks.

The fact that much of the adjustment to negative income shocks happens through reductions in expenditure, and that active coping strategies such as searching for additional jobs or employment are not common, partly because of deteriorating labor market conditions during a recession, reinforce the importance of improving the design of safety nets. However, the ongoing long-term shedding of labor by firms, particularly in the SOE sector, reinforces the need to strengthen the income support to the unemployed as part of the structural reforms agenda in Belarus. Unemployment benefits have been shown by the CEQ to be a very cost-efficient program in reducing poverty, relative to other fiscal interventions, but the program (and the size of the benefit, relative to the average wage) is very small and serves a small share of the unemployed. Policy options such as unemployment insurance, perhaps in combination with an unlimited duration means-tested social assistance component, could potentially offer improved possibilities of consumption smoothing for laid-off workers, as well as better coverage of vulnerable households upon the expiration of UI benefits.

The analysis of adjustments of expenditure patterns during the recession revealed also the limited ability of lower income households to reduce expenditures on utilities, relative to higher-income households. While the data do not allow the possibility to examine explicitly the reasons behind changes in utilities expenditures, it is plausible, that this is in part due to the fact that energy consumption in households vulnerable to poverty is already close to the minimum amount for basic needs; similarly, these households may have limited ability to introduce energy efficiency improvements. As energy tariffs continue increasing toward cost recovery, having an effective system for mitigating the effects of higher tariffs for low income households will thus be critical, as simulations suggest that the budget share that low income households spend on utilities could increase notably as tariffs rise, unless adequate mitigation measures, ideally targeted to low-income households, are in place.

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Annexes

Annex 1: Methodological notes

Poverty indicators

Official absolute poverty is estimated based on comparison of disposable income of the household with its budget of subsistence minimum. Disposable income is calculated based on consumption of the households, privileges, and in-kind income. Budget of subsistence minimum of a household is estimated based on the composition of the household and budgets defined for specific age groups: children age 0-3, children aged 3-6, children aged 6-18, working-age population, retirees.

Moderate poverty is estimated based on the comparison of per capita disposable income with the minimum consumer budget for a family consisting of 4 persons (2 working-age adults and 2 children).

Social groups definition

We define working-age individuals who reported income in the form of wages or from self-employment as employed. We define the fully employed to be those who reported employment related income exceeding BYN 100 for three months in a quarter. Other individuals who reported employment related income are considered partly employed. Non-employed are those working age individuals who did not report any employment or self-employment related income. Hence, this group includes the unemployed, inactive population, students, housekeepers, individuals on parental leave.

Consumption in real terms

Consumption of separate goods and services is reported in HBS files in monetary terms, and we convert it into real terms using the consumer price indices of related goods. Subsequently, all goods and services were aggregated into several groups:

- Consumable goods
    - Food
    - Other consumable goods
        - Food related goods and services (alcohol and tobacco, eating out, cultivation of land plot and animal breeding)
        - Non-food goods (clothes, footwear, textile, maintenance of private vehicles)
- Durable goods (household goods and appliances, furniture, purchase of private vehicles)
- Services
    - Education and health
    - Utilities and public transport
    - Other services (communication, culture, recreation and sports, personal care)

Annex 2: Additional tables and figures

Table A1: Cash income, in real terms (2014q1 set to 100)

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	100.0	110.2	117.1	108.8	111.3	110.9	114.7	114.3	103.0	108.4	101.6	102.5	97.0	102.3	99.1	103.9
Large cities	100.0	104.5	106.1	107.0	96.7	98.4	99.4	99.3	93.3	97.1	95.4	93.1	89.6	94.7	95.7	96.9
Small cities	100.0	105.1	106.6	105.0	92.3	96.4	96.9	97.3	87.0	89.9	90.4	88.9	85.7	88.7	91.9	93.8
Rural area	100.0	105.1	107.8	106.0	95.3	99.9	101.7	98.7	89.3	94.2	94.0	91.0	88.2	94.5	97.3	95.4
Age																
Child	100	106.6	109.0	106.6	100.1	103.8	108.0	104.3	93.5	98.4	98.2	95.7	91.3	100.0	100.0	102.6
working age	100	107.5	110.1	108.2	98.3	101.7	103.2	102.4	93.9	97.9	96.0	94.8	89.7	95.5	97.0	97.6
Retiree	100	103.2	107.2	104.0	100.2	100.2	100.1	100.8	93.6	97.8	94.0	92.0	91.0	93.1	93.1	95.6
Employment status for working age population																
Employed	100	106.5	108.8	106.5	97.4	100.0	100.6	100.8	92.7	96.5	93.6	93.5	89.6	94.5	94.9	96.5
Partly employed	100	107.5	103.2	103.3	89.2	94.7	116.8	96.8	89.0	109.3	99.6	94.1	77.1	83.1	98.2	89.4
Nonemployed	100	105.8	111.5	108.3	103.3	107.7	107.8	107.4	94.8	98.4	98.1	93.8	90.6	97.3	98.7	99.2
Education level for working age population																
high education	100	106.3	109.2	107.4	96.6	100.8	103.6	101.6	97.5	100.4	95.4	97.8	90.6	97.4	92.8	96.7
secondary specialized	100	108.2	110.4	109.5	99.7	101.0	101.5	101.0	89.5	94.5	93.9	91.7	87.1	91.5	96.1	95.0
Other	100	107.7	110.5	107.6	96.8	101.1	102.5	101.5	91.6	96.3	96.1	92.6	87.5	93.7	98.7	98.0
Type of household (HH)																
HH without children	100	105.3	109.5	105.7	98.1	100.4	100.1	100.5	94.2	97.9	94.0	93.0	90.3	92.8	94.2	95.9
Retiree HH	100	100.5	104.1	102.0	98.5	97.4	97.1	97.2	92.8	92.5	91.0	89.7	89.1	90.7	90.2	93.4
HH with children	100	107.0	108.1	107.6	100.2	103.6	106.8	104.3	93.1	97.8	97.5	95.2	90.9	99.4	99.2	101.2
1 child	100	107.2	106.6	109.5	98.1	101.1	106.9	103.7	91.9	96.5	94.8	93.5	88.3	97.5	96.4	97.7
2 children	100	108.6	111.1	108.5	103.7	108.2	104.4	102.8	92.7	97.7	101.0	96.2	95.2	102.4	103.7	107.0
3 and more children	100	116.5	129.5	112.7	97.6	103.8	109.8	109.5	101.7	105.3	104.6	103.6	91.5	97.3	102.7	103.6
single parent	100	101.8	109.1	101.8	97.6	100.7	130.1	106.7	89.7	96.4	94.6	91.5	90.5	107.0	99.1	114.3

Source: Authors' estimates based on HBS data.

Table A2: Official poverty

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	1.2	0.6	1.4	0.9	0.8	1.2	1.0	0.7	0.9	1.9	1.6	1.8	1.5	1.4	1.5	1.2
Large cities	5.9	4.9	5.3	4.3	4.9	5.8	5.4	5.6	5.0	5.4	6.3	7.0	6.5	7.1	7.5	5.7
Small cities	5.1	6.4	5.4	5.6	4.5	5.2	7.2	5.2	7.1	6.7	8.1	8.7	7.7	6.6	6.8	6.5
Rural area	8.3	8.4	8.6	8.1	10.8	10.2	9.9	9.3	10.2	10.9	11.1	11.1	11.1	11.3	11.5	9.6
Age																
Child	10.9	10.6	10.3	9.9	10.5	11.2	11.7	10.4	11.4	12.9	13.1	14.3	12.9	13.4	13.5	11.3
working age	5.3	5.4	5.7	5.2	6.1	6.5	6.5	6.1	6.5	7.0	7.8	8.1	7.8	8.0	8.4	6.8
Retiree	1.6	1.2	1.3	0.8	0.9	1.0	1.2	1.1	1.1	0.8	1.2	1.3	1.5	1.1	1.3	1.2
Employment status for working age population																
Employed	2.9	3.3	3.6	3.4	3.7	4.1	4.1	3.7	4.2	4.9	5.3	5.4	5.4	5.5	5.9	4.7
Partly employed	11.1	11.4	8.6	7.3	9.5	14.0	7.5	9.6	13.8	10.3	8.4	13.8	12.9	16.1	11.8	12.5
Nonemployed	10.2	9.7	10.1	9.7	11.5	11.5	12.3	11.8	10.8	11.3	14.5	14.4	12.6	13.2	13.7	10.9
Education level for working age population																
high education	2.0	1.4	2.0	1.2	2.0	2.3	2.6	1.8	1.3	1.4	1.5	2.2	1.8	1.9	2.9	1.9
secondary specialized	4.8	4.2	4.3	4.3	5.3	6.5	6.6	6.0	6.2	7.2	7.5	7.3	8.8	8.2	9.4	7.2
other	7.9	8.9	9.2	8.6	9.7	9.9	9.4	9.5	10.4	10.7	12.5	13.0	11.6	12.4	11.7	9.9
Type of household (HH)																
HH without children	1.7	1.6	1.9	1.6	2.1	2.2	2.0	2.2	2.3	1.7	2.6	2.5	2.8	2.6	2.5	2.3
Retiree HH	0.3	0.0	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.1
HH with children	9.1	9.0	9.0	8.3	9.1	9.6	10.2	9.1	9.6	11.1	11.5	12.5	11.1	11.5	12.1	9.5
1 child	5.4	5.2	5.7	4.5	5.8	5.5	6.1	5.9	5.6	6.4	7.3	7.6	7.2	7.2	8.3	6.2
2 children	10.8	11.0	11.0	10.3	11.4	13.2	13.9	11.4	12.7	15.4	15.0	17.5	14.5	13.8	14.8	11.1
3 and more children	28.9	23.6	20.0	21.0	25.5	25.8	26.1	24.4	27.6	30.0	29.4	29.0	27.6	34.8	30.7	29.8
single parent	13.3	14.4	15.1	14.7	13.4	12.8	12.7	12.0	15.9	15.1	15.2	18.7	15.9	14.3	15.0	14.1

Source: Authors' estimates based on HSS data.

Table A3: Moderate poverty

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	10.7	7.5	5.7	5.3	5.5	8.7	9.3	8.7	11.8	11.0	14.8	12.3	15.5	14.9	18.2	16.9
Large cities	19.9	17.8	20.1	19.2	21.0	23.9	23.9	23.7	28.0	30.4	33.2	35.8	35.5	33.9	34.8	35.7
Small cities	19.6	20.9	19.1	18.8	25.5	25.4	26.7	26.3	32.4	33.2	36.3	39.4	40.1	38.1	41.1	39.4
Rural area	24.8	25.2	26.3	26.4	34.7	35.3	32.7	33.8	38.0	40.1	41.0	41.9	44.0	39.8	40.0	41.7
Age																
Child	33.0	32.3	31.1	31.8	38.0	37.5	37.8	38.1	46.6	47.0	48.9	51.6	54.0	50.1	49.8	50.3
working age	19.1	17.3	18.2	17.7	22.4	24.6	23.5	24.1	28.7	29.5	32.2	33.2	35.2	32.9	33.8	34.0
Retiree	9.5	10.1	10.7	9.8	11.3	13.6	15.1	13.9	14.6	18.2	21.0	22.2	21.1	20.4	24.3	24.5
Employment status for working age population																
Employed	12.6	12.1	12.6	12.1	16.0	18.2	17.1	17.5	21.5	22.3	24.9	25.4	26.2	24.9	26.7	26.8
Partly employed	27.1	22.8	23.4	23.7	30.0	36.9	24.3	37.4	39.2	40.1	31.5	42.7	55.7	49.1	37.4	42.6
Nonemployed	32.0	28.7	30.7	31.1	35.3	36.2	37.6	37.1	43.0	44.7	49.6	49.3	51.8	48.0	47.6	47.5
Education level for working age population																
high education	9.9	7.1	8.0	7.8	10.2	11.3	11.2	11.9	14.0	13.8	17.3	18.0	19.4	16.9	19.1	18.4
secondary specialized	17.5	16.3	17.3	16.9	21.8	24.8	23.7	24.3	31.0	31.6	33.3	34.0	37.8	35.1	35.1	36.7
other	26.1	24.6	25.4	24.6	31.6	33.6	32.3	33.1	37.3	38.7	42.0	43.1	45.0	43.0	43.7	42.9
Type of household (HH)																
HH without children	9.2	8.5	9.4	8.5	10.5	13.6	13.6	13.0	13.5	15.5	19.1	19.1	18.4	19.0	21.2	21.0
Retiree HH	4.4	6.3	7.2	6.0	6.0	9.2	11.9	10.6	10.7	14.1	17.7	19.0	16.2	16.9	21.1	19.4
HH with children	29.4	28.2	28.2	28.3	34.6	34.4	34.5	35.2	43.1	44.2	46.0	48.5	50.9	46.1	47.1	47.2
1 child	18.2	16.8	19.0	18.1	23.9	25.5	24.3	26.5	32.7	34.6	37.6	39.3	41.7	35.7	38.3	38.2
2 children	41.8	35.7	35.4	35.5	48.0	43.8	46.1	44.2	54.6	56.1	54.6	58.6	61.5	58.7	56.9	57.6
3 and more children	59.5	65.9	53.2	56.5	64.5	64.1	66.3	65.9	77.0	69.8	76.8	77.4	79.7	76.1	74.6	76.8
single parent	34.5	32.9	36.1	36.8	36.0	36.7	36.9	39.2	46.0	43.9	47.1	52.7	51.0	50.3	45.9	47.0

Source: Authors' estimates based on HSS data.

Table A4: Vulnerability

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	1.4	0.2	0.6	0.1	0.3	0.4	0.8	0.1	0.6	2.4	1.2	1.7	0.6	1.8	0.6	1.9
Large cities	16.1	12.2	12.9	11.4	10.5	16.2	15.9	18.3	12.1	18.6	25.7	30.2	20.1	33.8	28.2	16.3
Small cities	16.0	26.8	20.0	25.7	18.0	22.5	25.2	23.8	34.4	31.5	27.9	40.2	33.3	28.7	28.5	29.7
Rural area	28.2	29.2	29.4	28.8	43.1	36.7	39.5	39.2	42.4	37.6	42.1	41.1	42.2	42.8	42.6	40.2
Age																
Child	40.2	43.5	37.0	42.5	40.2	45.9	50.4	51.7	48.4	50.1	63.8	74.3	54.6	69.7	62.2	50.6
working age	15.3	16.1	16.7	15.8	19.6	19.4	20.6	21.2	23.0	24.5	25.4	28.8	26.8	30.7	28.8	23.9
Retiree	0.8	0.5	0.4	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.1	0.1	0.1
Employment status for working age population																
Employed	5.8	7.9	8.1	7.6	9.3	10.3	10.7	12.4	13.8	16.6	15.9	19.1	19.0	22.0	21.3	16.0
Partly employed	34.7	39.6	33.2	27.6	39.7	43.6	23.4	43.2	50.8	37.4	28.2	51.0	46.1	47.2	42.2	46.9
Nonemployed	37.2	35.6	36.8	39.1	43.6	40.0	46.5	41.4	42.6	41.3	51.1	50.4	39.6	47.3	41.1	40.3
Education level for working age population																
high education	2.7	1.2	1.7	0.9	2.2	2.5	3.2	1.6	1.8	1.3	1.6	2.4	1.6	2.0	4.3	1.7
secondary specialized	12.7	12.2	11.5	11.6	16.8	18.9	19.4	18.4	23.5	21.4	21.1	25.6	31.6	33.5	36.6	24.6
Other	25.4	28.6	30.5	29.0	33.9	32.8	34.0	37.9	37.8	43.7	45.7	50.2	41.6	49.8	40.7	39.1
Type of household (HH)																
HH without children	1.3	1.2	2.0	1.7	3.2	2.2	2.5	1.8	2.8	1.9	3.5	3.4	1.1	3.2	1.8	1.6
Retiree HH	1.0	0.9	1.0	0.7	0.8	0.9	1.1	0.8	0.7	0.6	0.8	0.9	1.1	0.8	0.9	0.7
HH with children	31.4	33.6	30.8	32.2	33.8	36.3	39.4	41.2	40.5	43.9	48.8	56.2	47.4	55.4	52.1	41.7
1 child	23.4	24.4	22.9	23.8	25.7	28.7	31.8	34.0	32.4	36.6	41.4	49.4	41.3	48.6	46.9	35.9
2 children	28.7	32.3	26.7	30.1	36.5	37.9	41.7	43.7	44.1	44.9	53.3	60.7	48.9	58.4	52.5	40.1
3 and more children	97.7	88.4	86.4	80.8	86.1	86.3	88.3	86.5	88.9	96.3	88.3	90.6	89.1	96.0	89.8	95.8
single parent	60.2	62.2	64.9	60.6	60.9	64.4	68.0	64.7	67.1	66.5	68.1	72.7	67.0	65.0	67.8	64.3

Source: Authors' estimates based on HSS data.

Table A5: Change of material well-being of respondents: average score, share of those reported improvement and deterioration of the well-being

	average score				improved				worsened			
	2014	2015	2016	2017	2014	2015	2016	2017	2014	2015	2016	2017
Average	3.07	3.26	3.33	3.29	16.4	11.6	9.3	11.6	21.6	34.0	36.8	36.0
Poor and vulnerable population												
Vulnerable	3.05	3.23	3.30	3.23	18.6	13.4	10.7	14.5	21.3	31.9	36.5	33.5
Official poverty	3.14	3.29	3.29	3.28	14.4	12.0	13.2	13.0	24.7	34.5	33.0	33.7
Moderate poverty	3.14	3.29	3.30	3.29	12.6	9.7	10.3	11.7	24.2	34.1	35.1	35.3
Place of residence												
Minsk	3.10	3.29	3.33	3.34	14.2	13.7	10.4	12.1	22.1	37.7	38.6	39.4
Large cities	3.07	3.32	3.37	3.31	17.9	10.0	9.7	12.6	22.6	37.5	39.3	37.5
Small cities	3.06	3.26	3.40	3.34	17.1	11.2	8.8	9.6	23.4	33.8	43.9	39.1
Rural area	3.04	3.17	3.22	3.20	15.6	12.6	8.4	11.1	18.5	26.1	27.2	29.2
Age												
Child	3.05	3.27	3.31	3.25	18.3	13.1	11.7	14.9	21.9	35.7	36.9	35.6
Working age	3.05	3.27	3.34	3.25	17.6	12.5	10.0	14.1	21.3	35.1	37.6	34.8
Retiree	3.11	3.24	3.33	3.38	12.6	8.8	6.4	5.2	22.1	30.6	35.4	38.3
Employment status for working age population												
Employed	3.02	3.24	3.31	3.24	18.3	13.0	10.1	13.6	20.2	33.6	36.6	33.9
Partly employed	3.07	3.32	3.38	3.27	19.4	14.4	11.8	17.9	24.2	38.9	40.1	38.9
Nonemployed	3.12	3.32	3.34	3.29	14.8	11.3	10.8	12.8	23.7	36.6	37.0	36.2
Education level for working age population												
High education	3.05	3.28	3.31	3.24	18.9	13.1	11.8	14.8	22.6	36.2	36.7	34.9
Secondary specialized	3.05	3.25	3.34	3.29	16.8	13.0	8.9	13.2	21.0	33.4	37.5	37.4
Other	3.05	3.27	3.35	3.23	17.4	11.5	9.6	14.3	20.9	34.5	38.3	32.5
Type of household (HH)												
HH without children	3.09	3.27	3.34	3.32	15.2	10.1	7.4	8.8	22.2	33.4	36.6	36.1
Retiree HH	3.11	3.24	3.33	3.41	12.0	8.1	4.9	3.1	21.1	29.9	34.0	38.3
HH with children	3.05	3.25	3.31	3.26	17.6	13.1	11.3	14.4	21.1	34.6	37.1	35.8
1 child	3.05	3.25	3.35	3.27	16.9	13.0	10.4	13.5	20.2	33.9	39.3	36.2
2 children	3.05	3.28	3.25	3.24	17.2	12.2	12.7	16.0	21.9	36.3	33.7	35.8
3 and more children	3.03	3.17	3.28	3.20	23.1	17.5	12.5	15.1	23.1	32.8	33.5	32.9
single parent	3.11	3.37	3.36	3.43	14.9	11.6	13.0	9.2	24.1	41.6	39.8	42.3

Source: Authors' estimates based on HSS data.

Table A6: Reasons of well-being worsening

	Job loss				Salary reduction				Inflation			
	2014	**2015**	**2016**	**2017**	**2014**	**2015**	**2016**	**2017**	**2014**	**2015**	**2016**	**2017**
Average	2.74	3.55	4.71	3.93	3.19	7.16	7.83	4.49	10.13	15.87	17.68	20.83
Poor and vulnerable population												
Vulnerable	2.76	4.04	5.47	3.75	5.03	8.16	9.99	5.37	8.86	13.17	13.92	18.47
Official poverty	6.67	10.35	6.13	4.78	3.07	6.31	10.37	5.44	11.73	10.69	11.17	15.04
Moderate poverty	4.35	5.16	6.12	4.57	3.49	7.39	9.15	4.67	10.60	14.03	14.95	19.35
Place of residence												
Minsk	2.04	4.10	6.25	6.28	1.91	8.08	7.46	5.41	11.88	17.96	19.92	22.77
Large cities	3.16	4.09	5.01	4.08	3.79	9.00	9.36	4.91	10.35	17.84	18.29	22.13
Small cities	3.35	2.38	4.30	3.11	3.74	4.81	7.39	4.91	10.57	18.82	24.04	24.84
Rural area	2.20	3.11	3.40	2.51	2.90	5.34	6.15	2.92	8.18	9.50	10.86	14.89
Age												
Child	2.93	3.66	5.18	4.30	4.53	8.87	9.74	5.92	8.94	16.26	16.75	19.50
Working age	3.11	4.39	5.53	4.37	3.59	9.19	9.85	5.54	9.64	15.39	16.50	19.50
Retiree	1.83	1.79	2.80	2.93	1.39	1.94	2.60	1.74	11.98	16.56	20.60	23.99
Employment status for working age population												
Employed	2.45	3.65	4.70	3.70	3.85	8.69	9.46	5.65	9.39	15.47	17.14	19.27
Partly employed	4.96	7.60	13.49	10.18	3.00	9.33	13.78	5.16	10.65	14.52	7.60	18.63
Nonemployed	4.61	5.70	7.08	6.38	2.22	8.53	7.66	3.77	10.11	14.23	13.73	18.57
Education level for working age population												
High education	2.04	4.26	5.61	6.09	3.54	7.59	7.43	5.65	11.65	18.95	18.40	17.84
Secondary specialized	3.49	4.52	5.39	4.37	3.60	9.08	10.20	6.27	9.07	14.77	16.13	21.21
Other	3.48	4.41	5.60	3.09	3.65	10.30	11.29	4.86	8.97	13.20	15.45	19.26
Type of household (HH)												
HH without children	2.42	3.67	4.51	2.82	2.16	5.71	4.87	3.13	11.89	15.75	19.02	22.27
Retiree HH	1.32	0.97	1.78	0.71	0.39	0.89	0.57	1.00	12.70	16.80	21.94	26.41
HH with children	3.05	3.42	4.91	5.04	4.22	8.63	10.81	5.84	8.36	16.00	16.33	19.40
1 child	3.12	3.50	5.37	6.34	3.64	8.34	12.23	5.15	8.24	17.19	16.45	19.85
2 children	3.21	3.05	3.75	2.99	3.81	8.97	8.93	7.40	8.50	14.64	16.55	18.56
3 and more children	2.12	4.31	6.06	3.21	8.89	9.44	7.50	4.78	8.60	12.41	14.53	19.33
single parent	2.22	4.71	8.00	2.18	2.31	8.43	5.64	6.18	14.42	21.15	17.75	23.15

Source: Authors' estimates based on HSS data.

Table A7: Reasons of well-being improvement

	Job loss				Salary reduction			
	2014	**2015**	**2016**	**2017**	**2014**	**2015**	**2016**	**2017**
Average	5.88	4.56	3.41	5.20	5.94	2.99	1.91	3.97
Vulnerable	8.42	5.68	4.24	5.87	5.58	3.56	1.78	5.59
Official poverty	5.43	6.39	7.67	8.10	5.84	1.53	2.33	2.39
Moderate poverty	4.57	4.21	4.63	6.24	4.77	2.19	1.89	3.33
Minsk	5.28	5.28	3.10	5.89	6.59	3.81	1.61	3.65
Large cities	5.33	3.74	4.10	6.49	6.86	3.06	2.76	4.22
Small cities	6.71	5.40	3.10	4.66	5.24	2.30	1.21	2.96
Rural area	6.35	4.68	2.85	3.14	4.84	2.77	1.36	4.50
Child	7.87	5.24	4.56	6.62	6.72	3.76	2.57	5.34
Working age	6.97	5.59	4.09	6.42	7.34	3.69	2.12	5.15
Retiree	2.19	2.04	1.31	2.17	2.52	1.07	1.04	1.05
Employed	7.06	5.36	3.48	5.88	7.51	3.71	2.28	5.09
Partly employed	9.84	8.56	7.04	12.39	5.99	2.29	1.47	3.70
Nonemployed	4.99	4.56	4.60	6.21	5.88	3.30	1.55	3.89
High education	6.73	5.76	3.93	6.60	8.39	4.33	3.07	5.71
Secondary specialized	6.48	5.47	3.28	5.59	7.39	4.34	2.04	5.26
Other	7.45	5.25	4.92	6.87	6.69	2.88	1.51	4.66
HH without children	4.10	3.59	2.46	3.44	5.44	1.98	1.30	2.80
Retiree HH	1.61	0.90	0.81	0.87	1.54	0.83	0.64	0.36
HH with children	7.65	5.53	4.38	6.95	6.43	4.02	2.52	5.14
1 child	7.50	5.81	3.90	7.54	6.11	4.37	2.55	4.75
2 children	6.48	4.92	5.40	6.60	7.17	3.77	2.58	5.73
3 and more children	12.55	5.84	3.89	3.66	5.73	2.35	2.12	5.74
single parent	3.27	3.00	4.71	2.48	6.82	3.18	2.19	3.12

Source: Authors' estimates based on HSS data.

Table A8: Household coping strategies

	Increasing income				Cutting expenditure				Relying on help from relatives			
	2014	**2015**	**2016**	**2017**	**2014**	**2015**	**2016**	**2017**	**2014**	**2015**	**2016**	**2017**
Average	2.81	4.21	3.18	3.88	15.25	25.63	29.15	28.04	1.29	1.64	1.66	1.42
Poor and vulnerable population												
Vulnerable	4.04	5.48	4.18	5.16	13.43	24.69	26.38	24.00	2.10	1.31	2.89	2.22
Official poverty	1.79	6.54	1.36	6.14	18.98	25.21	25.37	24.12	1.94	1.83	3.90	2.65
Moderate poverty	2.97	5.37	3.71	4.32	16.76	25.71	27.02	26.91	1.88	1.48	2.16	1.87
Place of residence												
Minsk	2.81	3.50	3.94	3.45	15.58	27.72	30.96	31.14	1.08	3.29	1.23	0.99
Large cities	1.88	4.86	2.94	3.17	17.81	29.41	31.31	30.03	1.35	1.09	1.50	1.46
Small cities	3.77	4.36	2.63	5.75	15.00	24.38	34.17	28.49	2.01	1.92	3.65	2.39
Rural area	3.21	3.66	3.35	4.04	11.93	19.36	21.26	22.53	0.78	1.05	0.88	1.06
Age												
Child	3.61	5.41	3.99	4.79	14.24	26.56	28.21	26.41	2.12	1.83	2.37	2.09
Working age	3.24	4.77	3.58	4.20	14.84	26.55	29.63	26.89	1.26	1.70	1.76	1.29
Retiree	1.33	2.25	1.86	2.73	16.85	23.15	28.87	31.10	0.73	1.38	0.97	1.21
Employment status for working age population												
Employed	3.06	4.30	3.33	4.13	14.10	25.48	29.45	26.41	0.88	1.35	1.25	0.96
Partly employed	3.76	4.83	7.09	7.15	17.54	30.65	28.77	28.50	1.41	1.58	2.08	0.88
Non-employed	3.15	5.23	3.30	4.07	16.62	26.90	27.59	27.35	2.20	2.65	2.88	2.21
Education level for working age population												
High education	3.61	4.28	4.30	4.11	15.23	27.52	27.63	27.12	1.44	1.81	1.20	1.00
Secondary specialized	2.90	4.82	2.80	4.12	14.77	25.70	30.99	29.20	1.46	1.16	1.73	1.18
Other	3.30	4.85	3.75	4.34	14.82	26.25	29.86	24.74	0.99	1.49	2.18	1.59
Type of household (HH)												
HH without children	2.29	3.25	2.70	2.98	16.45	25.36	29.52	29.12	0.65	1.49	1.20	0.94
Retiree HH	1.19	1.55	1.18	1.63	15.51	22.80	27.87	31.58	1.02	1.58	1.32	1.55
HH with children	3.32	5.17	3.67	4.78	14.06	25.91	28.77	26.97	1.93	1.79	2.12	1.90
1 child	2.87	4.62	3.30	4.74	14.23	25.78	30.82	27.79	1.70	2.00	2.06	1.79
2 children	3.99	5.87	3.75	4.59	13.16	26.89	25.64	25.95	2.23	1.84	2.34	2.42
3 and more children	3.58	6.60	6.21	5.83	16.21	22.99	25.67	24.69	2.23	0.00	1.62	0.60
single parent	2.57	6.50	4.13	5.46	15.59	29.87	28.86	29.83	3.49	3.03	3.71	4.54

Source: Authors' estimates based on HSS data.

Table A9: Real expenditure on consumption (goods), % yoy

	Food			Other consumable goods			Durable goods		
	2015	**2016**	**2017**	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
Average	-1.7	-2.5	1.0	-0.4	-0.6	2.2	-10.6	-5.5	9.8
Poor and vulnerable population									
Vulnerable	-1.0	-1.2	2.2	5.6	1.7	8.9	-14.1	-0.4	14.7
Official poverty	-5.2	0.8	4.3	10.9	1.8	5.5	1.6	12.3	18.1
Moderate poverty	2.1	3.4	3.4	8.4	11.2	2.9	-2.8	10.3	17.7
Place of residence									
Minsk	-0.1	-1.9	1.0	3.2	-2.0	-0.4	-9.2	-7.7	12.1
Large cities	-0.7	-4.0	0.4	-3.3	0.3	4.0	-6.3	2.0	0.1
Small cities	-1.7	-1.5	1.7	-2.7	4.4	0.0	-11.9	-17.9	15.8
Rural area	-6.2	-1.3	1.5	0.7	-3.8	3.6	-17.6	-6.2	21.7
Age									
Child	-0.6	-4.7	1.7	1.6	-0.4	5.7	-12.8	-3.7	7.1
Working age	-2.7	-3.4	0.4	-1.7	-0.6	3.5	-13.3	-5.2	11.7
Retiree	-1.4	-0.9	0.5	2.1	0.4	-1.5	-2.1	-6.9	8.5
Employment status for working age population									
Employed	-2.6	-3.1	0.3	-1.2	-1.2	3.0	-11.8	-7.0	12.2
Partly employed	-1.4	1.7	-5.9	-8.0	2.4	-0.3	13.5	-39.8	34.1
Non-employed	-1.7	-3.6	2.9	1.6	-4.1	6.6	-17.9	5.3	8.3
Education level for working age population									
High education	-3.4	-0.3	-0.6	-4.4	1.8	5.1	-10.5	-10.7	7.2
Secondary specialized	-1.2	-5.0	0.7	-1.4	-3.6	0.9	-16.2	-3.2	11.8
Other	-4.5	-4.4	0.5	-1.9	-0.7	2.5	-15.7	-1.9	15.4
Type of household (HH)									
HH without children	-2.9	-1.0	1.0	-1.3	-1.2	-0.1	-8.2	-9.4	16.4
Retiree HH	-2.0	-0.4	1.0	0.3	3.1	-4.2	-5.2	-4.3	10.8
HH with children	-0.2	-5.1	1.8	0.7	0.1	5.0	-13.5	-0.6	2.7
1 child	0.0	-5.6	1.1	-1.8	-0.1	3.5	-16.1	0.4	0.8
2 children	-4.6	-3.2	2.6	0.3	-0.2	7.9	-9.5	-1.5	4.3
3 and more children	-2.7	-7.1	4.4	2.4	3.6	7.5	-17.5	-6.3	15.2
single parent	-1.9	-2.4	2.8	-0.3	-3.3	6.2	-4.1	-18.4	24.9

Source: Authors' estimates based on HSS data.

Table A10: Real expenditure on consumption (services), % yoy

	Education and healthcare			Utilities and transport			Other services		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Average	5.5	-1.2	5.0	-4.4	-7.3	-1.4	-3.2	-3.1	8.6
Poor and vulnerable population									
Vulnerable	12.4	1.3	6.8	-0.8	-4.6	2.3	-3.2	3.7	8.6
Official poverty	9.0	10.0	-0.2	-1.7	-3.4	6.2	5.7	15.2	-2.0
Moderate poverty	11.3	14.4	13.4	0.7	-0.9	6.5	6.3	11.2	6.9
Place of residence									
Minsk	4.9	-1.6	7.4	0.0	-5.8	-5.4	0.4	-10.9	7.1
Large cities	7.2	0.5	3.1	-4.4	-5.5	-3.2	-2.8	-2.4	8.8
Small cities	0.7	0.7	5.9	-6.4	-10.2	-0.5	-9.7	3.4	6.4
Rural area	2.9	-6.2	3.8	-11.7	-10.6	6.2	-8.4	3.7	11.4
Age									
Child	9.0	-0.3	6.7	0.0	-6.4	-2.9	-1.9	-2.1	6.4
Working age	1.5	-1.6	4.8	-4.2	-8.4	-2.5	-4.8	-3.2	8.3
Retiree	9.3	-2.0	3.0	-7.5	-6.2	0.1	0.6	-2.6	12.9
Employment status for working age population									
Employed	3.1	-2.4	5.4	-6.1	-7.6	-2.3	-4.4	-5.1	9.6
Partly employed	-10.8	12.8	6.4	-4.6	-6.8	-7.6	-17.6	5.5	1.4
Non-employed	6.1	-2.8	2.5	-0.2	-9.0	-1.0	-1.7	-1.9	6.8
Education level for working age population									
High education	2.7	6.1	3.7	-4.1	-4.6	-10.0	-7.9	-3.2	10.0
Secondary specialized	-5.7	-6.3	4.0	-3.5	-13.9	2.4	-4.3	-6.1	6.3
Other	4.8	-6.8	4.7	-6.8	-7.1	0.1	-4.0	-2.0	6.4
Type of household (HH)									
HH without children	4.1	-1.0	2.4	-7.0	-7.8	0.3	-3.6	-4.2	10.1
Retiree HH	11.8	-5.1	5.0	-8.3	-6.6	0.7	-3.3	2.3	15.9
HH with children	7.1	-1.6	8.8	-0.6	-6.8	-3.4	-2.8	-2.0	7.0
1 child	4.3	-7.3	12.0	-2.0	-6.5	-6.3	-5.2	-2.3	7.4
2 children	7.2	8.7	2.0	-3.0	-7.6	2.2	-1.2	-2.7	7.0
3 and more children	10.9	14.1	13.3	0.9	-5.5	5.0	-8.3	6.0	0.7
single parent	12.8	-12.0	6.9	0.8	-3.2	-2.1	2.9	-2.4	1.9

Source: Authors' estimates based on HSS data.

Table A11. Net savings (savings-dissavings) as share of disposable income

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	18	20	19	28	29	27	10	22	17	23	22	22	17	21	20	19
Large cities	13	18	16	19	12	19	12	16	8	14	14	13	9	16	13	16
Small cities	14	21	17	18	12	18	12	14	5	12	9	8	9	15	12	12
Rural area	7	14	14	12	3	13	15	13	9	13	13	14	11	14	15	18
Age																
Child	11	20	19	19	11	19	12	16	10	17	14	14	10	17	15	17
working age	13	21	18	21	14	22	12	18	11	18	16	16	13	19	16	18
Retiree	12	11	13	14	12	13	11	14	6	9	11	10	9	12	12	13
Employment status for working age population																
Employed	17	23	20	22	17	23	16	20	13	20	19	19	16	20	18	20
Partly employed	9	27	5	1	3	19	9	13	1	20	10	11	9	20	6	21
Nonemployed	8	15	17	20	11	18	7	11	7	10	13	11	5	16	15	13
Education level for working age population																
high education	17	18	16	23	17	22	7	21	15	22	16	19	17	19	13	17
secondary specialized	14	25	18	20	14	23	10	17	9	17	17	15	10	17	16	16
Other	11	19	18	20	12	21	17	15	10	15	16	16	12	20	18	20
Type of household (HH)																
HH without children	12	14	12	16	11	16	9	14	9	13	13	13	11	14	12	14
Retiree HH	9	6	10	10	5	7	8	9	3	4	7	7	3	6	7	8
HH with children	13	22	21	21	15	22	15	19	10	17	16	16	12	19	17	19
1 child	15	25	23	22	18	23	20	21	8	16	17	17	13	20	18	21
2 children	13	20	19	21	16	20	5	15	14	18	14	14	12	20	15	17
3 and more children	3	16	14	15	-15	17	19	13	9	23	17	13	5	12	17	11
single parent	0	8	4	3	-1	2	8	6	-5	2	-2	3	0	4	-1	7

Source: Authors' estimates based on HBS data.

Table A12. Earnings, in real terms (2014q1 set to 100)

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	100	107.1	103.7	108.3	109.8	110.6	108.3	113.0	97.8	100.6	98.3	99.3	92.8	98.6	96.5	100.2
Large cities	100	105.1	104.5	105.8	92.6	96.7	94.9	94.9	85.3	89.7	90.3	89.6	82.9	89.9	90.5	94.2
Small cities	100	107.3	106.6	104.8	85.3	90.3	88.9	87.4	78.0	84.3	82.9	82.5	76.5	82.3	83.2	87.2
Rural area	100	107.7	109.8	107.0	93.4	100.4	102.0	96.3	85.6	92.7	92.9	88.8	84.6	94.3	96.1	95.8
Age																
Child	100	105.8	106.5	107.3	97.1	102.7	102.3	102.7	87.8	94.5	95.7	94.9	86.1	95.2	97.2	100.7
working age	100	108.0	108.3	109.5	96.5	100.8	100.3	100.4	89.3	94.3	94.6	94.1	87.4	94.8	95.6	97.7
Retiree	100	103.6	98.9	98.9	97.3	98.7	95.5	93.2	86.2	90.3	85.1	85.0	86.9	93.2	89.7	96.1
Employment status for working age population																
Employed	100	107.0	106.9	107.0	95.5	99.4	99.1	98.6	88.5	92.9	92.4	91.9	87.5	94.0	93.9	96.5
Partly employed	100	104.3	106.6	100.3	85.0	94.5	100.2	88.9	79.1	86.9	88.5	87.4	69.8	79.1	99.8	87.0
Nonemployed	100	103.3	104.8	106.9	101.1	104.7	103.3	103.8	82.5	87.8	90.3	87.8	80.2	90.1	89.7	91.9
Education level for working age population																
high education	100	106.5	103.2	109.5	93.9	99.1	95.3	98.6	91.9	96.4	93.8	96.4	88.2	95.4	91.7	95.7
secondary specialized	100	108.6	110.9	110.2	99.0	101.5	102.1	100.9	85.1	91.7	92.8	90.1	83.3	89.7	93.2	94.4
Other	100	108.8	110.5	108.7	94.8	99.3	101.1	98.7	87.8	91.9	94.3	93.2	86.3	95.0	98.3	99.9
Type of household (HH)																
HH without children	100	105.9	104.3	104.3	94.3	97.4	95.5	94.2	87.2	90.7	87.9	86.8	83.7	89.1	87.8	90.8
Retiree HH	100	103.3	98.9	100.8	90.3	92.7	90.2	90.4	87.4	92.0	84.4	83.0	84.4	92.5	88.3	88.8
HH with children	100	106.8	107.0	108.2	97.9	103.1	102.5	103.1	87.7	94.1	95.9	95.2	86.1	95.1	97.0	100.0
1 child	100	109.3	108.2	110.7	96.9	101.9	100.9	101.8	86.8	92.4	93.9	94.8	84.6	93.4	95.3	97.1
2 children	100	105.9	108.6	109.8	99.1	104.4	105.6	105.4	87.3	95.2	98.5	94.3	87.8	98.2	99.3	104.3
3 and more children	100	110.8	118.6	113.3	89.0	100.4	95.2	93.2	91.9	99.8	96.9	94.5	83.7	89.2	95.1	100.0
single parent	100	99.9	98.0	102.4	93.4	97.4	93.8	100.9	83.9	92.3	84.6	86.4	83.7	93.1	95.2	98.1

Source: Authors' estimates based on HSS data.

Table A13. Government transfers, in real terms (2014q1 set to 100)

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	100.0	103.7	105.4	109.4	105.9	102.9	103.9	106.5	104.6	105.6	98.7	104.0	111.1	108.2	108.5	111.3
Large cities	100.0	103.5	102.4	107.8	108.0	104.6	107.1	106.7	103.3	101.6	100.3	102.6	102.6	99.9	99.4	102.2
Small cities	100.0	100.8	102.0	106.0	105.9	104.5	106.7	110.1	101.7	100.3	98.3	100.2	105.3	103.6	104.4	104.4
Rural area	100.0	99.5	102.9	104.6	99.2	98.4	100.9	102.4	95.6	94.9	93.8	93.9	96.0	95.3	95.3	96.4
Age																
Child	100.0	108.1	105.5	105.3	104.9	102.1	106.1	103.5	104.3	103.1	94.1	99.5	106.9	105.0	103.4	106.4
working age	100.0	99.7	96.7	99.8	106.3	102.8	103.1	103.4	99.3	97.8	91.2	93.8	101.1	95.5	93.5	96.9
Retiree	100.0	100.6	102.6	105.9	100.6	100.1	100.2	101.7	96.3	95.0	94.5	94.1	93.1	91.9	92.5	93.6
Employment status for working age population																
Employed	100.0	99.4	98.9	102.5	104.6	101.4	100.1	102.4	100.1	96.8	91.4	95.1	98.7	93.9	90.6	94.0
Partly employed	100.0	112.7	75.3	97.2	113.6	91.6	97.4	126.7	75.1	129.5	98.6	113.5	98.1	94.8	81.9	93.3
Nonemployed	100.0	104.5	105.0	109.7	107.0	106.3	109.6	109.4	109.1	106.4	103.2	106.3	112.8	109.0	109.5	112.4
Education level for working age population																
high education	100.0	96.5	91.8	94.2	105.8	107.7	109.2	108.2	99.4	100.4	90.4	91.7	104.7	100.1	94.6	101.6
secondary specialized	100.0	101.0	98.1	100.4	102.6	95.6	96.3	97.5	106.0	102.1	95.0	101.6	101.2	95.9	97.1	97.1
Other	100.0	100.8	98.6	103.1	108.4	104.2	104.1	102.9	94.3	92.6	88.7	89.3	98.2	91.7	89.8	92.7
Type of household (HH)																
HH without children	100.0	101.0	103.5	107.7	103.7	103.7	103.8	106.3	100.5	99.5	98.5	100.1	101.9	99.9	100.6	103.2
Retiree HH	100.0	97.5	99.1	102.3	99.3	98.0	97.4	98.1	93.2	91.6	90.2	90.3	90.4	88.7	88.5	91.3
HH with children	100.0	105.3	101.3	103.1	103.5	102.0	103.3	101.5	101.5	99.7	90.5	95.3	105.3	102.2	99.4	103.7
1 child	100.0	94.6	91.5	94.9	99.7	99.7	97.8	96.5	94.1	94.1	84.6	86.4	100.3	93.9	87.9	95.0
2 children	100.0	117.0	109.6	110.5	105.7	101.1	102.7	102.5	110.9	102.6	92.2	102.5	111.3	113.0	116.4	116.3
3 and more children	100.0	132.4	132.2	126.3	123.3	120.2	147.1	135.2	123.6	131.8	128.6	136.9	121.4	126.4	125.1	125.0
single parent	100.0	106.7	103.9	96.9	106.3	103.8	108.9	102.2	105.8	106.6	99.4	98.5	111.1	105.5	98.4	100.6

Source: Authors' estimates based on HSS data.

Table A14. In kind, in real terms (2014q1 set to 100)

	2014				2015				2016				2017			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Place of residence																
Minsk	100.0	66.4	112.1	105.5	85.2	73.0	109.9	103.6	96.3	82.5	128.0	131.2	118.4	87.1	145.9	125.5
Large cities	100.0	95.2	109.1	97.4	101.7	97.5	118.1	119.9	114.5	99.7	126.7	132.7	133.6	121.1	151.3	142.8
Small cities	100.0	86.6	99.9	94.6	113.4	93.6	110.3	122.6	123.2	112.4	118.6	137.5	128.1	117.9	127.2	140.9
Rural area	100.0	82.9	87.1	98.6	98.4	81.9	92.8	109.2	119.1	95.8	105.5	125.4	123.6	111.6	114.4	121.5
Age																
Child	100.0	82.0	99.1	96.2	96.8	82.0	95.4	104.6	110.8	91.5	106.3	115.2	115.8	102.4	111.0	114.2
working age	100.0	86.4	96.3	96.4	99.5	83.9	99.7	108.0	112.7	94.0	109.3	124.5	121.4	106.1	120.6	121.1
Retiree	100.0	84.9	99.0	103.4	98.6	90.2	109.9	122.1	118.6	104.5	124.2	139.0	130.6	119.8	143.0	144.2
Employment status for working age population																
Employed	100.0	84.1	92.9	93.1	98.0	82.1	101.6	108.4	106.9	92.5	107.5	121.4	118.1	102.0	119.1	118.6
Partly employed	100.0	74.4	87.5	103.4	83.7	81.0	94.0	99.5	120.3	83.3	98.5	108.0	103.7	107.2	99.6	92.5
Nonemployed	100.0	89.9	108.3	109.4	104.0	91.3	106.8	117.3	125.5	100.8	121.3	139.7	130.3	114.1	132.2	133.7
Education level for working age population																
high education	100.0	86.8	102.6	94.7	101.3	87.3	110.6	108.2	109.1	92.0	115.1	123.3	119.8	105.8	134.2	130.5
secondary specialized	100.0	79.2	90.0	94.0	96.4	83.2	92.9	102.2	111.9	93.6	107.8	121.7	122.3	108.5	116.7	118.9
Other	100.0	92.3	98.8	99.2	103.1	83.6	100.6	113.5	116.8	96.6	108.6	128.8	124.0	105.8	117.2	118.9
Type of household (HH)																
HH without children	100.0	88.3	96.7	100.0	101.6	90.2	107.2	116.9	116.4	102.3	119.1	136.8	129.4	116.4	137.6	138.3
Retiree HH	100.0	83.6	93.1	99.4	95.9	88.7	106.8	117.3	113.2	103.1	118.6	132.6	128.8	117.0	138.0	144.1
HH with children	100.0	81.0	98.8	96.3	94.7	79.7	94.8	104.5	111.5	89.3	105.2	114.8	116.7	102.2	111.9	115.3
1 child	100.0	81.7	97.4	95.3	92.0	79.7	96.0	103.2	111.9	88.4	103.9	112.9	117.6	101.2	113.1	116.5
2 children	100.0	79.5	95.7	93.3	93.0	75.7	89.1	103.5	108.8	89.0	105.3	119.2	115.2	104.4	109.5	117.2
3 and more children	100.0	81.8	115.3	110.7	120.4	93.3	107.5	118.3	119.2	97.4	114.6	111.7	115.2	101.3	111.2	98.0
single parent	100.0	90.7	90.1	79.4	101.6	91.3	99.0	104.0	104.6	111.8	117.0	118.2	108.2	104.4	110.4	114.9

Source: Authors' estimates based on HSS data.

Table A15: Summary statistics

VARIABLES		(1) N	(2) mean	(3) sd	(4) min	(5) max
Absolute poverty	pov_abs	219,792	0.0559	0.230	0	1
Child	child	219,792	0.195	0.397	0	1
Household with children	hh_ch	219,792	0.499	0.500	0	1
Household with 3+ children	hh_3more_ch	219,792	0.0441	0.205	0	1
Household with a single adult and children	hh_single	219,792	0.0428	0.202	0	1
Retired individual	retiree	219,792	0.270	0.444	0	1
Higher education	high_edu	219,792	0.137	0.344	0	1
Secondary specialized	ss_edu	219,792	0.179	0.383	0	1
Vocational education	voc_edu	219,792	0.0898	0.286	0	1
Secondary education	sec_edu	219,792	0.107	0.309	0	1
Basic, primary or don't have education	low_edu	219,792	0.0115	0.107	0	1
Large city	large_cities	219,792	0.360	0.480	0	1
Small city	small_cities	219,792	0.190	0.393	0	1
Rural	rural	219,792	0.259	0.438	0	1
Brest oblast	1.region	219,792	0.150	0.357	0	1
Vitebsk oblast	2.region	219,792	0.128	0.335	0	1
Gomel oblast	3.region	219,792	0.153	0.360	0	1
Grodno oblast	4.region	219,792	0.114	0.318	0	1
Minsk city	5.region	219,792	0.190	0.392	0	1
Minsk oblast	6.region	219,792	0.150	0.357	0	1
Mogilev oblast	7.region	219,792	0.115	0.319	0	1
Employed	empl	219,792	0.451	0.498	0	1
Partly employed	part_empl	219,792	0.0222	0.147	0	1
Non-employed	nonempl	219,792	0.121	0.326	0	1
Logarithm of income	log_income	219,792	14.91	0.930	3.916	19.60

Table A16: Poverty regressions

VARIABLES	(2014q1) pov_abs	(2014q2) pov_abs	(2014q3) pov_abs	(2014q4) pov_abs	(2015q1) pov_abs	(2015q2) pov_abs	(2015q3) pov_abs	(2015q4) pov_abs
empl	-4.270	-0.962**	-0.502*	-0.378	-0.709**	-0.359	-0.326	-0.612**
	(169.3)	(0.448)	(0.261)	(0.245)	(0.336)	(0.227)	(0.202)	(0.264)
part_empl	-3.757	-0.346	-0.0174	0.0613	-0.270	0.251	-0.0636	-0.213
	(169.3)	(0.463)	(0.280)	(0.282)	(0.351)	(0.249)	(0.226)	(0.287)
nonempl	-3.667	-0.464	-0.0492	0.0771	-0.178	0.0957	0.163	-0.107
	(169.3)	(0.451)	(0.267)	(0.253)	(0.341)	(0.234)	(0.209)	(0.270)
child	-4.604	-1.051**	-0.143	0.381	-0.634	0.198	-0.0818	-0.344
	(169.3)	(0.519)	(0.393)	(0.477)	(0.467)	(0.284)	(0.235)	(0.290)
retiree	-4.784	-1.504***	-0.624	-0.0807	-1.236***	-0.438	-0.622***	-0.818***
	(169.3)	(0.515)	(0.389)	(0.471)	(0.461)	(0.275)	(0.225)	(0.280)
hh_ch	0.658***	0.642***	0.590***	0.615***	0.559***	0.568***	0.591***	0.633***
	(0.0568)	(0.0591)	(0.0582)	(0.0611)	(0.0534)	(0.0529)	(0.0517)	(0.0534)
hh_3more_ch	0.854***	0.636***	0.625***	0.599***	0.593***	0.626***	0.573***	0.558***
	(0.0544)	(0.0558)	(0.0568)	(0.0574)	(0.0549)	(0.0530)	(0.0519)	(0.0531)
hh_single	0.321***	0.441***	0.519***	0.527***	0.385***	0.383***	0.381***	0.374***
	(0.0660)	(0.0652)	(0.0662)	(0.0678)	(0.0661)	(0.0649)	(0.0638)	(0.0661)
high_edu	-1.062***	-0.892***	-0.395	-0.0637	-0.623*	-0.0992	-0.356***	-0.441***
	(0.142)	(0.272)	(0.301)	(0.418)	(0.329)	(0.181)	(0.132)	(0.135)
ss_edu	-0.647***	-0.409	0.0664	0.498	-0.213	0.348**	0.0529	0.0521
	(0.128)	(0.263)	(0.294)	(0.410)	(0.324)	(0.172)	(0.121)	(0.121)
voc_edu	-0.343***	-0.00952	0.370	0.875**	0.105	0.580***	0.249**	0.271**
	(0.130)	(0.264)	(0.296)	(0.411)	(0.325)	(0.175)	(0.126)	(0.126)
sec_edu	-0.424***	-0.0985	0.450	0.809**	0.0693	0.509***	0.203*	0.315***
	(0.130)	(0.264)	(0.295)	(0.411)	(0.324)	(0.173)	(0.123)	(0.122)
o.low_edu	-							
2.region	-0.188***	-0.0944	0.0964	0.0321	-0.0567	-0.0235	-0.152**	-0.0370
	(0.0657)	(0.0660)	(0.0669)	(0.0681)	(0.0647)	(0.0628)	(0.0623)	(0.0632)
3.region	-0.123**	-0.143**	0.0418	0.00785	0.0274	0.0762	-0.0656	0.0117
	(0.0595)	(0.0616)	(0.0629)	(0.0637)	(0.0594)	(0.0575)	(0.0563)	(0.0578)
4.region	-0.330***	-0.394***	-0.387***	-0.356***	-0.231***	-0.292***	-0.265***	-0.265***
	(0.0731)	(0.0766)	(0.0820)	(0.0802)	(0.0692)	(0.0689)	(0.0650)	(0.0684)
5.region	-0.909***	-1.260***	-0.899***	-0.959***	-1.212***	-1.057***	-1.215***	-1.227***
	(0.0875)	(0.116)	(0.0983)	(0.103)	(0.100)	(0.0920)	(0.0971)	(0.106)
6.region	-0.357***	-0.361***	-0.299***	-0.469***	-0.345***	-0.404***	-0.412***	-0.305***
	(0.0647)	(0.0665)	(0.0698)	(0.0749)	(0.0660)	(0.0664)	(0.0637)	(0.0645)
7.region	-0.115*	-0.0547	0.152**	0.0294	0.0170	-0.105	-0.0883	-0.00758
	(0.0664)	(0.0668)	(0.0672)	(0.0695)	(0.0654)	(0.0656)	(0.0627)	(0.0642)
2.resid	-0.200***	-0.267***	-0.276***	-0.308***	-0.558***	-0.443***	-0.371***	-0.334***
	(0.0467)	(0.0488)	(0.0488)	(0.0508)	(0.0452)	(0.0445)	(0.0433)	(0.0437)
3.resid	-0.189***	-0.0496	-0.151***	-0.0931*	-0.417***	-0.277***	-0.236***	-0.286***
	(0.0511)	(0.0504)	(0.0519)	(0.0525)	(0.0538)	(0.0522)	(0.0510)	(0.0529)
4o.resid	-	-	-	-	-	-	-	-
low_edu		0.0846	0.741**	1.138***	0.289	0.697***	0.585***	0.468***
		(0.291)	(0.313)	(0.423)	(0.350)	(0.219)	(0.175)	(0.171)
Constant	2.876	-0.657	-1.622***	-2.159***	-0.799*	-1.673***	-1.376***	-1.237***
	(169.3)	(0.523)	(0.398)	(0.481)	(0.469)	(0.286)	(0.237)	(0.291)
Observations	14,195	13,646	13,310	13,122	13,831	13,939	13,944	13,901

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

continued on next page

VARIABLES	(2016q1) pov_abs	(2016q2) pov_abs	(2016q3) pov_abs	(2016q4) pov_abs	(2017q1) pov_abs	(2017q2) pov_abs	(2017q3) pov_abs	(2017q4) pov_abs
empl	-0.426*	-0.439*	-0.343*	-0.662**	-0.605**	-0.443*	-0.325	-0.447**
	(0.222)	(0.255)	(0.198)	(0.263)	(0.251)	(0.247)	(0.203)	(0.221)
part_empl	0.106	-0.126	-0.0694	-0.227	-0.312	0.00359	0.151	0.0271
	(0.248)	(0.279)	(0.222)	(0.286)	(0.274)	(0.270)	(0.227)	(0.253)
nonempl	-0.0360	-0.111	0.115	-0.284	-0.256	-0.0440	0.0378	-0.0620
	(0.229)	(0.261)	(0.206)	(0.269)	(0.257)	(0.253)	(0.211)	(0.229)
child	-0.757***	3.316	-0.543	3.429	-1.593*	-1.572**	2.739	2.715
	(0.266)	(159.3)	(0.610)	(112.7)	(0.880)	(0.630)	(160.7)	(192.7)
retiree	-1.318***	2.716	-1.074*	2.909	-2.092**	-2.217***	2.185	2.218
	(0.255)	(159.3)	(0.605)	(112.7)	(0.876)	(0.623)	(160.7)	(192.7)
hh_ch	0.557***	0.706***	0.639***	0.673***	0.654***	0.658***	0.658***	0.656***
	(0.0520)	(0.0536)	(0.0507)	(0.0504)	(0.0527)	(0.0525)	(0.0526)	(0.0541)
hh_3more_ch	0.665***	0.699***	0.550***	0.532***	0.606***	0.787***	0.649***	0.699***
	(0.0534)	(0.0519)	(0.0518)	(0.0503)	(0.0511)	(0.0492)	(0.0497)	(0.0504)
hh_single	0.406***	0.367***	0.322***	0.417***	0.306***	0.176***	0.310***	0.291***
	(0.0599)	(0.0586)	(0.0583)	(0.0565)	(0.0601)	(0.0625)	(0.0608)	(0.0628)
high_edu	-1.063***	2.995	-1.005*	3.374	-1.695**	-1.897***	2.440	2.443
	(0.159)	(159.3)	(0.579)	(112.7)	(0.845)	(0.582)	(160.7)	(192.7)
ss_edu	-0.528***	3.595	-0.398	3.909	-1.054	-1.222**	3.043	3.110
	(0.146)	(159.3)	(0.576)	(112.7)	(0.843)	(0.579)	(160.7)	(192.7)
voc_edu	-0.304**	3.844	-0.0697	4.123	-0.991	-1.069*	3.046	3.180
	(0.150)	(159.3)	(0.577)	(112.7)	(0.843)	(0.580)	(160.7)	(192.7)
sec_edu	-0.238	3.885	-0.0915	4.276	-0.828	-0.965*	3.191	3.349
	(0.147)	(159.3)	(0.577)	(112.7)	(0.843)	(0.579)	(160.7)	(192.7)
o.low_edu	-							
2.region	-0.0213	0.0681	-0.0751	-0.0136	0.0398	-0.0266	0.149**	0.0757
	(0.0605)	(0.0622)	(0.0603)	(0.0580)	(0.0638)	(0.0635)	(0.0626)	(0.0631)
3.region	-0.148**	0.0250	-0.00345	-0.0629	0.146**	0.0700	0.109*	-0.00428
	(0.0581)	(0.0581)	(0.0549)	(0.0544)	(0.0571)	(0.0564)	(0.0575)	(0.0582)
4.region	-0.187***	-0.0594	-0.250***	-0.245***	0.0369	-0.153**	-0.165**	-0.268***
	(0.0651)	(0.0661)	(0.0657)	(0.0640)	(0.0662)	(0.0679)	(0.0700)	(0.0716)
5.region	-1.202***	-0.924***	-1.183***	-1.048***	-0.942***	-1.050***	-0.951***	-0.909***
	(0.0993)	(0.0880)	(0.0955)	(0.0874)	(0.0937)	(0.0959)	(0.0916)	(0.0895)
6.region	-0.380***	-0.362***	-0.319***	-0.309***	-0.135**	-0.189***	-0.218***	-0.237***
	(0.0621)	(0.0648)	(0.0602)	(0.0587)	(0.0630)	(0.0623)	(0.0642)	(0.0642)
7.region	-0.108*	0.143**	0.0114	-0.131**	0.0342	0.0846	0.201***	0.0140
	(0.0639)	(0.0624)	(0.0610)	(0.0617)	(0.0660)	(0.0632)	(0.0631)	(0.0655)
2.resid	-0.437***	-0.438***	-0.392***	-0.291***	-0.313***	-0.218***	-0.311***	-0.324***
	(0.0438)	(0.0435)	(0.0418)	(0.0413)	(0.0426)	(0.0419)	(0.0422)	(0.0439)
3.resid	-0.175***	-0.254***	-0.271***	-0.122**	-0.205***	-0.204***	-0.238***	-0.157***
	(0.0493)	(0.0504)	(0.0495)	(0.0479)	(0.0506)	(0.0514)	(0.0511)	(0.0515)
4o.resid	-	-	-	-	-	-	-	-
low_edu		4.266	0.115	4.389	-0.781	-0.806	3.352	3.351
		(159.3)	(0.589)	(112.7)	(0.856)	(0.594)	(160.7)	(192.7)
Constant	-0.683**	-4.948	-0.921	-4.935	-0.0774	-0.0557	-4.408	-4.368
	(0.267)	(159.3)	(0.610)	(112.7)	(0.880)	(0.629)	(160.7)	(192.7)
Observations	13,802	13,904	13,839	13,840	13,624	13,679	13,643	13,573

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A17:. Income regressions

VARIABLES	(2014q1) log_income	(2014q2) log_income	(2014q3) log_income	(2014q4) log_income	(2015q1) log_income	(2015q2) log_income	(2015q3) log_income	(2015q4) log_income
empl	0.394***	0.407***	0.398***	0.415***	0.364***	0.395***	0.393***	0.390***
	(0.0165)	(0.0167)	(0.0174)	(0.0167)	(0.0156)	(0.0162)	(0.0171)	(0.0159)
part_empl	0.257***	0.292***	0.276***	0.239***	0.211***	0.195***	0.308***	0.260***
	(0.0318)	(0.0310)	(0.0278)	(0.0339)	(0.0271)	(0.0293)	(0.0274)	(0.0304)
nonempl	0.141***	0.183***	0.184***	0.204***	0.156***	0.195***	0.183***	0.190***
	(0.0201)	(0.0207)	(0.0216)	(0.0210)	(0.0194)	(0.0202)	(0.0213)	(0.0201)
child	0.584***	0.456***	0.374***	0.329***	0.300***	0.352***	0.307***	0.297***
	(0.0372)	(0.0604)	(0.0555)	(0.0534)	(0.0648)	(0.0320)	(0.0299)	(0.0275)
retiree	0.461***	0.297***	0.222***	0.185***	0.199***	0.234***	0.181***	0.180***
	(0.0353)	(0.0594)	(0.0544)	(0.0522)	(0.0639)	(0.0299)	(0.0275)	(0.0251)
hh_ch	-0.352***	-0.339***	-0.332***	-0.332***	-0.354***	-0.346***	-0.337***	-0.341***
	(0.00898)	(0.00934)	(0.00972)	(0.00958)	(0.00893)	(0.00927)	(0.00970)	(0.00932)
hh_3more_ch	-0.317***	-0.311***	-0.254***	-0.279***	-0.231***	-0.276***	-0.235***	-0.234***
	(0.0153)	(0.0150)	(0.0155)	(0.0150)	(0.0146)	(0.0148)	(0.0152)	(0.0147)
hh_single	-0.0690***	-0.103***	-0.118***	-0.140***	-0.0955***	-0.0952***	-0.0836***	-0.0797***
	(0.0161)	(0.0161)	(0.0171)	(0.0169)	(0.0158)	(0.0165)	(0.0171)	(0.0166)
high_edu	0.474***	0.338***	0.245***	0.197***	0.192***	0.227***	0.188***	0.165***
	(0.0331)	(0.0580)	(0.0527)	(0.0508)	(0.0628)	(0.0277)	(0.0245)	(0.0226)
ss_edu	0.282***	0.131**	0.0620	-0.00977	0.0107	0.0182	-0.0304	-0.0320
	(0.0326)	(0.0578)	(0.0525)	(0.0505)	(0.0627)	(0.0273)	(0.0240)	(0.0221)
voc_edu	0.184***	0.0345	-0.0396	-0.113**	-0.0916	-0.0588**	-0.102***	-0.124***
	(0.0334)	(0.0584)	(0.0531)	(0.0511)	(0.0631)	(0.0286)	(0.0257)	(0.0238)
sec_edu	0.189***	0.0138	-0.0542	-0.115**	-0.0846	-0.0670**	-0.111***	-0.119***
	(0.0331)	(0.0583)	(0.0530)	(0.0510)	(0.0629)	(0.0281)	(0.0250)	(0.0231)
o.low_edu	-							
2.region	0.0378***	0.0433***	-0.00526	0.0133	0.0464***	0.0282**	0.0469***	0.0478***
	(0.0127)	(0.0130)	(0.0134)	(0.0132)	(0.0124)	(0.0128)	(0.0134)	(0.0128)
3.region	0.0404***	0.0202	-0.0345***	0.0128	0.0452***	0.0192	0.0250**	0.0261**
	(0.0121)	(0.0124)	(0.0128)	(0.0126)	(0.0118)	(0.0122)	(0.0127)	(0.0122)
4.region	0.0622***	0.0803***	0.0207	0.0858***	0.0964***	0.0910***	0.0891***	0.0752***
	(0.0133)	(0.0135)	(0.0139)	(0.0136)	(0.0127)	(0.0131)	(0.0137)	(0.0131)
5.region	0.307***	0.334***	0.324***	0.386***	0.475***	0.469***	0.466***	0.456***
	(0.0134)	(0.0137)	(0.0142)	(0.0140)	(0.0131)	(0.0135)	(0.0141)	(0.0135)
6.region	0.153***	0.141***	0.112***	0.143***	0.109***	0.135***	0.124***	0.113***
	(0.0123)	(0.0126)	(0.0131)	(0.0129)	(0.0120)	(0.0124)	(0.0129)	(0.0124)
7.region	0.0130	0.0167	-0.0528***	-0.0216	0.00438	0.0143	0.00361	-0.000519
	(0.0133)	(0.0135)	(0.0140)	(0.0137)	(0.0128)	(0.0132)	(0.0138)	(0.0132)
2.resid	0.106***	0.0910***	0.116***	0.130***	0.157***	0.144***	0.144***	0.140***
	(0.00891)	(0.00908)	(0.00940)	(0.00924)	(0.00842)	(0.00873)	(0.00910)	(0.00871)
3.resid	0.0484***	0.0238**	0.0488***	0.0484***	0.0736***	0.0695***	0.0613***	0.0779***
	(0.00950)	(0.00972)	(0.0100)	(0.00986)	(0.00988)	(0.0102)	(0.0107)	(0.0102)
4o.resid	-	-	-	-	-	-	-	-
low_edu		-0.148**	-0.236***	-0.236***	-0.200***	-0.176***	-0.228***	-0.200***
		(0.0658)	(0.0608)	(0.0581)	(0.0718)	(0.0453)	(0.0447)	(0.0397)
Constant	14.29***	14.51***	14.66***	14.68***	14.66***	14.66***	14.73***	14.76***
	(0.0371)	(0.0608)	(0.0559)	(0.0538)	(0.0649)	(0.0320)	(0.0299)	(0.0275)
Observations	14,195	13,646	13,310	13,122	13,831	13,939	13,944	13,901
R-squared	0.315	0.311	0.288	0.320	0.355	0.340	0.308	0.325

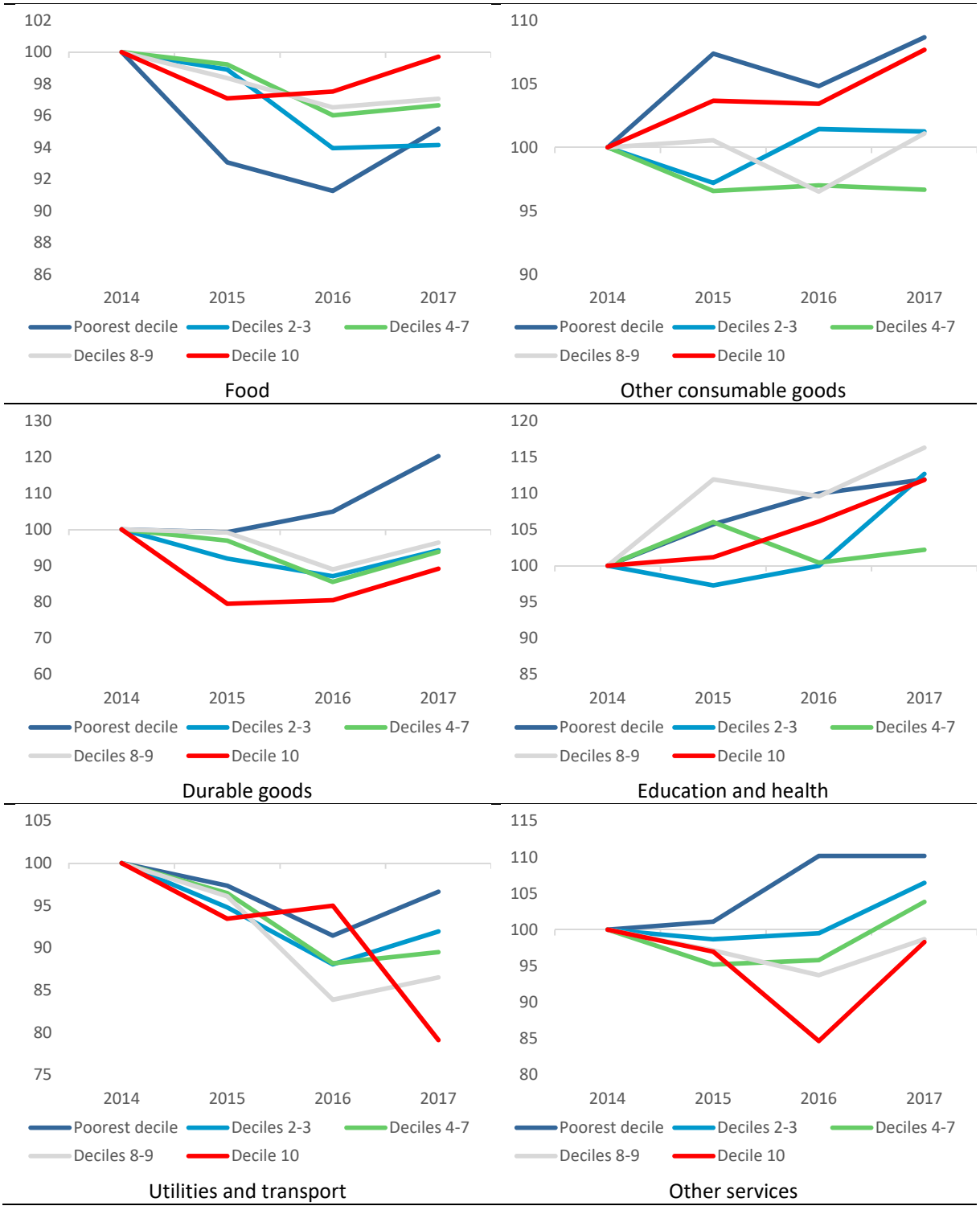
Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

continued on next page

VARIABLES	(2016q1) log_income	(2016q2) log_income	(2016q3) log_income	(2016q4) log_income	(2017q1) log_income	(2017q2) log_income	(2017q3) log_income	(2017q4) log_income
empl	0.352***	0.386***	0.368***	0.387***	0.339***	0.359***	0.387***	0.387***
	(0.0154)	(0.0159)	(0.0164)	(0.0152)	(0.0151)	(0.0158)	(0.0161)	(0.0151)
part_empl	0.193***	0.279***	0.283***	0.257***	0.191***	0.161***	0.275***	0.225***
	(0.0300)	(0.0305)	(0.0276)	(0.0299)	(0.0291)	(0.0313)	(0.0287)	(0.0325)
nonempl	0.166***	0.204***	0.149***	0.201***	0.142***	0.155***	0.197***	0.192***
	(0.0195)	(0.0204)	(0.0211)	(0.0197)	(0.0196)	(0.0207)	(0.0212)	(0.0201)
child	0.472***	-0.0156	0.355**	0.243*	0.391*	0.202	0.211	0.226
	(0.0415)	(0.155)	(0.149)	(0.140)	(0.226)	(0.168)	(0.186)	(0.178)
retiree	0.379***	-0.141	0.223	0.107	0.281	0.0905	0.0569	0.0672
	(0.0400)	(0.155)	(0.148)	(0.140)	(0.226)	(0.167)	(0.185)	(0.177)
hh_ch	-0.367***	-0.368***	-0.342***	-0.358***	-0.363***	-0.342***	-0.346***	-0.355***
	(0.00913)	(0.00944)	(0.00971)	(0.00917)	(0.00930)	(0.00977)	(0.00993)	(0.00955)
hh_3more_ch	-0.265***	-0.260***	-0.266***	-0.242***	-0.279***	-0.306***	-0.282***	-0.291***
	(0.0148)	(0.0150)	(0.0152)	(0.0141)	(0.0140)	(0.0143)	(0.0145)	(0.0139)
hh_single	-0.0584***	-0.0361**	-0.0594***	-0.0979***	-0.0343**	-0.0435***	-0.0486***	-0.0399***
	(0.0149)	(0.0153)	(0.0155)	(0.0148)	(0.0147)	(0.0156)	(0.0159)	(0.0154)
high_edu	0.380***	-0.120	0.253*	0.121	0.301	0.122	0.0852	0.102
	(0.0384)	(0.155)	(0.148)	(0.139)	(0.225)	(0.167)	(0.185)	(0.177)
ss_edu	0.178***	-0.355**	0.0444	-0.102	0.101	-0.117	-0.151	-0.137
	(0.0380)	(0.155)	(0.148)	(0.139)	(0.225)	(0.167)	(0.185)	(0.177)
voc_edu	0.0811**	-0.460***	-0.0643	-0.190	0.00166	-0.215	-0.220	-0.197
	(0.0390)	(0.155)	(0.148)	(0.139)	(0.225)	(0.167)	(0.185)	(0.177)
sec_edu	0.0782**	-0.459***	-0.0629	-0.211	0.00403	-0.203	-0.225	-0.230
	(0.0385)	(0.155)	(0.148)	(0.139)	(0.225)	(0.167)	(0.185)	(0.177)
o.low_edu	-							
2.region	0.0434***	0.00949	0.0335**	0.0320***	-0.00232	-0.0130	-0.0201	-0.0315**
	(0.0124)	(0.0128)	(0.0131)	(0.0123)	(0.0124)	(0.0130)	(0.0132)	(0.0127)
3.region	0.0449***	0.0172	0.0328***	0.0184	-0.0253**	-0.0307**	-0.0226*	0.000570
	(0.0118)	(0.0121)	(0.0124)	(0.0117)	(0.0117)	(0.0122)	(0.0124)	(0.0118)
4.region	0.0650***	0.0460***	0.0762***	0.0798***	0.000688	0.0139	0.0368***	0.0330**
	(0.0128)	(0.0132)	(0.0135)	(0.0128)	(0.0129)	(0.0134)	(0.0136)	(0.0131)
5.region	0.431***	0.398***	0.380***	0.400***	0.360***	0.346***	0.305***	0.324***
	(0.0132)	(0.0135)	(0.0139)	(0.0130)	(0.0132)	(0.0137)	(0.0139)	(0.0133)
6.region	0.125***	0.102***	0.120***	0.113***	0.0606***	0.0755***	0.0788***	0.0642***
	(0.0119)	(0.0123)	(0.0126)	(0.0118)	(0.0120)	(0.0125)	(0.0127)	(0.0122)
7.region	0.0455***	-0.00929	0.00926	0.0210*	-0.0204	-0.0549***	-0.0599***	-0.0491***
	(0.0128)	(0.0132)	(0.0135)	(0.0127)	(0.0128)	(0.0134)	(0.0136)	(0.0130)
2.resid	0.153***	0.145***	0.115***	0.101***	0.123***	0.106***	0.118***	0.110***
	(0.00845)	(0.00871)	(0.00891)	(0.00839)	(0.00840)	(0.00876)	(0.00889)	(0.00852)
3.resid	0.0719***	0.0634***	0.0564***	0.0445***	0.0615***	0.0470***	0.0396***	0.0497***
	(0.00994)	(0.0102)	(0.0105)	(0.00986)	(0.00989)	(0.0104)	(0.0105)	(0.0101)
4o.resid	-	-	-	-	-	-	-	-
low_edu		-0.589***	-0.138	-0.246*	-0.0199	-0.233	-0.286	-0.230
		(0.159)	(0.152)	(0.142)	(0.229)	(0.171)	(0.189)	(0.180)
Constant	14.57***	5.935***	5.554***	5.683***	5.578***	5.826***	5.856***	5.866***
	(0.0414)	(0.155)	(0.149)	(0.140)	(0.226)	(0.168)	(0.186)	(0.178)
Observations	13,802	13,904	13,839	13,840	13,624	13,679	13,643	13,573
R-squared	0.346	0.330	0.294	0.335	0.335	0.317	0.286	0.315

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure A1: Expenditure dynamics across different expenditure categories, by decile, 2014-2017



Source: Authors' estimates based on HSS data.