

In-Work Poverty in Poland: Diagnosis and Possible Remedies

Piotr Lewandowski, Agnieszka Kamińska



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Abstract:

In this paper we analyze the evolution and the determinants of in-work poverty in Poland, according to three poverty lines: relative, absolute, and the 1998-adjusted poverty line. We find that behind moderately high in-work poverty incidence in Poland there is very high in-work poverty in agriculture and modest in-work poverty in all other sectors. Workers are much less likely to be poor than jobless individuals, especially the unemployed. In fact, the share of adults out of employment is a much stronger predictor of households' risk of poverty than the level of wages at which they work. Moreover, the share of jobless adults or of agricultural workers has become an increasing determinant of in-work poverty over time. The risk of in-work poverty is also inversely related to the educational attainment and the stability of employment of an individual, which is especially important considering that the incidence of temporary contracts in Poland is the highest across both EU and OECD countries. Existing fiscal and benefit policies have not been sufficient to address in-work poverty and some of its underlying causes in the labor market: we propose four policy recommendations aimed at tackling in-work and total poverty, and at increasing labor market participation and employment.

Keywords: in-work poverty, low pay, tax benefit systems, transition economies

JEL Classification Numbers: I32, J21, R28

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1 Incidence and Nature of In-Work Poverty in Poland

1.1 Introduction

Although paid work is the main source of most households' income, even households whose members work may be at risk of poverty. In Poland, as in other European countries, having a paid job significantly decreases the risk of poverty, but does not fully protect against it. Poverty is associated low-end of income distribution, but internationally, the relationship between in-work poverty and income inequality¹ remains far from defined. Furthermore, we find that in Poland individual wage levels are less related to the risk of household poverty than might be supposed. All of which leaves the precise interactions between the labor market and poverty in Poland as a collective enigma—and one needing the investigation that is the focus of this paper.

The first chapter of the paper presents in-work poverty in Poland in the international context, identifies groups of workers at particular risk of poverty, and assesses the relative importance of factors such as wages, household structure, and total labor supply. In tandem, we assess how individuals' as well as workplace characteristics affect in-work poverty risk.

The second chapter focuses on the impact that existing policies and recent reforms in the tax-benefit system have had on total and in-work poverty. We analyze the total impact of tax and benefit system on the total and in-work poverty rates in Poland, and present simulations of the impact of most important policy changes which were introduced in Poland between 2005 and 2012. We find that so far tax and benefit policies have not been addressing in-work poverty properly and policy makers should consider profound changes in the public intervention in order to tackle in-work poverty efficiently. We conclude the paper with summary of findings and policy recommendations.

1.2 Defining Poverty and the Working Poor

Analysis of in-work poverty requires detailed definition of several terms that are important to this study: “workers,” the “working poor,” and “poverty,” as well as the distinction between

¹ Measured with Gini index, D9 / D1 or D5 / D1 ratios.

total poverty rates and in-work poverty rates. Moreover, depending on the data being sought, either “relative” or “absolute” thresholds are used to calculate each type of poverty rate.

Workers. Those who were both earning wages and considering themselves as workers during the month of the study.

Working poor. Working members of poor households are considered the working poor.

In-work poverty rate. The proportion of workers living in poor households constitutes the in-work poverty rate.

Poverty. When equivalised household income falls short of defined poverty lines, that household is part of the incidence of poverty, expressed as a percentage of households. Poverty is defined at the household level because an individual’s situation also depends on the income of the other household members.

Poverty thresholds. Monetary poverty is calculated by comparing equivalised household income (using the “OECD-modified” equivalence scale defined below) with a defined “poverty threshold.” Following “*Employment in Poland 2011 – poverty and jobs*” (IBS 2013), we use three types of poverty thresholds to measure monetary poverty in Poland:²

- *The relative poverty line:* Sixty percent of a country’s median household equivalised income (based on the OECD-modified equivalence scale).³ This is the standard Eurostat measure of relative poverty.
- *The absolute poverty line:* A subsistence minimum income for single-person households—calculated each year by Polish Institute of Labor and Social Studies (*Instytut Pracy i Spraw Socjalnych*, or IPISS), but only for selected types of households. We used IPISS’s poverty line

² To study trends in poverty and in-work poverty in Poland, we used Poland’s Household Budget Survey (HBS), which takes into account the specific nature of Polish agriculture (comprising mainly the production of small individual farms) and thus presents a more adequate picture of the farms’ incomes than the EU’s Statistics on Income and Living Conditions (EU-SILC). Poland also sets a so-called statutory poverty threshold of 521.11 zlotys (a subsistence minimum for single-person household in 2012, according to the Institute of Labour and Social Studies) as a point of reference for various social transfers, but this threshold is not based on any strict methodology and therefore is not used here.

³ Of the *relative* poverty lines, the OECD-modified equivalence scale has been applied to the poverty calculations in this study. It ascribes a weight of 1 to the first adult, 0.5 per each additional adult and 0.3 per child (an individual aged 14 years or younger).

(521.11 zlotys in 2012) for single-person households and applied it to all households using the OECD- modified equivalence scale.

- *The 1998-adjusted poverty line*: Sixty percent of a country's median household equivalent income in 1998 (the relative poverty line in 1998), adjusted for inflation up to 2012. This threshold measures improvements in living standards in real terms against those of 1998.

Both the relative and absolute poverty lines have evolved over time depending on changes (of composition or value) in two ways: (a) the poverty-defining basket of goods (a country-determined "cost of basic needs" such as specified daily calories per person and other essentials such as clothing and shelter); and (b) the median household income. In contrast, the 1998-adjusted poverty rate provides insight into the number of individuals in society living in poverty based on past living standards. All of these measures are used in this study.

1.3 In-Work Poverty in Poland: 1998–2012

1.3.1 Poland's Poverty Rates in the EU Context

The phenomenon of in-work poverty pervades Europe, but its extent varies widely by country.

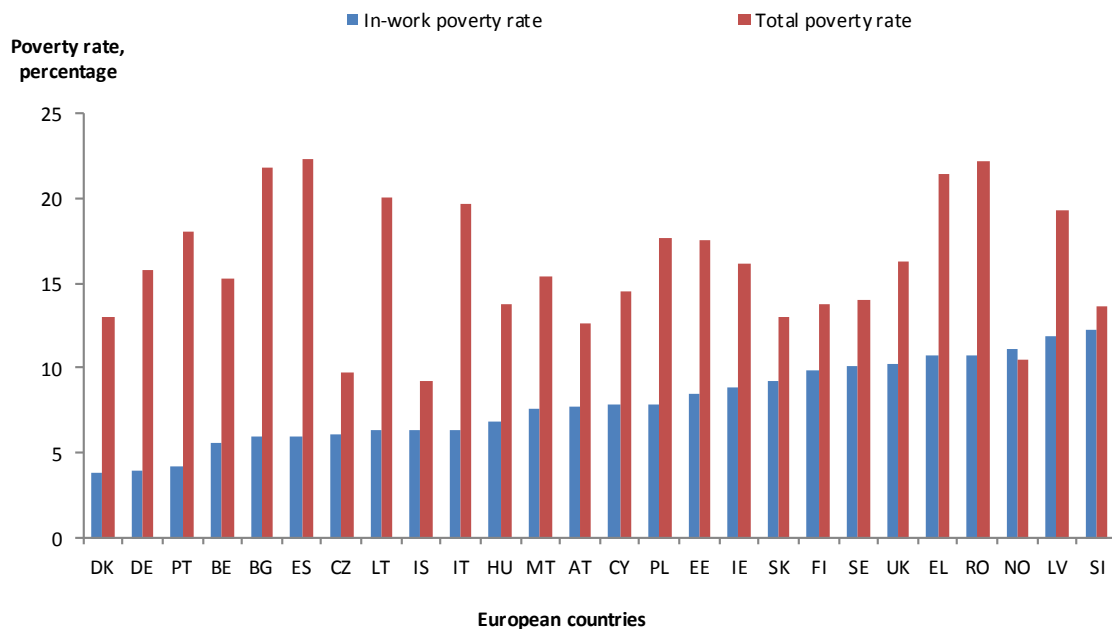
In 2011, Poland had one of the highest relative in-work poverty rates in the EU (7.9 percent) and a total relative poverty rate (17.7 percent) above the EU average of 16.9 percent.⁴ In all European countries, except for Norway, poverty rates are lower among workers than among total population (regardless of the poverty measure). In 2011, the average difference between the total and in-work poverty rates in the EU27 (excepting Croatia, added to the EU in 2013) was 11 percentage points, against the 10-percentage-point figure recorded in Poland.

Moreover, across the EU countries there is no significant correlation between their total and in-work poverty rates: the relationship between the two depends on the distribution of earnings and other income across households, the distribution of workers across households, as well as industries, and the scope of redistribution via tax and benefits systems. As figure 1.1 shows, however, there is heterogeneity based on income levels: European countries with the lowest in-work poverty rates exhibit a total poverty rate two to three times higher than the in-work poverty rate. This is the case of richer countries whose moderate inequality and generous but mostly active labor market policies (e.g. Denmark or Germany) reduce income differentials

⁴ According to the Eurostat data.

in the economy. On the other end of the spectrum, poorer countries with low labor market participation rates, high overall inequality, and much less developed and less efficiently targeted social security systems, exhibit a smaller gap between in-work poverty rates and total poverty (e.g. Bulgaria or Portugal).

Figure 1.1 Relative Total and In-Work Poverty Rates in EU-Member Countries, 2011



Source: Eurostat database, European Commission (epp.eurostat.ec.europa.eu/).

Note: The figure includes 24 EU member countries plus Norway and Iceland. The “in-work poverty rate” is the percentage of nonagricultural workers whose households live below the relative poverty line. An individual is considered as a worker if he/she has spent more than half of the reference year in that activity status. The “relative” total or in-work poverty rates are the percentages of households living on 60 percent or less of their country’s median household income (based on the OECD-modified equivalence scale, ascribing a weight of 1.0 for the first adult, 0.5 for each additional adult, and 0.3 per child [≤ 14 years of age]).

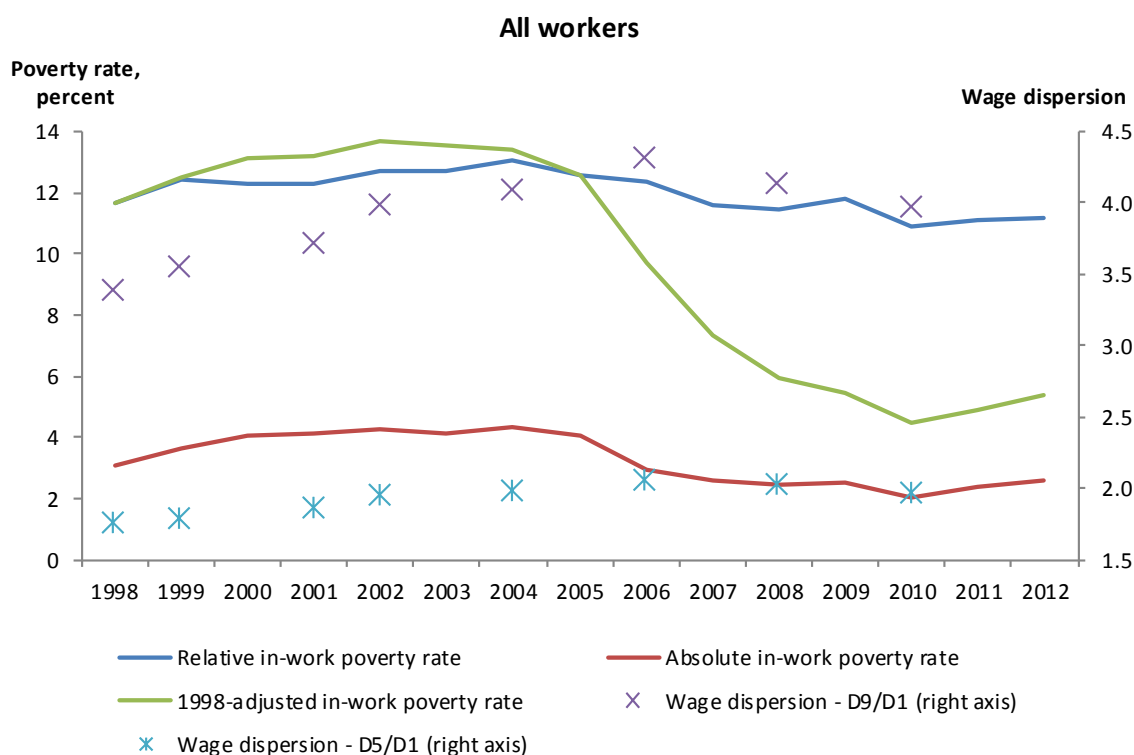
1.3.2 In-Work Poverty Trends in Poland

1.3.2.1 Overall Trends

Over the past 15 years, in-work poverty rates in Poland evolved in line with overall poverty rate, which fluctuated between 14.9 percent (in 1998) and 17.4 percent (in 2004) in the 1998-2012 period. Relative in-work poverty rates remained highly sensitive to macroeconomic fluctuations. For example, during the period of high unemployment between 1999 and 2005, they rose from 11.6 percent in 1999 to a peak of 13.0 percent in 2005 among all workers (figure 1.2) and from 6.2 percent to 8.2 percent among nonagricultural workers (figure 1.3, panel b).

Absolute in-work poverty also increased during this period—from 3.1 percent in 1998 to 4.1 percent in 2005 (figure 1.2). Notably, the 1998-adjusted poverty rate for all workers exceeded the relative poverty rate between 2000 and 2004—showing that living standards deteriorated in absolute terms between the late 1990s and early 2000s (figure 1.2). However, as the economy and labor market rebounded, in-work poverty rates have been declining (according to all three thresholds used) from 2005 to 2010. The 1998-adjusted poverty rate declined most substantially. The Great Recession brought these improvements to a halt, but the relative in-work poverty rate has been stable since 2010 whereas the absolute and 1998-adjusted poverty rates have increased slightly.

Figure 1.2 In-Work Poverty Rates and Wage Dispersion of All Workers in Poland, 1998–2012



Source: Poland Household Budget Survey data.

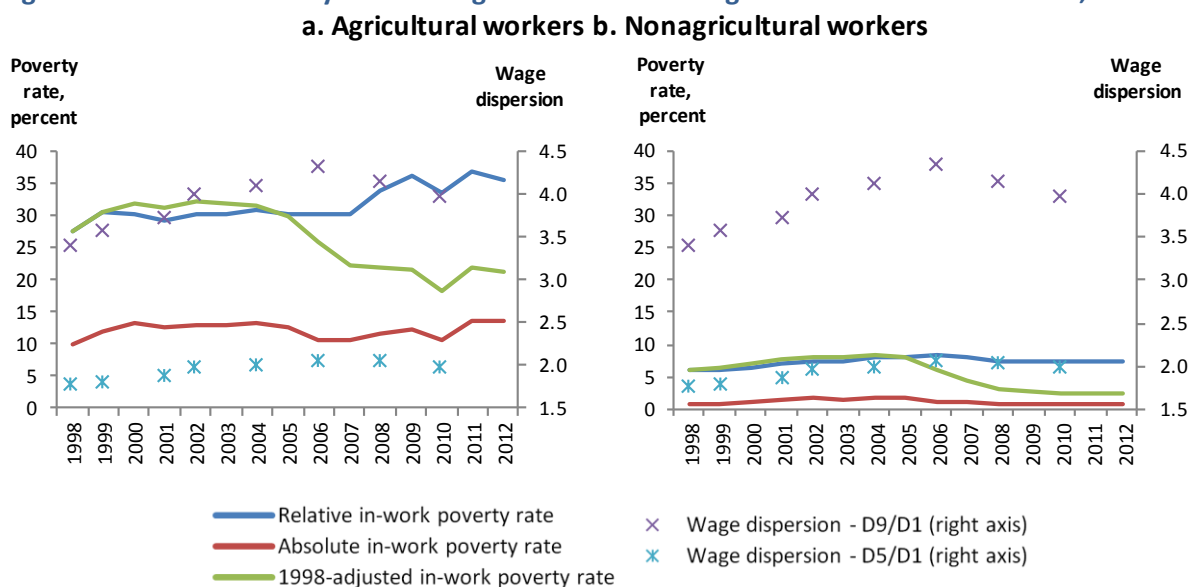
Note: The “in-work poverty rate” = the percentage of poor persons in the population of workers. “Workers” are those who were both earning wages and considering themselves as workers during the month of the study. “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale. “Absolute in-work poverty rate” = the percentage of workers living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). “1998-adjusted in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998. “Wage dispersion” = is an interdecile ratio. The ratio D9/D1 evidences the difference between the top and bottom decile of the distribution, and the ratio D5/D1 compares the median to the bottom decile of the distribution.

1.3.2.2 Agricultural and Nonagricultural In-Work Poverty Trends

The in-work poverty rate is much lower among nonagricultural workers than among farmers (figure 1.3) and although all workers have improved their welfare levels overall since 1998, the poverty gap between agricultural and nonagricultural workers has increased over time. As a result, although about 13 percent of workers worked in agriculture in Poland in 2012, nearly half of the working poor worked in that sector. There has been also a marked difference in in-work poverty trends in farming and other sectors of the economy. According to all measures, poverty rate among nonagricultural workers has been increasing between 1998 and 2004 (from 6.2 to 8.2 percent in terms relative poverty, from 0.8 to 1.9 percent in terms of absolute poverty and from 6.2 to 8.5 in terms of the 1998-adjusted poverty rate), whereas among farmers, in contrast, the relative in-work poverty rate remained stable between 2000 and 2004 (30.3 percent in 2000 and 30.9 percent in 2004), as did their absolute poverty rate (13.2 percent in both 2000 and 2004) and the 1998-adjusted poverty rate (31.8 in 2000 and 31.5 percent in 2004).

However, since 2005 the gap between agricultural and nonagricultural incomes and poverty rates widened, as figure 1.3 shows. As shown in figure 1.2, the in-work poverty rate has declined markedly since 2005 regardless of the measure, in line with increasing employment and rising wages in Poland. The relative in-work poverty rate among all workers declined by 2 percentage points since 2005 (figure 1.2), and among nonagricultural workers by 1 percentage point (figure 1.3), although it still remained relatively high, at 7.4 percent rate among nonagricultural workers in 2012. At the same time, it increased among farmers by 2.8 percentage points. The absolute poverty rate among farmers remained high (13.5 percent in 2012), whereas among other workers this virtually disappeared (less than 1 percent in 2012). The 1998-adjusted poverty rate (relating 2011 living standards to those in 1998) also trended strongly downward since 2005. In 2012, 5.4 percent of all workers and 2.4 percent of nonagricultural workers were poor in 1998-adjusted in-work poverty terms (down from 11.6 and 6.2 percent in 1998, respectively). In 2012 however, 21.2 percent of farmers were living on incomes below the 1998-adjusted poverty threshold—four times the share of nonagricultural workers living on incomes below the same threshold (in real terms) in 1998, again illustrating the widening in living standards between agricultural and nonagricultural workers.

Figure 1.3 In-Work Poverty Rates for Agricultural and Nonagricultural Workers in Poland, 1998–2012



Source: Poland Household Budget Survey data.

Note: The “in-work poverty rate” = the percentage of poor persons in the population of workers. “Workers” are those who were both earning wages and considering themselves as workers during the month of the study. “Relative in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale. “Absolute in-work poverty rate” = the percentage of workers living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). “1998-adjusted in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998. “Wage dispersion” = is an interdecile ratio. The ratio D9/D1 evidences the difference between the top and bottom decile of the distribution, and the ratio D5/D1 compares the median to the bottom decile of the distribution.

1.3.2.3 Earnings Dispersion Trends

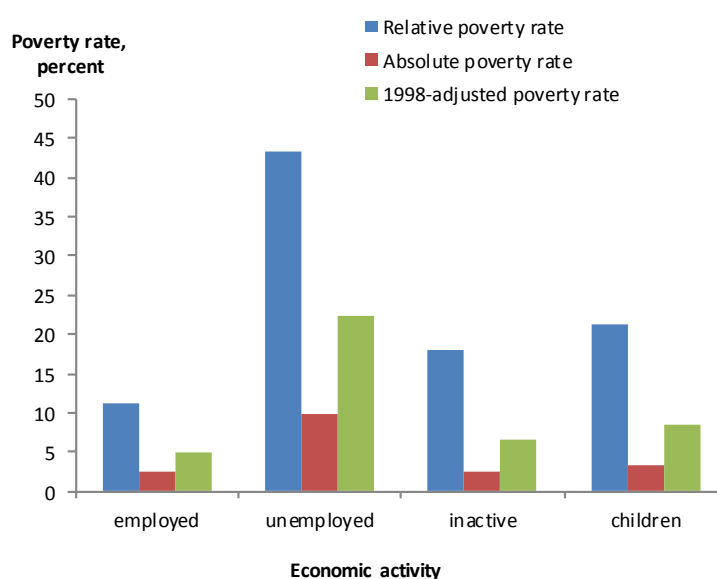
In-work poverty rate of non-agricultural workers has been correlated with earning dispersion in the economy, whereas among farmers this was not the case. Earnings dispersion (measured using the D9/D1 relation and Gini coefficient) increased by half between 1994 and 2006, mostly due to rising dispersion⁵ of earnings below the median wage (see figure 1.2). In 2006, the situation changed: earnings dispersion has since decreased, as dispersion below the median has stabilized (the D5/D1 ratio has remained unchanged since 2006), and dispersion above the median has shrunk. Figure 1.3 shows that, between 1998 and 2010, the relative poverty rate among nonagricultural workers (mostly hired workers) evolved in line with earnings dispersion, especially the D5/D1 measure. This phenomenon was not observed among agricultural workers, who are predominantly self-employed and most of whom (66 percent in 2012) earn incomes below the median.

⁵ “Wage dispersion” measured with an interdecile ratios. The D9/D1 ratio is the ratio of the top to the bottom decile of the distribution, and the ratio D5/D1 relates the median to the bottom decile of the distribution.

1.3.2.4 Employment Status and Poverty in Poland

Nevertheless, workers in Poland demonstrate much lower poverty rates than jobless people, especially the unemployed. Figure 1.4 indicates that in 2012, 43 percent of unemployed persons were relatively poor, and 10 percent were poor in absolute terms. Importantly, inactive adults faced higher relative poverty rate than workers (17 percent versus 11 percent if farmers are included, and 7 percent if farmers are excluded), although both groups combined exhibit low absolute poverty rates (2.6 percent in 2012). Temporary employees (whose data are not broken out in figure 1.4) faced a higher poverty rate in 2012 (absolute poverty rate – 0.3 percent, relative – 5.5 percent) than permanent employees (absolute poverty rate – 1.6 percent, relative – 13.9 percent), although their poverty rate was much lower than that of farmers (absolute poverty rate – 13.5 percent, relative – 35.6 percent in 2012).

Figure 1.4 Poverty Rates by Economic Activity of All Individuals in Poland, 2012



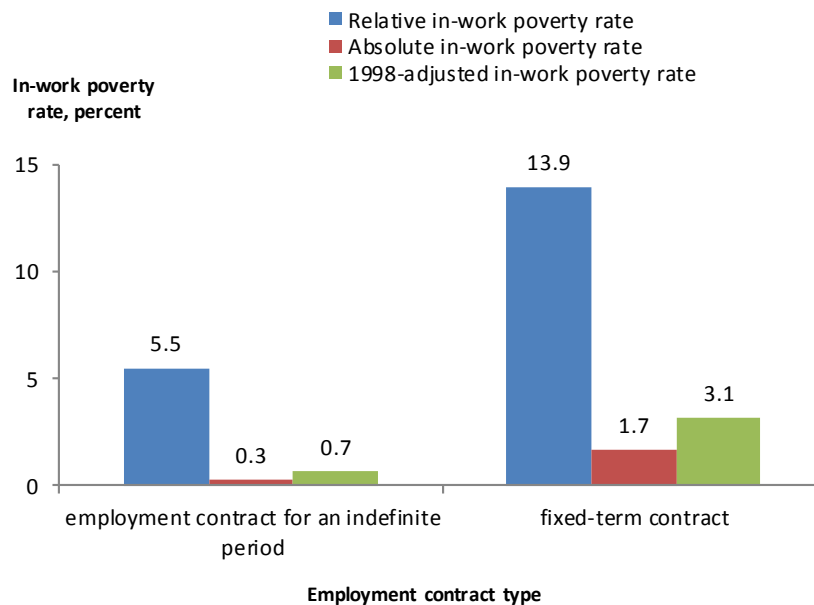
Source: Poland Household Budget Survey data.

Note:

- “Employed” = those who were considering themselves as employed during the month of the study.
- “Unemployed” = those who were considering themselves as unemployed during the month of the study.
- “Inactive” = those who were considering themselves as economically inactive during the month of the study.
- “Children” = individuals being less than 15 years of age.
- “Relative poverty rate” = the percentage of individuals living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale.
- “Absolute poverty rate” = the percentage of individuals living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS).
- “1998-adjusted poverty rate” = the percentage of individuals living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998.

Even though nonagricultural workers are less likely to be poor than jobless adults in Poland, differences between workers emerge due to type of employment contract. Temporary workers, who in 2012 constituted 21 percent of all employed workers, faced 2.5 times higher relative poverty rate, 5 times higher 1998-adjusted in-work poverty rate and 6 times higher absolute in-work poverty rate than workers employed on open-ended contracts, as shown on Figure 1.5.

Figure 1.5 In-Work Poverty Rate among Nonagricultural Workers, by Contract Type, in Poland, 2012



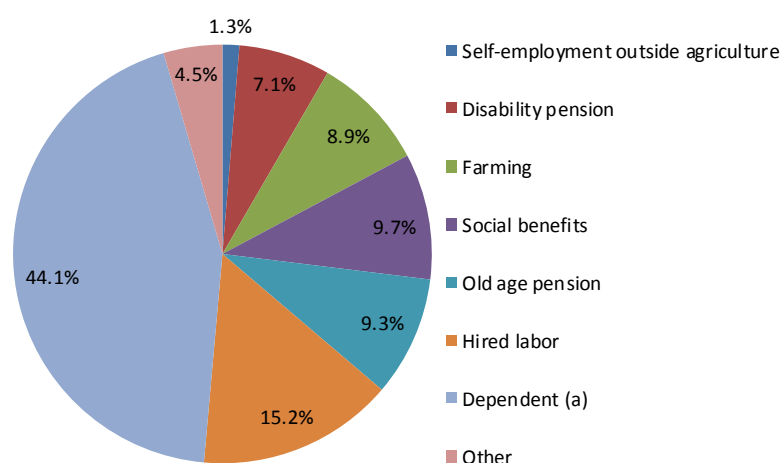
Source: Poland Household Budget Survey data.

Note: The “in-work poverty rate” = the percentage of poor persons in the population of workers. “Workers” are those who were both earning wages and considering themselves as workers during the month of the study. . “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger). “Absolute in-work poverty rate” = the percentage of workers living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPiSS). “1998-adjusted in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998.

In 2012, workers employed or self-employed in other sectors than agriculture constituted 16.5 percent of those living in relative poverty in Poland (Figure 1.6), and 58.5 percent of the working poor (the remaining group being farmers, who constituted 9 percent of all relatively poor), **and demonstrated the lowest poverty rates among all groups distinguished by main source of income. The relative poverty rate among nonagricultural workers (both employees and self-**

employed) was 8 percent in 2012, and it was about 4,5 times lower than among agricultural workers (39 percent) and persons whose main source of income were social benefits (37 percent). Poverty rate among nonagricultural workers was also much higher than among disability pensioners (21 percent) and dependent persons (24 percent). As much as 44 percent of relatively poor people in 2012 were dependent on incomes of other members of their households.

Figure 1.6 Polish Population Living in Relative Poverty, by Main Income Source, 2012



Source: Poland Household Budget Survey data.

Note: Figure based on 100 percent of Polish population living in the relative poverty, which means they live in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (based on the OECD-modified equivalence scale, weighting the first adult at 1.0, other adults at 0.5, and 0.3 per child).

a. Dependent = person whose main source(s) of income come from other members of the same household.

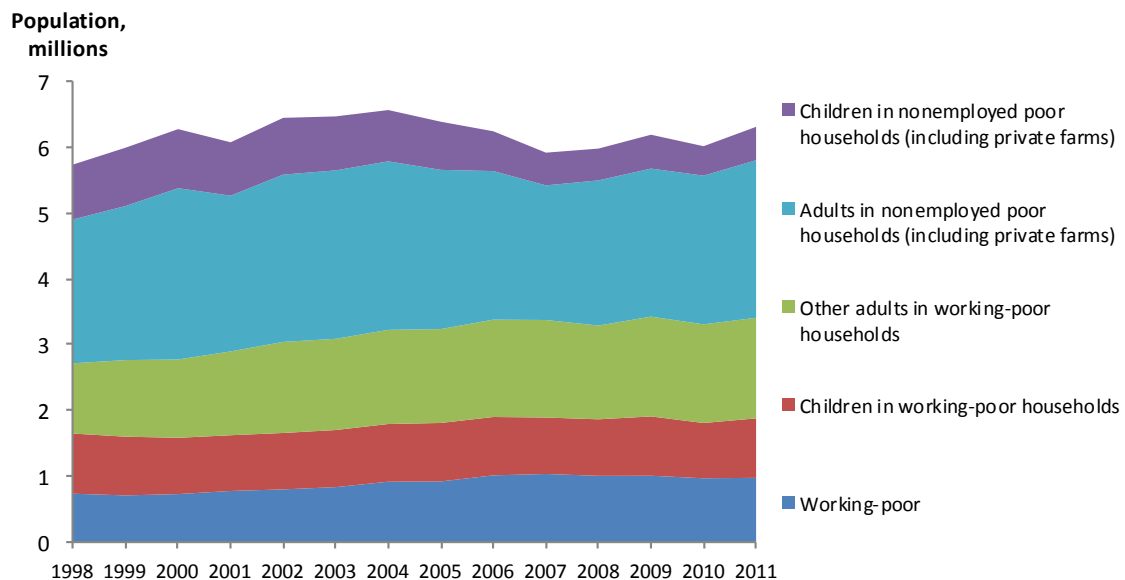
1.3.2.5 Adult dependency and In-Work Poverty Trends

The phenomenon of in-work poverty has been increasingly related to presence of adults who have no job at all or work only in farming, in the households of workers. Figures 1.7 and 1.8 present breakdowns, respectively, of the population at risk of relative poverty and the population living above the relative poverty threshold in Poland between 1998 and 2011. We distinguish between various combinations of (a) adults working outside agriculture and living in households with children and other adults (whether jobless or working in agriculture); and (b) adults living in households with no workers employed outside agriculture (whether farmers or jobless adults) plus children in these households. Also heightening the risk of in-work poverty is

the rising share of adults with no job outside agriculture (i.e. unemployed, inactive or working in agriculture). The share of adults with no job outside agriculture among members of working-poor households increased under all three poverty thresholds:

- *Relative poverty.* Of all people at risk in relative poverty, the share of adults with no job outside agriculture increased from 19 percent in 1998 to 25 percent in 2011. They also made up 45 percent of all members of working-poor households in 2011, up from 40 percent in 1998.
- *Absolute poverty.* Among those in absolute in-work poverty, the share of adults with no job outside agriculture rose from 11 percent in 1998 to 16 percent in 2011. They made up 44 percent of all members of such households in 1998; by 2011, they were 49 percent of those household members.
- *1998-adjusted poverty.* The share of adults with no job outside agriculture within the total population who were living in 1998-adjusted poverty was stable between 1998 and 2011, at 20 percent. However, this group has become relatively more numerous among members of working-poor households under the 1998-adjusted standard, growing from 39 percent of such members in 1998 to 47 percent in 2011.

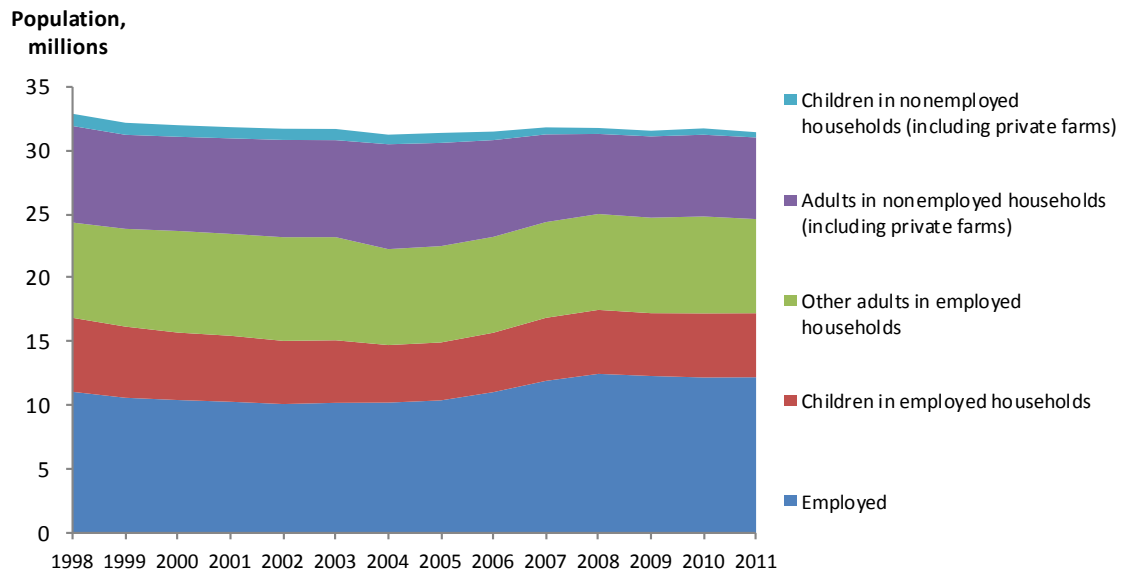
Figure 1.7 Population in Relative Poverty in Poland, 1998–2011



Source: Poland Household Budget Survey data.

Note: "Relative poverty" = The standard Eurostat measure of relative poverty, which is ≤ 60 percent of median household equivalent income (based on the OECD-modified equivalence scale of 1.0 for the first working-age adult [aged 15–64 years], 0.5 for each other adult, and 0.3 for each child). "Working poor" = working members of poor households.

Figure 1.8 Population above the Relative Poverty Threshold in Poland, 1998–2011



Source: Poland Household Budget Survey data.

Note: “Relative poverty threshold” = The standard Eurostat measure of relative poverty, which is ≤ 60 percent of median household equivalent income (based on the OECD-modified equivalence scale of 1.0 for the first working-age adult [aged 15–64 years], 0.5 for each other adult, and 0.3 for each child). “Working poor” = working members of poor households.

Even as the average number of children per working-poor adult in relatively poor households has declined over this period (from 1.25 to 0.93), the average number of adults with no job outside agriculture has increased (from 1.46 to 1.57). In the case of absolute and 1998-adjusted poverty, the average number of adults with no job outside agriculture and living in poor workers’ households was 1.6 in 2011—twice the average number of children in these households. In contrast, adults with no job outside agriculture became a decreasing presence in workers’ households that were not in relative poverty. The share of adults with no job outside agriculture in non-poor households decreased from 25 percent in 1998 to 23 percent in 2011. The share of adults with no job outside agriculture in population living in non-poor households with at least one non-agricultural worker decreased even stronger – from 35 percent in 1998 to 30 percent in 2011.⁶ In 2011, the average number of adults with no job outside agriculture in the relatively non-poor workers’ households equaled 0.6, nearly three times less than in working-poor households. In 2011, the average number of children per working adult in the non-poor working households was 0.4, which was less than in the working-poor households, but the difference is relatively lower than in case of adults with no job outside agriculture.

⁶ There were no significant changes in this regard for populations above the 1998-adjusted and absolute poverty thresholds.

1.3.3 Demographic Characteristics Correlated with In-Work Poverty

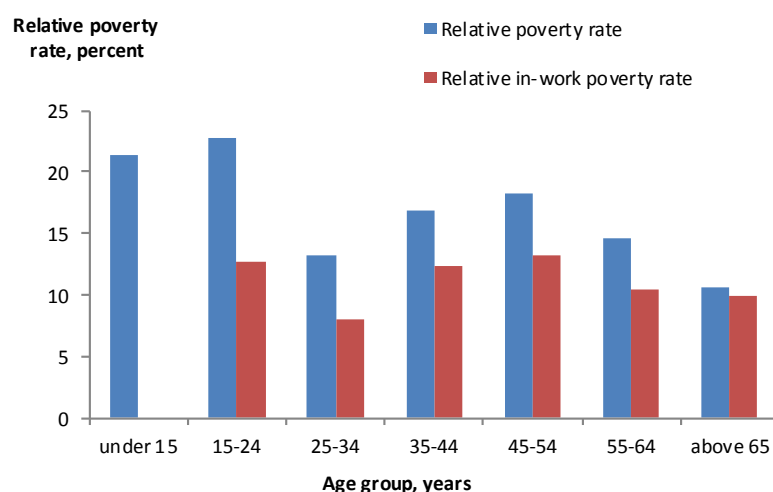
1.3.3.1 Age Group

The risk of poverty—including in-work poverty—is correlated with household structure with respect to the age of members of the household, and it generally increases with the number of children in the household. Thus children (and other members of households with children) have higher relative poverty rates than those of working-age individuals and those of people aged over 65 (figure 1.9). The relative poverty rate among children in Poland is above the EU average, even though, among families with children, Polish families average the same number of children as families throughout the EU28 (according to the Eurostat data). Poverty rates among children and young people are significantly higher than those in other subgroups.⁷ In 2012, 41.2 percent of people living in relative poverty in Poland were aged under 25 years, although their financial situations improve significantly once they enter the labor market. Although often related to household structure and sources of income, an individual's age may still have a partially independent correlation to the risk of poverty.

Youth and older prime-age workers experience highest in-work poverty rates in Poland although they still have lower poverty rates than total population in the same age groups. The relative poverty rate among workers aged 15–24 years is much lower than for all persons in this age group (13 percent and 23 percent, respectively in 2012). However, their in-work poverty rate is still much higher than that of older workers (figure 1.9) Forty percent of young workers are in low-paying jobs (as box 1.1 discusses below), whereas the figure is lower for older age groups (17 percent). According to HBS data, only one in five people aged 18-25 years lived independently in 2012, and the relative poverty rate of this group was equal to 13 percent. The proportion of people aged 18-25 and living with their parents was higher for young men (85 percent) than women (73 percent). This group more often economically idle and its relative poverty rate equaled 23 percent in 2012. These figures are consistent with Baranowska-Rataj (2011) findings that having a job is a crucial determinant of leaving parents' household by young people in Poland.

⁷ Which is not the case in all European countries, according to Eurostat data, e.g. in Slovenia, Germany, Estonia, Croatia poverty rates among children and young people are lower than those among persons over 55 years of age.

Figure 1.9 Relative Total and In-Work Poverty Rate, by Age Group, in Poland, 2012



Source: Poland Household Budget Survey data.

Note: No “in-work poverty rate” is reported for the “under 15” age group because the minimum working age is 15 years. “Relative” poverty = 60 percent of median household income, based on the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to the each additional adult, and 0.3 per child [a child being ≤ 14 year of age]).

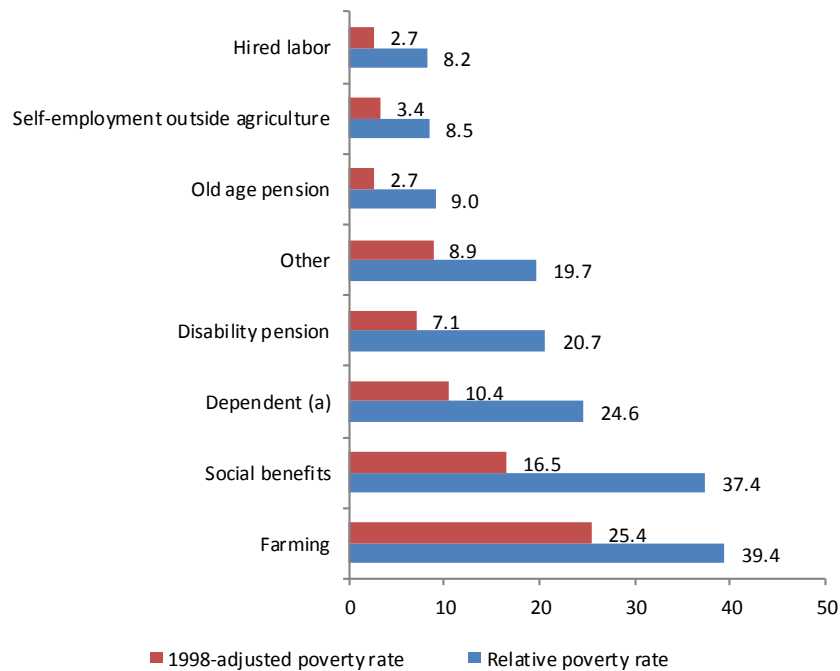
After children and youth, individuals aged 45–54 years exhibit both the highest total poverty and the highest in-work poverty rates, as shown in figure 1.9. These individuals, even though still in prime-age, are at higher risk of poverty than workers aged 25-44 years, because this group is more likely than younger or older people to live on social assistance transfers, receive disability pensions, or depend on other household members. IBS (2013) relates this to availability or early retirement, increasing risk of disability from work and lower labor force participation rate than in the group aged 25-44 years. On the other hand, contrary to widely held opinions, people aged over 65, majority of whom are old-age pensioners, are less frequently poor in relative terms in Poland than people age under 65 (figure 1.9). Those older than 65 have the lowest total relative poverty rate of any age group, and the only relative in-work poverty rate lower than theirs is among those aged 25–34 years.

1.3.3.2 Main Source of Household Income

Low poverty rates of people aged 65 in Poland result from relatively high equivalised incomes of households living on old-age pension. HBS statistics on poverty rates by the main source of income (figure 1.10) show that in 2012, the relative poverty rate among those living on an old-age pension was only slightly higher (9 percent) than it was among nonagricultural workers (8 percent). It was also lower than Poland’s total relative poverty rate of 17.1 percent in 2012. Conversely, whether a household’s primary income comes from a worker’s job or not, it runs the

highest risk of being relatively poor if that job is in agriculture (figure 1.6). Almost 40 percent people living in Polish farming households were relatively poor in 2012, and they also experienced the steepest decrease in living standards compared with those of 1998. More than a quarter of farming households fell into that category. In both relative and 1998-adjusted poverty rates, farming households exceeded all households whose main income came from other sources, even households mainly dependent on social benefits.

Figure 1.10. Relative and 1998-Adjusted Poverty Rates by Main Household Income Source in Poland, 2012



Source: Poland Household Budget Survey data.

Note: "Relative poverty rate" = the percentage of individuals living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale. "1998-adjusted poverty rate" = the percentage of individuals living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998.

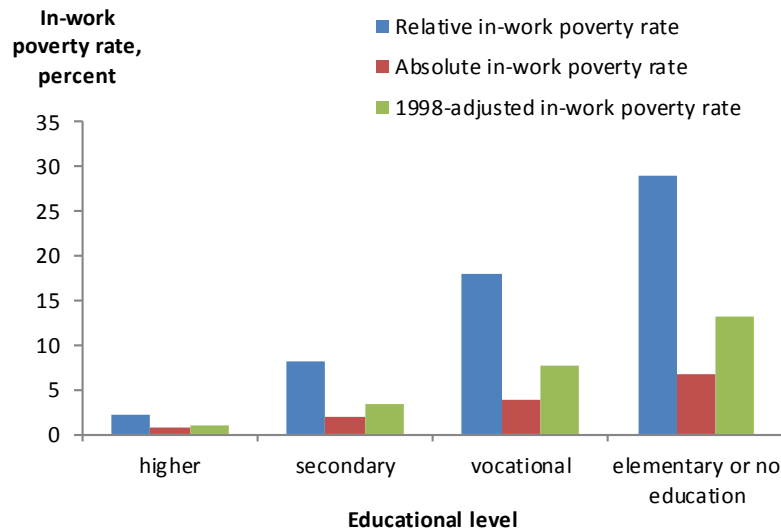
a. Dependent = person whose main source(s) of income come from others in the same household.

1.3.3.3 Educational Level

The higher the level of education, the lower the risk of being working poor, which is directly linked with the wage distribution across skills levels. Figure 1.11 shows that the difference in poverty rates between workers with higher education and those with vocational or elementary education is substantial. Individuals with higher education are not only more frequently in work, earn better wages and work outside agriculture, they also frequently tend to live in the same household as couples. As a consequence, low-paid workers, similar to individuals at risk of

poverty, more often have vocational or at most lower secondary school education – in 2012, low-paid persons constituted about 25 percent of these education groups.

Figure 1.11 In-Work Poverty Rate by Educational Attainment in Poland, 2012



Source: Poland Household Budget Survey data.

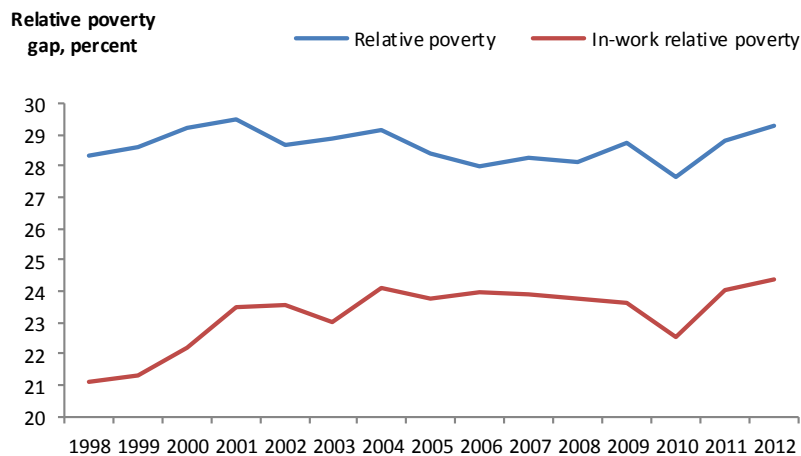
Note: The “in-work poverty rate” = the percentage of poor individuals in the population of workers. “Workers” are those who were both earning wages and considering themselves as workers during the month of the study. “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger)). “Absolute in-work poverty rate” = the percentage of workers living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPiSS). “1998-adjusted in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998.

1.3.4 Severity of Poverty

In-work poverty turns out to be less deep than poverty of jobless persons, for both absolute and relative thresholds. The working poor constitute only a moderate fraction of all poor in Poland (25.4 percent in 2012), and among them, nearly half (42 percent in 2012) work in agriculture. Nonagricultural employees and self-employed persons demonstrated the lowest poverty rates among all groups distinguished by main source of income. On top of that, the amount of equivalised income which these households need to get out of poverty is on average lower than the amount of income needed by jobless poor households to get out of poverty. Figure 1.12 shows that the poverty gap, i.e. average difference between the poverty line and the equivalised disposable income of persons living in poverty, for the relative poverty. Among the working-poor, the income gap amounted on average to 24 percent in 2012, so it was by 5

percentage points lower than for the total population (see figure 1.12). However, the relative poverty gap among the working poor has increased in comparison to the late 1990s, whereas among all poor it has remained at a fairly stable level. Difference between all poor and working-poor declined, but jobless poor still exhibit on the average lower incomes than the working-poor.

Figure 1.12. Relative Poverty Gap among the Working Poor and All Poor Individuals in Poland, 1998–2012



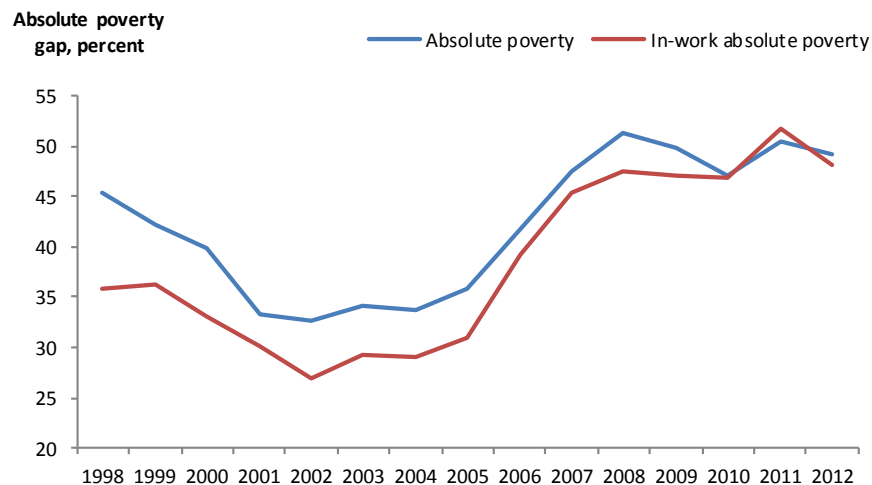
Source: Poland Household Budget Survey data.

Note: In this calculation, the “working poor” excludes agricultural workers. “Relative poverty” = living in a household whose income was ≤ 60 of median household income, using the OECD-modified equivalence scale. “In-work relative poverty” = living in a household with at least one worker and that earned ≤ 60 percent of median household income. The poverty gap index among persons living in poverty is calculated as an average difference between the relative poverty line and the equivalised disposable income of persons living in poverty.

In the case of absolute poverty (the subsistence minimum), the evolution of poverty gap tells a slightly different story (figure 1.13). During economic slowdowns, when total absolute poverty rates were the highest, the absolute poverty gap of the absolutely poor workers was lower than that of all poor. But after a period of strong growth and declining absolute poverty rates of total and working populations, the absolute poverty gap among working and nonworking persons was almost equal between 2010 and 2012, while in 1998 the difference was as high as 7 percentage points (figure 1.13). So, what happened between 1998 and 2012 to bring about this change? First, the share of inactive persons aged 55–64 years in absolutely poor households with workers increased from 2.1 percent to 5.8 percent. Second, over the same period, the average number of workers in absolutely poor households decreased from 1.9 to 1.3. In short, the share of dependent adults rose in the households of working-poor individuals. Early old-age pensions or disability pensions are lower than labor incomes, so the higher incidence of their recipients

translated into an increase in the severity of absolute in-work poverty.

Figure 1.13 Absolute Poverty Gap among the Working Poor and All Poor Individuals in Poland, 1998–2012



Source: Poland Household Budget Survey data.

Note: In this calculation, “working poor” excludes agricultural workers. “Absolute poverty” = living in a household earning less than the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). “In-work absolute poverty” = living in a household with at least one worker but earning less than the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). The “severity of absolute poverty” is calculated as the poverty gap index among persons living in poverty (an average gap between the absolute poverty line and the equivalised disposable income of persons living in poverty).

1.4 In-Work Poverty and Low Pay in Poland

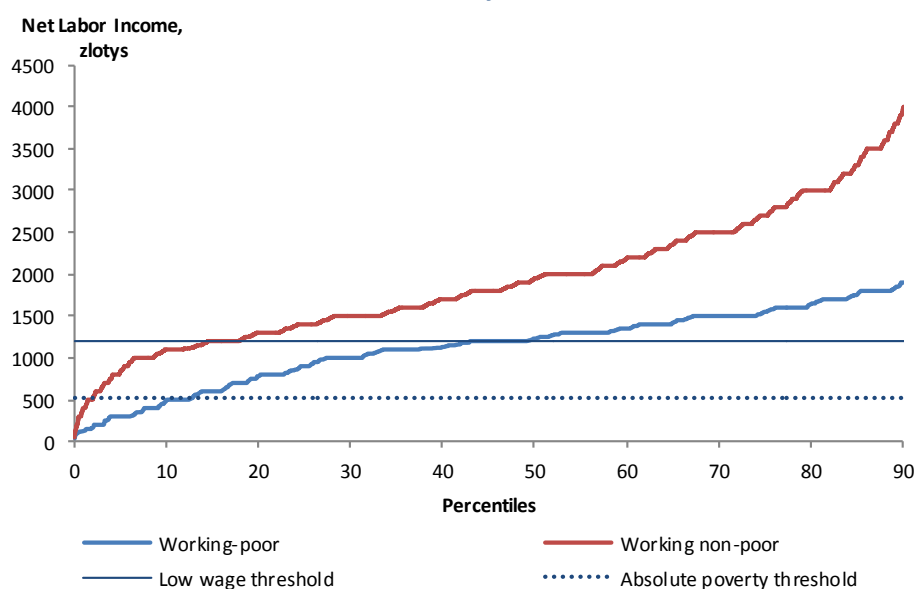
This section examines the nexus between job intensity and quality, and the incidence of in-work poverty. In-work poverty may result from low hourly wages, low hours worked, or a low number of workers in households (low total labor supply per household). A lack of HBS data on the precise number of hours worked forces an approach that combines two factors (low hourly wages and low hours worked) and defines low-paid workers as those whose monthly wage is relatively low (box 1.1).

1.4.1 Correlation between Low Pay and In-Work Poverty

The Poland HBS data show only a weak correlation between being a low-paid worker and being among the working poor. Figure 1.14 indicates that while the working poor are on average earning less than non-poor workers, only half of the working poor are low-paid (using the definition in box 1.1). In 2012, 7.5 percent of all nonagricultural workers were relatively poor, but among them only 43 percent (which means 3 percent of all nonagricultural workers)

were simultaneously low-paid (figure 1.15). In addition, as many as 79 percent of low-paid workers are not poor,⁸ and in all deciles of equivalised household income distribution, the share of low-paid workers is higher than the poverty rate in the corresponding deciles of wage distribution. This suggests that low wages might be less important in determining the risk of in-work poverty than a low number of workers in a household.

Figure 1.14 Distribution of Net Labor Income, by Percentile, in Poland, 2012

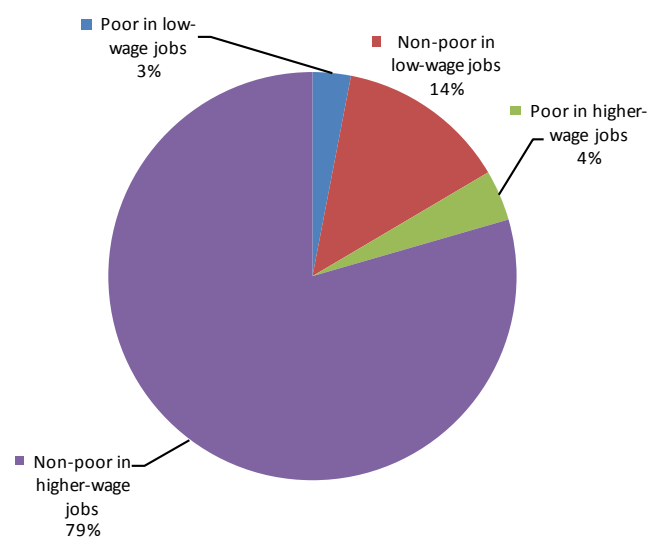


Source: Poland Household Budget Survey data.

Note: Figure presents the cumulative distributions of wages. “Working poor” = (in relative terms) workers whose households earn ≤ 60 percent of median household income. “Working non-poor” = workers whose households earn more than 60 percent of median household income. “Low-wage threshold” = two-thirds of the median monthly wage calculated for all nonagricultural workers. “Absolute poverty threshold” = the minimum per-person amount needed for subsistence, calculated by the Polish Institute of Labor and Social Studies (IPiSS).

⁸ In most OECD countries, low-paid jobs are also not necessarily associated with poverty (Marlier and Ponthieux 2000; Crettaz and Bonoli 2010).

Figure 1.15 Wage and Poverty Structure of Nonagricultural Employment in Poland, 2012



Source: Poland Household Budget Survey data.

Note: "Poor" = (in relative terms) nonagricultural workers whose households earn ≤ 60 percent of median household income. "Non-poor" = nonagricultural workers whose households earn more than 60 percent of median household income. "Low-wage job" = a nonagricultural job that earns two-thirds or less of the median monthly wage. "Higher-wage job" = a nonagricultural job that earns more than two-thirds of the median monthly wage.

Box 1.1 Low-Paid Workers Defined

A low-paid worker earns a monthly income from nonagricultural labor that does not exceed two-thirds of the median wage calculated for all nonagricultural workers. A lack of HBS data on the precise number of hours worked makes it impossible to define low-paid jobs in terms of hourly wages. In 2011, 19.5 percent of workers were deemed to be low-paid. In 2011, about 30 percent of these persons worked part-time.

Applying the same definition of low-paid labor to Eurostat's Structure of Earnings Survey data leads to the conclusion that, in 2010, a low-paid worker in Poland earned less than 1,938 zlotys gross per month, i.e. 1,416 zlotys net (assuming a 19 percent tax rate with no tax-free threshold). This wage level is higher than in the HBS estimate of net monthly income (1,136 zlotys in 2010). However, the Structure of Earnings Survey fails to take into account employees of companies with fewer than 10 workers and the self-employed, whose wages are often lower than in larger companies.

Between 1998 and 2011, the difference between the low-paid labor threshold and the relative poverty threshold, according to the HBS, increased from 70 to 230 zlotys. In the case of a single-person household, a wage at two-thirds the median labor wage is enough to avoid poverty (figure 1.22), although that would probably not be the case for households with only one and low-paid worker.

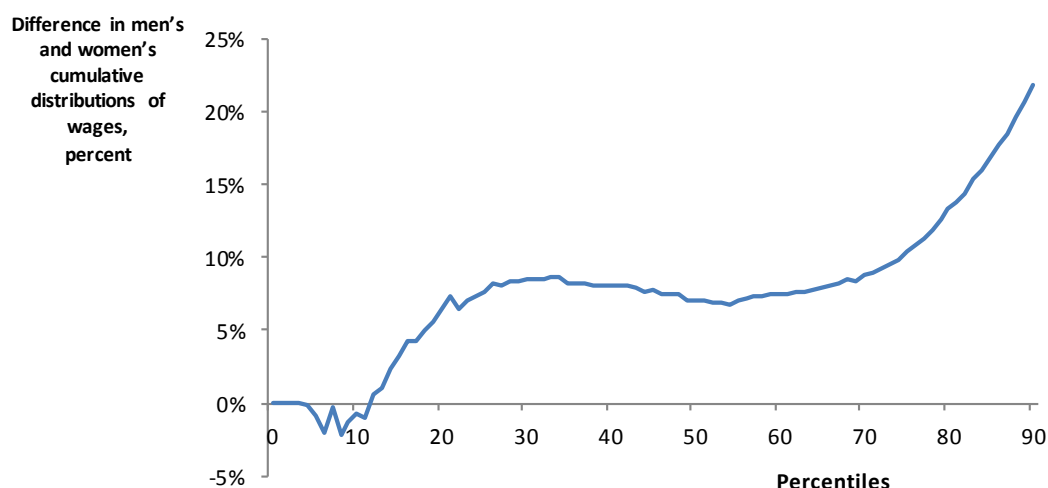
1.4.2 Gender Differences in Low Pay

Low-paid jobs are more prevalent among women, only in part because of sectoral segregation.

In 2012, 21 percent of women working outside agriculture were earning salaries below the low-pay threshold, compared with only 12 percent of male workers. This difference cannot be explained by claims that women work fewer hours on average, because the share of low-paid women and men working part-time are similar, at about 30 percent. Significantly higher incidence of low-paid workers among women results to some extent from professional segmentation and the frequent employment of women in low-paid professions, such as housework and cleaning (85 percent of persons employed in these professions are women). Lower educational levels among low-paid workers doesn't explain this disparity: poorly educated men usually take up simple manual jobs requiring physical strength, which are usually better-

paid than the typically low-skilled “female jobs.” In addition, although women more frequently work for companies and in sectors and jobs where wages are lower, even there they still earn less than men, and so are at higher risk of low wages (Ministry of Labor and Social Policy 2008). Although the share of low-paid persons among women is one-third higher than among men, Figure 1.16 shows that 10 percent of males and females earning the lowest wages in Poland receive very similar wages. However, the wage gap increases steeply in the second decile, to reach 25 percent for the highest-paid workers.

Figure 1.16 Relative Difference of Men’s over Women’s Wages’ Cumulative Distribution, by Wage Percentile, in Poland, 2010



Source: Structure of Earnings Survey data, Eurostat.

Note: Figure shows the difference in cumulative distribution of wages among men and women.

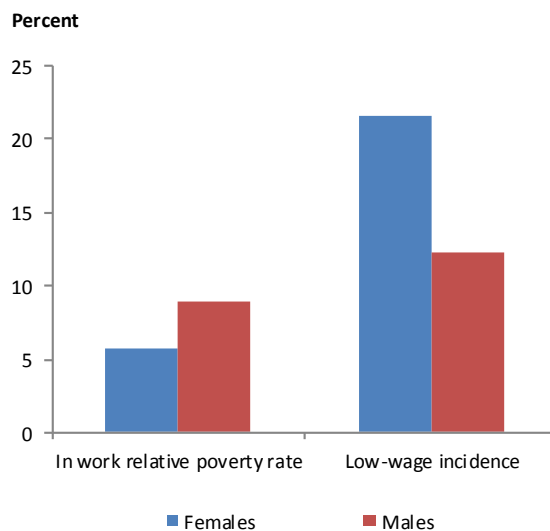
Nevertheless, the higher risk of low wages among women does not imply a higher poverty rate, as most working women are live with a second earner. On the contrary, HBS data shows that poverty affects working women less frequently than men, regardless of the measure (figures 1.17 and 1.18). In 2012, 1 in 11 working men was relatively poor, but only 1 in 20 working women was relatively poor (figure 1.17).⁹ Working women in Poland have such a relatively low poverty rate because, more often than men, they live in households with other workers: in 2012, about 70 percent of working women lived in households with other workers,

⁹ In most European countries, the in-work poverty rate tends to be higher for men than for women. The difference is highest in Poland and the Southern European countries, and close to zero in the Czech Republic, the Nordic countries, and the United Kingdom. In 2012, the in-work poverty rate was higher among women than among men only in Cyprus, Estonia, Germany, Latvia, and Lithuania.

while for men the figure was only 55 percent. When working women live in a household with other adult worker their labor income is usually not the main source of household income, and their relative in-work poverty rate is only 4 percent.

Household position makes a difference. Among those women who are the primary breadwinners (they are heads of household in about a quarter of Polish households), 80 percent are among the higher-paid workers. When they are not heads of households, they are low-paid workers more often than men. This translates into comparable relative poverty rates among female and male workers who are household heads: 8 percent and 9 percent, respectively. However, if these workers support not only dependent children but also dependent adults, the poverty rate reaches 20 percent—10 percentage points higher than the poverty rate among single mothers.

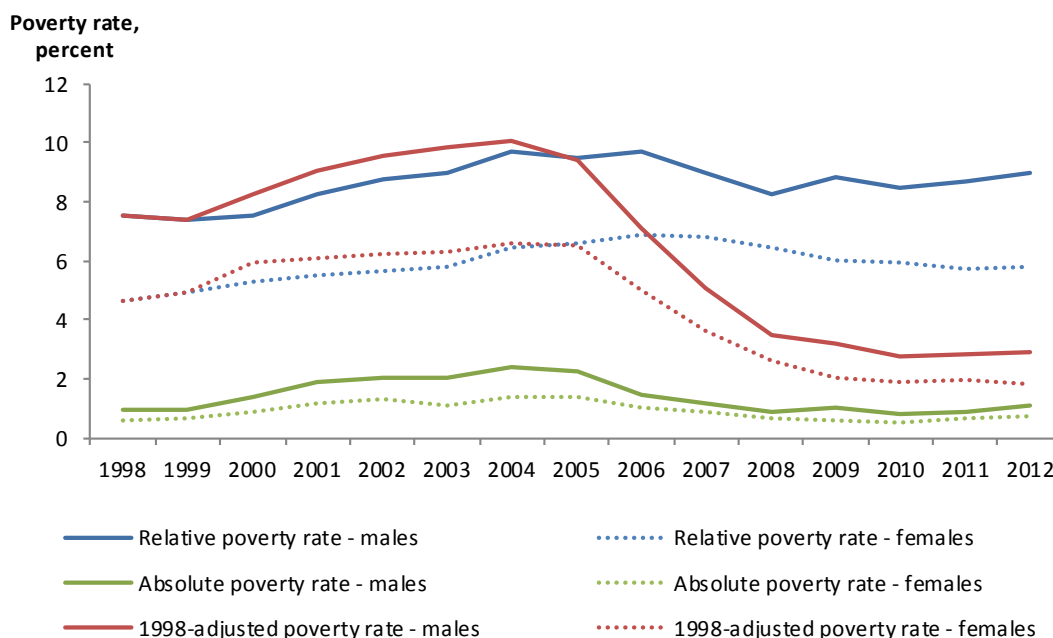
Figure 1.17. In-Work Relative Poverty Rate and Share of Low-Paid Nonagricultural Workers, by Gender, in Poland, 2012



Source: Poland Household Budget Survey data.

Note: “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger)). “Low wage” = monthly income from nonagricultural labor \leq two-thirds of the median wage calculated for all nonagricultural workers.

Figure 1.18 In-Work Poverty Rates, by Gender, in Poland, 1998–2012



Source: Poland Household Budget Survey data.

Note: The “in-work poverty rate” = the percentage of poor persons in the population of workers. “Workers” are those who were both earning wages and considering themselves as workers during the month of the study. “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger). “Absolute in-work poverty rate” = the percentage of workers living in households which equivalised income was below the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). “1998-adjusted in-work poverty rate” = the percentage of workers living in households which equivalised income was below 60 percent of median equivalised household income in 1998, measuring improvements in living standards in real terms against those of 1998.

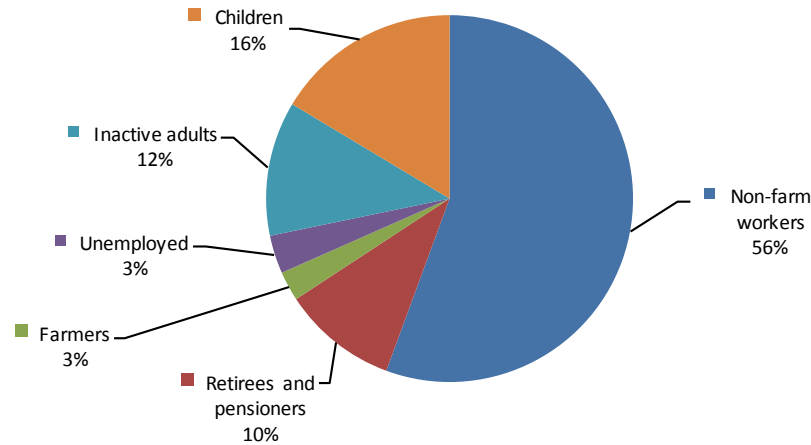
1.4.3 Impact of the Household Structure on Poverty Risk for the Low-Paid

The low-paid often avoid poverty because others in the household (workers or pensioners) provide regular incomes. In poor households with low-paid workers, 45 percent of the individuals had a regular income¹⁰ in 2012, while in non-poor households with low-paid workers, the share was 69 percent (figures 1.19 and 1.20). On average, poor households with low-paid workers have more children than non-poor households with low-paid workers, but the main difference is in the proportion of workers among total adults in the household (38 percent vs. 59 percent in 2012). In general, the same principle applies to all workers’ households, as shown in figures 1.21 and 1.22: among poor households—relative to non-poor households—the share of nonagricultural workers is 26 percentage points lower, whereas the share of jobless

¹⁰ “Regular income” refers to workers’ wages, old-age or disability pensions.

persons 19 percentage points higher (of which: the share of inactive adults 8 percentage points higher, the share of unemployed person 6 percentage points higher, and the share of children 5 percentage points higher).

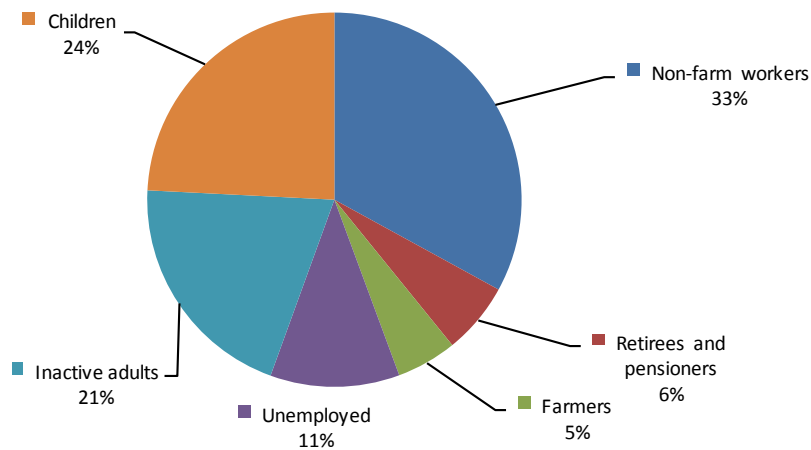
Figure 1.19 Structure of Non-Poor Households with Low-Paid Workers in Poland, 2012



Source: Poland Household Budget Survey data.

Note: "Workers" are those who were both earning wages and considering themselves as workers during the month of the study. "Low-paid" = monthly income from nonagricultural labor \leq two-thirds of the median wage calculated for all nonagricultural workers. "Inactive adult" = individual \geq 15 years of age who does not seek work or otherwise participate in the work force. "Relative poverty" = living in a household whose income was \leq 60 of median household income, using the OECD-modified equivalence scale.

Figure 1.20 Structure of Poor Households with Low-Paid Workers in Poland, 2012



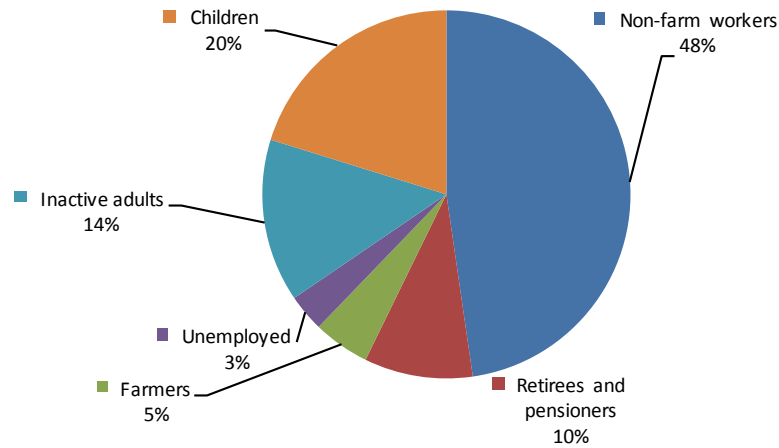
Source: Poland Household Budget Survey data.

Note: "Workers" are those who were both earning wages and considering themselves as workers during the month of the study. "Low-paid" = monthly income from nonagricultural labor \leq two-thirds of the median wage calculated for all nonagricultural workers. "Inactive adult" = individual \geq 15 years of age who does not seek work or otherwise participate in the work force. "Non-poor" = person living in a households whose income is \geq 60 percent of median household income, using the OECD-modified equivalence scale.

Among agricultural workers, there is no substantial distinction between poor and non-poor households with low-paid workers, although there is a significant distinction between all poor and non-poor workers' households. Income from individual farming is less regular than from

hired labor and pensions. Even when compared with low wages earned in other sectors of the economy, agricultural earnings are frequently insufficient to exceed the poverty threshold.

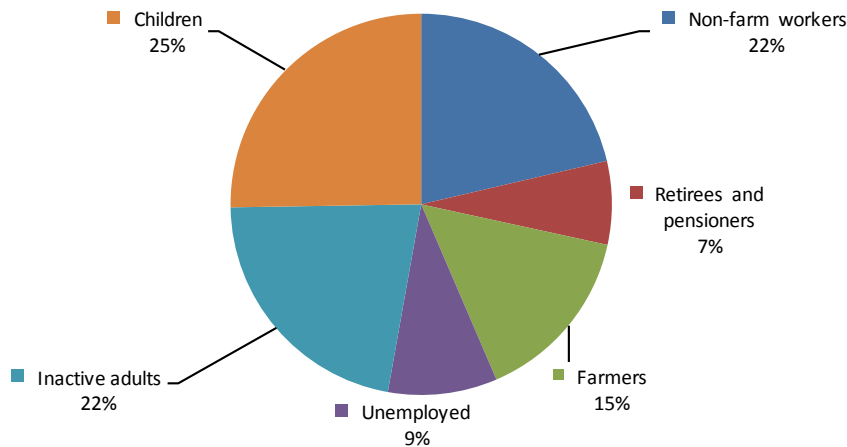
Figure 1.21 Structure of Non-Poor Workers' Households in Poland, 2012



Source: Poland Household Budget Survey data.

Note: "Workers" are those who were both earning wages and considering themselves as workers during the month of the study. "Inactive adult" = individual ≥ 15 years of age who does not seek work or otherwise participate in the work force. "Non-poor" = person living in a households whose income is ≥ 60 percent of median household income, using the OECD-modified equivalence scale.

Figure 1.22 Structure of Poor Workers' Households in Poland, 2012



Source: Poland Household Budget Survey data.

Note: "Poor" = households whose income is ≤ 60 percent of median household income, using the OECD-modified equivalence scale. "Workers" are those who were both earning wages and considering themselves as workers during the month of the study. "Inactive adult" = individual ≥ 15 years of age who does not seek work or otherwise participate in the work force.

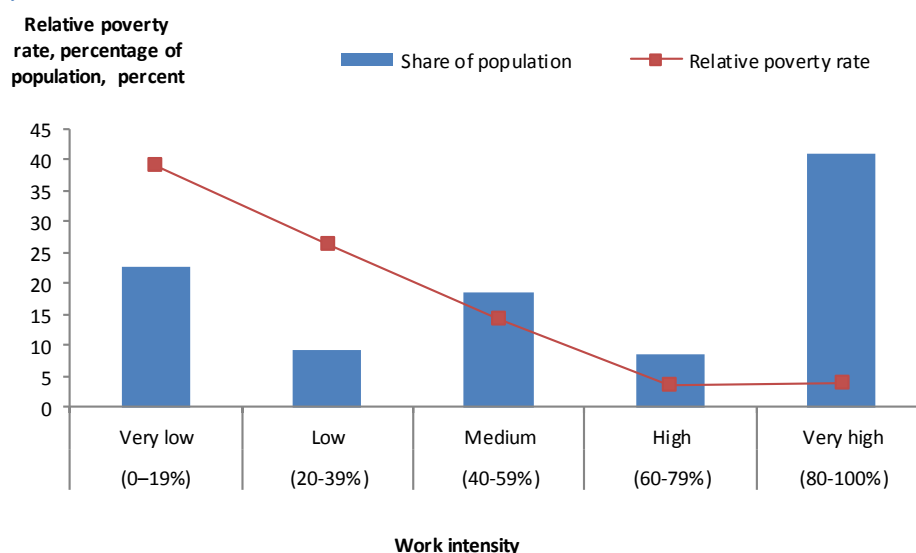
1.4.4 Household Structure, Labor Supply and In-Work Poverty

In order to quantify the relationship between household structure, its effective labor supply and risk of poverty, we introduce the concept of "work intensity" and define it as the ratio of the number of nonagricultural workers in the household (for individuals working full-time, the

weighting is 1, and for part-time employment 0.75),¹¹ to the total number of persons in the productive age (15-64) in the household. HBS data is used. Figure 1.23 shows that labor intensity is negatively correlated with the risk of relative poverty.¹² Each additional worker in a household has a positive impact on its financial situation, and households with low labor intensity – and without other regular sources of income, such as pensions—run a higher risk of poverty than household.

Figure 1.23 shows also that two models of labor supply are dominant in Polish households: either all people able to work actually do so (work intensity is above 80 percent – 41 percent of population lives in such households), or almost no one works (work intensity is below 20 percent – 23 percent of population lives in such households). The risk of poverty decreases significantly when work intensity surpasses 60 percent: for example, in a household with three adults, two full-time workers are usually sufficient to avoid poverty (even if they are low-paid). Figure 1.23 shows that poverty rates among households with high and very high work intensity is very similar and quite low (below 4 percent) which suggests that although increasing the work intensity above 80 percent is likely to increase household income, it doesn't seem to reduce the risk of relative poverty as the income is most often above the poverty threshold when work intensity is high (60 to 80 percent).

Figure 1.23 Percentage of Population by work Intensity per Household and the Relative Poverty Rate in Poland, 2011



¹¹ Weighting based on LFS data.

¹² The same applies to other measures of poverty, not shown on the figure.

Source: Poland Household Budget Survey data.

Note: “Work intensity” is the ratio of the number of nonagricultural workers in the household (for individuals working full-time, the weighting is 1, and for part-time employment 0.75, based on LFS), to the total number of persons in the productive age (15-64) in the household. “Relative poverty rate” = percentage of people living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger).

In most cases in-work poverty in Poland is not caused by low wages but rather by the lack of income earned by other adult household members. If all the working poor in Poland lived in single-person households, 70 percent would cease to be poor and the in-work poverty rate would decrease to 2 percent (according to 2011 HBS data).¹³ In this sense, the significance of household structure for in-work poverty is greater in Poland than in Germany or the United Kingdom, where the share of working poor who would no longer be poor if they lived in single-person households, is close to 60 percent. It is still much higher than in Belgium, where only 6 percent of the working poor would remain in poverty if they did not share their labor income with anybody else (Strengmann-Kuhn 2005; using European Community Household Panel data from 1996). Considered another way, however, because in all countries a substantial share of low-paid workers live with other workers in non-poor households, if all such workers switched to single-person households, the in-work poverty rate would increase – in case of Poland from 7.4 percent to 8.8 percent (2011 HBS data).¹⁴ This result again hints at the utmost importance of proliferating the two-earner model in order to reduce in-work and total poverty in Poland.

1.5 Determinants of In-Work Poverty in Poland

This section uses regression analysis to identify the relative contribution of different labor market and household level factors on the risk of poverty. To study the impact of particular individual and workplace characteristics, the probit model for the risk of in-work relative poverty in Poland is used below, estimated using Poland Household Budget Survey data, 2005–11.

¹³ The poverty of nonworking household members would increase at the same time.

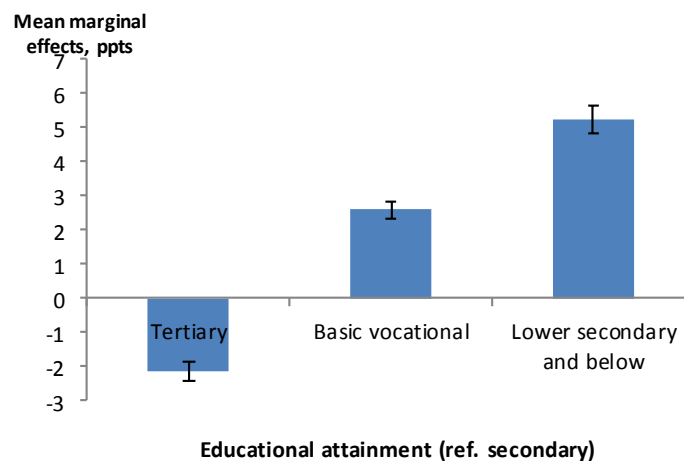
¹⁴ Assuming a constant poverty threshold.

1.5.1 Gender and Educational Attainment of Workers

A first finding from this analysis is that controlling for differences in household structure and in the household members' labor market status, women are at slightly higher risk of relative in-work poverty than men. In particular, female workers' probability of in-work relative poverty is 0.3 percentage points higher than it is for male workers.¹⁵ This difference corresponds with the wage differences between males and females (previously shown in figure 1.16). That low-paid women are, on the average, less often in relative poverty than low-paid men is likely to be associated with their different household types – as argued in subsection 1.4.2, working women more often live in households with other workers than men.

Even controlling for other household-level factors, higher education is associated with consistently lower rates of poverty, which can be explained by positive wage returns to education on the labor market (Arias et al., 2014). Controlling for other individual and household characteristics, workers with higher education exhibit a risk of poverty that is 2 percentage points lower than workers with secondary education (figure 1.24). As a result, only 1 in 100 workers with higher education is relatively poor, although in professions that do not require higher education, the in-work poverty rate of the higher-educated amounts to 16 percent.

Figure 1.24 Impact of Education on the Risk of In-Work Poverty in Poland, 2005–11



Source: Poland Household Budget Survey data.

Note: the figure presents the mean marginal effects from the probit model for the probability of being poor. Horizontal lines denote 90 percent confidence intervals. Full list of control variables and the values of the coefficients can be found in the Appendix 1 (Table A 1.1).

¹⁵ The detailed results of estimations are presented in the annex.

1.5.2 Occupational Skill Requirements and Contract Type

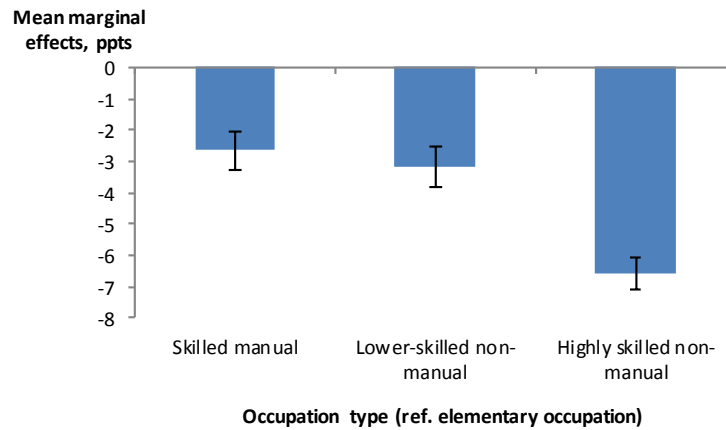
Although low-paid workers are concentrated in the services sector,¹⁶ the regression results suggest that no dominant sector shows a particular association with the employment of working poor (see Table A 1.1 in Appendix 1). Interestingly, the risk of in-work poverty is higher among workers with manufacturing jobs than among those with services jobs. IBS (2013) shows that within the services sector, the risk of poverty is slightly higher among workers with jobs in market related services rather than nonmarket services; but, paradoxically, low wages are less frequent in the former. In manufacturing, subsectors are much more diverse in terms of in-work poverty rates. Among those employed in manufacturing, people working in construction; the generation and supply of electricity, gas, and water; or waste management are at the greatest risk of relative poverty, and low-paid workers are often found in these industries - in 2011, one in five construction workers was low-paid (IBS 2013).

The chances of avoiding poverty are most enhanced by having a nonmanual job that requires high qualifications.¹⁷ Half of the working poor perform physical tasks requiring some job-specific skills, such as electricians or miners, although only 15 percent of people in this group are low-paid. They constitute one-third of all nonagricultural workers. Workers performing manual tasks not requiring any specific skills are more often low-paid (43 percent), but at the same time have an in-work poverty risk that is approximately 4 percentage points lower than the among the reference group – workers with elementary occupation (figure 1.25). On the other hand, almost half of low-paid workers (40 percent) are medium-skilled office workers, and their risk of in-work poverty is three times lower than that of workers performing simple manual tasks.

¹⁶ According to the HBS, in 2011, 70 percent of low-paid workers worked in services, exceeding the 57 percent share of services in total employment.

¹⁷ Forty percent of all workers belong to this group, and their relative poverty rate is only 1.5 percent.

Figure 1.25 Impact of Occupation, by Type, on the Risk of In-Work Poverty in Poland, 2005–11



Source: Poland Household Budget Survey data.

Note: The aggregation of job classification is based on Whelan, Maitre, and Nolan (2011). The figure presents the mean marginal effects of the probit model for the probability of being poor. Horizontal lines denote the 90 percent confidence intervals. Full list of control variables and the values of the coefficients can be found in the Appendix 1 (Table A 1.1).

Lower-skilled occupations jobs are often associated with fixed-term contracts, and temporary contracts are associated with much higher risk of poverty than self-employment and jobs with permanent contracts would be. Since the late 1990s, Poland has experienced significant changes in the structure of employment by type of contract, and the incidence of temporary work has increased, including fixed-term employment contracts, temporary agency work, and civil law based contracts (contracts of mandate and contracts for specific task or product). Among the working poor (outside agriculture), around 85 percent are hired on permanent contracts, 10 percent are self-employed, and 5 percent are employed on fixed-term contracts. The low-paid workers exhibit very similar structure by the type of contract. However, according to LFS data, only 30 percent of workers with fixed-term, civil law or temporary agency work contracts have jobs requiring high skills,¹⁸ whereas about 60 percent of workers with permanent contracts have jobs requiring high skills.¹⁹

Even if other characteristics (e.g., workplace and household structure) are taken into account, temporary contracts increase the risk of poverty by 2.5 percentage points compared with permanent employment (figure 1.26). All these factors translate into an especially high relative poverty rate of workers with temporary jobs, which in 2012 amounted to 38 percent. Self-employment does not differ significantly from permanent employment in terms of poverty risk

¹⁸ None of the available data sources allows distinguishing between workers with with fixed-term, civil law or temporary agency work contracts so they have to be analyzed as one group.

¹⁹ The classification of professions comes from Whelan, Maitre, and Nolan (2011).

(figure 1.24), and accordingly the poverty rates among the self-employed and workers with open-ended contracts are comparable, at about 6.5 percent, whereas the incidence of low wages in both groups is about 20 percent. Figure 1.24 shows also that once other characteristics are controlled for, self-employment doesn't differ significantly from being employed on open-ended contract, in terms of the risk of relative poverty.

Part-time workers are at particular risk of poverty when they have no possibility of finding another job and the entire household depends on their wages. This was already pointed by Wóycicka (2010) and the results of the probit model shown on figure 1.26 confirm that part-time workers face much higher risk of relative poverty than full-time workers, the difference close to 5 percentage points.²⁰ This can be related to both lower working hours – according to LFS data, average weekly working hours of part-time workers are 32, less than 39 for full-time workers – and lower hourly wages – Magda and Potoczna (2014) show that except for well-paid young women, there is a wage penalty attached to part-time work in Poland. In line with these findings, in 2012 only 5 percent of higher-paid jobs in Poland were part-time. On the other hand, in 2012, 70 percent of the low-paid worked part-time.

Figure 1.26. Impact of Contract Type and Firm Ownership on Risk of In-Work Poverty in Poland, 2005–11



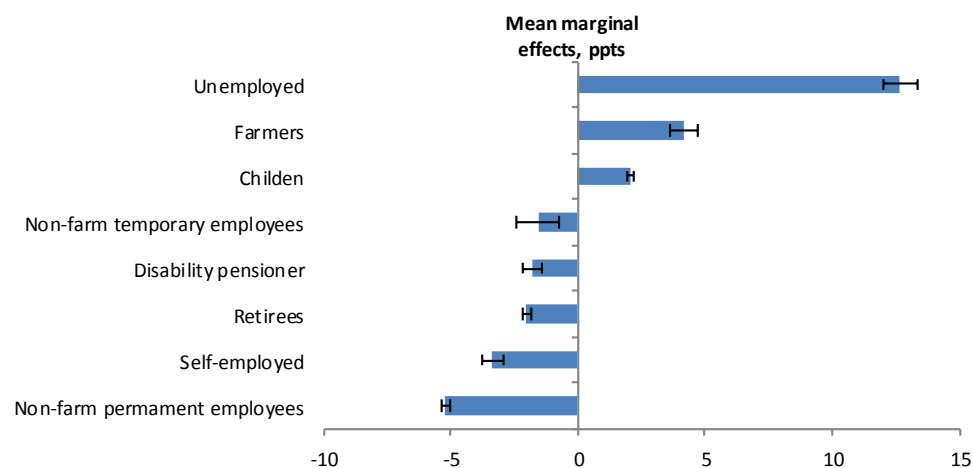
Source: Poland Household Budget Survey data.

Note: The figure presents the mean marginal effects from the probit model for the probability of being poor. Full list of control variables and the values of the coefficients can be found in the Appendix 1 (Table A 1.1).

²⁰ There is no data on hours worked in HBS, only information about full-time / part-time status, thus part-time can be modeled only with a binary variable.

The risk that the household falls into poverty is to largest extent reduced by household members have work in a non-agricultural job with a open-ended contract. Figure 1.27 shows the marginal effect on poverty risk of different types of household members which shed additional light on the results presented above. Each subsequent permanent worker holding a job outside agriculture increases the chance that the household avoids poverty by 5.2 percentage points. However, the presence of self-employed or temporary workers also significantly decreases the risk of (household) poverty, even though temporary contracts increase the risk of poverty of individuals. This apparent contradiction can be explained by the fact that less than 1 percent of households are headed by temporary workers, which suggests that this type of employment is often treated as an additional source of household income. It improves chances of avoiding poverty, but to a lower extent than permanent employment. However, the presence of a person on a fixed-term contract decreases this risk only slightly, at a level comparable to the presence of a disability pensioner and less so than the presence of an old-age pensioner.

Figure 1.27 Impact of Household Members, by Type, on the Risk of In-Work Poverty in Poland, 2011



Source: Poland Household Budget Survey data.

Note: Figure shows the average marginal effects of the probit model for the probability of being poor. Horizontal lines indicate 90 percent confidence intervals. In the model, the number of people enters as a continuous variable. Marginal effects were calculated only for households that already had at least one person from a given group. The detailed results of the estimation can be found in the Appendix 1.

Although the presence of a child increases the risk of in-work poverty, the impact on poverty risk is lower than of the presence of a farmer, and much lower than of the presence of an unemployed person. The high impact of the unemployed on the risk of poverty in workers' households can, to some extent, be explained by the fact that only around 10 percent of all

unemployed persons Poland receive benefits.²¹ Unemployment benefits in general are paid out for the first 6 months, and since 2002 the long-term unemployment rate has fluctuated between 2.4 percent and 11.1 percent, meaning that 30–56 percent of all who are out of work were long-term unemployed and received no unemployment benefits. This makes households with unemployed persons relatively poorer than (identical) households with old-age or disability pensioners, i.e. jobless people who receive regular transfers. Interestingly, the lowest risk of poverty is observed among workers who live in households where a pension is the main source of income – the likelihood of in-work poverty among persons living in such households is approximately 3 percentage points lower than when paid labor is the main source of household income (see Appendix 1 for estimation results). Old-age pensioners’ households are the second-most numerous group of households that include workers.

1.6 Conclusions

In-work poverty in Poland does not result solely from low wages but mainly from low labor intensity within households — a phenomenon most likely to take hold among those with low general human capital (education) and low specific human capital (years worked in relation to age). In addition, Poland’s agriculture sector—which employs 12 percent of the country’s workers and whose relative poverty rate far exceeds those of other European countries—must be counted as a major generator of working-poor households in Poland.

The presence or absence of *nonagricultural* workers in a household is a critical determinant of poverty risk, regardless of the poverty threshold used. People living in households with no nonagricultural workers constitute a much larger share of the population in relative poverty - 49 percent on the average between 1998 and 2012 - than of the population that is not poor in relative terms (25 percent on the average 1998 and 2012). In case of absolute poverty the difference is even more pronounced as the shares in question amount to 67 percent and 27 percent, respectively, In case of 1998-adjusted poverty, they are 52 percent and 25 percent, , respectively. Impact of nonagricultural workers is particularly large when they earn regular income. Temporary employment and part-time work have relatively smaller effect on the reduction of in-work poverty, even after controlling for the fact that such contracts are more often found in low-wage sectors and jobs. Moreover, self-employment provides only a slightly greater reduction of poverty risk than fixed-term employment. On the other hand, the stability

²¹ This number varied from 7 percent in 2008 to 14 percent in 2001 (LFS data).

of employment and more compressed distribution of wages in the public sector results in a lower risk of poverty for public sector workers than for the private sector workers. Among the factors that help to protect workers' households from poverty risk is the presence of other workers or old-age pensioners.

It can be argued that in-work poverty in Poland is increasingly being caused by (a) the inadequate total work intensity of households, (b) the presence in households of adults who are either jobless or work in private farming and are thus dependent on a household member working outside agriculture. In the next chapter we will analyze how successful was the tax and benefit policy in Poland in tackling poverty, in particular poverty of workers.

2 Impact on In-Work Poverty of Existing Policies and Recent Changes in the Tax-Benefit System

2.1 Introduction

Public policy exerts a direct impact on the disposable income of households via both income taxes paid by and benefits paid to the members of the household. This section utilizes the work of Myck, Kundera, and Oczkowska (2013) to identify the impact of recent (2012) and less recent (2005–10) changes to the tax and benefit system in Poland on the extent of in-work poverty. The review of these reforms suggests that the tax and benefit system could be an appropriate channel to tackle poverty given the low rates of informal employment and the broad tax base among households in Poland. However, government actions thus far have had only a modest impact on in-work poverty.

2.2 Baseline Impact of Policies (Prior to Recent Reforms)

Recent studies show that the impact of the tax and benefit system on the overall and in-work poverty rate in Poland is significant but not always desirable. Table 2.1 shows a simulation of the overall impact of the tax and benefit system on the relative poverty rate in Poland. The results are for 2010 and are obtained from the SIMPL model on the basis of HBS 2010 data, initially presented by Myck, Kundera, and Oczkowska (2013). The base system represents the poverty rate in 2010 under the tax and benefit system in use at that time. The middle column simulates a system without any social benefits being paid to households (except for contribution-based benefits, i.e., retirement pensions, disability pensions, and employment benefits). The last column simulates a system without these benefits (contribution-based benefits, i.e. retirement pensions, disability pensions and unemployment benefits, are assumed to be paid), without social insurance contributions, and without any tax burden. Poverty rates in all three cases were calculated using the same poverty threshold.

Although social benefits contribute to alleviating poverty, the combined effect of benefits and taxation results in significantly higher poverty rates than under a scenario with no taxation involved. The relative poverty rate calculated for the system with no social benefits (as per the SIMPL model) is by 4.3 percentage points higher for the total population and by 2.4 percentage points higher for the workers than in the base system. Therefore, the withdrawal of social benefits would significantly increase the poverty rate, both in the overall population and among

workers. However, the results for the base system relative to the system with no tax burden, no social insurance contributions, and no social benefits are the most interesting: The withdrawal of social benefits, income taxes, and social security contributions would cause the poverty rate to decline. In addition, this effect would be much stronger than the impact of abolishing social benefits alone. The overall poverty rate would be 11.2 percent—4.8 percentage points lower than under the base system in 2010.

Table 2.1 Effect of Tax and Benefit System on the Extent of Relative Poverty in Poland, 2010 percentage

	Under base tax and benefit system, 2010	Under system without social benefits	Under system without tax burden, social insurance, or social benefits
Relative poverty rate (total)	16.0	20.3	11.2
In-work relative poverty rate (working poor)	10.9	13.3	6.1

Source: Myck, Kundera, and Oczkowska 2013.

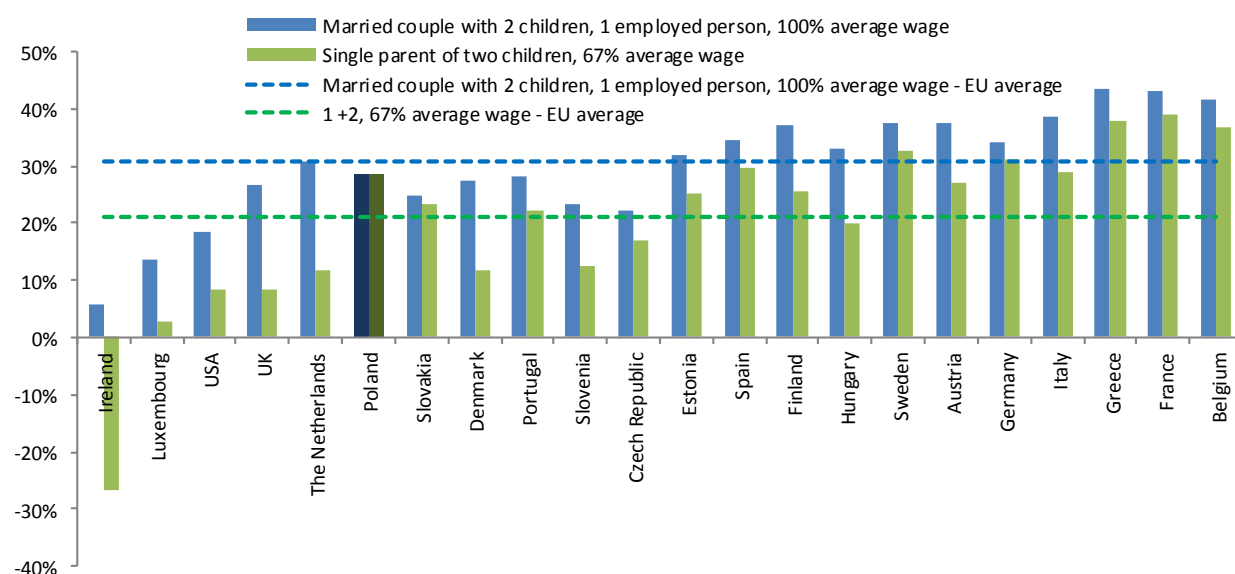
Note: “Relative in-work poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income (931.77 zlotys in that case), using the OECD-modified equivalence scale (ascribing a weight of 1.0 to the first adult, 0.5 to each additional adult, and 0.3 per child (an individual aged 14 years or younger)).

Discounting both taxes and benefits, poverty rates of the working poor would be lower than currently observed, due to their limited access to social transfers. As shown in the table 2.1, withdrawing all positive and negative transfers would make the in-work poverty rate drop by almost half—from 10.9 percent to 6.1 percent. These results can be explained by the fact that workers’ households receive social benefits relatively rarely (if there were no social benefits, the in-work poverty rate would rise by 2.4 percentage points), while they must shoulder a significant burden from social insurance contributions and income taxes. This suggests that the tax-benefit system in Poland places a substantial net tax burden on people at risk of poverty, in particular low-income workers. Myck, Kundera, and Oczkowska (2013) argue that, according to EUROMOD simulations, the joint impact of the tax system and social benefits on poverty is minor in most European countries, but it increases poverty rates in Bulgaria, Estonia, Greece, Italy, Latvia, Lithuania, Poland, and Romania.²²

²² EUROMOD is a tax-benefit microsimulation model for the EU. For more information, see the website, <http://www.iser.essex.ac.uk/euromod>.

The tax wedge, i.e. the difference between the total labor cost incurred by the employer (non-wage cost of employment includes social security contributions and income taxes) and the net remuneration received by the worker, for low earners (individuals earning 2/3 of the average wage) and single parents in Poland is significantly higher than the EU average. Moreover, Poland is the only OECD country which imposes the same tax burden on low earners with children as on couples with children and at least one person earning the national average wage (see Figure 2.1).²³ In other OECD countries the tax burden on single parents is relatively much lower than on couples and single earners. At the same time, Poland places a rather low tax wedge on individuals earning the national average wage or more, particularly if such individuals have no dependants).²⁴

Figure 2.1. Total tax wedge (total burden of income tax and social security contributions in relation to gross remuneration) – for a married couple with 2 children and 1 person earning the average wage, and for a single person earning the average wage in selected European countries and the United States, 2011.



Source: own elaboration based on OECD data.

²³ This is related to the weakness of the Polish fiscal system – the system of reliefs is in practice available to higher earners, while the poorest earn too little to take a advantage of it (Myck, Kurowska and Kundera, 2013). The tax wedge imposed in Poland on households with two children, with one person earning 100 percent of the average wage, is close to the EU average and higher than in the Czech Republic, Slovakia and Slovenia.

²⁴ According to the OECD data, in 2011 the average tax wedge imposed on workers in the EU countries amounted to 34.8 percent. It was highest in Belgium (47.5 percent) and lowest in Ireland (13.1 percent). In Poland it amounted to 33.1 percent.

2.3 Impact on Poverty Rates of 2005–10 Changes in the Tax-Benefit System

The reforms that took place between 2005 and 2010 resulted in a moderate reduction of poverty and of in-work poverty. Table 2.2 presents the simulation of the impact of changes in the tax-benefit system between 2005 and 2010 (listed in box 2.1), as calculated by Myck, Kundera, and Oczkowska (2013). The base system of 2010 is compared with the system in force in the first half of 2005.²⁵ Thus, the hypothetical system “rolls back” the tax and benefit reforms implemented in 2005–10. The results indicate that, because of these changes as a whole, the 1998-adjusted and absolute poverty rates have decreased significantly (from 7.7 percent to 6.4 percent and from 2.8 percent to 2.4 percent, respectively). In addition, the relative poverty rate among children decreased (from 21.6 percent to 20.2 percent). However, although households gained 25.2 billion zlotys because of tax and benefit reforms introduced between 2005 and 2010, relative poverty rates among the total and working populations remained practically the same (16.0 percent and 10.9 percent, respectively). Among other things, the reforms led to an approximate 5 percent increase in the relative poverty threshold (from 887.60 zlotys to 931.77 zlotys). On the other hand, the policy changes as a whole led to a visible improvement in the total and in-work 1998-adjusted poverty rates, which would be 1.3 percentage points and 0.8 percentage points higher had the system from 2005 remained in place. However, absolute poverty rates were virtually unaffected.

Most of the gains in poverty reduction over this period can be attributed to changes in the family benefit system. Notably, Myck, Kundera, and Oczkowska (2013) argue that this impact was almost entirely due to these changes, which box 2.1 describes in detail. Had the 2005 family benefit system still been in place in 2010, poverty rates would have been higher. This shows that the other changes in the tax-benefit system were of much lesser importance: the estimated net gain for households would have been only 1 billion zlotys Myck, Kundera, and Oczkowska (2013). In particular, the income tax changes had a negligible effect on poverty rates because they made no significant changes in the tax burden for low earners.²⁶

²⁵ This system was properly indexed to reflect changes in consumer prices and income levels.

²⁶ Earlier defined, in box 1.1, as someone earning “a monthly income from nonagricultural labor no greater than two-thirds of the median wage calculated for all nonagricultural workers.”

Table 2.2 Simulated Impact of Tax and Benefit Changes Introduced 2005–10 in Poland

	Base tax and benefit system in 2010	Hypothetical system: indexed 2005 system in 2010
<i>I. Relative poverty</i>		
Poverty threshold (zlotys)	931.77	887.58
Poverty rate (percent)	16.0	15.9
Median poverty gap (zlotys)	469.13	468.73
In-work poverty rate – working poor (percent)	10.9	11.1
<i>II. 1998-adjusted poverty</i>		
Poverty threshold (zlotys)	675.27	675.27
Poverty rate (percent)	6.4	7.7
Median poverty gap (zlotys)	332.45	352.09
In-work poverty rate – working poor (percent)	4.6	5.4
<i>III. Absolute poverty</i>		
Poverty threshold (zlotys)	472.72	472.72
Poverty rate (percent)	2.4	2.8
Median poverty gap (zlotys)	366.72	400.25
In-work poverty rate – working poor (percent)	2.0	2.2
<i>IV. Benefit for households resulting from the introduction of the hypothetical system (billions of zlotys per year)</i>		-25.169

Source: Myck, Kundera, and Oczkowska 2013.

Note: “Relative poverty rate” = percentage of workers living in households which equivalised income was below 60 percent or less of median equivalised household income, using the OECD-modified equivalence scale. “1998-adjusted in-work poverty rate” = percentage of workers living in households earning the 2011 equivalent of ≤ 60 percent of median household income in 1998, measuring improvements in living standards in real terms against those of 1998. “Absolute in-work poverty rate” = percentage of workers living in households earning less than the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). The “in-work poverty rate” = the percentage of workers living in poor households. “Worker” = individual ≥ 15 years of age who had worked within the seven days preceding the LFS [labor force survey] or who had been employed but did not work within those seven days.

Box 2.1 Changes in the Tax-Benefit System in Poland between 2005 and 2010

Between 2005 and 2010, significant changes were implemented in Poland's tax and benefits system that significantly affected the incomes of Polish households. A detailed description, including the values of particular parameters, can be found in IBS (2013). The most important changes introduced at that time involved reforms to the social insurance system, tax system, family benefits, and social assistance.

I. Social insurance reforms

- Reduction of the accident insurance contribution and contribution to the Guaranteed Employee Benefits Fund (2006)
- Reduction of the disability pension contribution (2007, 2008)
- Reduction of the accident insurance contribution (2009)
- Reform of the agricultural social insurance system: increase in contributions, linking the amount of contributions to the value of the farm, and increasing contributions for farmers additionally engaging in nonagricultural activities (2010)

II. Tax reforms

- Increase in the value of revenue costs (2006, 2007, 2008)
- Increase in the tax-free allowance (2007, 2008)
- Introduction of the child tax credit (2007)
- Increase in National Health Fund (NFZ) health insurance contribution (2006, 2007)
- Increase in the tax threshold (2009): reduction in the number of tax rates from three (19 percent, 30 percent, and 40 percent) to two (18 percent and 32 percent).

At the same time, subsequent governments pursued a policy of freezing the nominal values of system parameters, such as revenue costs (2009, 2010), the tax-free allowance and child tax credit (2006, 2010), tax thresholds (2006, 2008-10), and the Internet tax deduction (2009-10). Inflation decreased the real value of these amounts, and in view of rising gross wages, the freezing of parameters modified the impact of the tax system in relation to changing wage distribution.

III. Family benefits reforms

- Change in the system of calculating the family allowance from one based on the number of children to one based on their age, change in family allowance amounts (2006)

- Increase in the amounts of some supplements to the family allowance (2006)
- Increase in the family allowance amount granted in all child age categories (2009)
- Increase in the amount of nursing allowance (2009)
- Introduction of the universal child birth benefit (2006)
- Making the nursing allowance independent of income (2010).

On the other hand, since 2005 income eligibility thresholds relevant for receipt of family benefits—and in most of the years also for the amounts of supplements to family allowance and nursing allowance and benefit—were kept at a nominally constant level. Because the family benefits system is indexed every three years, the actual values of all benefits decreased in 2007, 2008, and 2010.

IV. Social assistance

- Increase in the income eligibility threshold for the permanent and temporary social assistance allowance (2006)
- Increase in the maximum amount of the permanent social assistance allowance and of the share of the temporary social assistance allowance amount guaranteed by the state (2006)

For social assistance and family benefits, the levels of permanent and temporary allowances as well as the income eligibility threshold for receipt of permanent and temporary allowances were frozen in most years during the analyzed period. This policy limited the number of people eligible to receive support from social assistance.

Source: IBS 2013.

2.4 Impact of Recent Tax-Benefit Changes on Poverty Rates

The most relevant policy changes since 2010 relate to an increases in generosity accompanied by stricter eligibility criteria for family benefits and social assistance. The family benefits system includes a family allowance with supplements, a child birth benefit, and care benefits. Families whose income does not exceed a specified eligibility threshold have the right to receive the family allowance and its supplements (detailed in Appendix 2). The most important recent reforms were introduced in 2012, and included changes in eligibility thresholds and amounts of benefits. Income eligibility thresholds have decreased slightly (in real terms) relative to 2010.

The family allowance dependent on the age of the child increased both nominally (from 13.2 percent to 17.3 percent) and in real terms. An income eligibility threshold (1,922 zlotys per person in a family) for a one-time child birth grant of 1,000 zlotys was introduced in January 2013. Changes in the nursing allowance could also have an impact on the financial situation of the working poor. Since 2010 the allowance is no longer dependent on income, and in 2011 a restriction on payout of this allowance was introduced: only one disabled child per family has the right to receive it. Several changes in the social assistance system were also introduced in October 2012. The permanent allowance was increased by 4.5 percent in nominal terms, and income eligibility thresholds for social assistance benefits were increased nominally by 14 percent and 30 percent, respectively, for single-person and family households.

Simulations indicate that the 2012 reforms to the family benefit system had no net impacts on poverty. Table 2.3 presents a simulation of the impact of recent changes, after Myck, Kundera, and Oczkowska (2013). Scenario 1 (“Changes in the family benefits system from 2012”) includes changes in the real values of family benefits system parameters implemented in November 2012 (and compared with the 2010 system). Scenario 2 (“All changes from 2012”) comprises all changes in the tax and benefit system between 2010 and 2012.²⁷ All benefit elements in the system have been adjusted for inflation, and the tax system elements have been adjusted for wage growth. Table 2.3 shows that the total net impact of changes implemented in the family benefits system in 2012 failed to bring any financial gains (in real terms) to households in relation to the 2010 system. Moreover, the reforms caused total household income to decrease by approximately 60 million zlotys. Overall, in scenario 1, poverty rate deviations from the base scenario are negligible.

However, the combination of all changes in taxes and benefits in 2012 resulted in a positive but very small improvement in poverty rates without any improvement in in-work poverty. Scenario 2 takes into account, as a whole, the tax-benefit system reforms implemented between 2010 and 2012. Overall, the simulations show that reforms led to an almost 1.8 billion zlotys drop in total household disposable income. This decrease mainly resulted from freezing the nominal values of tax system parameters (the value of which had decreased in real terms and moved down in wage distribution). Another potential reason could be the farmers’ health insurance contribution, introduced in February 2012. Both these factors have also decreased the

²⁷ The simulation does not include the changes in employer social insurance contributions introduced in February 2011 because of lack of information on who directly paid these contributions.

relative poverty rate.²⁸ On the other hand, the changes in family benefits introduced in November 2012 positively affected the incomes of the poorest households, which, together with a drop in the threshold, led to a slight decrease in the poverty rate in the second scenario. However, the results of simulations show that the in-work poverty rate was unaffected by changes in the tax-benefit system introduced between 2010 and 2012. Their total financial impact was relatively small, and again there was no substantial change in the net tax burden on low-income working households.

Table 2.3 Simulated Impact of 2012 Poverty and Family Support Reforms in Poland

	Base tax and benefit system in 2010	Changes in family benefits from 2012 (scenario 1) ^a	All changes from 2012 (scenario 2) ^b
<i>I. Relative poverty</i>			
Poverty threshold (zlotys)	931.77	931.19	927.28
Poverty rate (percent)	16.0	16.0	15.8
Median poverty gap (zlotys)	469.13	470.86	456.84
In-work poverty rate – working poor (percent)	10.9	10.9	10.9
<i>II. 1998-adjusted poverty</i>			
Poverty threshold (zlotys)	675.27	675.27	675.27
Poverty rate (percent)	6.4	6.5	6.3
Median poverty gap (zlotys)	332.45	330.77	318.07
In-work poverty rate – working poor (percent)	4.6	4.6	4.5
<i>III. Absolute poverty</i>			
Poverty threshold (zlotys)	472.72	472.72	472.72
Poverty rate (percent)	2.4	2.4	2.2
Median poverty gap (zlotys)	366.72	371.97	396.48
In-work poverty rate – working poor (percent)	2.0	2.0	2.0
<i>IV. Benefit for households resulting from the introduction of the system (billions of zlotys per year)</i>	-	-0.063	-1.783

Source: Myck, Kundera, and Oczkowska 2013.

Note: “Relative poverty rate” = percentage of workers living in households which equalised income was below 60 percent or less of median equalised household income, using the OECD-modified equivalence scale. “1998-adjusted in-work poverty rate” = percentage of workers living in households

²⁸ The relative poverty threshold is equal to 60 percent of median equalized disposable income, so changes in the income of the poorer half of the population affect its value.

earning the 2011 equivalent of ≤ 60 percent of median household income in 1998, measuring improvements in living standards in real terms against those of 1998. “Absolute in-work poverty rate” = percentage of workers living in households earning less than the minimum per-person subsistence needs calculated by the Polish Institute of Labor and Social Studies (IPISS). The “in-work poverty rate” = the percentage of workers living in poor households. “Worker” = individual ≥ 15 years of age who had worked within the seven days preceding the LFS [labor force survey] or who had been employed but did not work within those seven days.

a. Scenario 1 includes changes in the real values of family benefits system parameters implemented in November 2012 (and compared with the 2010 system).

b. Scenario 2 comprises all changes in the tax and benefit system between 2010 and 2012. All benefit elements in the system have been adjusted for inflation, and the tax system elements have been adjusted for wage growth.

2.5 Conclusions

In sum, tax and benefit policies so far have failed to address in-work poverty, mainly because the parametric changes in taxation have been modest, benefit access for working individuals remains limited and inadequate work intensity in poor households has not been systematically addressed. Micro-model simulations show that the burden placed on the working poor in Poland by income taxation and social security contributions outweighs support from the benefit system. Policy reforms introduced between 2005 and 2010 led to notable reductions in absolute and 1998-adjusted in-work poverty rates, mainly due to changes in the family benefit system. However, these had almost no impact on the relative in-work poverty rate, and income tax changes were irrelevant to poverty rates because they failed to change the tax burden on low earners.

The evolution of in-work poverty after 2010 can primarily be attributed to macroeconomic and labor market developments, as the impact of policy on changes in poverty was negligible. The focus on family benefits, which so far dominates antipoverty policy in Poland, can be understood in light of the country’s high child-poverty rates. However, considering the importance of individual farming and adult joblessness for total and in-work poverty, family benefits will prove insufficient to provide adequate alleviation, and other instruments are needed to tackle these issues.

3. Findings and policy recommendations

In 2011, Poland had one of the highest relative in-work poverty rates in the EU: at 11.1 percent, the figure was above the EU average. However, half of the working poor in Poland are employed in agriculture, and the risk of poverty in this sector is much greater than for nonagricultural workers. Taking only the latter into account, the poverty rate is visibly lower at 7.4 percent, albeit still at a relatively high level.

Since the late 1990s, in-work poverty rates have decreased regardless of the threshold used. The in-work poverty rate among nonagricultural workers (in both relative and absolute terms) was correlated with wage dispersion (especially below the median) and was procyclical, although it has followed changes in employment and wages with some delay. Poverty rates among farmers were higher and were weakly related to changes in both wage dispersion and economic and employment growth. In 2007–09, the relative and absolute in-work poverty rates in agriculture increased, but overall in-work poverty shrank because of the declining share of agriculture in total employment and the declining in-work poverty rate among nonagricultural worker. In terms of the 1998-adjusted poverty rate—comparing current living standards with those in late 1990s—poverty has decreased significantly both in agriculture and in other sectors.

Workers are much less likely to be poor than jobless people, especially the unemployed. Poverty rates among young people are higher than those among all other subgroups at working age, but the risk of relative poverty among workers aged 15–24 years is much lower than the total relative poverty rate for this age group (11 percent vs. 22 percent in 2011). Among prime-aged people, individuals aged 45–54 years have exhibited the highest total poverty level, mainly because of a lower employment rate than among younger age groups.

The risk of in-work poverty is also inversely related to educational attainment and stability of employment. In addition, the skill component of jobs is significant; workers employed in physical jobs requiring primarily job-specific skills are most likely to fall into in-work poverty. This is related to the fact that, although 70 percent of the nonagricultural working poor are employed in services, manufacturing jobs exhibit a higher risk of in-work poverty once other factors are accounted for. Poland has experienced significant changes in the contractual structure of employment: since the late 1990s, the incidence of temporary work has increased. Although among both the working poor and low-paid workers (outside agriculture), around 5 percent are employed on a fixed-term basis and 85 percent on permanent contracts (the remaining 10

percent are self-employed, which does not differ significantly from permanent employment in terms of poverty risk) fixed-term employment increases the risk of poverty by 2.5 percentage points compared with permanent employment. However, temporary workers are often second earners in households.

Notably, the overlap between the low-paid earners and the working-poor population is relatively low: only half of the working poor are low-paid at the same time, and 80 percent of low-paid persons are not poor, even according to the relative measure. These persons often avoid poverty because other members of their households receive regular income from employment or old-age pensions. For this reason, the higher risk of low wages for women does not translate into a higher risk of poverty: female workers are more likely than men (70 percent and 55 percent, respectively, in 2011) to live in households with other workers.

The main difference between relatively poor households and relatively non-poor households with a main source of income from paid labor, is in the labor market status of adults: poor households exhibit a share of nonfarm workers that is 24 percentage points lower than in non-poor households (21 percentage points lower in the case of employed nonfarm workers and 3 percentage points lower in the case of self-employed nonfarm workers). The share of jobless adults is also 15 percentage points higher in poor households (9 percentage points higher in inactive adults and 6 percentage points higher in unemployed adults). On average, poor households with a main source of income from paid labor have more children than non-poor households living on earnings from labor, but this factor is of lesser importance than differences in the labor market status of adults: the share of adults who are either jobless, work in private farming, or are otherwise dependent on other household members working outside agriculture in relatively working-poor households has been on the increase since late 1990s and in 2011, an average of 1.6 such persons per worker lived in relatively poor workers' households, whereas the average number of children per worker in such households was only 0.93.

Several policy recommendations can be formulated with an aim to improve the public policy impact on total and in-work poverty in Poland.

The tax wedge imposed on individuals with relatively low earnings can be reduced with higher tax deductible expenses related to earning income from the paid work. Arak, Lewandowski and Żakowiecki (2014) present an example of such change which is neutral for revenues from PIT – in their proposal the tax deductible expenses are increased four and a half times (for the system in

place in 2013 this would mean an increase to PLN 501 per month / PLN 6008 per year), and the basic income tax rate is raised from 18 percent to 20 percent (the second income tax rate would remain at the current level of 32 percent and the tax brackets would be unchanged too). This would reduce the tax burden only for workers earning up to PLN 4000 zlotys gross per month (according to the 2013 level of prices and wages), with the reduction affecting mainly individuals earning below 3000 zlotys gross, and most significantly those earning below the median of earnings from work. For the minimum wage, this means reducing the tax burden by 2.7 percentage points and increasing the net income by 52.5 zlotys per month, i.e. 630 zlotys per year. CENEA's calculations based on the SIMPL model show that Arak, Lewandowski and Żakowiecki (2014) proposal implies that the total disposable income of households below the median of household disposable income would increase by 403 million zlotys (according to prices from 2013). At the same time, such change would slightly increase the taxation of persons earning over 4500 zlotys per month, with the increase in the effective tax rate not exceeding 1 percentage point, which would prevent the revenue from PIT decreasing.

The extent of support for families with children via social benefits should be increased via an increase in the value of family allowance but at the same time instruments improving the financial attractiveness of work should be introduced. Increase in the value of family allowance is a tool particularly effective cost-wise to enhance the support for families with children which in Poland is relatively low in comparison to other European countries – IBS (2013) shows that the same amount of money spent on the increase in family allowance would decrease the relative poverty rate, especially among children, by about twice the reduction which could be achieved by spending the same amount of money on increasing the eligibility thresholds. At the same time, the support for the poorest families should be merged with instruments limiting disincentives to work created by higher transfers. The gradual (instead of threshold based) withdrawal of benefits and expansion of availability of benefits in the case of families in which both parents work, may be such an instrument which would result in higher economic activity of parents and contribute to reducing in-work, children and total poverty rates.

Policies to promote the double-earner households, which are less likely to be poor even if both earners are paid low wages, should focus on increasing employment of women. Part time work should, flexible working hours be promoted, but policymakers should ensure that the flexible contracts offered to mothers are non-discriminatory, i.e. provide the same hourly wages and a similar level of employment protection as ordinary contracts. Availability of affordable and

good quality childcare and pre-school services should be increased, either via public investment in facilities, or subsidies lowering fees paid by parents.

Public policy should support reallocation of workers from agriculture to other sectors of economy. Despite the transfers carried out within Common Agricultural Policy, the relative poverty rate in agriculture has increased in recent years, and the income gap between agricultural and other workers is increasing. Vast majority of farms have small arable land and low productivity which implies that many households earn incomes from farming which enable merely a basic existence or even subsistence. Transfers within Common Agricultural Policy help in supplementing their income, in a way substituting social policy. Agricultural policy should favour restructuring and modernisation of agriculture and not constitute the substitute of social policy, which is the right policy to address the problem of poverty.

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Appendix 1 – Probit Model of In-Work Poverty Risk

Table A1.1 Estimations of the Probit Model Parameters for the Risk of In-Work Poverty in Poland

	explanatory variables	parameter estimations	average marginal effect (pp)
worker characteristics	sex (reference: man)		
	woman	0.03**	0.35**
	education (ref. secondary)		
	tertiary	-0.26***	-2.16***
	basic vocational	0.23***	2.59***
	lower secondary and below	0.42***	5.23***
	age group (ref. 45-54)		
	15-24	0.04**	0.52**
	25-34	-0.14***	-1.53***
	35-44	-0.04**	-0.42**
	55 and more	-0.26***	-2.65***
	population of place of residence (ref. village)		
	500 thousand inhabitants and more	-0.49***	-4.95***
	200 - 499 thousand inhabitants	-0.31***	-3.48***
	100 - 199 thousand inhabitants	-0.33***	-3.64***
	20 - 99 thousand inhabitants	-0.26***	-2.95***
	below 20 thousand inhabitants	-0.15***	-1.80***
	region (ref. Mazowieckie)		
	Dolnośląskie	0.11***	1.16***
	Kujawsko-pomorskie	0.17***	1.77***
	Lubelskie	0.29***	3.19***
	Lubuskie	-0.04	-0.38
	łódzkie	0.13***	1.30***
	Małopolskie	0.06**	0.58**
	Opolskie	0.16***	1.65***
	Podkarpackie	0.25***	2.74***
	Podlaskie	0.25***	2.73***
	Pomorskie	0.28***	3.14***
	Śląskie	0.16***	1.70***
	Świętokrzyskie	0.19***	1.95***
	Warmińsko-mazurskie	0.13***	1.29***
	Wielkopolskie	0.09***	0.85***
	Zachodniopomorskie	0.00	0.01
	type of work (ref. work for an indefinite period)		
	work for a definite period	0.22***	2.54***
	self-employment	-0.01	-0.12
	occupation (ref. elementary occupation)		
	highly skilled non-manual	-0.60***	-6.60***
	lower skilled non-manual	-0.24***	-3.19***
	skilled manual	-0.19***	-2.66***
working time (ref. full-time work)			
part-time work	0.38***	4.93***	
ownership of the company (ref. public)			
private	0.04***	0.44***	
sector			
services	0.02*	0.25*	

household characteristics	main source of income (ref. labor)		
	agriculture	0.27***	3.41***
	old-age pension	-0.32***	-2.96***
	disability pension	0.04*	0.50
	social benefits	0.19***	2.25***
	unearned sources of income	0.42***	5.75***
	number of children	0.15***	1.66***
	number of agricultural workers	0.18***	2.02***
	number of non-agricultural workers employed for an indefinite period	-0.50***	-5.50***
	number of non-agricultural workers employed for a definite period	-0.06***	-0.69***
	number of self-employed	-0.36***	-3.91***
	number of the unemployed	0.53***	5.83***
	number of old-age pensioners	-0.27***	-2.93***
number of disability pensioners	-0.14***	-1.55***	
control variables	years (ref. 2005)		
	2006	0.09***	0.98***
	2007	0.12***	1.22***
	2008	0.08***	0.83***
	2010	0.11***	1.16***
2011	0.11***	1.20***	
Constant		-0.85***	
Number of observations		186215	
Likelihood ratio test		25558.98***	

Source: Poland HBS data, 2005–11.

Note: The dependent variable assumes the value 1 when the working is poor, i.e., earns below 60 percent of the median equalized household income in a given year, and 0 if otherwise. Asterisks ***, ** and * indicate significance at a level of 1, 5 and 10 percent.

Appendix 2 – Family and Social Assistance Benefits in Poland

Table A2.1 Family Benefits in Poland, 2008–12 (zlotys per month)

	Eligibility period during the year for which the benefit is granted					
	09.08	11.09	01.10	11.10	11.11	11.12
From:	09.08	11.09	01.10	11.10	11.11	11.12
To:	10.09	12.09	10.10	10.11	10.12	10.13
Family allowance with supplements						
Income eligibility threshold	504	504	504	504	504	539
Income eligibility threshold for a family with a disabled child	583	583	583	583	583	623
Amounts of allowance per child:						
- first and second child/ child aged 0-4 years	48	68	68	68	68	77
- third child/child aged 5-17 years	64	91	91	91	91	106
- fourth and subsequent child/ child aged 18 years or more	68	98	98	98	98	115
Supplements:						
- lone parent supplement						
a) amount per child	170	170	170	170	170	170
b) amount per child, if the child is disabled	250	250	250	250	250	250
- child care supplement granted for the duration of the parental leave	400	400	400	400	400	400
- for large families						
- for starting the school year	80	80	80	80	80	80
- for education and rehabilitation of a disabled child	100	100	100	100	100	100
a) child aged 0-4 years	60	60	60	60	60	60
b) child aged 5 years or more	80	80	80	80	80	80
- for starting education outside the place of residence						
a) for dormitory/lodgings	90	90	90	90	90	90
b) for transport to school	50	50	50	50	50	50
- child birth grant	1 000	1 000	1 000	1 000	1 000	1 000
Nursing benefits²⁾						
Nursing allowance						
a) income eligibility threshold	583	583	-	-	-	-
b) amount of the benefit	420	520	520	520	520	520
Nursing benefit	153	153	153	153	153	153
Child birth benefit³⁾						
"Becikowe"	1 000	1 000	1 000	1 000	1 000	1 000

Source: Myck, Kundera, and Oczkowska 2013, based on "Information on providing family benefits in 2006" (2007, 2008, 2009, 2010, 2011), Ministry of Labor and Social Policy, Warsaw.

Table A2.2 Social Assistance Benefits in Poland, 2008–12 (zlotys per month)

	Examined period during the year for which the benefit is granted				
	10.08	10.09	10.10	10.11	10.12
From:	10.08	10.09	10.10	10.11	10.12
To:	09.09	09.10	09.11	09.12	09.13
Income eligibility threshold for a permanent and temporary allowance (zlotys monthly):					
- person in a single-person household	477	477	477	477	542
- person in a family household	351	351	351	351	456
Amount of allowance (zlotys, monthly per capita):					
<i>Permanent allowance (min.-max.):</i>					
- person in a single-person household	30-444	30-444	30-444	30-444	30-529
- person in a family household	30-351	30-351	30-351	30-351	30-456
<i>Temporary allowance (min.-max.):</i>					
- person in a single-person household	20-418	20-418	20-418	20-418	20-418
- person in a family household	20-351	20-351	20-351	20-351	20-456

Source: Myck, Kundera, and Oczkowska 2013, based on "Information on providing family benefits in 2006" (2007, 2008, 2009, 2010, 2011), Ministry of Labor and Social Policy, Warsaw.