Employment in Poland 2011

POVERTY AND JOBS

edited by Maciej Bukowski and Iga Magda

Warsaw 2013

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

Human Resources Development Center

MINISTRY OF LABOUR AND SOCIAL POLICY

EUROPEAN UNION
EUROPEAN SOCIAL FUND

Employment in Poland 2011

POVERTY AND JOBS

Editors: Maciej Bukowski, Iga Magda

Warsaw 2013

Contributors

Editors:
Maciej Bukowski PhD, Iga Magda PhD

Part I
Maciej Bukowski PhD
Sonia Buchholtz

Part II
Piotr Lewandowski
Paweł Chrostek
Agnieszka Kamińska

Part III
Maciej Lis
Monika Potoczna

Part IV
Michał Myck PhD
Michał Kundera
Monika Oczkowska

Translation from Polish:
Centrum Tłumaczeń Profesjonalnych, C.T.P. Anna Michalska
www.ctp.com.pl
and Michał Biela

All opinions and conclusions included in this publication constitute the authors' views and do not necessarily reflect the official position of the Ministry of Labour and Social Policy.

This report was prepared as part of the project *Analysis of the labour market processes and social integration in Poland in the context of economic policy* carried out by the Human Resources Development Centre, co-financed by the European Social Fund and initiated by the Department of Economic Analyses and Forecasts at the Ministry of Labour and Social Policy.

Authors of the report:

Institute for Structural Research
ul. Rejtana 15, r. 28
02-516 Warszawa, Poland
www.ibs.org.pl

Cover design, typesetting and editing
studio graficzne Temperówka
www.temperowka.pl

This publication was co-financed by the European Union under the European Social Fund

ISBN: 978-83-61638-81-0

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

Human Resources Development Center

MINISTRY OF LABOUR AND SOCIAL POLICY

EUROPEAN UNION
EUROPEAN SOCIAL FUND

INTRODUCTION

It is with great pleasure that we present the seventh edition of 'Employment in Poland'. The report has been elaborated by the Institute for Structural Research on the initiative of Ministry of Labour and Social Policy as a part of the systemic *project Analysis of processes on the Polish labour market and in the area of social integration in the context of the conducted economic policy*, commissioned by the Human Resources Development Centre. This edition is devoted to the issue of poverty. Growth of prosperity is not distributed evenly among the Polish citizens, and some of them still cannot satisfy even basic needs. The improvement of an overall economic situation reduces risk of poverty in general. However, in case the risk occurs, efficient and effective support measures should be provided.

First part of the report defines poverty, and explains the extent of the connection with such phenomena as economic deprivation or social exclusion. It is vital, as the exact criterion of poverty is ambiguous. Having discussed these issues, we elaborate on the characteristics of poverty in Poland as compared to those observed in other Member States of the European Union, as well as their regional and local dimensions. The key element of this part is to determine the causes of poverty, i.e. to what extent poverty results from the features of national and regional economy, and to what extent from individual characteristics of people. The topics introduced in this part form background for subsequent parts of the report.

The second part is devoted to the poverty of certain social groups such as elderly, children, unemployed and rural. Conducted analyses allow to dispel some of the myths in this matter, as well as to bring out the characteristics that are particularly important from the perspective of creating the support instruments for groups that are at risk of poverty. The issue of poverty among children is scrutinised from the intergenerational perspective, and its determinants and possible measures of preventing the phenomenon are discussed.

The third part focuses on relations between income inequalities and situation on the labour market. In this part changes in distribution of wages in Poland are confronted with the poverty dynamics. They are supplemented with a reflection on the impact on poverty exerted by changes in the Polish society, including (but not limited to) those concerning household structure or economic activity of women. The phenomenon of so called working poor is also scrutinised here. We determine, inter alia, whether the characteristics of household or of work performed are more important causes of in-work poverty. We also elaborate on the question if situation of poor households is persistent or low-paid employment enables them to get out of poverty.

The fourth part discusses available tools and instruments to fight the poverty. The state of affairs described in first three parts allows to take a closer look on efficiency and effectiveness of social policy measures applied in Poland, both tax and benefit based. Special attention is drawn to the issue of financial support of families with children as an element of social and demographic policy. The key features of this part are simulations of the impact of hypothetical changes in currently functioning system on rate of poverty in Poland. The recommendations for public policy constitute the summary of the report.

1. POVERTY AND INEQUALITY

Authors:
Sonia Buchholtz
Maciej Bukowski

LIST OF BOXES / Part I

LIST OF TABLES / Part I

LIST OF FIGURES / Part I

LIST OF MAPS / Part I

LIST OF DIAGRAMS / Part I

Introduction

There is no doubt that the rewards of economic growth have never been distributed across the society evenly. People, who are affluent, attain high incomes and possess considerable resources live side by side with those whose financial means are very scarce and improvement prospects are uncertain. The poor are also quite diversified themselves: some of them, despite being unable to pursue active public life due to their low income, do not have to worry about the satisfaction of their fundamental needs i.e. food, sleep and housing, while others are forced to live in grinding poverty. Historically speaking, in the past the poor were doomed to rely upon their own resourcefulness only. Only relatively recently their situation has become a subject of concern for democratic societies, and implicitly, for the public policies in more developed countries. Nowadays, in times of globalisation, substantial developmental disparities and uncertain economic prospects, the issue of poverty and the struggle against it have become key concerns of the international policies.

Poverty itself can look differently in various regions of the world. In developing countries it can assume extreme shapes, when fulfilment of the basic needs of numerous groups becomes impossible. On the other hand, in industrialised countries such extremities are rare, and the poor are defined as those whose incomes just fall below predefined below-average levels, despite the fact that their material status and living conditions may be incomparably better than of the majority of developing countries citizens. Hence, when raising the subject of poverty, we should remember about its definitional complexity. In fact, the main purpose of the present Part of this report is to systematise poverty-related definitions and set up a quantitative panorama of this phenomenon in Poland with international background. In this context, this Part can be regarded as an introduction to the topics that will be raised later on in this paper.

This Part begins with the definition of poverty and the circumstances which made it the subject of public and political debates. Then, on the basis of extensive literature, we are going to set up a definitional network of the poverty phenomenon, considering its interdisciplinary nature and the social policies. We are going to pay particular attention to the nontrivial mutual relations that exist between poverty and social exclusion. In part two we are going to present poverty in more quantitative terms. For example, to outline the differences between objective and subjective approach to poverty in Poland, take a look at material deprivation, and find out to what extent poverty diversifies particular regions of Poland. Based on these analyses, in Part three we discuss the role of poverty in the context of the public policy in Poland – indicating which groups should be supported first of all, and how to ensure efficiency of such support.

1 WHAT IS POVERTY?

1.1 WHY DO POLITICIANS TAKE INTEREST IN POVERTY?

Improving the status of the poor is regarded as a generally accepted task of public policies nowadays. However, this issue has not always been treated as such. In the past, the poor used to obtain support from other individuals, religious congregations and charity organisations, rather than from the state. Poverty became the subject of political actions only in the second half of the 19th century, when political interest in improving conditions of the poor stemmed not only from moral reasons, but also from economic and political ones.

From the economic point of view, poverty can be a source of the negative externalities for the entire population and economy. One of them is spreading of contagious diseases, to which extremely poor and homeless individuals devoid of the possibilities of maintaining basic hygiene and adequate nourishment, are most prone. The incidence of poverty is also relatively high among illegal immigrants looking for better living prospects in countries of their destination, even at the cost of their personal freedom, slave labour, or breaking the law – which also coincides with higher delinquency, family violence and alcohol abuse rates. The poor also relatively more frequently engage into precarious jobs in the shadow economy, which imply lower occupational safety and hygiene standards, and higher environmental pollution, due to relatively primitive manufacturing technologies. Reduction of such negative outcomes *a priori* may be more problematic and costly, than the struggle against poverty including a wide array of public interventions targeted at the poor. Moreover, if poverty in any individual country affects living/economic conditions at international level, the international community may exert high pressure upon all countries failing to take precautions against poverty (Risse, 2003).

Counteracting poverty may also stem from certain moral premises. This conviction is reflected, first of all, in the philosophy of the Catholic Church and the related doctrines of European Christian-democratic and liberal parties. According to Papal Encyclicals, such as e.g. *Rerum Novarum* (1891), *Quadragesimo Anno* (1931) and *Centesimus Annus* (1991), the state is obliged to: show solidarity with its citizens, struggle against inequalities caused by capitalism, and protect the society against its adverse effects, e.g. by ensuring stable employment, fair working conditions, necessary vacation or minimum wages. All the three Encyclicals also point out to the subsidiary function of the state towards its citizens and micro-communities. The Papal Encyclicals, and the conviction that excessive social disparities and incidence of extreme poverty, adversely affect the quality of life of the society (Burguignon, 2004) in the 1940s -1950s inspired the German ordoliberals to formulate their concept of social market economy, which shortly afterwards became a leading European political doctrine, accepted by the majority of parties. Nowadays, extreme poverty and substantial social stratification are regarded as unacceptable in the majority of developed countries (cf. Esping-Andersen, 1990) and considered as an example of market failure, which should be counteracted by the state (Acocella, 1998).

Apart from its economic and moral aspects, the public interest in poverty also stems from pragmatism. The gradual democratisation of political processes which took place in the Western Europe between mid 19th and mid 20th centuries led to extension of the eligible voters group with the classes which had previously been excluded from participation due to their gender (women), social background (peasants, workers) or material status (the poor). These processes encouraged politicians to pay more attention to the economic interests of such groups, which facilitated the incorporation into the political mainstream of the ideas that had been so far reserved to revolutionary leftish movements i.e. social justice, equality and solidarity, with their simultaneous and radical transformation. As a consequence, at the end of the 19th century in Germany, and at the beginning of the 20th century in Great Britain, the first social protection systems were established. They first used to be targeted at preventing poverty among senior people, and then, also among other social groups. The Great Depression of the 1930s, which facilitated introducing the first social support systems that provided unemployment benefits and intervention works (such as e.g. the US *Social Security Act* of 1935) in several developed countries was a powerful impulse for extending the coverage of national protection of individuals at risk of poverty. However, all such supporting instruments became more widespread in the more developed part of the world only during post-war period, when the social market economy concept was formulated and incorporated into political doctrines.

An internationally recognised document confirming the importance of ensuring basic social protection was the Universal Declaration of Human Rights adopted by the United Nations in 1948. Among others, the Declaration stated that: (Article 23): "Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection", and: (Article 25): "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control". Implicitly, the UN signatories confirmed that the international community should take effort in order to ensure that all people, regardless of their nationality and residence, were provided with certain minimum standards of living and social protection. Despite the fact that this idea has not been effectively implemented so far, the UN takes steps in order to ensure observance of such minimum standards even in the poorest countries of the world, by implementing the Millennium Development Goals (cf. Box I.1).

BOX I.1 Poverty in the Millennium Development Goals and Europe 2020 strategy

Millennium Development Goals are the eight goals established and adopted by international community in 2000 which are targeted at the improvement of living standards and developmental potential in 189 signatory states of the agreement (including Poland) and assume:

1. eradication of extreme poverty and hunger (i.e. the priority objective) > halve the proportion of people (1) living on less than 1 USD a day and (2) suffering from hunger,
2. achieve universal primary education > ensure that children everywhere can complete a full course of primary schooling, girls and boys,
3. promote gender equality and empower women > eliminate gender disparity in primary and secondary education by 2005, and at all levels by 2015,
4. reduce child mortality > reduce by two-thirds the under-five mortality ratio,
5. improve maternal health > reduce by three quarters the maternal mortality ratio,
6. combat HIV/AIDS, malaria and other diseases > have halted and begun to reverse (1) the spread of HIV/AIDS, (2) incidence of malaria and other major diseases,
7. ensure environmental sustainability > 4 detailed targets,
8. develop a global partnership for development > 6 detailed targets

Implementation of these objectives on a global scale is supposed to enable creating of such conditions that would respect the basic human needs and rights including e.g. freedom from hunger, access to education, healthcare or housing. In order to achieve these conditions, coherent cooperation among partners is needed. Thanks to the poverty statistics conducted in developing countries and their systematic surveillance, monitoring of fulfilment of the Millennium Development Goals is possible both at global and national levels, in particular taking into consideration the poorest countries.

The fulfilment of the global priority objective is still possible; however, if no visible economic growth takes place, it will happen only in certain regions i.e. apart from industrialised countries, mainly in the Eastern Asia – both in terms of poverty and hunger. Achievement of the Millennium Development Goals in some parts of the world will still not be possible for many years to come, especially in Sub-Saharan Africa where 51% of the population live on less than USD 1.25 a day, and also to the Southern Asia – where such ratio amounts to 39%, as compared to the South-Eastern Europe where the problem applies to less than 1% of population. In Poland, the extreme poverty defined as living on less than USD 1 a day is marginal and refers to ca. 0.1% of the population. In this respect, Poland does not differ much from other industrialised countries. Hence, similarly to other developed countries, in-depth studies of the poverty phenomenon in Poland mostly take into account the relative poverty indictors, which are independent from the actual USD amount of daily income.

TABLE I. 1. IMPLEMENTATION OF THE MILLENNIUM DEVELOPMENT GOALS IN POLAND

	1993	1996	1999	2002	2005	2008	2009
proportion of individuals living on less than USD 1 (PPP) a day in the total population	4.2	1.4	0.1	0.1	0.1	0.1	0.1
poverty gap (%)	1.6	0.3	0	0	0	0	0
proportion of the poorest 20% in the national income (%)	6.5	8.2	7.9	7.6	7.3	7.6	7.7

Source: own elaboration based on UN Stat data.

The same idea - i.e. focusing on relative poverty – has inspired the definition of **Europe 2020** strategy objectives. In order to achieve such level of development that would promote social inclusion within the EU i.e. giving the poor an opportunity to participate of in economic/social life, the number of individual at risk of poverty or social exclusion should be reduced by 20 million (ca. 25%) until 2020. At the same time, Member States also specified their individual goals which collectively only slightly exceeded 10 million[1] i.e. half of the EU target. Moreover, each Member State could independently decide whether the poverty reduction should be considered in the context of the entire population, or selected groups only. In Denmark, for instance, the issues of poverty and exclusion of households with low labour supply were emphasised, while Germany focused on the long-term unemployed, Sweden – on the long-term medical leaves, and the UK emphasised the situation of children. Poland intends to reduce the number of its poor by 1.5 million, which objective is comparable, in terms of absolute numbers, to Spanish (by 1.4-1.5 million) and Italian ones (2.2 million), considering the respective numbers of citizens.

The achievement of individual poverty reduction objectives is supported by the *National Reform Programmes*, *the European Platform against Poverty and Social Exclusion*, and by the recently introduced *Social Investment Package*. In financial framework 2014-2020 each EU Member State was obliged to include a document presenting the list of actions aimed at poverty risk reduction.

Source: own elaboration based on UN, 2010 and EC, 2010.

1 The selected objectives have shorter timelines and can be verified.

1.2 WHAT DO WE HAVE IN MIND WHEN TALKING ABOUT POVERTY?

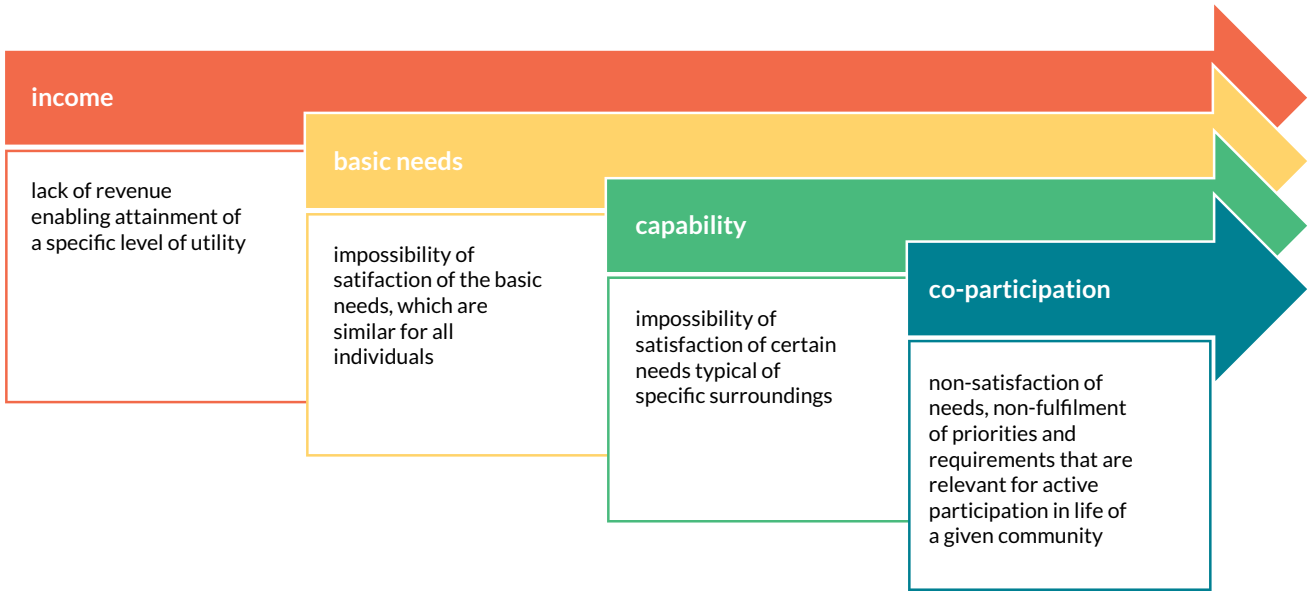
Over the past two centuries understanding of poverty in the social sciences has evolved substantially: from a purely economic notion, to a multidimensional phenomenon encompassing various spheres of social life. At the beginning, it mostly used to denote such situations when someone's **income** did not allow him/her attaining a specific living standard. The monetary approach, which was introduced by Booth and Rowntree, was used mostly at the turn of the 19th and 20th centuries (Laderchi et al., 2003). As time went by, the literature dealing with the subject started defining poverty as an inability to **satisfy one's basic needs** such as housing or nourishment, due to the scarcity of resources (Townsend, 1954). This approach is still used in the field of development economics which deals with low-income regions the world.

In the 1980s, thanks to Amartya Sen (1980), this approach was modified – poverty was no longer interpreted just as mere inability to satisfy one's basic needs, but as a lack of resources resulting lack of such *capability*. In this context, resources are not needed because of their particular traits, but because of their ability to satisfy one's core needs. E.g. a bicycle is not acquired because of its market value, or aesthetic appeal, but because of its ability to improve one's mobility. Such needs may evolve in time or space. Although some time ago, providing for certain fundamental needs such as food or housing used to be enough, nowadays more sublime needs, e.g. related to participation in community life have become relatively more important. This approach stems from the co-participation concept, according to which the lack of resources leads to non-fulfilment of certain community priorities and requirements, and thus, *limits possibility of one's active participation in community life.*

The first insights into non-financial poverty aspects date back to the end of the 18th century, when Adam Smith named those resources which allowed an individual to feel publicly confident (i.e. unembarrassed). Their type depended on the socioeconomic context and surroundings. In other words, the indicators of the minimum material status allowing one to feel publicly adequate are changeable. Whereas in Adam Smith's times, such status indicators were linen shirts and leather shoes, nowadays such functions are performed by material and financial resources allowing for fulfilment of one's needs in the field of economy, culture, entertainment, sports, healthcare, politics or science. At the same time, treating poverty as a multidimensional phenomenon is consistent with our perceptions, which are reflected in the contemporary public debate which focuses upon the differences that occur between the poor and the others i.e. difficulties in supporting one's children and educating them, inability to satisfy one's housing needs, lack of access to cultural resources, limited participation in the public life, etc.

Analysing poverty as an inability to fulfil one's basic needs, or limited participation in the social life is constrained by the fact that research methodology lags behind theoretical concepts. The major methodological concern is related to measuring needs, priorities, possibilities and functions (whose shortages would be most visible among the poor) that represent the values appreciated by the society. Reviews of available literature made in order to identify alternative indicators of the quality of life and socially-appreciated values (cf. Alkire, 2007) have shown that such studies are mostly qualitative and spatially constrained. For instance, a survey conducted in Rajasthan (India), has resulted in identifying 32 conditions that must be fulfilled in order to recognise the quality of life as good, at least in the Indian context (UNFPA).[2] The spatially constrained character of

Diagram I.1. | Evolution of the definition of poverty



Source: own elaboration.

2 cf. Kakwani i Silber (rev.), 2008.

Table I. 2 | Definitions of poverty – methodological limitations

dimension / method	income-based	basic needs	possibilities	co-participation
reflection of reality	-	+/-	+	+
limited number of components	+	+/-	-	-
additivity of particular components	+	-	-	-
independence from cultural factors	+	-	-	-
inter-spatial comparability	+/-	-	+/-	-
inter-temporal comparability	+	+	+/-	+/-
precise definitions	+	+/-	-	-
data availability	+	+/-	-	-
data reliability	+/-	+	?	?
low costs of analyses	+	+/-	-	-
economic policy recommendations	+	+	+/-	+/-

Source: own elaboration.

such analyses results in low comparability of studies conducted at various times and places, which makes multidimensional and comparative qualitative analyses of poverty difficult – both at international, and national levels, from a certain time perspective. As a consequence, poverty defined in terms of possibilities and co-participation, and the multidimensional phenomenon of social exclusion rest within the domain of sociological studies, rather than economic or statistical analyses which investigate entire societies or economies. Although the findings of such qualitative studies may have considerable educational value, it is difficult to assess the scale, temporal evolution and spatial differentiation of detailed characteristics of poverty and social exclusion in course of such research. In fact, conducting such analyses is impossible even in case of small numbers of indicators.

Somewhat different limitations can be observed if the basic needs methodology is used to investigate the population of the poor. As a matter of fact, this approach enables specification of a limited number of measurable poverty indicators only. However, the choice of such indicators can be questioned as being arbitrary, since weights ascribed to specific measures can considerably affect the results. At the same time, multiplicity of the possible basket of goods and life strategies aimed at satisfying one's hunger or housing needs is problematic. Furthermore, mainly in the context of nutrition, we should take into account different geographical, climate, and socio-demographic conditions of specific countries, or different activity patterns. The consumption patterns of the poor, although less often analysed in the context of explicit poverty studies, can be a valuable piece of information in case of material deprivation. The limitations related to specific methods have been listed in Table I.2.

There are several arguments in favour of the income-based quantitative analyses of poverty, despite their limitations i.e. unbiased character and transparency of measures, inter-temporal and inter-spatial comparability, and low costs of data collection/processing. However, information about one's income, expenditure or household wealth is regarded as sensitive – such data tend to be disclosed reluctantly, they are often underrated, and their exact classification is difficult and labour-intensive – both in terms of their structuring, and supplementation. The characteristics of the poverty datasets have been presented in Box I.3.

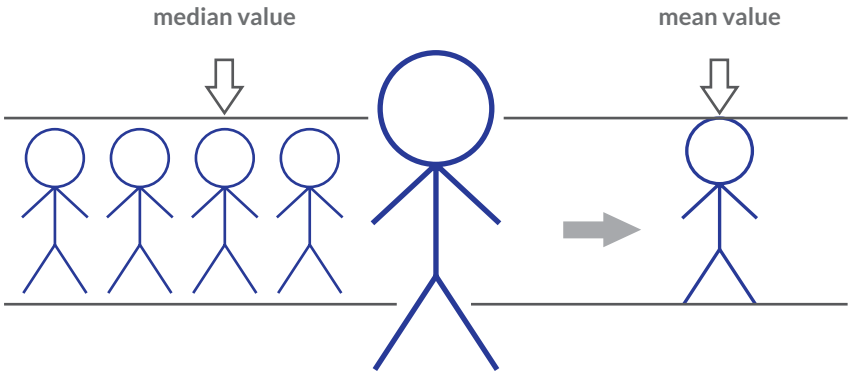
In the course of the Household Budget Survey (HBS), apart from information about incomes of specific household members, the household expenditure data is collected. Based on such data, we can associate poverty with an extremely low consumption level. The Central Statistical Office of Poland (GUS) which defined the poverty threshold as 50% of the mean of equivalised disposable expenditure used the expenditure-based approach. Meanwhile, Eurostat takes advantage of the income-based definition in determining the poverty threshold as 60% of the median of equivalised disposable income (cf. Box I.2). Moreover, Eurostat uses the income approach, by referring to the total income attained by respondents in the past year, instead of taking into account selected months, such as it happens in case of HBS. The co-occurrence of both these definitions in public surveys may prompt some questions regarding the consequences of using each of them in general studies of the phenomenon, its sectoral, spatial structure and temporal changes.

The core poverty indicators in Poland calculated based on both these definitions are quite comparable, at the very first glance, but difference in poverty ratios calculated in accordance with expenditure-based and income-based methods has considerably decreased over the past ten years. Besides, the poverty rate dynamics is similar, regardless of the measurement method (Figure I.1). Apart from that, there are no substantial differences between these two approaches as regards the gender, education and residence-related structuring of the poor. The same applies to the poverty structures based on

BOX I.2 A mean or median value?

The fundamental role in the poverty analyses presented in this report is performed by a median value which is, obviously, different from mean value. While the mean value enables us to calculate an average value of a variable in a specific population, the median identifies the value of such variable ascribed to a population member positioned right in the middle of an increasing sequence. For instance, in the sequence of students who have been arranged according to their height, the median height will be the height of the student who is neither shorter, nor higher than half of his colleagues. The height of the median student does not have to be the same as the mean height of all students (cf. Figure I.1).

DIAGRAM I. 2. A MEAN VS. MEDIAN VALUE – AN EXAMPLE



In case of the median value the values of variables that have been ascribed to specific individuals are not relevant, provided that all such individuals have been arranged in an increasing sequence i.e. each preceding individual is representing a lower value than the next one. This makes the median value insensitive to the presence of single individuals whose variable values would be outliers. For instance, the presence of a narrow group of billionaires whose high monthly income substantially increases the mean value, would lead to an impression that the income of a randomly selected worker may be higher than it is, and the scale of poverty is rather small. However, in case of the median value the situation looks differently: what matters is the variable value ascribed to an individual who has been positioned right in the middle of an increasing sequence.

Other analogous measures used throughout the present report include e.g.

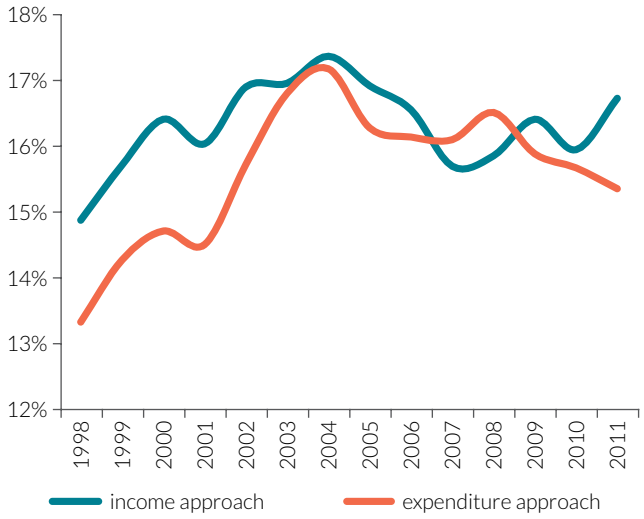
- quartiles – dividing the sample into 4 equal parts by cutting off 25%, 50% and 75% of the sample,
- quintiles – dividing the sample into 5 equal parts (20%, 40%, 60%, 80%),
- deciles – dividing the sample into 10 equal parts (10%, 20%,..., 80%, 90%),
- percentiles – dividing the sample into 100 equal parts (1%, 2%,...,98%, 99%).

Source: own elaboration.

the main sources of income (Figure I.2). However, in this case, the expenditure-based measure may show a somewhat higher share of employees and retirees, and a lower share of farmers and retirees in the population of the poor, as compared to the income-based method. The overall structural similarity does not mean, however, that the same households will be always classified as poor according to both expenditure- and income-based criteria. In 2011, half of individuals classified as poor according to income-based criteria, could not be classed as such, pursuant to the expenditure-based approach. This could have been attributed to non-synchronised exposure of households to both poverty types, assuming that income-based poverty leads expenditure-based one.

In fact, the difference between income and spending is the amount of savings. Households with high savings may be perceived as poor according to the expenditure-based approach. On the other hand, a household deprived of its source of income can temporarily maintain its spending level by using its savings. Another drawback of the expenditure-based approach is the fact that loan repayments are not categorised as expenditure (cf. GUS, 2011). Loans instalments, especially including mortgage credit, may constitute a large proportion of household spending, especially in case of labour-income households. As spending data, at the same time, include housing rents, in accordance with GUS's definition, the poor do not include tenants, but those who cut down on their consumption in order to repay mortgage loans. According to HBS, in 2008 the ratio of households which had mortgage loans amounted to ca. 5% of households, which was comparable to that of agricultural households. In accordance with the Polish Bank Association's (ZBP) estimates the number of active mortgage loans in 2012 was 1.7 million, which, assuming that 1 loan is linked to 1 household, includes 12% of all households in Poland.

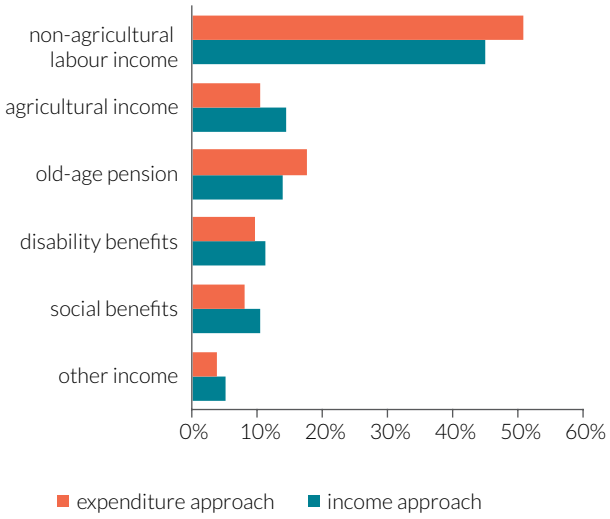
Figure I. 1 | Poverty risk in accordance with expenditure-based and revenue-based approaches; 1998-2011



Note: modified equivalence scale has been applied.

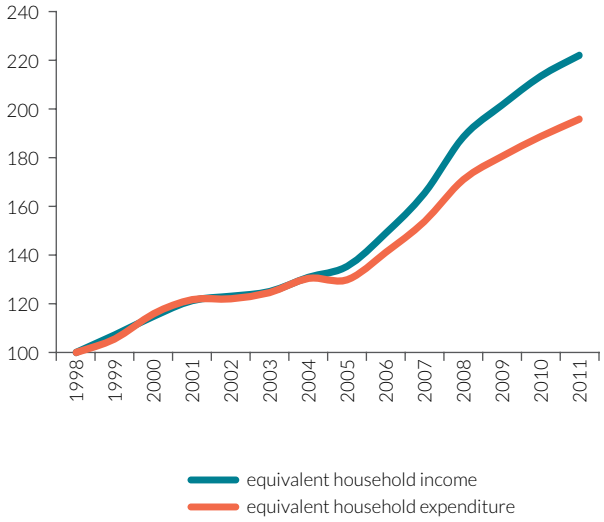
Source: own calculations based on HBS data.

Figure I. 2 | Structure of the poor by main source of household income; 2011



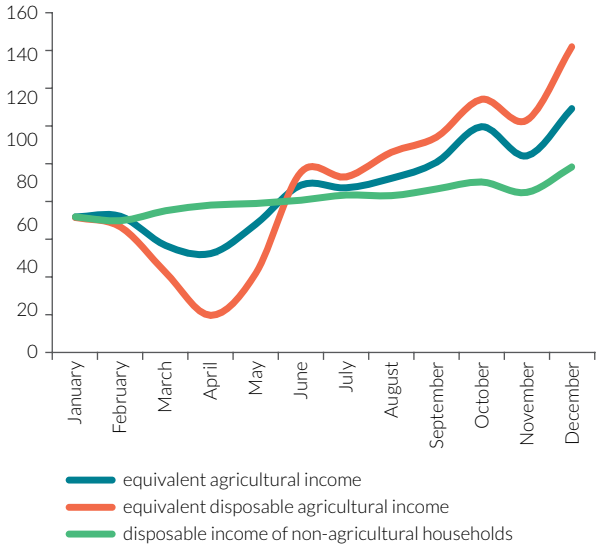
Source: own calculations based on HBS data.

Figure I. 3 | Dynamics of the median equivalised income and expenditure; 1998-2010 (1998=100)



Source: own elaboration based on HBS data.

Figure I. 4 | Seasonality of income among agricultural and non-agricultural households in Poland; 1998-2011 (each January=100)



Source: own elaboration based on HBS data (1998-2011).

Note: each year monthly income was compared to income in January, and then the monthly differences were averaged in the years 1998-2011.

These observations seem to be confirmed by the dynamics of equivalised incomes and expenditure in 1998-2011 (cf. Figure I.3).[3] While in 1998-2005 these datasets used to be similar, since 2005 a growing gap between incomes and expenditure could be observed. This corresponds to the growing household indebtedness reported at that time, even though the value of mortgage loans declared in HBS is lower than the one presented in the reports of the Polish Bank Association (ZBP, 2012). For these reasons, the income-based approach provides a better view on poverty dynamics over the past few years. As the dynamics of equivalent household expenditure collapsed in 2005, analysing of poverty changes in accordance with the expenditure-based approach may be erroneous.

3 A modified OECD equivalence scale has been applied. It ascribes weight 1 to the first adult, 0.5 to the next adult and 0.3 to a child (i.e. an individual aged 14 or younger).

BOX I.3 Characteristics of the poverty datasets – dilemmas and solutions

The poverty analysis allows us to assess which proportion of the society is unable to satisfy their fundamental needs (absolute approach), or can satisfy them to a lesser extent than others (relative approach). In order to determine the quantitative threshold separating the poor from others, household income/expenditure data are used. On a long-term basis, both these indicators should be equal – since consumption may not be permanently financed by credits or loans.

The studies of households and their status have been based upon the following 2 data sources: **the European Union Statistics on Income and Living Conditions (EU-SILC)**, and the **Household Budget Survey** conducted by the Central Statistical Office of Poland (**GUS**),

- **EU-SILC** is an annual survey focusing upon the properly documented household income. An unarguable strength of this study is its scale – it is conducted in all EU Member States, Croatia, Iceland, Norway, Switzerland and Turkey and provides detailed datasets. Thanks to data harmonisation, conducting of cross-sectional and dynamic comparative analyses is possible.
- **HBS (Household Budget Survey)** is conducted monthly and takes into account both declared household income and expenditure. Although the use of monthly income data provides information detailed enough for annual calculations, the method still has its drawbacks i.e. the monthly income data are seasonally biased and have higher variability than the annual ones, and the lack of income in a given month may result in classifying the household as poor even though – in view of its annual income or possessions – it should not be classified as such.

The collation of these two sources allows us to create a comprehensive qualitative panorama of poverty in Poland.

The groups in case of which obtaining of the data that accurately reflect the status quo is most difficult include:

- **Farmers**, as their income is correlated with the vegetation cycle, expenditure classes which are not present in other sectors, and the fact that certain data gathered in an agricultural household can be ambiguous. The specificity of Polish farming is well reflected in the HBS methodology. What is important, in case of both data sources the distributions of equivalised income do not substantially differ in the section that is relevant in the context of poverty studies.
- **Retirees,** who due to their lower consumption have lower expenditures, which may lead to ineligible classification of them as poor.
- **The self-employed**, due to irregularity and substantial fluctuations of their monthly income – in fact, their income levels usually range beyond the poverty threshold.

Studying of HBS and EU-SILC data will allow us to conduct a comprehensive analysis of poverty in Poland, by reducing the existing methodological constraints. The income-based approach will prevail in our further analyses, due to the simplicity of measures, limited number of resources and resource management and its international comparability (Haughton, Khandker, 2009). The study takes into account purchases of certain durables which (regardless of one's affinity with the poor) are related to specific consumption patterns.

Thanks to availability of the household income (HBS and EU-SILC) and expenditure data (HBS) pertaining to Poland, we can define poverty either based on household income, or its expenditure. However, both these indicators have their drawbacks: the monthly farming income is subject to seasonal changes, and the expenditure may sometimes be a reflection of unique preferences of a given household. Moreover, the definition of expenditure used by GUS in the context of HBS survey does not take into account loans instalments, e.g. by virtue of mortgage loans, which may, in some cases, account for a substantial proportion of household expenditure. In case of the income-based approach, agricultural households are more likely to be classified as poor, while in case of the expenditure-based approach the same applies to retirees' households. The dynamics of household expenditure after 2005 tends to be visibly detached from income indicators. The HBS methodology does not report any substantial changes of definitions during that period. The household income data obtained in the course of HBS was consistent with EU-SILC data, especially in case of the households whose income was below the median level. Use of HBS income indicators for the purpose of poverty analyses will allow us to analyse various social policy scenarios (cf. Part IV of the Report) and conduct comparative cross-country studies. The limitations that both these measures have should be kept in mind in the course of interpretation of the research results.

Source: own elaboration.

In case of income, an important factor affecting interpretation of results is the seasonality of farming income, which is subject to major fluctuations over a calendar year. The lowest values can be reported in spring, when the farming income drops down and the spending substantially increases (e.g. purchase of fertilisers) (Figure I.4).[4] Following the summer harvest, the farming income successively increases during autumn and winter seasons. In the years 1998-2011, the farming income in the last quarter of the year used to be higher than in the remaining quarters. The highest income in the 4th quarter was due to the fact that the farming expenditure in such period decreased, and was accompanied by the revenues from sale of the annual harvests. In the period following 2004, income attained in December were by 62% higher than in January, whereas in the years 1998-2003 this ratio amounted to 25% on average. This could have been attributable to disbursements of farming subsidies. Moreover, an increase in consumption of edible crops in households during winter, which is taken into account in income calculations, may also contribute to income growth. As a consequence, in case of the income-based approach, agricultural households which are investigated in spring are more likely to be classified as poor, as compared to those investigated in winter.

4 According to HBS the farming income constitutes a difference between the farming revenue and expenditure.

Figure I. 5 | Cumulative distribution of the equivalised income in agricultural households; 2007

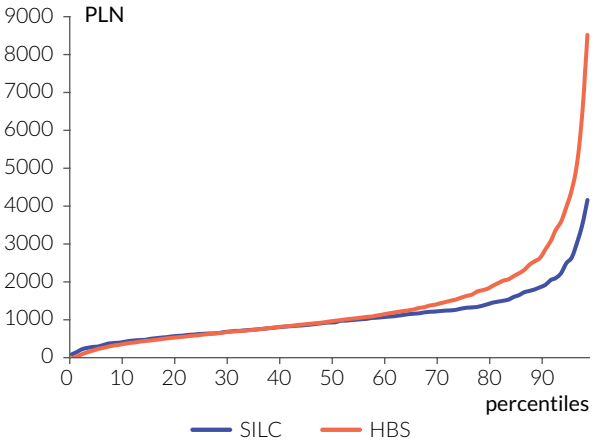
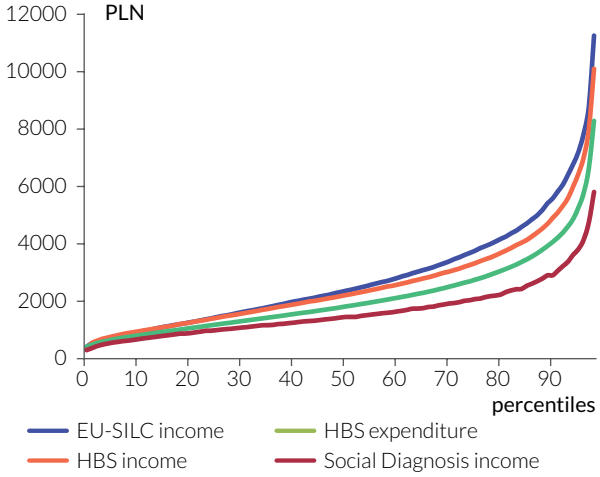


Figure I. 6 | Cumulative distribution of the equivalised income and equivalent expenditure by sources; 2007



Note: cumulative distribution data have been presented for year 2007 due to availability of HBS, The Social Diagnosis and EU-SILC data. The negative agricultural income has been substituted by zero.

Source: own elaboration based on HBS, The Social Diagnosis and EU-SILC.

Farming income is major, although not the only one, source of income for agricultural households. It accounts for ca. 50% of all household income (2008). Other types, such as wages/salaries or retirement benefits, reduce the income seasonality in the agricultural households (Figure I. 4). Hence, the disposable income dynamics in case of agricultural households, including alternative income sources, is comparable to that of other households.

Despite its problematic seasonality, the distribution of farming income based on annual and monthly data does not show much differences in case of lowest income percentiles. Figure I.5 contains a comparison of cumulative distribution of equivalised income in agricultural households, based on monthly HBS and annual EU-SILC data. A visible difference can be seen for upper income groups, which may be ascribed to periodically increasing farming revenue which are taken into account by HBS. However, among lowest income groups which are exposed to poverty, the distributions are comparable. Moreover, according to HBS, income distribution in case of the poorest people (i.e. farmers and others) is consistent with EU-SILC data (Figure I.6). The income data obtained in course of the Social Diagnosis substantially differ from those derived from the other two sources.

Use of income-based approach allows us to gain information about the characteristics of poverty. First of all, it allows us to determine how many individuals, and in which groups, do not attain enough income to have their fundamental needs satisfied. This method is labelled as an **absolute poverty** approach since it takes into account the value of the basket of goods which corresponds to a certain minimum consumption, regardless of the actual concentration of income in the society. In other words, this approach is insensitive to the diversification of income in case of households representing subsequent income percentiles, including median households, and the most affluent ones. The poverty survey conducted in accordance with the absolute approach would allow us to describe the situation of the most destitute individuals, without comparing them to more affluent ones. The definition of the absolute poverty has been used, among others, by the UN in the context of the Millennium Development Goals (i.e. USD 1 a day threshold applying to the poorest individuals globally), and by the Polish Institute of Labour and Social Studies in determining the so-called subsistence minimum level, which has been described in more detail below.

The use of income data in determining the poverty threshold also allows for conducting poverty analyses in reference to the total income distribution in the society. In such case we are dealing with **relative poverty.** The income attained by an average or median member of a given society can be regarded as a reference point in determining the poverty threshold. A member of a society who does not attain a given proportion of the mean or median income is regarded as poor. The most frequently used thresholds are equivalent to 60% of the median of equivalised disposable income (Eurostat) or to 50% of the equivalent average spending (GUS).

The structures of both poverty lines (i.e. absolute and relative) are independent – i.e. those who are regarded as poor keeping with relative approach do not have to be regarded as such, according to the absolute one (although this relation does not apply in the opposite direction – due to the fact that absolute poverty threshold is below the relative one). As a consequence, an increase in the relative poverty ratio, with the absolute ratio staying unchanged, results from faster growth of income attained by a median or mean individual, as compared to less affluent persons, rather than from the impoverishment

BOX I.4 The equivalence scale

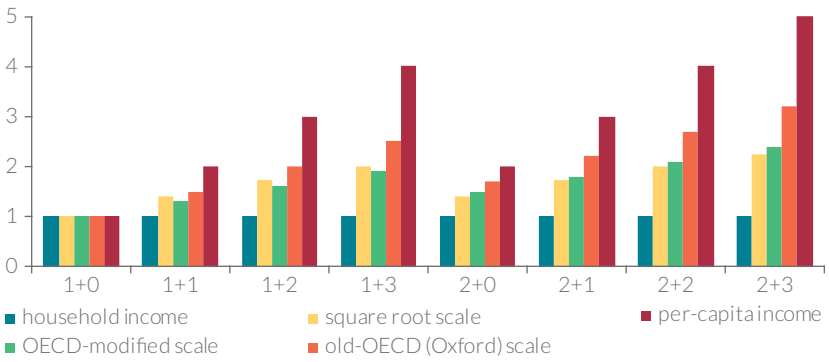
Depending on their size and structure, households may require different types of goods and services. The needs that are typical of single-person household differ from those which are indigenous to large families, or pensioner households. In particular, proportions of fixed expenditure in the basket of goods differ according to household types, and demand for specific goods: such as schoolbooks or medicines may appear. In order to define how a demographic composition of a given household would affect its maintenance costs the following two methods are used i.e. basket of goods which reflect average demand in different types of households, and the so-called equivalence scales are created. The first method is used relatively seldom, since the number of combinations reflecting the possible household structures is high, and the remaining results are unstructured. A less complicated and more universal indicator called the equivalence scale is used more frequently. It determines to what extent an income of a given household should change in order to achieve the consumption level of a reference household (Łukasiewicz, Koszela, Orłowski, 2006).

The purpose of this method is to obtain an abstract measure representing the expenditure of the first person in the household, serving as a reference for expenditures of subsequent members of that household (the so-called *numéraire*). Depending on age (or other socio-demographic features), different weights are ascribed to adults and children, thus creating equivalence scales. In this way, all household models can be described in a logically structured manner.

Equivalence scales include normative (based on average maintenance costs in an expanding household, assessed by an expert), empirical (econometric estimations taking into account consumption needs depending on socio-demographic features) and subjective scales (based upon survey results) (Panek et al., 1999). There is a wide array of equivalence scales (only Buhmann et al., (1988) specify 35 of them) and it has not been univocally resolved which one reflects the changing household consumption patterns most accurately. OECD normative scales (initially Oxford scale, currently modified) are most commonly used – e.g. by Eurostat – just like root scales.

The following example illustrates why the right choice of an equivalence scale is so important. When the scope of an analysis is a single-person household (1+0), each equivalence scale will yield identical results (Figure I.7). However, the appearance of subsequent adults and children is associated with differing levels of increase in the maintenance costs, depending on the scale used. A household consisting of 1 adult and 2 children (1+2) will be assessed according to the modified OECD scale, root scale and Oxford scale as 1.60, 1.73 and 2.00, respectively. The difference amounts to 0.4 of the equivalent unit, depending on the scale used. In case of a household consisting 2 adults and 2 children the difference increases to 0.7 (root scale: 2.00, Oxford scale: 2.70).

FIGURE I. 7. SIZE OF A HOUSEHOLD AND THE EQUIVALENCE SCALE



Note: the first constituent denotes number of adults in a given household, and the second one – number of children.

Source: own elaboration.

The choice of an equivalence scale results from adopting technical assumptions concerning an impact of a household size upon consumption patterns, and the assessment of differentiation of demand for goods and services according to socio-demographic features, and substantially affects the study results, and to a somewhat lesser extent, also descriptions thereof (Burniaux et al., 1998; Łukasiewicz, Koszela, Orłowski, 2006). Whereas OECD equivalence scales ascribe fixed proportions of a consumption level determined for the first adult household member to each subsequent adult and child (respectively 0.7 and 0.5 in case of Oxford scale, and 0.5 and 0.3 in case of the modified scale), the remaining scales are insensitive to socio-demographic parameters. It is assumed that high increases in equivalent household size, accompanied by increasing numbers of individuals are typical of less prosperous and less developed economies, which can be attributed to a relatively high proportion of the fixed costs (especially food) in the basket of goods (the so-called Engel's law; cf. Zimmerman, 1932; Haughton, Khandker, 2009). This change is illustrated by the transfer from OECD Oxford scale to the modified one.

Source: own elaboration.

of the society in general, as it would appear. Therefore, we should always pay attention to the type of indicator that has been used, and to the poverty threshold, since interpretations of both measures are different.

It should be noted that neither absolute, nor relative indicators measure impacts that the growing affluence of the whole society has upon the poverty ratio. This correlation can be investigated by means of **quasi-absolute poverty** (i.e. *poverty anchored at a fixed moment in time*) indicators, where the reference

point is the real (inflation-adjusted) value of the basket of goods at a specific moment in the past. This indicator assumes that the expectations regarding minimum living standards are constant, and enables us to verify how economic growth contributes to the elimination of poverty. On practical level, the relevant aspect is the choice of inflation adjustment method of the basket of goods upon which all calculations are based. However, situation of the poor would be better reflected by a basket of goods that corresponds to their actual consumption profile i.e. including housing rents and costs of food, provided that the observed price dynamics exceeds the inflation rate (corresponding to an extended basket of goods including e.g. garments or cultural goods and services, whose proportion in the actual consumption of the poorest households is lower than in the whole society (cf. Box I.4)).

Sometimes this classification is supplemented by other indicators. **The policy definition of poverty** (Sen, 1983) takes into account such income level which the society feels obliged to deliver to all its members, and is equivalent to absolute poverty threshold. Its alternatives include **social** and **subsistence minimum**, calculated annually by the Institute of Labour and Social Studies (IPiSS). The first of these indicators describes the minimum level of needs, taking into account both biological (housing, food, hygiene, clothing), and social ones (transportation, culture, leisure), whereas the second one denotes the minimum level of consumption of goods and services that must be attained in order to avoid emaciation (Kurowski, 2002). Both minimum values have been specified for seven different household classes and for five personal classes (i.e. female worker, male worker, older child, younger child, and retiree).

Of particular educational interest is the **subjective poverty**, which is defined in course of social surveys in terms of such disposable income that is regarded by a respondent as a minimum necessary to *make ends meet* or perceived as inadequate, insufficient, hardly sufficient, good or very good etc. in a specific period of time (Kapteyn et al., 1988). Unlike the objective category, this approach will allow us to find out what income households perceive as enabling them to participate in social life at the level comparable to that observed in the past.

Sometimes equivalence scales are abandoned in favour of basket of goods ascribable to households characterised by different socio-economic structures. In such a way, the basket of goods used by the Institute of Labour and Social Studies (IPiSS) are created. Such baskets, after being monetized, are used for the purpose of determining the **social/ subsistence minimum**. However, this method has its major shortcomings. First of all, the analysis of effective equivalence scales in the years 1994-2011 used to change in case of both indicators, thus limiting their inter-temporal comparability. During the analysed period, the weight ascribed to a younger child increased from 0.6 to 0.9 and that ascribed to an older child from 0.7 to 0.9. Secondly, different ratios used to be ascribed to the first vs. subsequent children in the household. Thirdly, the equivalence levels adopted by ILSS notably differ from those used in other universally used scales, which, in the light of above conclusions, makes the comparison of results obtained in Poland and other countries more difficult. Finally, the definitions of households only apply to ca. 30% of the existing household types, which severely reduces the efficiency of social and subsistence minimum methods in describing the overall poverty phenomenon in Poland.

Poverty analyses are typically accompanied by social inequality descriptions. This allows for making approximate descriptions and comparisons of households situated in the upper and lower sections of the income distribution – by investigating affluence differences between the poorest and the richest population groups, and their mutual relations. This kind of information is provided by the **income share of the poorest decile**[5] or by comparing it with the most affluent decile (D9/D1).[6] International comparisons and dynamic inequality analysis provide us with valuable knowledge about income concentration in the society and indicate the extent of inclusiveness of economic growth i.e. by assessing whether its beneficiaries mostly include affluent persons, the middle class or the poorest members of the society. In this case, the most frequently exploited inequality measure is the **Gini coefficient** (cf. Box I.4). Its popularity can be attributed, first of all, to simplicity of its interpretations – income concentration index ranges between 0-1, and the so-called Lorenz curve allows for its graphical representation. However, such simplicity has got its shortcomings – as opposed to the more complex **Theil index**,[7] Gini coefficient cannot be decomposed across different subgroups or voivodeships.

The very distinction between the poor and the others may misleadingly imply that there is a gap between such groups. In fact, there is none, and poverty is a heterogeneous phenomenon (The World Bank, 2005). Whereas some of the poor do not dispose even of any traceable income, and their daily existence is constantly threatened, the standard of living in case of other poor does not differ much from that observable in medium-income households, being substantially above the subsistence minimum. Besides, poor households also differ in terms of persistency of their situations. For some, poverty is a transitional state, for others, a constant one. Hence, limiting the analysis to only such measures that assess the **poverty scale** and its **extent** would be an oversimplification. Such a description would be suggestive due to its simplicity and ease of interpretation, but, at the same time, it would not provide us with certain important information about the nature of poverty, hence, serving as an insufficient background for public policy recommendations. Therefore, a study on the poverty extent should be supplemented by an analysis of its **profoundness** and **persistency** (cf. Table I.3).

5 similarly: percentile, quartile, etc. (cf. Box I.2)

6 Similar calculations can be made to assess property or consumption shares.

7 Theil index ($\frac{1}{N}\sum_i \ln\left(\frac{x_i}{\bar{x}}\right)$, where N – size of population, x_i –variable value for i[th] individual , $\bar{x}$ – population's average) constitutes, similarly to Gini coefficient, the measure of changes of the variable in the population. However, it fulfils a higher number of statistically relevant axioms (transfer sensitivity, sub-populational consistence and decomposition ability), at the cost of complex and non-intuitive interpretations. For these reasons, Theil index is used much more frequently in research analyses, while Gini coefficient, which has been recommended e.g. by the UN Industrial Development Organisation, is used for popularisation purposes.

BOX I.5 Gini coefficient – an example of a relative measure

Gini coefficient is the most popular indicator that is used for measuring the income concentration in the society. It enables also measuring the wealth or consumption concentration. At the same time, it takes into account the size of the surveyed population and incomes (i.e. property, consumption, etc.) of subsequent individuals as compared to the average:

$$G(y) = \frac{\sum_{i=1}^{n}(2i - n - 1)y_i}{n^2\overline{y}}$$

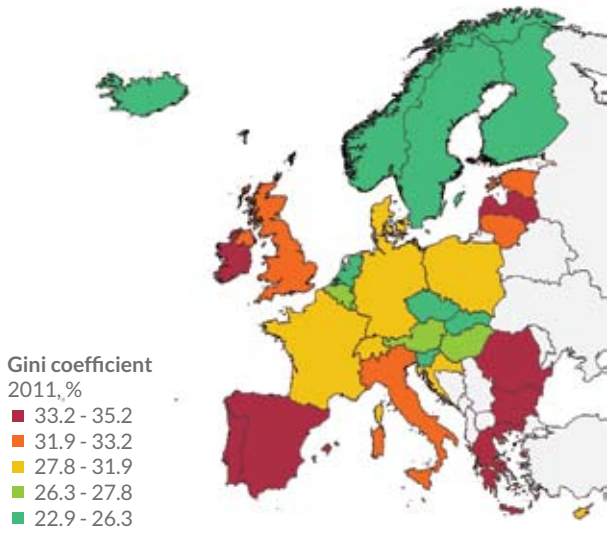
where: i is an order number of observation which ranges from 1 to n, y_i – value of i^{th} observation (observations are provided in an increasing sequence), $\overline{y}$ – average of observations and n – number of observations. The values of the ratio fall between the ranges [0.1], and the lower it is, the more even is the income distribution. In extreme cases, when the ratio equals to 0, the values of income attained by specific individuals are equal, and if it amounts to 1 - all income is ascribed to a single individual. Due to its structure, a relative high income concentration corresponds to a relatively low value of the ratio. We should keep in mind, however, that quantitative indicators used to describe inequalities should conform to a number of different criteria (Haughton, Khandker, 2009):

- men independence – doubling of income attained by all individuals would not affect the value of the ratio ,
- population size independence – if it changed - *ceteris paribus* – the ratio would still remain the same,
- symmetry – the interchange of incomes between individuals would not affect the ratio,
- Pigou-Dalton transfer sensitivity – the transfer from the affluent to the poor would result in the ratio reduction.

Such conditions are fulfilled by Gini coefficient. However, this measure is devoid of other desirable qualities such as e.g. statistical testability, i.e. the possibility of testing importance of index changes in time, and decomposability. As a consequence, even though Gini coefficient provides a suggestive and publicly recognisable outlook on the income concentration in the society, in order to conduct in-depth inequality studies, additional measures such as e.g. changes of income in the upper and lower section of the income distribution, or Theil index, must be used.

In 2010 the value of Gini coefficient in the EU used to fall within the range of 0.24 – 0.37 and its spatial distribution was comparable to that of the relative poverty ratio. The highest revenue concentration was reported in the Baltic States, Portugal, Romania, Bulgaria and Anglo-Saxon countries – where its ratio exceeded 0.33. The lowest values of Gini coefficient i.e. below 0.25 were observed in Slovenia, Sweden, Hungary and Czech Republic. In 2010 the income distribution in Poland used to slightly exceed the EU-27 average (0.311 vs. 0.305), but, as compared to 2005 (Gini 0.36) a visible decrease in the level of income inequalities was observed.

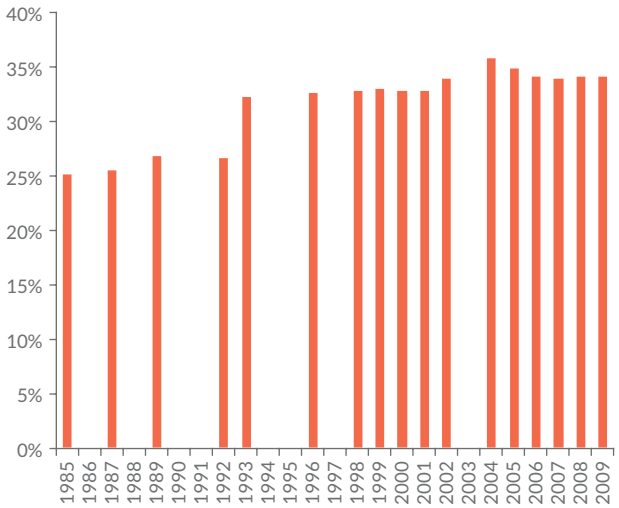
MAP I. 1. GINI COEFFICIENT IN EUROPE (%); 2011



Note: data concerning Ireland – 2010.

Source: own calculations based on EU-SILC data.

FIGURE I. 8. GINI COEFFICIENT IN POLAND; 1985-2011



Source: own calculations based on the World Bank's data.

Gini coefficient is used for the purpose of comparison of income dispersions, not only at a national, but also international level, in order to report substantially higher differences. As a matter of fact, over the past two centuries the global income inequalities have been dynamically growing – while in 1820 the coefficient value was 0.50, in 1980 it exceeded 0.65, which should be ascribed to an unbalanced economic development of the First, Second and the Third World.[2] In later years the coefficient stabilised on that level. The inequality levels in the developing countries are higher than in case of the developed ones. The highest dispersion can be observed in Southern Africa and South America, where the coefficient value exceeds 0.50 (e.g. Brazil, Columbia, Bolivia, Zambia, Central African Republic), or even 0.60 (e.g. Botswana, RSA, Namibia).

Source: own elaboration.

8 This means that due to heterogeneous economic development the income diversification between different group of countries (i.e. The First, Second and the Third World) has increased, although it does not necessarily have to reflect a growing diversification within specific countries.

Table I. 3 | Inequality and poverty indexes

aspect	index	interpretation
inequalities	proportion of the poorest decile in the income	What is the share of the poorest 10% of the population in the overall population income?
	income differentiation S90/S10	How many times do the incomes attained by the most affluent exceed those which are attained by the poorest?
	Gini coefficient	How strong are inequalities in society?
	Theil index	How strong are social inequalities, and which subpopulations they are attributable to?
scope	absolute poverty rate	What is the share of the poor in society, based on current living standards?
	quasi-absolute poverty rate	What is the share of the poor in society based on past living standards?
	relative poverty rate (FGT(0))	What is the share of the poor in society?
	subjective poverty rate	What is the share of individuals who are considered as poor?
profoundness	income gap indicator (FGT(1))	What is the extent of poverty in case of the poor?
	poverty severity index	How severe is poverty (assuming that a large poverty gap is stronger than a small one)?
	Gini index in poor populations	How strong are inequalities among the poor?
persistency	years of poverty	How long do the poor remain poor?
	transformation matrix between poverty and non-poverty	What proportions of individuals have left/entered the poverty zone, or remained poor?
	Shorrocks index	What proportions of individuals have left/entered the poverty zone over examined period?
	mobility index	Which direction of transfers (in or out of poverty zone) is more frequent and by how much?
	Watts index	-
scope and inequalities	FTG (2) index	The function of poverty scope and inequalities among the poor
scope and profoundness	Sen index	The function of poverty scope, its profoundness, and inequality of distribution among the poor
	Sen-Shorrocks-Thon index	
	Kakwani index	

Source: own elaboration.

The poverty profoundness is a feature specifying how profound is poverty measured by means of the income gap i.e. difference between the income obtained by the poor, and the one marking the poverty threshold. **The poverty gap index** has also got its additional interpretation: it allows us to determine the value of transfer that would effectively reduce poverty (The World Bank, 2005). Nonetheless, its structure does not fully reflect the income differences existing among the poor: bearing in mind that this group includes both those who fall below the threshold only insignificantly, and those who live under the subsistence minimum level. In the latter case, budgetary constraints are stricter. As a result, the satisfaction of one's basic needs is severely limited. A measure which takes this aspect into account is the **poverty severity index**, which has been structured in such a way as to emphasize those individuals who lean out the most from the poverty threshold. The measures that take into consideration, at the same time, the scale, profoundness and the diversity of the phenomenon are **Sen, Kakwani** and **Sen-Shorrocks-Thon indices**. The latest one can be decomposed in order to identify to what extent the index level changes are due to the changing poverty scale, profoundness and diversity changes.

Persistency of poverty is yet another question. If poverty is only temporary, it seems to be relatively unthreatening. However, if an individual who has fallen into poverty cannot get out of it for months or years, its negative personal and social consequences (e.g. being dependent on welfare tools, difficulties in returning to employment) are aggravating. The simplest measure used to determine the persistency of poverty is the **average number of years spent in poverty**. However, this measure falls to identify the direction and scale of movements between the poor and the remaining part of the society. Such information is provided by **transformation matrixes**, which describe the structure of changes within a specific period. Meanwhile, **mobility index** defines the prevailing direction of movements, and **Shorrocks index** enables us to identify the proportion of individuals who have left / accessed the poverty zone within the studied period.

1.3 THE POOR VS. THE SOCIALLY EXCLUDED?

Such notions as: *poverty*, *material deprivation* and *social exclusion* are commonly used to describe a single phenomenon i.e. living below a standard that is regarded as fair within specific surroundings. Poverty within households can lead to an increase in the level of material deprivation, while deterioration in the quality of interactions with the surroundings can result in social exclusion of individuals and their relatives.

Table I. 4 | Material deprivation aspects used in EU-SILC and the Social Diagnosis

category	EU-SILC	Social Diagnosis
arrears	• arrears on mortgage or rent payments	• debts incurred to cover everyday consumer needs • debts incurred to repay earlier debts • debts incurred to make regular payments • other types of indebtedness • overdue payments for the dwelling (rent),repayment of the home loan, gas or electricity bills
lack of capability to afford adequate living standard	• afford a meal with meat, fish e.g. every two days • keep home adequately warm • afford paying one week annual holiday • face unexpected expenses [9]	• purchase of a sufficient amount of food items (vegetables, fruit, meat, dairy products, etc.) • a holiday trip for children, adults, all family members, due to the scarcity of resources • household can afford the cheapest food and clothing, but not to pay the rent
lack of durable goods due to financial reasons	• colour TV • car • washing machine • telephone	• automatic washing-machine, dishwasher, microwave oven, LCD or plasma TV set, paid satellite or cable TV, DVD player, home cinema set, summer house, desktop PC, portable computer, e-book reader, passenger car, Internet access from home, landline phone, motorboat or sailboat, garden plot
housing conditions	• leaking roof, dampness or rot • lack of bath/shower • lack of flushing toilet • congested apartment	• lack of a bathroom equipped with bath/shower • lack of flushing toilet • sense of congestion
housing / living environment	• excessive noise • pollution or grime • crime, violence	• problematic neighbour relations • sense of being in dangerous environment
financial burden	• difficulty in making both ends meet • financial burden of total housing costs • financial burden of repayment of debts from hire purchases or loans	• regular income of household does not allow to satisfy its basic needs • household can afford the cheapest food and clothing, but have no money to pay the rent • household can afford the cheapest food, clothing and the housing fees, but have no money to repay the loan

Source: own elaboration based on Eurostat and Social Diagnosis.

Hence, linking the notions of poverty and exclusion is intuitively justified. Another argument supporting this approach focuses upon the multidimensional character of the phenomenon of poverty, including its interdisciplinary nature, and the fact that its comprehensive analysis can only be achieved by means of combining economic, social and political sciences. On the other hand, identification of poverty with social exclusion and material deprivation in various contexts, mostly in case of social journalism, makes the public debate disorganised in terms of semantics (Broda-Wysocki, 2012). Therefore, before proceeding to the next part of the analysis, it would be useful to have the relations between such notions systematised.

Material deprivation, which can be interpreted as a persistent shortage of specific goods and services, is one of the most easily observable results of poverty. Although scientific publications dealing with this issue do not pay much attention to definitions, the operationalisation of the phenomenon of deprivation appears to pose much greater challenge than the possible obscurity of its interpretations. In fact, material deprivation can apply to a very extensive array of goods and services which could serve as a demarcation line, separating materially deprived households from the remaining ones i.e.

- durable goods (e.g. radio and TV equipment, household appliances, telephones, cars),
- housing standards,
- consumption standards,
- financial liabilities and savings.

However, the above list should be regarded as open, and the set of indicators used to assess deprivation should be generally determined by means of an expert method. The choice criterion would typically be their adequate empirical correlation with poverty (or with an average material status, being regarded as a point of reference) and their impacts upon participation in the selected areas of public life (in other words: high probability of social exclusion caused by material deprivation in a specific field). In practice, the most frequently used data sources on material deprivation include EU-SILC (for 31 EU countries) and the Social Diagnosis (for Poland). These sources provide diversified information enabling assessment of a number of potential

9 Poland: equivalent to the monthly value of last year's monthly poverty threshold (PLN 400-500).

BOX I.6 Social exclusion

The category of social exclusion is more extensive than poverty, but at the same time, it has not been precisely defined in the literature. The term itself has been derived from Townsend's definition of the relative deprivation, which applied to the living standard below which performing certain social roles, engagement into social life and customary conducts that are regarded as typical of, and valuable for membership in a given society. Since such multidimensional approach incorporates both material and social aspects, it offers a good reflection of the contemporary perceptions of social exclusion – however, it fails to address the problem of nonexistence of an uniform definition of such phenomenon. As a consequence, the convictions about redundancy of homogenisation or harmonisation of alternative definitions are becoming more and more widespread.

The social exclusion debates take into account the following 3 common aspects: (1) engagement in social life, (2) access to resources and institutions and (3) social rights and implementation thereof; and in some cases, also on the question of poverty and material deprivation (Szarfenberg, 2006). However, by far, no ultimate consent has been reached in the literature as regards the actual reasons and constitutional features of social exclusions. In particular, it has not yet been settled and agreed whether social exclusion (Czapiński, 2009):

- should rather be defined as a limitation (refusal) of rights, or as a self-isolation,
- denotes total withdrawal from relevant aspects of the social life, or participation in involuntary forms thereof
- is due to certain temporarily and spatially constant factors, or rather to cultural and civilisational factors indigenous to given surroundings,
- is a macro-social or individual phenomenon.

As a result of the lack of consensus, social exclusion is a very capacious term, and in view of the heterogeneity of approaches, instead of categorising single definitions, classification of definitional clusters appears to be more practicable. Golinowska and Broda-Wysocki (2005) have identified 5 such definitional clusters:

- definitions juxtaposing social exclusion against average and socially accepted customary social situations (Moisio, Estivilla),
- definitions focusing on persistency and dynamics of the social exclusion process,
- definitions focusing on the correlations between excluded vs. excluding individuals, more or less conscious interactions between various subjects which are mostly attributable to their competing for resources (Room, Atkinson & Hills),
- definitions focusing on the participation phenomenon – indicating that being part of the society sometimes does not imply participation in civic life, due to certain discriminatory processes (Burchardt, Le Grand, Piachaud),
- definitions which link the issue of social exclusion with the lack of social capital (Putnam).

The definitions which have been developed for research purposes usually tend to be more abstract that those coined for social policy applications – the latter ones more frequently combine the status quo with the possible public interventions. However, irrespectively of the actual precision of the social exclusion definition it is regarded as a multidimensional phenomenon, revealing itself in economic, political and cultural contexts, and a cumulative one – the risk of exclusion depends on the number of risk factors. Nevertheless, it is difficult to univocally determine whether social exclusion is a state or process or rather an outcome thereof. A progressing exclusion may result in breaking of the bonds with one's close and more distant surroundings, and reversal of its consequences may require much effort.

Source: own elaboration based on Czapiński (2009), Broda-Wysocki (2012) and Szarfenberg (2006).

deprivation aspects, as well as of their inter-spatial and inter-temporal analysis (relatively long time series). For these reasons, the comparison of data gathered in course of subsequent study waves is a comprehensive source of information about the changes of the phenomenon. Table I.4 contains the list of aspects of material deprivation.

Drawing conclusions from the analysis of material deprivation indicators should be a cautious process. First of all, we should keep in mind that data comparisons are reasonable only between countries whose levels of development are comparable, and which belong to similar cultural area. Deprivation indicators illustrate priorities of the consumption of goods and services. Some goods that are regarded as indispensable in certain parts of the world can be deemed as useless in others, hence their non-acquisition does not have to result from budgetary constraints only. Secondly, even in case of the optimum choice of indicators for a given country, deprivation studies should not only be focused upon the scale of absence of certain goods. The persistency of such ***status quo*** in the context of growing affluence of the society is equally important. Thirdly, one should keep in mind that deprivation is typically defined as a lack of specific goods although, in reality, it is more frequently reflected by a substandard quality of the purchased goods, or their longer durability. Finally, deprivation studies are based on respondents' declarations, which can be imprecise. Due to these reasons, the seemingly attractive material deprivation indicators should rather be treated as deprivation risk measures, which provide valuable knowledge about the extent and seriousness of consequences of persistent poverty, which, however, can sometimes be imprecise.

The differentiation between the poor and the socially excluded remains much more complex. The poor do not have to be excluded, and the socially excluded do not necessarily have to be poor, although both these phenomena frequently coincide. Intuitively, the **socially excluded** are those individuals who have been excluded from certain public spheres, and thus, are unable to fully participate in the public life. However, as for today, no mutual consent has been reached regarding new definitions, and their final classification (cf. Box I.5).

BOX I.7 Laeken indicators

Laeken indicators include a set of 18 statistical indicators established at the European Council in Laeken (Belgium) in 2001. They allow for standardisation of the knowledge sources regarding social cohesion in the EU Member States, including, in particular, poverty and social exclusion, as well as inter-temporal/ inter-spatial comparisons of the core indicators of such phenomena. Laeken indicators have been divided into the following four subject categories: poverty, labour market, education and health and two groups: primary vs. secondary indicators. Depending on their actual needs, specific countries have been given an opportunity of including their own, most relevant auxiliary indicators, on the list. Currently, apart from their informative function, Laeken indicators help the European Commission and national government to trace the progress of the social integration strategy implementation in specific Member States (Golinowska, 2012).

TABLE I. 5. LAEKEN INDICATORS

category		basic indicators		additional indicators
poverty	1a	At-risk-of poverty rate by age and gender	11	Dispersion around the at-risk-of-poverty threshold
	1b	At-risk-of poverty rate by most frequent activity and gender	12	At-risk-of-poverty rate anchored in a given year
	1c	At-risk-of-poverty rate by household type	13	At-risk-of-poverty rate before social transfers, by sex
	1d	At-risk-of-poverty rate by tenure status	14	Inequality of income distribution – Gini coefficient
	1e	At-risk-of-poverty threshold (illustrative value)	15	At-persistent-risk-of-poverty rate by sex (50% median)
	2	Inequality of income distribution S80/S20 quintile share ratio		
	3	At-persistent-risk-of-poverty rate by gender (60% median)		
	4	Relative income gap among low-icome households		
labour market	5	Regional cohesion (dispersion of regional employment rates)	16	Share of long run unemployed, by sex
	6	Unemployment rate in the long run, by sex	17	Long run unemployment (24 months and over), by sex
	7	Persons living in jobless households		
education	8	Early school leavers not in education or training, by sex	18	People with low rate of educational attainment, by sex
health	9	Life expectancy at birth, by sex		
		Self-defined health status by income quintile, by sex		

Source: own elaboration based on Eurostat.

Due to the absence of a uniform definition of social exclusion, this phenomenon is difficult to assess. One of the challenges is measuring the composition of various determining and resulting factors: economic, demographic, social, psychological, health-related, residential, etc. At the same time, the most frequently applied quantification methods include an analysis of selected symptoms and creation of summary indexes of social exclusion. In light of definitional obstacles and multidimensionality of the phenomenon, both these methods only provide a partial solution to the measuring problem (Broda-Wysocki, 2012).

Use of the former method would impose, from the start, some limitations as regards the number of exclusion indicators/aspects, thus challenging an assumption about the cumulative character of social exclusion risk factors. Furthermore, the analysis of exclusion symptoms/correlates calls for an expert choice of the domineering phenomenon which will be subject to further statistical breakdowns. A good example is provided by e.g. Laeken indicators, focusing on poverty, economic activity, education and health (cf. Box I.6). Extending the list of social exclusion measures, and setting up a summary index is also regarded as a suboptimal method – the cumulative character of the phenomenon does not allow for adding up specific measures, due to their mutual relations. Furthermore, the final outcomes will always be burdened by the weights ascribed by researchers to specific measures, and statistical objectification methods substantially reduce transparency of a specific index.

Laeken indicators, which can be used for monitoring the poverty phenomenon internationally, do not allow for conducting more detailed analyses of the exclusion phenomenon either in Poland or other EU Member States, nor for precise assessments of the public policy undertakings aimed at boosting social integration and inclusion.

Table I. 6 | Social exclusion factors

social exclusion aspect		social exclusion factor
economic	labour market	Professional inactivity due to despondence or inability to find a job
		Frequent job losses
		Long-term unemployment
		Working part-time due to the lack of full-time job opportunities
		Income instability
		Illegal sources of income*
	monetary poverty	Monetary poverty
		Difficulties in meeting everyday needs
		Loans taken out in order to provide for everyday consumer needs and/or regular payments
		Debt rollover
		Usurer-type loans
		Lack of a bank account
	material deprivation	Malnutrition due to financial constraints (vegetables, meat, dairy products)
		Lack of durable goods due to financial reasons
digital	–	Non-use of computers (in any circumstances)
		No Internet access due to lack of appropriate equipment
		No Internet access due to lack of sufficient skills to use the Internet
		No Internet access due to excessive cost of access
		No Internet access due to convictions/lack of such needs
		Internet access; speed < 144 kb/s
social (in a strict sense)	competences	Low level of own education
		Low level of parental education
		No professional qualifications updated/acquired
	culture and leisure	Non-participation in cultural events – cinemas, theatres, museums
		Non-participation in culture – books
		Non-practicing in sports
	public life	Inability to deal with administrative matters
		Distrust in public institutions
		Non-participation in community life
		Feeling discriminated due to ethnical or other differences
	degeneracy	Breaking the law
		homelessness*
demographic	–	Old age
		Being a child in multi-child family
		Single parenthood
health-related	physical disorders	Disability
		Decrepitude
		Serious illness over the past year
	mental disorders	Depression
psychological	degeneracy	Addictions – alcohol or drug abuse
		Suicidal thoughts
	safety net	Sense of isolation
		Strained family relationships
		Feeling unloved
		The size of safety net: family, friends, acquaintances
		Unwillingness to engage into new friendships
	inertia	Lack of energy
		Lack of the sense of life
housing	regional dimension	Living in rural areas
		Large distance from major cities
	place of residence	Households sharing same apartment / living space
		Overcrowded place of residence
		Inadequate technical condition of apartment
		Coal-fired furnace heating at home
	surroundings	Bad surroundings (crime, drug abuse, hooliganism)
		Serious conflicts with neighbours

Note: factors which have not been identified by the Social Diagnosis have been marked by an asterisk (*).

Source: own elaboration based on Social Diagnosis 2011 survey.

Sources of such knowledge can be EU-SILC data, and in case of Poland, HBS and the Social Diagnosis. The first of these studies combines poverty and material deprivation with such issues as: (1) labour market situation of a given individual – e.g. regarding the risk of labour market dualism, (2) education in the context of basic existential and labour market competences, (3) (subjective and objective) health, (4) housing standard (5) access to information (mostly via the Internet). HBS provides information about the structure of household expenditure and income, thus enables identification of the goods that are affordable / unaffordable, and what are the consumption priorities in a given household. Meanwhile, the Social Diagnosis survey contains questions regarding access to various spheres of life, allowing easy identification of those in which the exclusion risk occurs.

Other reasons for social exclusion, apart from poverty, may include e.g. gender, age or disability, as well as certain socioeconomic or socio-cultural factors, or even individuals' informed choices. In the EU documents only, references to the exclusion phenomenon can be found in over 50 different contexts (Peace, 2001). The classification criteria in case of exclusion correlates are particularly complex and their choice depends on actual research objectives and adopted analytic perspective. The authors of UNDP Report (2006) have identified four criteria of classification of the exclusion determinants, which have been recognised representative in the relevant literature (cf. Frieske, 1999; Lepianka, 2002; Marks-Bielska, 2003):

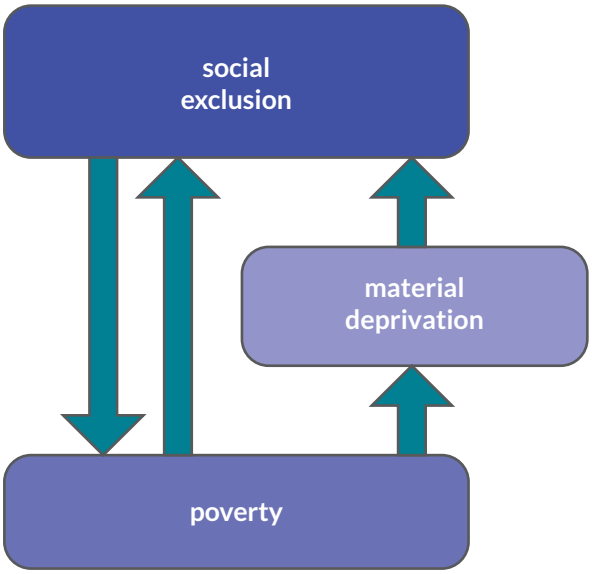
- nature of an excluding factor (e.g. biological, economical, random),
- position in the causal sequence leading to exclusion chain i.e. type of impact upon the risk of exclusion (e.g. normative, structural),
- combination of factors with the areas of exclusion (labour market, goods and services market and social marginalisation),
- level of the factor's independence from an individual.

The list of social exclusion factors (correlates) has been presented in Table I.6. A natural point of reference is its economic aspect, manifested by an inability of a long-term and adequately rewarded participation in the labour market, poverty and correlated deprivation, but, instinctively, social exclusion can be linked to much more aspects: demographic, health-related and psychological (pertaining to an individual's health and condition in a broad sense, and potentially affecting his/her interactions with the surroundings) as well as housing, social and digital ones (defining the level of the social participation and participation potential).

The co-occurrence of poverty assisted by material deprivation on the one hand, and social exclusion on the other, does not preclude that there must be come causal relationships between these two phenomena. Apparently, we can talk about two independent processes.

In the first case, individuals who attain insufficient income are incapable of participating in selected spheres of social life due to material constraints. Non-participation in certain spheres reduces the access to other ones, and crossing a certain critical point leads to the real social exclusion. Such process is particularly visible in developed societies characterised by a wide range of social participation options, many of which are strongly interconnected. A good example is a situation when an unemployed individual loses his/her source of income, and after

Diagram I. 3 | Poverty and material deprivation vs. social exclusion



Source: own elaboration.

some time, is forced to use his/her savings, ask family members for help, or even sell his/her own property. The lack of resources makes searching for a job and further participation in social life more difficult, thus aggravating the sense of social isolation. In addition, someone who has been forced to rely on her relatives' support, may eventually break up or severely loosen his/her relations with other family members and start to take advantage of limited institutional support provided the state. Such withdrawal from social relations may, in turn, deepen the sense of solitude and make finding a new job even more difficult, thus reinforcing one's poverty status and persistency of his/her social exclusion.

In the second causal sequence which combines social exclusion with its root causes we are dealing with individuals whose exclusion could be attributed to any factors other than socioeconomic ones – even though they are not poor, they face difficulties in participating in some, or even all spheres of the social life. Finding themselves in existentially risky situations (such as long-term illness or disability) without any support from their safety net i.e. relatives, friends, acquaintances or the state, they are exposed to quick impoverishment, which may further aggravate their social isolation. This scenario can happen in case of an illness or an unfortunate accident happening to an immigrant whose chances of taking advantage of welfare support are slim. If part of health services is not free, and an individual is detached from his/her relatives and friends, s/he may become unable to settle his/her liability and finally fall into poverty or become homeless. Another example can refer to ex-convicts who, facing the lack of social acceptance and their own inability to cope with reality out of prison, may find getting a job and material stability without breaking the law particularly difficult, which additionally increases the risk of their impoverishment and subsequent delinquency.

2 WHO IS POOR AND WHO IS EXCLUDED?

2.1 WHERE THE POVERTY THRESHOLD IS SITUATED?

Classifications of poverty and social exclusion presented in Part 1 may apparently imply that specific statistical analyses of the poverty phenomenon only differ in details. In fact, even minor methodological changes can have substantial effect upon the reported poverty level and ratio of the poor, just like the use of different data sources. However, if we combine individual methods of determining the poverty threshold with the conceptual and interpretational network presented in Part 1, based on the data concerning the years 1994-2011, we will be able to establish a number of stylised facts (regularities) typical of the major trends concerning the poverty risk in Poland observable over the past dozen or so years.

Fact #1: Income attained by non-poor individuals makes them capable of basic participation in the social life

Among alternative definitions of poverty threshold in Poland, its unchangeably highest level has been demarcated by the social minimum specified by the Institute of Labour and Social Studies (ILSS). In 2011 it was above PLN 983, and nearly 7.8 million of people (ca. 19.3% of all population) did not attain such income per capita. Still at the beginning of the 2000s, nearly twice as many i.e. four out of ten Poles were situated below such poverty line. It should be observed than in 2010, the values of the social minimum (absolute measure) and 60% of the median of equivalised disposable income became equal. The gap between these two measures used to be similarly narrow in the first half of the 1990s, yet it visibly grew later on due to the rising unemployment rate. Only after improvement of the economic situation in 2004 (cf. Fact #2), due to the growing employment rate and wages in Poland, the gap between the relative poverty threshold regarded as 60% of the median income and the absolute poverty one, marked by the social minimum, decreased. Today, in accordance with both measures, 17-19% of the population may be regarded as poor (levels may slightly differ, due to the use of different equivalence scales). This equalisation shows that a (relatively) non-poor household may afford to acquire a basket of goods corresponding to the social minimum taking into account, apart from biological needs, also social ones, related to culture or leisure. Hence, the risk of social exclusion in case of this group, due to material causes, is low.

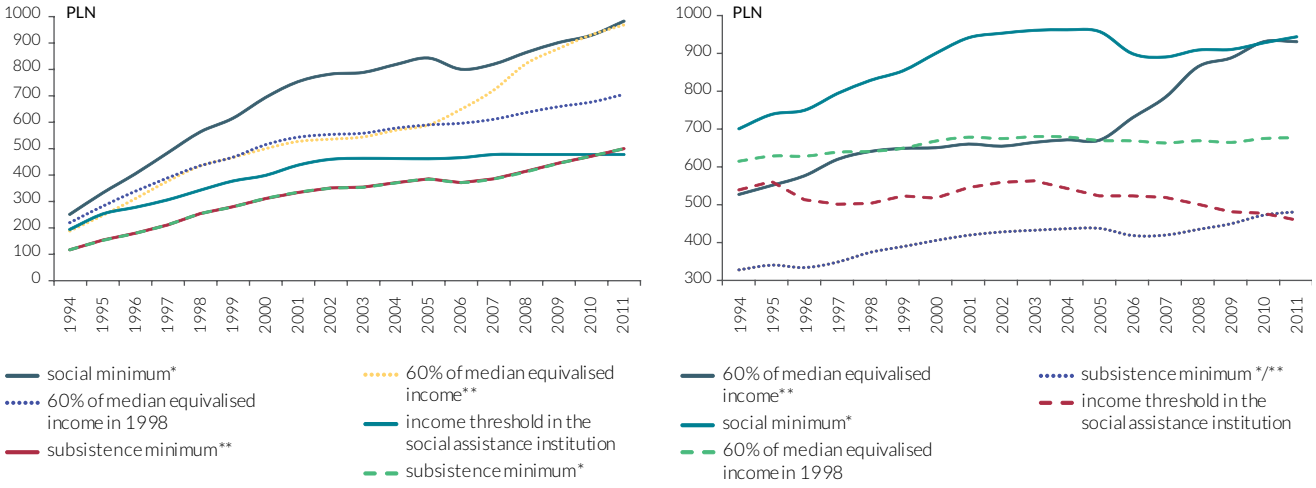
Fact #2: Dynamic economic growth and the drop in unemployment after 2004 substantially contributed to reduction of the poverty rate

In years 1999-2003 Poland experienced the so-called second wave of economic restructuring which resulted in a substantial and long-term deterioration of the labour market situation (cf. *Employment in Poland 2007 – Security on a flexible labour market*). Rapid economic growth reported in 2004-2009 contributed to a marked decrease in the poverty risk ratio. Shares of individuals living below the subsistence level upon both equivalence scales dropped down by 45%, and by a half – in case of those living below the social minimum. If we refer back to the poverty threshold of 1998, we can observe that over the next 14 years the proportion of the poor in the society fell down by 60%. Such changes should be perceived as a side effect of the affluence growth in Poland and improvement of the labour market situation. However, greater prosperity is not the only source of decrease of the poverty rate in Poland. On a long-term basis (since 1994) all poverty indicators have been showing a visible downward trend. Even in the period of an economic slowdown, numbers of people at risk of poverty and poverty rates remained lower than at the beginning of the 1990s, regardless of the definition.

Fact #3: Freezing the statutory poverty threshold decreased its importance as a social policy instrument

The lowest poverty threshold is marked by the subsistence level. In 2011 this value only slightly exceeded PLN 500. Depending on the equivalence scale used, 2.8% (OECD) or 7.9% (ILSS) of Poles (from 1 to 3 million) used to live below such threshold. Such a marked difference can be attributed to different treatment of costs related to the presence of an older child in household by OECD and ILSS. In years 2004-2011, substantial decrease in poverty rate defined by the statutory threshold was observed. The proportion of Poles whose income fell below that level dropped down by ca. three-fourths (from 17% to 4%), which could be largely attributed to sustaining of the fixed income threshold ensuring 5 year (2007-2011) continuity of monetary transfers at the level of PLN 477, after it has been raised by only PLN 18 over the previous 5 years (2002-2006) (from PLN 459 in 2002 to PLN 465 in 2006), while the average earnings at that increased by over PLN 1260 in total. Freezing the thresholds led to a visible decrease in the welfare support level, which in turn resulted in a decreasing rate of the statutorily poor. Currently, the statutory eligibility threshold to welfare support is situated slightly below the value of the minimum subsistence basket.

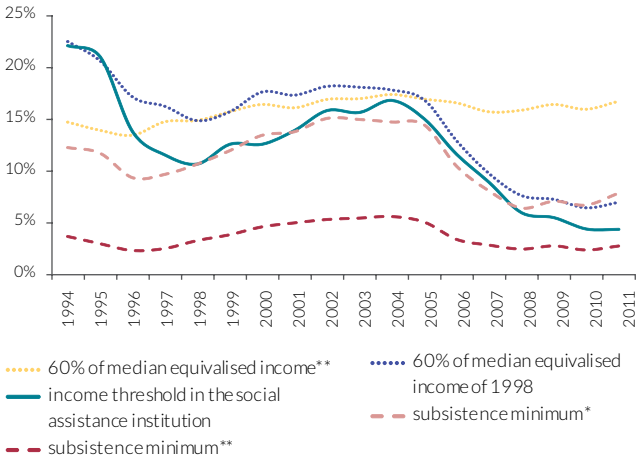
Figure I. 9 | Poverty thresholds in Poland by poverty measures: current prices (left), fixed prices (right); 1994-2011



*Note: threshold values applying to single-member households. * equivalency scale ILSP; ** equivalency scale OECD.*

Source: own elaboration.

Figure I. 10 | The poverty rate in Poland by poverty thresholds; 1994-2011

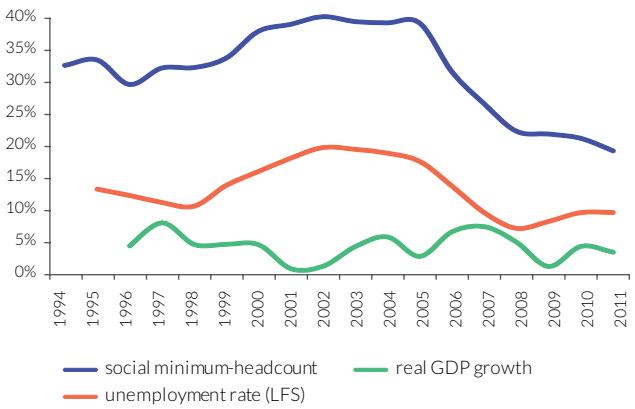


Note: threshold values applying to single-member households.

**equivalency scale ILSP, ** equivalency scale OECD*

Source: own elaboration.

Figure I. 11 | Social poverty rate and economic variables; 1994-2011



Note: threshold values applying to single-member households.

Source: own elaboration based on ILSP and CSO of Poland (GUS) data.

Regardless of the statutory poverty thresholds, households themselves try to identify such income level that would guarantee fulfilment of their basic needs. Such amount is considered as a **subjective poverty threshold**.

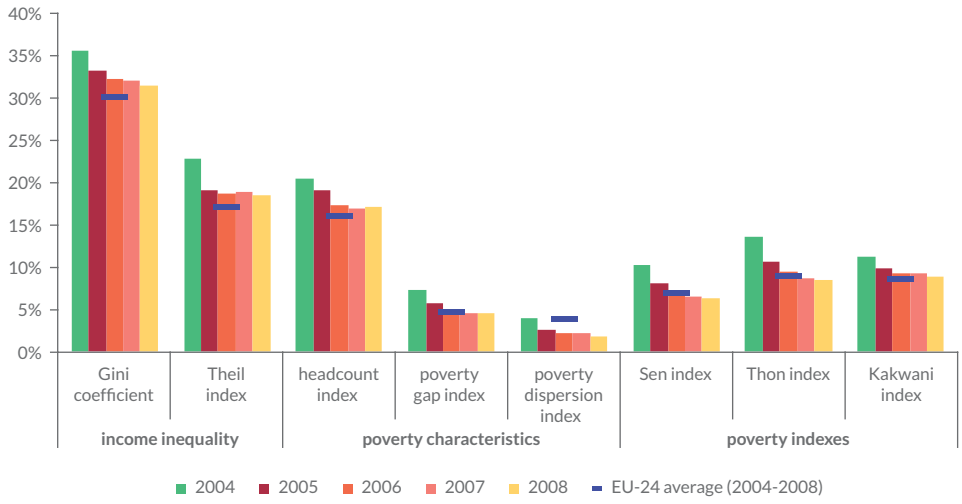
Its formulation depends on a number of regularities. First of all, we can observe a strong connection existing between the current living standard and the subjective poverty threshold. The relatively more affluent respondents (i.e. those who attain higher relative incomes) also declare a higher value of minimum income needed to cover their basic costs, thus positioning their subjective poverty threshold higher. In 2011, such minimum income was defined as PLN 650 by the 5th percentile of households, while in case of the median household this amount was twice as high (PLN 1286), and in the 90th percentile it amounted to PLN 2000. In the context of poverty analyses this means that from the 5th percentile households' point of view, the presence of each adult person (except for the head of a household) in a household corresponds to the cost increase by ca. PLN 325, and by PLN 195 in case of a child.[10] In the median household, similar calculations would yield the amounts of ca. PLN 640 and PLN 390, respectively, and in the 90th percentile – PLN 1000 and PLN 600. Relations between declarations made by the poorest and most affluent proportions of households remain constant, regardless of the moment in the business cycle. Therefore, it can be assumed that households tend to expand systematically

10 According to the modified equivalence scale; according to Oxford scale such amounts would be equal to PLN 455 and PLN 325, respectively.

BOX I.8 Reduction in inequality and poverty rates in Poland vs. EU

The reduction of the poverty rate in Poland and its convergence to the levels reported in other EU Member States has been reflected by virtually all indicators which have been described and interpreted in Part 1 (Figure I.11). The relatively biggest changes could be observed in case of inequality and poverty descriptions in the years 2004-2005, when the period of an economic slowdown of the beginning of the 2000s ended, and the economic growth visibly accelerated. The subsequent reductions in the poverty rate used to be markedly less intense. However, in the years 2005-2009 income inequalities visibly decreased: the value of Gini coefficient dropped down by one-tenth i.e. from 35.6% to 31.4%, while that of Theil index decreased by nearly one-fifth – from 22.9% to 18.5%. The poverty indicators also improved: its ratio decreased (by 16.6%), and the level of income attained by poor households began to approximate the poverty threshold (by 37.5% on average). As a consequence, the poverty severity ratio also decreased (by 52.7%). All such changes have been reflected in the collective breakdowns that illustrate the poverty extent, gap and severity, such as Sen, Thon or Kakwani indexes (reduction by 21-37%, depending on the index).[11]

FIGURE I. 12. INEQUALITY AND POVERTY INDICATORS IN POLAND AND EU-27; 2004-2008



Note: average value for EU-24: EU-27 excluding Bulgaria, Romania and Malta, weighted by share in population.

Source: own elaboration based on EU-SILC.

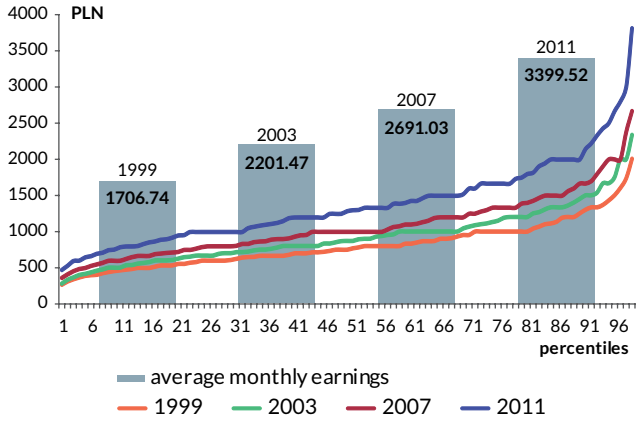
their ranges of needs, and their shopping price levels increase together with the income level, and durables tend to depreciate relatively fast.

Secondly, consumer sentiment tends to shift the subjective poverty threshold upwards across the entire sample – both among poor, medium-income and relatively affluent households. A visible increase in the (absolute) average wage reported in the period 2007-2011 was accompanied by an over-proportional shift of the poverty threshold. Whereas the average wage changes by ca. PLN 500 observable in the previous 4-year intervals resulted in shifting the poverty threshold in case of a median household by ca. PLN 125, the change by ca. PLN 700 which took place over the past 4 year period resulted in a shift by nearly PLN 300.

Although the growth of the equivalised income results in elevating the poverty threshold, the poor themselves have different perceptions of the amounts considered as sufficient from the point of view of satisfaction of their basic needs. When the question about the equivalised income that would allow one to no longer consider oneself poor was asked, the answers turned out to be highly diversified: the minimum amount was PLN 800, which was markedly below the social minimum, and the maximum one was PLN 2600 which corresponded to ca. 75% of the average net monthly wage – which is, apparently, highly incompatible with the definition of the income that allows one to "make ends meet". An identification of the 4 income groups (i.e. absolutely poor, relatively poor, non-poor and affluent) points out to an interesting phenomenon regarding gradation of the declarations. The declared subjective poverty threshold in case of the first half of the sample of the absolutely poor remains the same as in case of the relatively poor (only incidentally exceeding such level), whereas patterns of declarations observable in the second half are similar to those in case of the non-poor. Hence, the absolutely poor tend to have high expectations, and their perceptions of the affluence threshold tend to be distorted, as compared to those observable in case of the relatively poor and non-poor. Such *status quo* may be attributed to a number of factors: severe and persistent poverty may lead to considerable material deprivation – hence, in order to exceed the poverty threshold, shortages of certain fixed assets must be

11 Collective poverty indexes (i.e. Sen, Thon or Kakwani indexes) are sensitive to the changes of all aspects of the analysed phenomenon (cf. Table I.3). Hence, if improvements are observed in all aspects, as it happened in Poland in the analysed Period, we would observe that the intensity of changes of the collective index depends on the weights ascribed to particular measures by the formula used.

Figure I. 13 | The subjective poverty threshold according to percentiles of the equivalised income distribution; 1999-2011



Source: own elaboration based on HBS data.

Table I. 7 | Subjective perceptions of poverty threshold among poor and non-poor, 2011

		Groups of individuals – divided based on their equivalised income			
		Absolutely poor	Relatively poor	Non-poor	Affluent
Subjective poverty threshold	Minimum value	800	800	1200	1600
		1000	1000	1400	2000
		1300	1200	1500	2000
		1500	1500	1800	2500
	Median value	1800	1500	2000	2500
		2000	1800	2000	3000
In accordance with group declaration pattern		2000	2000	2500	3000
		2500	2200	2500	3500
	Maximum value	3000	2600	3000	4000

Note: it has been assumed that absolutely poor households are ones whose equivalised incomes fall below absolute poverty threshold, and relatively poor ones are those whose incomes are in-between absolute and relative thresholds, while the non-poor household are those whose income falls between relative threshold and the median income, and finally, the affluent household are those whose equivalised income exceeds the median value.

Source: own elaboration based on HBS data.

eliminated. Although this situation may also apply to the relatively poor, it affects their declaration patterns to a limited extent only. The poor may also choose higher-quality goods with longer depreciation periods – although in view of their income management strategies this type of scenario appears to be unlikely. Their poor knowledge of the prices and irrationality of their economic choices cannot be also ruled out.

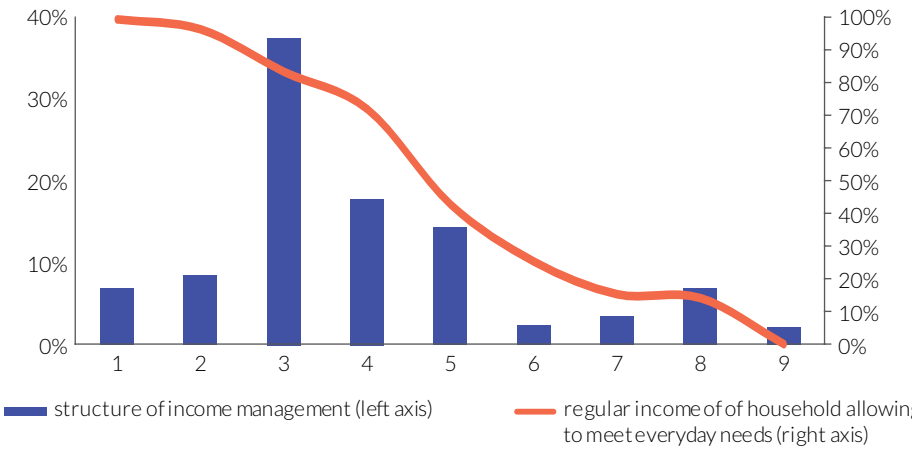
2.2 DOES POOR MEAN DESTITUTE?

Despite an evident dropdown in poverty risk over the past decade, the sense of impoverishment remains powerful in Poland. In light of findings of the Social Diagnosis 2011, only 15.5% of all households declared that their income allowed them to live their lives without renunciations (cf. Figure I.14, strategies 1 & 2) – in such groups nearly all respondents claimed that their regular income allowed them to satisfy their daily needs. Ca. 8% of households managed to make some savings for the future, and another 15% of them admitted that they disposed of certain accumulated financial resources. The largest group (37.5%) were those who claimed that their needs could be satisfied only because of their humble lifestyles (cf. Figure I.14, strategy 3). The respondents who represented this strategy emphasised that purchasing durable goods typically implied cutting down on their current consumption, although in contrast to another 17.7% of the population (cf. Figure I.14, strategy 4) they were not forced to save money prior to making any major expenditures. However, while among those who were forced to save money for major expenditures, the perceived degree of satisfaction of their current needs exceeded 70%, in case of the latter group such ratio did not exceed 50%. The share of households unable to satisfy all their current needs (cf. Figure I.14, strategies 6-9) amounted to 15%, and the overall majority of them confirmed that satisfaction of such needs was beyond their financial possibilities. It is noteworthy that this share corresponds to the proportion of the relatively poor in Poland.

When the level of expenditure of a given household consistently exceeds its income (cf. Figure I.15), the first step is limitation of the current needs (88%). Subsequently, Poles ask their relatives for help and incur debts in order to finance their consumption (41% in each case). In most cases, such resources are allocated for the purchase of durable goods, even though some of them allow for covering current consumption costs and fixed charges (Figure I.16). Paradoxically, when facing an increase in their spending needs, relatively few poor households search for additional income through employment (18%), and even every tenth of them does not take any actions whatsoever, thus perpetuating their impoverished status.

Housing conditions strongly differentiate the living standards of the poor vs. non-poor. However, their analysis and interpretation is quite complex. This can be attributable, first of all, to the differences between detached houses and apartments as regards their average residential space, and to the correlations between the building's location/its other attributes and the price (and, implicitly, its availability for subsequent income distribution deciles). According to GUS data, in 2011 the average useful floor area in case of Polish household was 73.7 m^2 and corresponds to ca. 26 m^2 *per capita* which is ca. 18-20 m^2 lower than in Germany. Empirically, larger *per capita* areas are typical of smaller households, but in case of households composed of a specific number of persons, the incomes ranging between

Figure I. 14 | Income management strategies vs. satisfaction of current needs; 2011

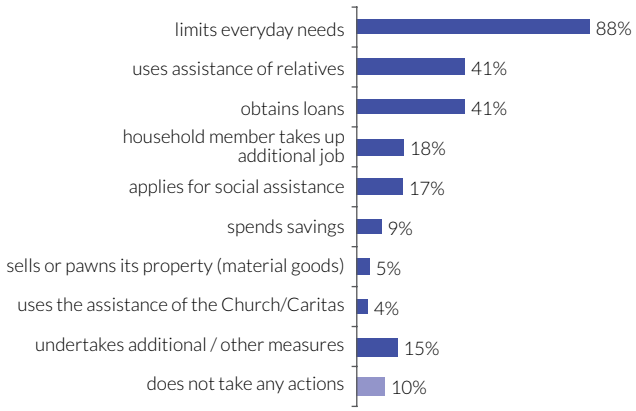


Explanation:

1. We have enough money and we save it for future
2. We have enough money, we do not have to resign from anything, but we do not save it for future
3. We try to economise and that is why we have enough resources
4. We live very humble life to save some money for major expenses
5. We can only afford to buy the cheapest food, clothes, and pay our housing fees, or to repay our loans
6. We can only afford to buy the cheapest food, clothes and pay our housing fees, but we are unable to repay our loans
7. We can only afford to buy the cheapest food and clothes, but we are unable to pay our housing fees
8. We can only afford to buy the cheapest food, but we cannot afford to buy any clothes
9. We cannot even afford to buy the cheapest food

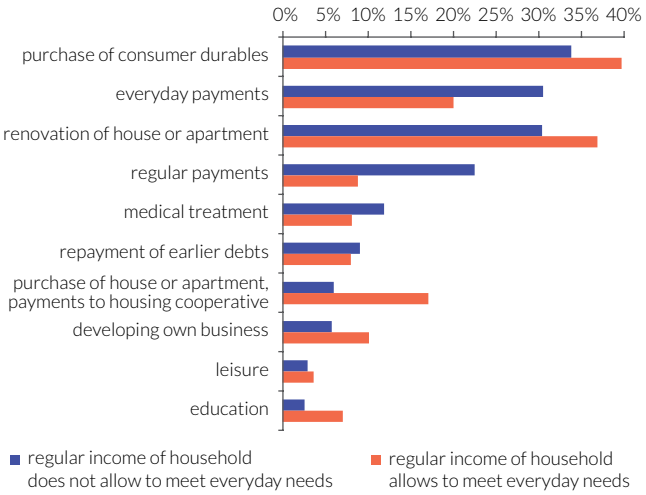
Source: own elaboration based on Social Diagnosis 2011 data.

Figure I. 15 | Survival strategies in case of inability to satisfy current needs; 2011



Source: own elaboration based on Social Diagnosis 2011 data.

Figure I. 16 | Purposes of the incurred loans; 2011

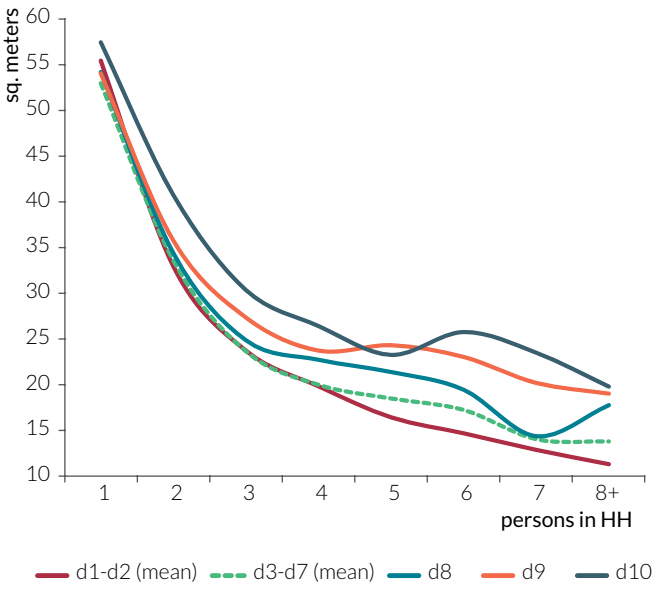


Source: own elaboration based on Social Diagnosis 2011 data.

the 3rd and the 7th deciles do not diversify average residential space *per capita*. Markedly higher spaces are observable in case of the two highest income deciles, while the 8th decile prevails among the largest households. Meanwhile, the visibly lowest residential area is observable in case of the 1st and the 2nd income deciles i.e. the most impoverished households, which is particularly visible in case of those which consist of more than 5 members (Figure I.17).

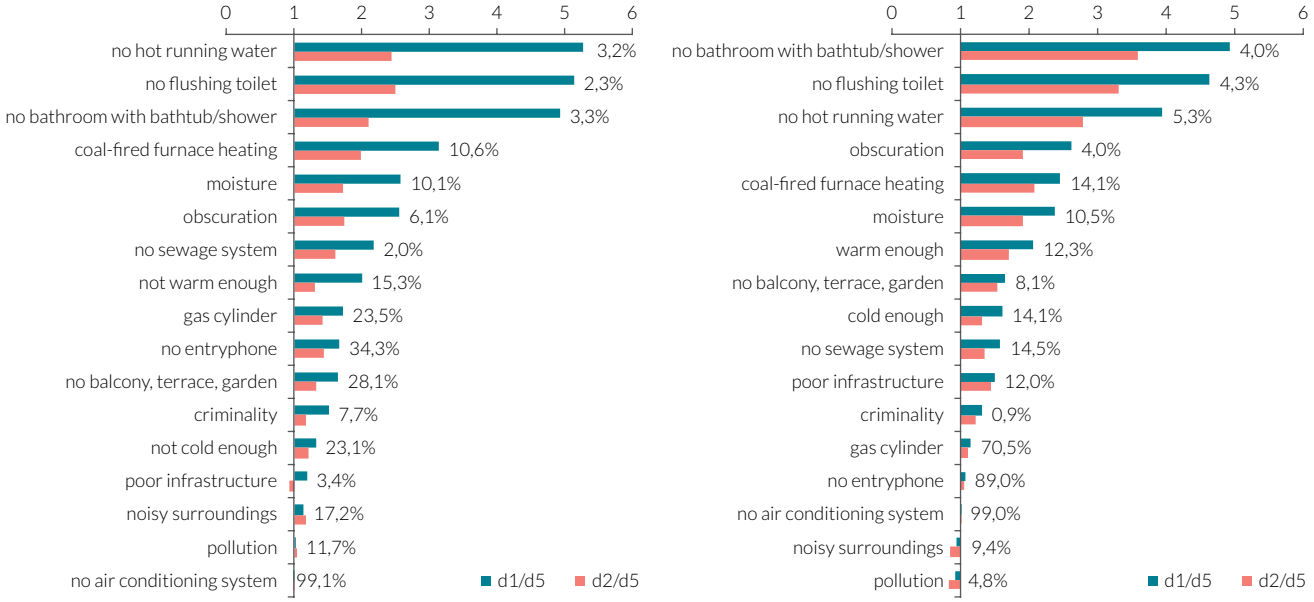
An indicator of the quality of life of the poor more precise than the residential area is the standard of apartment/house i.e. presence of network utilities, amenities and equipment. Regardless of the fact whether a given household is located in an urban or a rural area, core poverty correlates are the same: hot running water, toilet and bathroom with a tub or shower (cf. Figure I.18). They differentiate the poorest households (1st income decile) from median ones, both in urban and rural areas, and, additionally, the relatively poor (2nd decile) residents of the rural

Figure I. 17 | Residential space per capita by the equivalised income decile; 2011



Source: own elaboration based on HBS data.

Figure I. 18 | Quality of life in case of poor and median households in cities (left) and rural areas (right); 2011



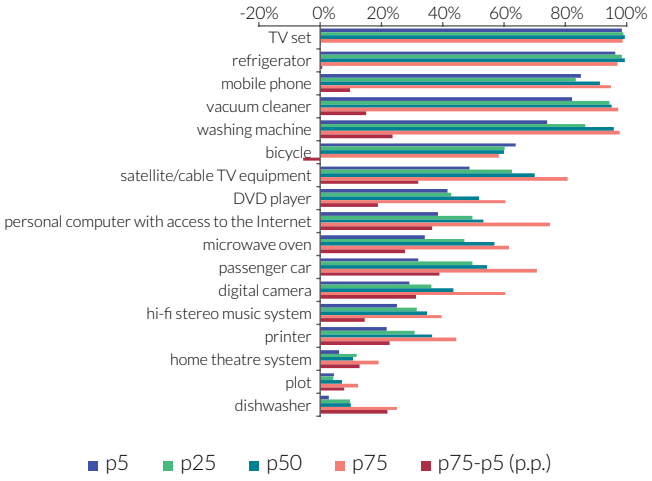
Note: data illustrate relative incidence of certain phenomena in 1st and 2nd decile households as compared to 5th decile households d1/d5 and d2/d5, respectively). Labels describe frequency of given phenomenon in 5th income decile.

Source: own elaboration based on HBS data.

areas. Meanwhile, in case of median households such amenities are absent in ca. 2-3% and 4-5% of urban and rural households, respectively, in case of the poorest households (1st decile), such shortages are 4-5 times more frequent and apply to 10-20% of all households. Also in case of the relatively poor (2nd income decile), the comparable relation would be 2 in urban areas and ca. 2-3 in rural ones. The shortage of hot running water and sanitary facilities are therefore a good poverty indicator. However, bearing in mind the fact that the presence of sewage systems in most urban areas are nowadays regarded as a standard, they less frequently constitute a subject of material deprivation in cities, as compared to rural areas.

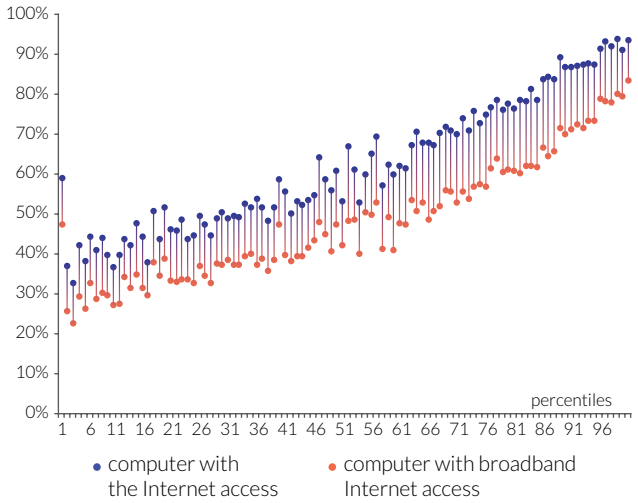
The range of material correlates of poverty that indicate the most widespread aspects of the relative material deprivation of households is quite extensive. Such indicators include

Figure I. 19 | Material deprivation in selected percentiles of the sample; 2011.



Source: own elaboration based on HBS data.

Figure I. 20 | PC ownership and the Internet access in households according to percentiles of equivalent income, 2011



Source: own elaboration based on HBS data.

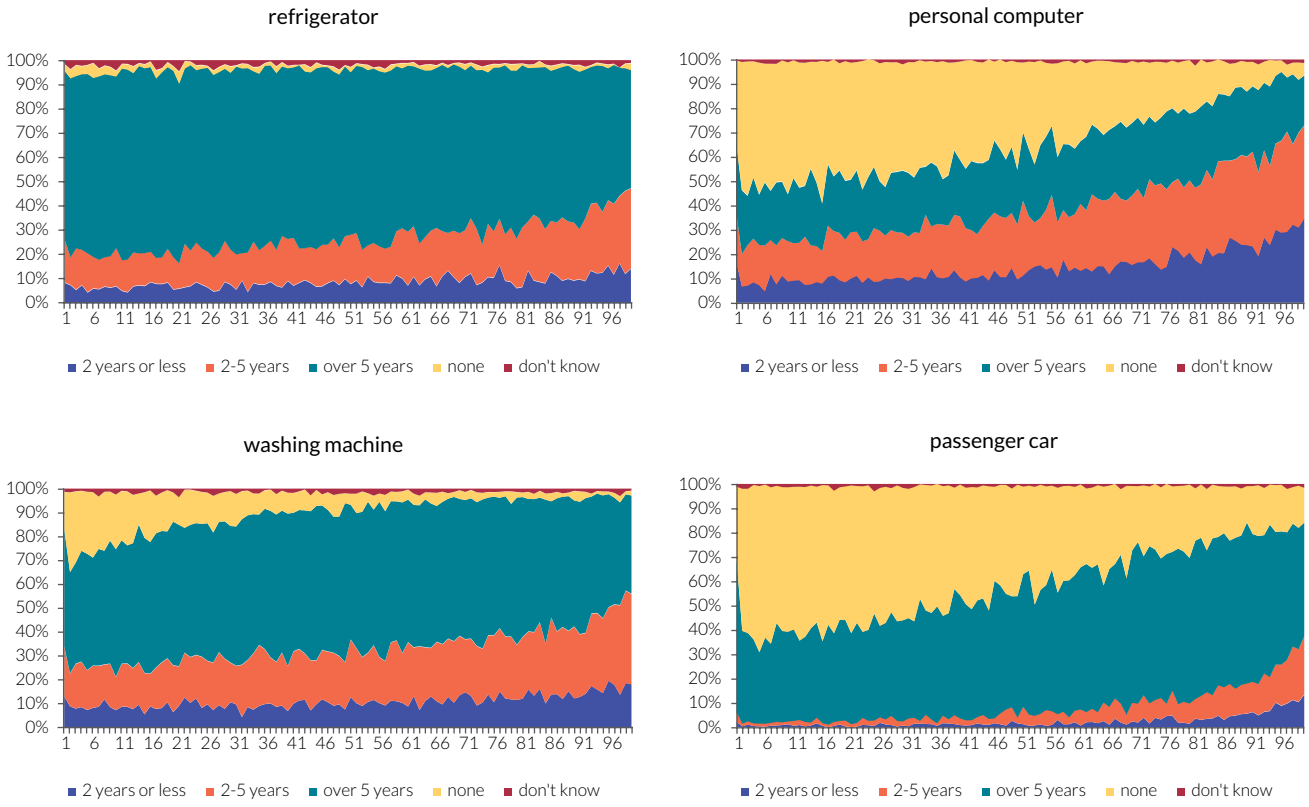
e.g. coal-fired furnace heating, moisture and absence of light at residential premises. Even though such problems may also occur in median households, the poor representing the 1st decile tend to face them 2.5-5 times more often than median households. In case of the individuals representing the 2nd decile, the values of such indicator decrease to the level 1.5-2 times higher as compared to median households. Some housing amenities can serve as material status indicators in selected regions only. For instance, coal-fired furnace heating is definitely more widespread in rural households, and its presence is less attributable to poverty than to the actual place of residence. Similarly, the absence of an entry phone – which is rarely ever used in rural areas – does not really serve as a poverty indicator. Meanwhile, in cities this feature is more widespread and is a good indicator of income level and infrastructure quality. By way of comparison, poor household are not differentiated from non-poor ones by such attributes as the presence of air conditioning systems, which are not yet that common in Poland, noise or environmental pollution (especially in urban areas).

Apart from basic housing amenities, other durable goods may also serve as indicators of the poverty-related material deprivation. However, we should keep in mind that their absence may be a matter of individual choice relatively more frequently than the housing standard. Every second Pole admits that major purchases, which also include durable goods, constitute a serious financial burden. This remains consistent with an observation that only few items, such as a TV set and refrigerator, are regarded as standard equipment in case of Polish households. An overall majority of households are also equipped with a vacuum cleaner, automatic washing machine and at least one mobile phone. Therefore, these cannot serve as good indicators of material standing of specific households. The same applies to the goods that are rarely present in Polish households, regardless of their income level, which include e.g. home cinema or air conditioning systems referred to above.

In case of many durable goods a visible interrelation between their consumption level and an equivalent household income level can be observed. Such characteristics are observable in case of e.g. a PC with the Internet access, passenger car (where the difference between the 75th and the 5th percentile exceeds 40%), satellite or cable TV equipment (30%), or a dishwasher (20%). Atypical consumption patterns are observable in case of a bicycle: while in poorer households it is regarded as a mean of transport, in the more affluent one it has a leisure-related function.

The presence of a PC with Internet access is strongly correlated with household income level, and the majority of Internet users take advantage of a broadband connection. A diversifying factor is the necessity of purchase of hardware (fixed cost) and systematic payments of Internet access fees (variable costs). On the other hand, a relatively smaller proportion of households equipped with PCs with the Internet access may be, at least partially, attributable to the relatively less developed network infrastructure in the poorer regions of Poland. It can be also assumed that there exists an opposite relationship i.e. digitally-literate households with Internet access are typically capable of attaining higher incomes. Irrespectively of the strong correlation that exists between the level of income vs. presence of a PC with Internet access, the diversification between specific household groups is, in this respect, relatively substantial – only 40% of the poor have such type of equipment, as compared to 95% in case of the most affluent individuals. Such a regularity is not observed for another communication medium i.e. mobile phone. Different types of operator agreements provide households with optimum access possibilities regardless of their equivalised income levels: the proportion of households where mobiles phones are present does not fall below 77%, and attains 90-95% in most groups.

Figure I. 21 | Households' assets by age and by percentiles of income distribution; 2011

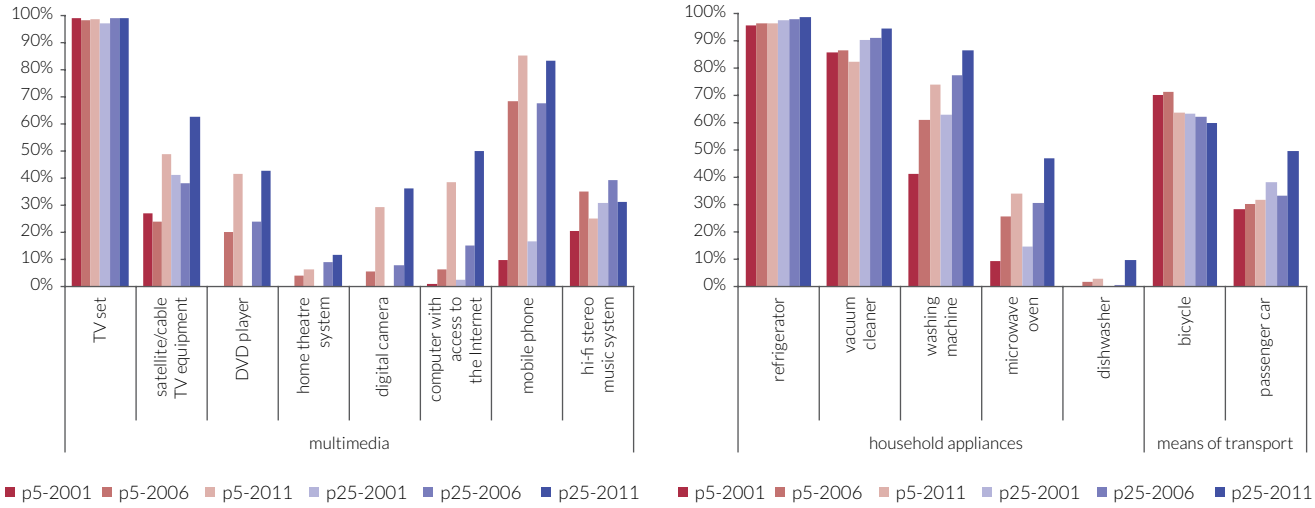


Source: own elaboration based on HBS data.

It should be kept in mind, however, that the very presence/absence of specific goods in a household should not serve as a sufficient measure of its material deprivation. Since some households may, due to financial constraints, be devoid of certain practically relevant goods, others may, for the same reason, dispose of the goods that are obsolete and extremely outworn. At the same time, we should remember that obsolete appliances are more expensive to maintain, and more susceptible to breakdowns, which additionally decreases their quality of use. The frequency of exchange of durable goods depends not only on the equivalised income level of a given household, but also on its type i.e. its obsolescence, unit purchase price and the level of substitutability with other household objects. For example, in case of the poorer half of the society 7% and 15% of households respectively possess younger than 2-year, and 2-5 year old refrigerators. This factor is not less relevant than in case of the more affluent half, where the respective proportions are ca. 10% and 21%. A refrigerator is, in fact, an example of an appliance whose usability period is quite long. In case of PCs, which are characterised by relatively short life cycles, the situation is different: in the poorer half of all households, 10% and 20% of all households have PCs younger than 2 years, and 2-5 years old, respectively. The respective proportions observable in the more affluent half are 20% and 30%, with a strong upward trend observable at the most affluent end of the sample. It should be emphasised that half of the poor households does not dispose of any PC equipment. Therefore, this type of goods strongly distinguishes this group from relatively more affluent households. A similar tendency is observable in case of cars which are present only in a minority of poor households. Purchases of cars, which involve very substantial costs as compared to the average equivalised income, happen rarely. The possession of cars younger than 5 years is seldom – in 2011, their incidence in the first half of the sample did not exceed 3.5% on average. Meanwhile, improvement of one's material status still remains a powerful stimulus for exchanging one's car for a newer one.

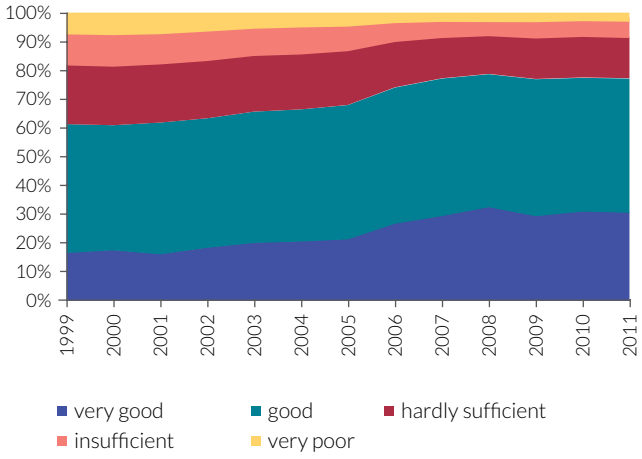
Decrease in material deprivation of the poor households over the past years can be attributed, on one hand, to the improvement of the material status of Poles overall, and on the other hand, to the popularisation and decreasing prices of multimedia and household appliances. While in 2001, only one-tenth and one-sixth of all 5th percentile and 25th percentile households, respectively, possessed a mobile phone, current proportions of such households exceed 80%. A similar situation can be reported in case of the previously discussed PCs with Internet access, or cable/satellite TV equipment. In 2001, PCs with Internet access used to be totally inaccessible for the poorer households (1.0% and 2.5%, in case of 5th and 25th percentile, respectively), yet by the year 2006 their incidence visibly increased (to 6.4% and 15.0%, respectively). However, only currently we are observing their popularisation (2011: 38.5% and 49.8%). In case of cable/satellite TV equipment, we can see the growing saturation of households with this kind of equipment (an increase from 27.2% to 48.8% in p5 and from 41.2% to 62.6% in p25 in the years 2001-2011). Some changes can be

Figure I. 22 | Household equipment, by income percentiles; 2001, 2006, 2011.



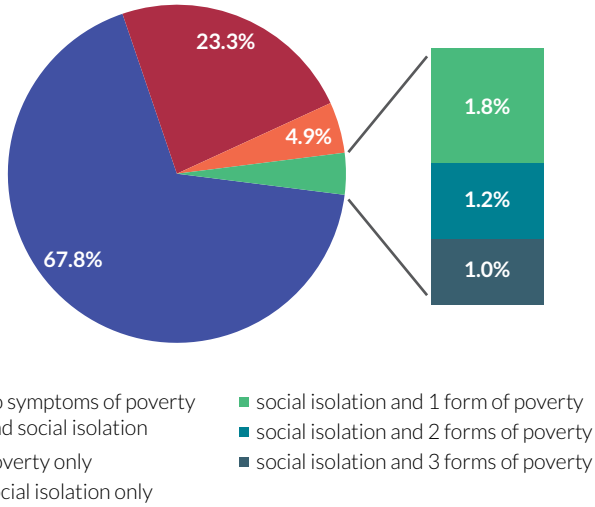
Source: own elaboration based on HBS data.

Figure I. 23 | Own income assessment; 1999-2011



Source: own elaboration based on HBS data.

Figure I. 24 | Poverty and social isolation in social cohesion studies; 2011



Note: types of poverty: poor living standards, poverty due to budgetary imbalance, income-related poverty.

Source: own elaboration based on CSO of Poland (GUS) (social cohesion study, 2011).

observed even in a shorter 5-year perspective: a DVD player or a digital camera, whose purchases still constitute a considerable item in the budgets of the poorest households have become much more common (from ca. 20% to 40% in both sample sections in case of a DVD player, and from 5.7% to 29.2% in p5 and from 7.8% to 36.3% in p25). Meanwhile, certain goods are becoming obsolete: hi-fi audio systems are becoming less and less frequent in households – both less and more affluent households do not acquire any new such equipment, or replace old one.

Apart from new technologies, the availability of household appliances making life more convenient, such as e.g. automatic washing machine, microwave oven or (to a smaller extent) dishwasher, improves systematically. Over the years 2001-2011, an automatic washing machine has become a must-have even in the poorest households (p5: from 41.4% to 74.1%, p25: from 63.0% to 86.7%), most likely, due to depreciation of old equipment, absence of non-automatic washing machines at stores, and convenience it provides. Also a microwave oven is no longer regarded as an equipment for 'the chosen ones' (p5: from 9.5% to 34.2%, p25: from 14.7% to 47.0%). Apparently, goods whose unit prices are lower tend to spread faster and more easily e.g. a microwave ovens are more popular than dishwashers. The latter is still regarded as a prestigious and costly appliance. However, its popularity grows even among the poor i.e. in 2011 its possession was reported in every 10th household in the 25th income percentile.

Figure I. 25 | Poverty clusters in EU-27; 2008

Source: own elaboration.

The sense of impoverishment that is experienced by Poles despite their objectively improving material status appears to stem from the generally recognised point of reference, which in case of living standards are the West European countries, rather than the domestic situation in Poland ten or twenty years ago. In terms of accumulation of durables, Polish households tend to gradually converge to West European ones. However, this phenomenon has not yet contributed to the change of self-identification patterns, since Poles still perceive themselves as a society whose members need to make sacrifice in order to improve their living standards. This does not imply, however, that respondents do not notice any improvements of their material status. Yet, they perceive such improvements as demanding much effort.

If we place the actual income of a given respondent into his/her self-defined income category,[12] instead of asking him/her about its monetary calculations which can be underestimated, we will observe that the perceived status of the overall majority of households is either good or very good. In years 1999-2011 the proportion of households whose income was perceived as poor or insufficient visibly decreased (from 18% to 9%), so did the proportion of households on the poverty threshold (from 21 to 14%). At the same time, however, the share of households with very high declared income levels nearly doubled (from 17 to 31%). Even though the economic slowdown which has been recently reported in Europe has decelerated this positive tendency, Polish households are convinced of a visible improvement of their income-related situation on a long-term basis. Based on the social cohesion survey conducted by GUS, poverty (if existing) only rarely leads to social isolation. Over two-thirds (67.8%) of Polish citizens are not at risk of poverty or social isolation. 4.9 % of respondents are regarded as non-poor, but isolated, and the co-occurrence of both these phenomena (with varying intensity) applied to 4% of the population.

2.3 GLOBAL AND LOCAL ASPECTS OF POVERTY

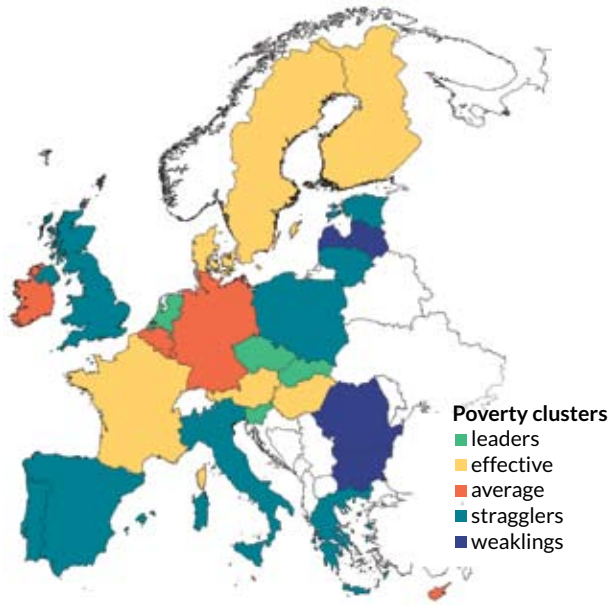
The prevailing approach in case of the EU poverty analyses is a relative one, based on the poverty threshold constituting 60% of median of the equivalised income.[13] According to this approach, in 2011 ca. 85 million individuals were at risk of poverty (16.9% of the EU-27 population). In the last studied year this proportion slightly increased, as compared to a relatively stable level of 16.3-16.5% that had been observed in the years 2005-2010. However, if we look at individual countries, the diversification scale is tremendous: in Czech Republic, poverty seems to be just an incident, and relatively non-acute, while in case of Latvia it is virtually a mass issue, with definitely unfavourable parameters. In order to simplify our study, we have divided particular EU Member States into 5 clusters differing in terms of poverty intensity, severity and profoundness i.e. the leaders, the effective, the average, the stragglers and the weaklings.

The leaders in counteracting poverty, apart from low poverty rate (i.e. 8.5-11.5%) display also a number of other favourable features such as low poverty gap and severity. Besides, they do not show substantial internal diversification, which is particularly visible in case of Czech Republic whose welfare policy maintains the poverty risk ratio, in its all dimensions, at a stable low level. **The effective** countries have comparable gap, severity and inequality levels, with the poverty rates (12-14%) systematically higher as compared to the leader. This group includes, among others, Scandinavian countries. Among them, insignificantly less favourable severity and diversification statistics can be observed in case of Sweden – however, these levels still fall below the EU-27 average. **The average** differ from the leaders and the effective only in terms of the poverty ratio which is close to the EU average (15-16%). The country that seems to somewhat lag behind in this relatively homogenous group is Germany. Considerably less favourable situations are

12 extremely low, insufficient, barely sufficient, good, very good.

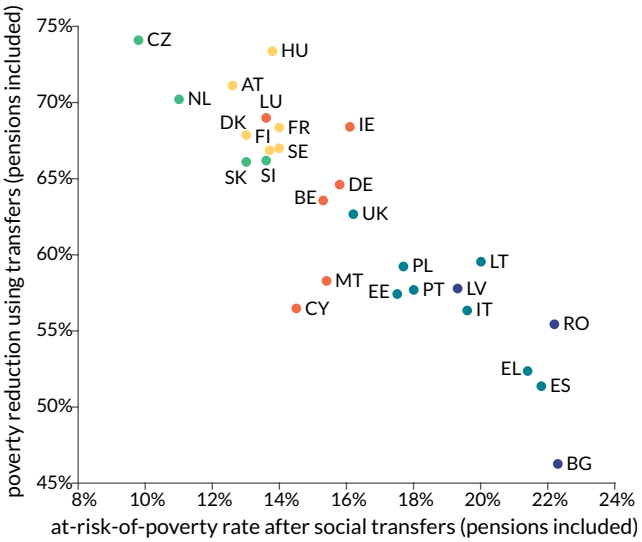
13 Absolute measures are not used due to substantial per capita income differences, and inadequacy of measures across specific countries.

Map I. 2 | Poverty clusters in EU-27; 2008



Source: own elaboration.

Figure I. 26 | Reduction of poverty risk rate with welfare transfers (including pensions) in EU-27; 2010



Note: 1. Data concerning Ireland – 2009. 2. Tag colours correspond to the clusters mentioned above.

Source: own elaboration based on EU-SILC data.

faced by the poor in the countries categorised as the stragglers and the weaklings. **The stragglers** include such countries whose income statistics unfavourably stand out from the EU average: the poverty ratio amounts to 17-20%, and the average income attained by the poor falls much more below the threshold, as compared to the three previous groups. This increases the severity of poverty, and leads to a higher diversification among the poor themselves. This country group is relatively capacious and includes the Great Britain, South European countries, and a number of NMS, including Poland. It should be in emphasised that Poland, which has been categorised as the straggler, in terms of its poverty rate and inclusiveness of the welfare policy system considerably lags behind not only Scandinavian countries, but also some Central European countries, such as Slovakia, Czech Republic or Hungary. The last country cluster includes **the weaklings**, who face systemic difficulties in counteracting poverty: the poor are numerous (over 20% or 25% in case of Latvia), which is reflected in very high poverty gap and severity levels, visibly lagging behind even from the poorest straggler country i.e. Spain. Besides, visible mutual differences can also be observed among the weaklings themselves.

We should keep in mind that the poverty rate measured in specific EU Member States is not a crude indicator. It takes into account the entire range of social transfers distributed by various public institutions, such as: pensions, unemployment benefits, family allowances or welfare support (except for benefits in kind). Without taking into account such redistribution of resources, poverty ratio would include half of all population. Meanwhile, a properly targeted set of social benefits allows for cutting down on the poverty rate by over 70%, as it happened in Czech Republic or Hungary. At the same time, inefficient actions contribute to reducing the poverty rate by less than a half – like in case of Bulgaria. In Poland, transfer system is characterised by an average (in the context of the entire EU) efficiency in counteracting poverty and reduces its rate by 60%. The factors that distinguish the leaders, the efficient and the average clusters from the stragglers and the weaklings, who cope with such issues much worse, are efficiently operating systems of social transfers, and implicitly, substantial reduction of the poverty rate. This conclusion appears to be particularly relevant, since despite economic instabilities observable over the past few years, the social policy development and efficiency trends have remained constant.

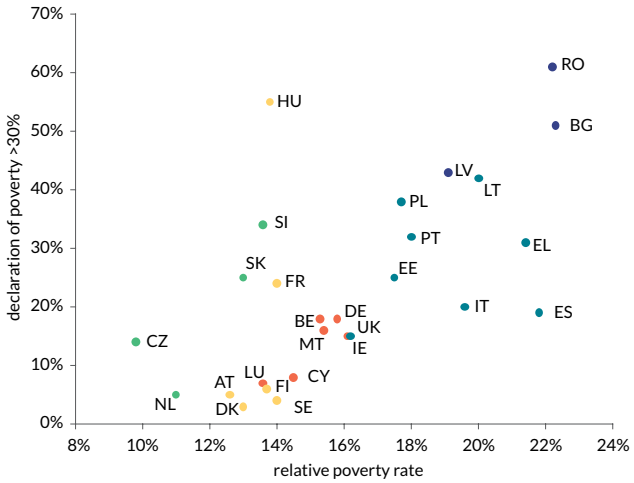
Although at present Poland is a representative of the stragglers cluster, if the downward tendency that has been observed over the past decade in case of the poverty rate continues, there is a chance that in the coming years it will join the average group. Such an improvement would occur earlier, if the social policy system in Poland followed Czech, Hungarian or Slovakian patterns in order to improve its efficiency and targeting of benefits. This issue is going to be discussed in more detail in further parts of the present report.

Despite the fact that poverty severity in Poland is rather medium (close to the European average), Poles show a strong tendency for overestimation in this area. In 2010 when relative poverty ratio in Poland amounted to 17%, nearly every two out of five Poles would agree with a statement that this problem applies to over 30% of all population. As compared to other EU Member States, the poverty overestimation scale is substantial

Figure I. 27 | Poverty rate estimates in Poland and EU-27; 2010

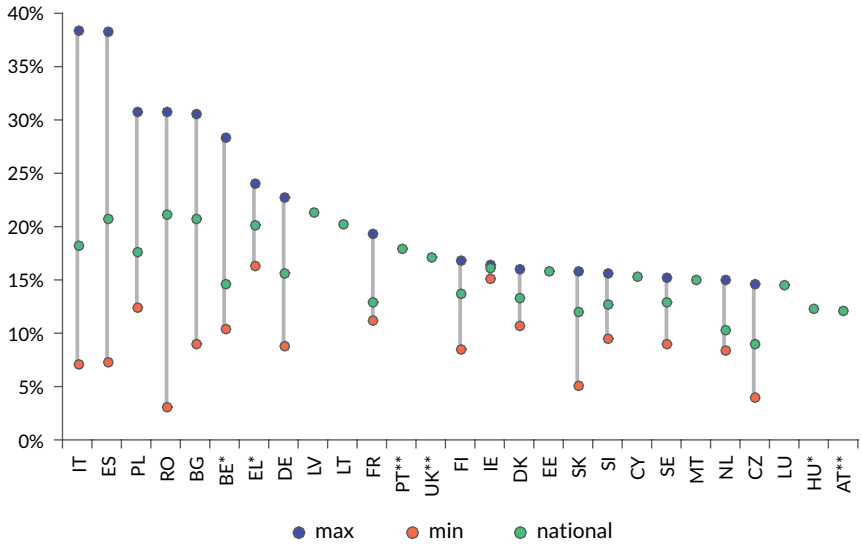
Source: own elaboration based on Eurobarometer data, 2010.

Figure I. 28 | Actual vs. perceived poverty rates in EU-27; 2010



Source: own elaboration based on Eurobarometer data, 2010.

Figure I. 29 | Poverty risk ratio differences in EU-27 at NUTS-2 level; 2009

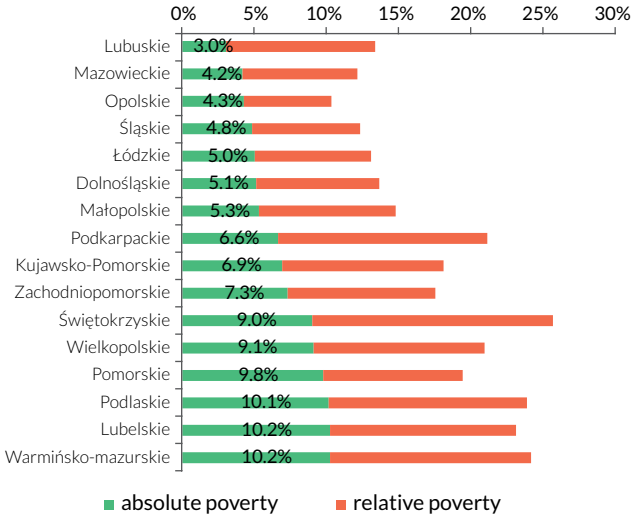


*Note: 1. * - availability of data at NUTS-1 level, ** - availability of data at NUTS-0 level. 2. France data concerning 2008, Finland – data concerning 2010.*
Source: own elaboration based on EU-SILC data.

– higher than in Lithuania or Latvia (despite objectively less favourable situations of those countries), but smaller than in Romania, Bulgaria or Hungary. This tendency can be partly ascribed to the persistent nature of poverty. Historically speaking, Poles used to be accustomed to their limited resources and a sense of deprivation. Over the past decade, of topmost importance was the tough period between 2001 and 2004, and the repercussions of the global financial crisis of 2008-2009 also affected the perceptions of poverty. In the countries where the poverty rate has remained at a stable low level (like in the majority of the EU-15, excluding South European countries), the proportion of declarations regarding the high poverty rate is insignificant. A different phenomenon can be observed in case of NMS, where convictions about high poverty rates are much more widespread. The issues concerning the poverty risk and its persistency have been discussed in Part 3 of the report

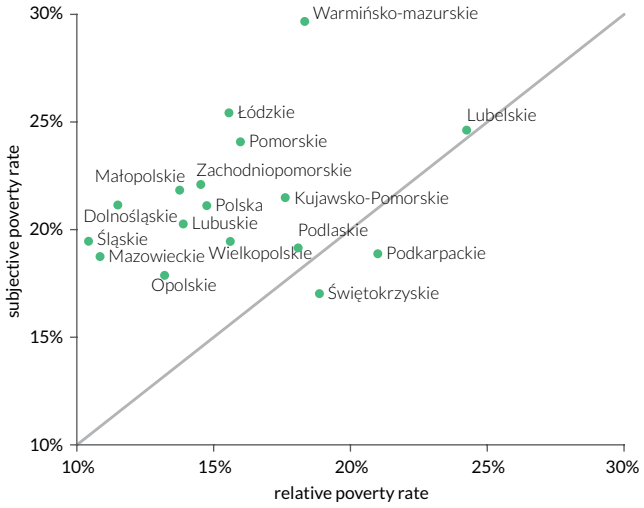
The average value of relative poverty rate in a given country does not take into account the internal differences existing between specific regions, which can even be higher that continental differences. In this context, the most frequently quoted example is Italy: the differences between *the affluent North* and *the poor South* are, in fact, reflected in poverty indicators: in 2009, the poverty rate in the provinces of Bolzano, Trento or Emilia-Romagna (all of them bordering with Austria) did not exceed 8.3%, while in Sicily it amounted to 38.3%. A comparably high diversification can be reported in Spain (Community of Navarre 7.3%, Estremadura – 38.2%), and only slightly lower in Romania (Bucharest-Ilfov development region – 3.1%, south-western region bordering with Serbia – 30.7%). Smaller diversifications are typical of countries reporting higher GDP per capita i.e. Germany, France (with the differences ranging from 13.9 to 8.1%, respectively) and countries with small geographical areas.

Figure I. 30 | Absolute and relative poverty rates in Poland across different provinces (voivodeships); 2011



Source: own elaboration based on HBS and CSO of Poland (GUS) data.

Figure I. 31 | Poverty perceptions in different provinces (voivodeships); 2011



Source: own elaboration based on HBS data.

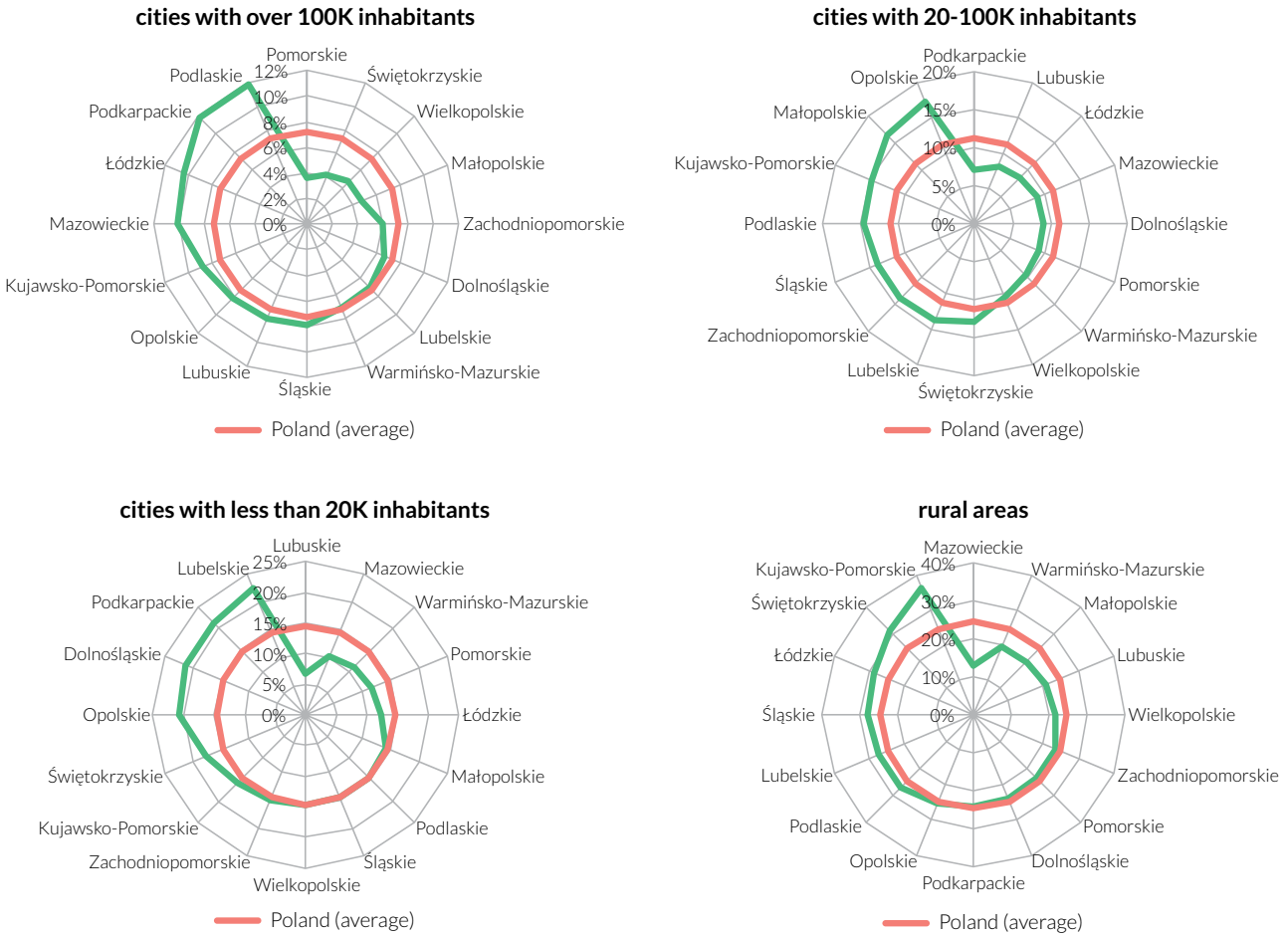
The rate of diversification across the Polish regions (18.3 p.p.) is moderate, as compared to countries with similar geographical size, even though the distribution of poverty is similar to that which is typical of poorer and more diversified EU-27 Member States. The highest relative poverty rate can be observed in the Świętokrzyskie voivodeship (25.7%). More than one out of every five residents of Warmińsko-Mazurskie, Podlaskie, Lubelskie, Podkarpackie and Wielkopolskie voivodeships are at risk of poverty. However, if we looked at the absolute poverty rates, our findings would be somewhat different:: in 2011 every tenth resident of Warmińsko-Mazurskie, Lubelskie, Podlaskie and Pomorskie voivodeships remained poor. The poverty, both absolute and relative one, most rarely affects the residents of Lubuskie, Mazowieckie, Opolskie and Śląskie voivodeships.

The disparities between the perceived impoverishment and the *status quo* can be also observed on a regional level. Nearly all presented regions of Poland range above 45° line, which implies that the subjective poverty ratio exceeds the objective one. Moreover, in case of the majority of the poor, the disparity (manifested as the divergence from the line) remains very conspicuous, and such phenomenon equally applies to those regions were the number of the poor is relatively low (e.g. Śląskie, Dolnośląskie), and to those characterised by more extensive poverty (Warmińsko-Mazurskie, Łódzkie). The exceptions to the rule are Podkarpackie and Świętokrzyskie (where the subjective poverty rates are slightly lower than those resulting from objective indicators). Meanwhile, declarations provided by the residents of Lubelskie and Podlaskie regions are relatively consistent with the actual rates. It should be observed that such data confirm the findings obtained in the course of *Eurobarometer* survey, where the declared poverty rates amounted to 20-25%, or sometimes even to 25-30%. The subjective measures are rather disconnected with the status quo, which is manifested by the low correlation between both these measures.

The poverty rates are strongly correlated with the level of urbanisation. In cities, the poverty ratio is visibly lower than in rural areas. Moreover, the bigger the city, the lower the poverty rate. While in cities with more than 100 thousand inhabitants the poor accounted for 7.2% of all population, in towns having 20-100 thousand inhabitants this ratio amounted to 11.2%, and in those inhabited by less than 20 thousand – 14.6%. Meanwhile, in the countryside the proportion of the poor exceeded 24.6%. However, diversifications between the least and the most poverty-threatened regions are substantial: they range from a half of, to the double of average calculated in a given residence area category: in major cities they range from 3.6 % to 11.9%, in medium-sized ones from 7.1% to 17.3%, and in small ones from 6.6% to 22.4%. In the countryside, the scale of regional diversification is the most substantial and ranges from 13.1% to 36%. By controlling the place of residence class it can be easily observed that there are no voivodeships that would be visibly less threatened by poverty, which could be reflected in low poverty rates in all classes. For example, the Podkarpackie region, which lags behind other Polish regions in terms of cities having over 100 thousand and less than 20 thousand inhabitants, has relatively lowest poverty rates in towns having 20-100 thousand, and is located in the half of the scale in case of rural areas.

The poverty scale may also be visualised by means of the relative poverty threshold – the lower it is, the lower is the median equivalised income, and, implicitly, the poverty threshold. For example, in 2010 in Warsaw the poverty threshold was defined at the level of PLN 1660, while in rural areas of the Lublin Province, such indicator amounted to PLN 660. In cities having over 100K inhabitants, the declared thresholds generally exceeded PLN 1000 (again, in major cities the declared living standards were higher), while in the countryside they remained lower than PLN 900.

Figure I. 32 | Relative poverty rate according to residence class; 2011



Source: own elaboration based on HBS data.

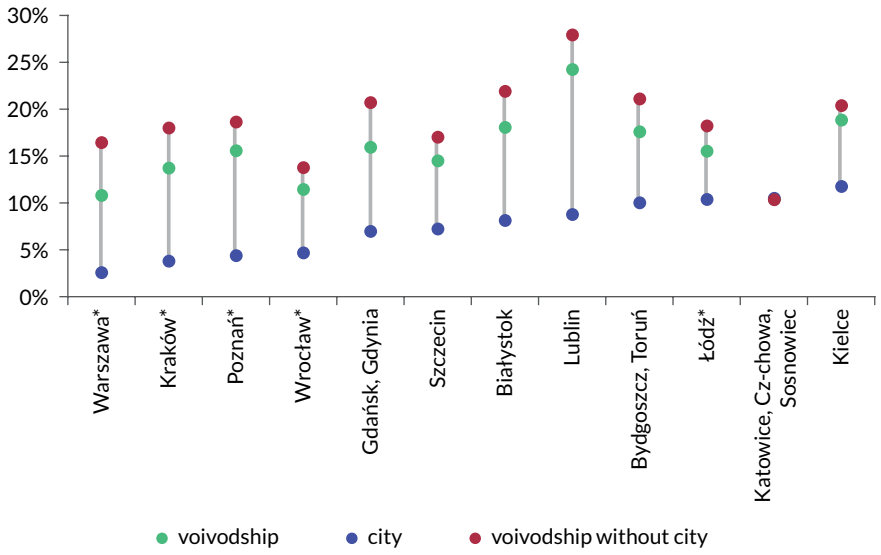
The presence of major cities substantially affects the scale of poverty. This happens mainly due to the diversification of local economic structures and competitiveness of wages, which lead to a higher professional mobility of residents of the neighbouring regions. The definitely most powerful stimulus is provided by Warsaw, whose relative poverty ratio amounts to 2.6%, as compared to 10.6% across the entire province. If we excluded Warsaw from the statistics of the Mazowieckie voivodeship, the poverty rate in that region would increase to 16.5%. In case of cities having over 500K inhabitants, very positive impacts can be observed in the areas surrounding Cracow. Meanwhile, in the group of cities with 200-500K inhabitants such regional effects can be observed in case of Gdańsk, Gdynia, Białystok, Lublin, Bydgoszcz and Toruń. Wrocław and Łódź have substantially smaller impact on their surroundings, and in the Silesian Province, due to its specificity, there are virtually no differences between poverty rates observed in the major cities and those reported in their surroundings.

Poverty analyses conducted on regional levels can be supplemented with local perspectives. A better availability of data at the voivodeship level is accompanied with limited information concerning intraregional diversification of the phenomenon, which is substantial. Whereas in 2011 the poverty variability coefficient[14] across regions amounted to 26%, its value increased to 46% in case of poviats, and 69% in case of gminas. The visible increase in the ratio which can be observed along with narrowing down of the perspective is the first symptom of the fact that intraregional variability has more impact upon the shaping and perceptions of the poverty phenomenon, that cross-regional one.

This conclusion also helps us to answer questions as regards to what extent poverty depends on a type of socioeconomic surroundings, and how strong such correlations are. In view of the high number of poviats (379), it would be helpful to use a cluster analysis enabling grouping of districts in accordance with their characteristic features, and comparing specific clusters thus created (the baseline set) with clusters that would have been created if a poverty scale indicator was added to the list of variables (the extended set). This would make us more likely to assess to what extent poverty can be related to: (1) local economic structure and (2) demographic structure of the local population.

14 The indicator has been approximated by the proportion of household members taking advantage of the local welfare support in the overall population.

Figure I. 33 | Impact of major cities upon scope of poverty; 2011



Note: 1. only direct impacts have been considered. 2. The analysis includes cities with more than 200 thousand inhabitants, apart from Radom whose impacts decrease due to the neighbourhood of Warsaw. Cities with over 500 thousand inhabitant have been marked with an asterisk.*

Source: own elaboration based on HBS data.

The basic set of economic determinants includes the following variables:

- **unemployment rate** –the first approximation of paid employment possibilities,
- **share of agricultural farms below 5 ha in specific poviats** – an approximation of the urbanisation level and farming productivity,
- **gross average monthly remuneration** – an approximation of the productivity of the local economy and household affluence,
- **No. of enterprises registered in REGON per 10 thousand inhabitants** – an approximation of the economic activity of residents,
- **No. of registered cars per 1 thousand inhabitants** – an estimation of the income and wealth of residents (presence of a fixed cost and regular variable costs).

The basic set of demographic determinants has included:

- **young-age and old-age dependency ratio** – in order to identify the scale of burden placed upon people at productive age,
- **feminisation ratio** – in light of the diversified economic activity among women/men,
- **female and male life expectancy**[15] – as an estimation of the quality of life and economic activity prospects.

It should be emphasised that since the variables included in both sets remain correlated to some degree, each of them provides additional information about cluster characteristics. In both cases, the extended sets of variables have been supplemented by the poverty ratio assessed on the basis of the proportion of household members taking advantage of the local welfare support in the overall population. It is the most precise statistical approximation of the poverty phenomenon at the poviat level, which reflects income poverty correlates.

Economic structure of the population vs. poverty indicators

The analysis of economic clusters has allowed us to distinguish the following 4 groups of districts: well-rewarded, entrepreneurial, average and unemployment-threatened.

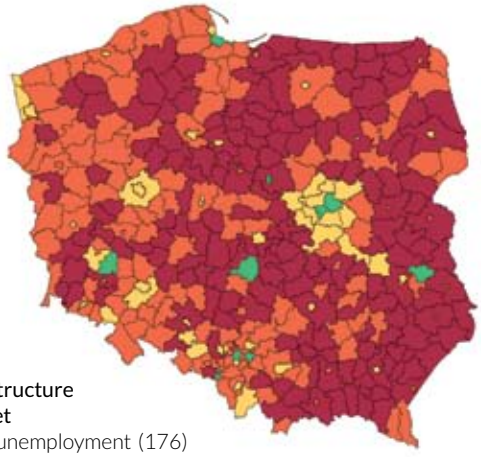
A group that is the least numerous, but visibly stands out from the others are the **well-rewarded**. It includes 9 districts where labour market situation is definitely more favourable than in the remaining ones i.e. Warsaw and Pruszków district, selected mining districts (Katowice, Jaworzno, Jastrzębie-Zdrój, Lubin, Łęczna, Bełchatów) and Płock (crude oil processing). In such districts the average monthly remuneration exceeds PLN 5 thousand (ca. 40% above the national average), and the average unemployment rate amounts to ca. 8.6% (3.7% in Warsaw). The high fragmentation of agricultural farms is coupled with their relatively low share (the role of farming in the local economies is marginal). At the same time, the good economic standing of these regions encourages people to establish their own businesses, which is reflected in high level of entrepreneurism.

The second relatively small group are the **entrepreneurial**. The 33 districts comprising such cluster are townships and their immediate surroundings, taking advantage of such neighbourhood. As compared to the remaining groups, the venturesome have similar characteristics as the well-rewarded i.e. high economic activity ratio (1337 business entities per each 10

15 sub-regional level statistics

Map I. 3 | Determinants of poverty – economic clusters

Economic structure
basic set
- At risk of unemployment (201)
- Average (136)
- Entrepreneurial (33)
- Well-rewarded (9)



Economic structure
extended set
- At risk of unemployment (176)
- Average (147)
- Entrepreneurial (46)
- Well-rewarded (10)

Source: own elaboration based on LDB CSO of Poland (BDL GUS) data.

Table I. 8 | Economic clusters - selected characteristics

Variable/cluster type	well-rewarded	entrepreneurial	average	risk of unemployment	Poland [16]
The clusters based on the basic list of variables					
Number of districts	***9***	***33***	***136***	***201***	***379***
Unemployment rate (%)	8.6	9.3	14.7	17.4	**15.5**
Agriculture (%)	81	79	71	61	**67**
Remunerations (PLN)	5059	3678	3157	2812	**3065**
Entrepreneurship (no. of business entities per 10 thousand inhabitants)	1065	1337	944	730	**868**
Cars (passenger cars per 1 thousand of inhabitants)	490	477	467	472	**471**
The clusters based on the extended list of variables, including the poverty rate					
Number of districts	***10***	***46***	***147***	***176***	***379***
Unemployment rate (%)	8.3	9.6	15.4	17.5	**15.5**
Agriculture (%)	81	79	69	61	**67**
Remunerations (PLN)	4986	3595	3090	2796	**3065**
Entrepreneurship (no. of business entities per 10 thousand inhabitants)	1100	1227	929	710	**868**
Cars (passenger cars per 1 thousand of inhabitants)	491	473	470	470	**471**
Poverty rate (%)	5.1	5.5	8.8	11.4	**9.5**

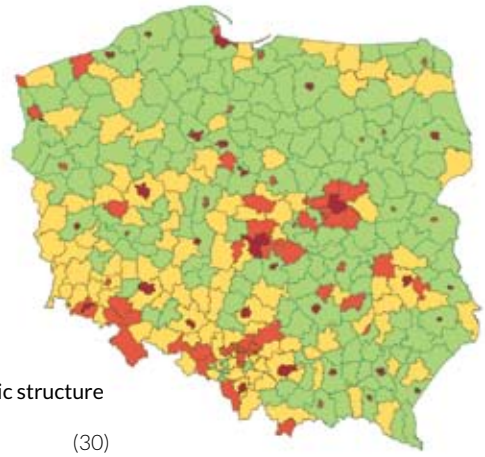
Source: own elaboration.

thousand of residents) and relatively low unemployment rates (9.3%), at visibly lower average remuneration levels. Due to the on-going urbanisation and suburbanisation processes, farming business does not play any relevant role in such regions.

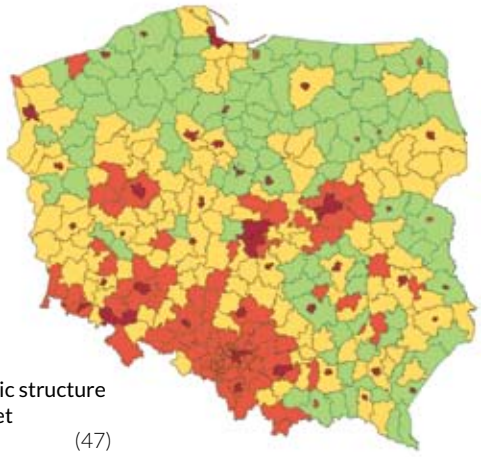
The third group comprises the **average** i.e. such districts which approximate the national average in all statistical dimensions. The cluster includes 136 districts. It is mainly composed of the districts which serve as a more distant backup of major cities, and cities having smaller effects on their surroundings than e.g. Warsaw or other major cities representing

16 In case of economic and demographic clusters: unweighted average

Map I. 4 | Determinants of poverty – demographic clusters



demographic structure
basic set
- elderly (30)
- feminisation (61)
- average (107)
- masculinisation (181)



demographic structure
extended set
- elderly (47)
- feminisation (93)
- average (133)
- masculinisation (106)

Source: own elaboration based on LDB CSO of Poland (BDL GUS) data.

the venturesome cluster. The districts located in the Western Poland, near the German border, are insignificantly more frequently categorised as the average, mostly due to large role of business services in these regions.

The situation of the **unemployment-threatened** appears to be visibly less favourable than that of the remaining clusters. The cluster analysis univocally shows that apart from the regions mentioned above, in the majority of Polish poviats belonging to this group, such situation is unfavourable. The proportion of unproductive farming is high, which hinders the average remuneration growth. At the same time, the chances of finding a non-farming job are limited – hence, the unemployment rate exceeds the national average. Moreover, the majority of districts have a typically rural character, which does not promote local entrepreneurship, especially in view of the low development level.

If we supplemented the initial set of economic indicators with the poverty variable (extended set), the changes would be only cosmetic, which confirms a strongly economic, yet non-deterministic, character of the poverty phenomenon. As a consequence, the number of poviats representing the unemployment-threatened cluster would decrease. In other words, unfavourable local economic structures and structural labour market obstacles do not univocally determine the high poverty risk, but substantially affect its level. Inclusion of the poverty variable shifted 25 districts from the unemployment-threatened to the average cluster, 11 districts from the average to the entrepreneurial one, and 1 entrepreneurial poviat to the well-rewarded cluster, without exerting substantial impacts upon the basic set of variables.

Demographic structure of the population vs. poverty

A similar procedure has been carried out for demographic variables. However, in this case the outcomes have been quite different:

- The dependency ratio's' direction and intensity allows us to distinguish the cluster of districts that are **ageing**, where – apart from the high ratio of senior people – are characterised by a considerable level of feminisation and a relatively high male life expectancy. This type of demographic characteristics applies to a narrow group of townships.
- High share of women vs. than of men, at relatively unfavourable life expectancy statistics in case of both genders, is typical of the cluster of **feminised** districts. The feminised districts are frequently located in the surroundings of major cities, and their employment opportunities are related to the public services sector.
- The situation of the cluster of **masculinised** districts is different: in this group we can observe a higher dependency ratio concerning the young, than the elderly, and a relatively high proportion of men, as compared to that of women. This group is relatively large and comprises regions located in the northern and eastern parts of Poland.
- The **average** cluster in which all demographical statistics correspond to the national averages. An accumulation of the average districts can be observed in the south-eastern part of Poland.

Inclusion of the district's poverty rate into the set of demographic variables (the extended set) leads to, in contrast to clusters based on economic variables, substantial modifications of the demographic structure map. As a result of re-clustering process, over 40% units have changed their classifications.

Table I. 9 | Demographic clusters - selected characteristics

Variable/cluster	ageing	feminisation / masculinisation	average	masculinised	Poland
Clusters based on basic list of variables					
Number of districts	***30***	***61***	***107***	***181***	***379***
Young people (%)	19	21	22	24	**23**
Elderly people (%)	29	26	25	23	**25**
Feminisation ratio (women per 100 men)	113.5	108.4	104.7	101.7	**104.6**
Male life expectancy (years)	72.8	71.8	72.1	72.1	**72.1**
Female life expectancy (years)	80.9	80.4	80.6	80.8	**80.7**
Clusters based on extended list of variables					
Number of districts	***47***	***93***	***133***	***106***	***379***
Young people (%)	20	22	24	24	**23**
Elderly people (%)	28	25	24	23	**25**
Feminisation ratio (women per 100 men)	112.4	106.0	103.3	101.5	**104.6**
Male life expectancy (years)	72.4	72.3	72.0	72.0	**72.1**
Female life expectancy (years)	80.7	80.6	80.7	80.7	**80.7**
Poverty rate (%)	6.1	6.0	9.5	14.2	**9.5**

Source: own elaboration based on LDB CSO of Poland (GUS) data.

Feminised districts, which are often highly urbanised, migrate into the group of ageing (the major cities), while masculinised ones become average ones. Such scale of changes also affects the characteristics of the modified clusters - whereas in case of masculinised districts, the narrowing down of such group reinforces their characteristics, the remaining clusters tend to approximate the national average. However, such modifications do not result in increasing of the internal homogeneity of clusters, but it is just the opposite. This can be attributable to the fact that the demographic structure serves as an explanation of the poverty phenomenon to a very limited extent. The impacts of certain accompanying correlations are much more likely for example living in a major city is correlated with a low probability of poverty, ageing demographic structure and a high feminisation level.

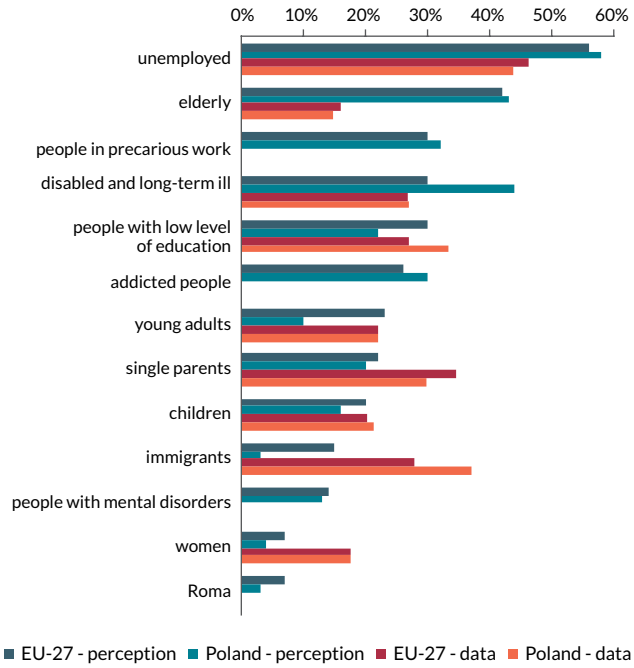
The juxtaposition of the results of both cluster analyses confirms the findings gathered over the course of the variability analysis. The affinity with a given cluster is much less related to the situation of a given province, than to the place of residence class, which (together with the results of NUTS-2 variability analysis and the studies of cities impacts) points out to a higher role of intraregional variability of poverty, than cross-regional one. In other words, the poverty in individual poviats is attributable to their socioeconomic characteristics to a much higher degree, than to their linkage to a specific region, bearing in mind that economic variables affect poverty more substantially than demographic ones. Implicitly, in the context of social policy, it is difficult to look at the poverty clusters from the spatial perspective. Rather, it should be concluded that the accumulation of negative phenomena, especially economic ones, can be conducive to poverty, regardless of the region. As a consequence, welfare support should not be targeted at specific regions, but rather at specific problems encountered in a given locality, which may contribute to poverty such as e.g. low productivity and high fragmentation of farming, monoculture of rural areas, low levels of entrepreneurship, etc.

2.4 WHO IS AT RISK OF POVERTY?

The poverty risk does not apply to everyone with the same probability. There are more or less prone socio-demographic groups. As a consequence, poverty rates are considerably diversified. Our intuitive perceptions of the most poverty-stricken social groups are often mistaken, especially if the situation of such groups rarely becomes a subject of public debate.

The group that has been most frequently indicated as poverty-threatened in Eurobarometer & EU-SILC surveys, both in Poland, and in the EU, are the unemployed – the declared ratio exceeds 55%. High results are also recorded for working individuals, who engage in precarious jobs (ca. 30%) and those who are poorly skilled/educated – however, in case of the latter group the ratio of the perceived poverty risk in Poland is lower than in the EU on average. The perception of unemployment as a major poverty reason that is widespread among European citizens is consistent with statistical data, especially if the poverty rate does not take into account transfers (but that is not the only case). As a matter of fact, absence of labour income substantially reduces the possibilities of ensuring oneself relative wealth, as they are, apart from pensions, the only source of income which enables transgressing of the relative poverty threshold. Therefore, such perceptions are well-grounded. In the light of the EU-SILC data, ca. 45% of the unemployed were poor. In many cases, having only one member of a household

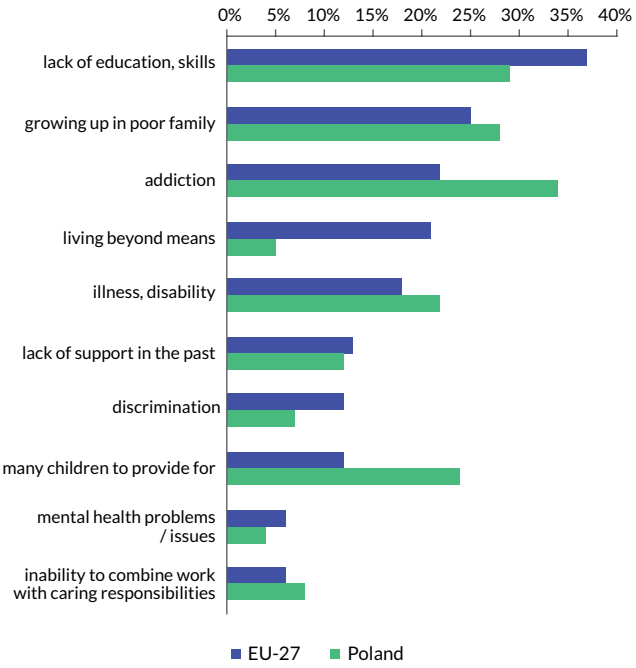
Figure I. 34 | At-risk-of-poverty groups – opinions vs. reality; 2010



Note: 1. The 'opinions' category is interpreted as proportion of respondents who considered given group as definitely threatened by poverty, while the 'data' category denotes the poverty threat ratio in given group. 2. Data concerning disabled and chronically ill individuals are approximated by data concerning those who obtain any sources of income other than wages (mainly pensions). 3. Data concerning immigrants in Poland have been viewed as unreliable by Eurostat.

Source: own elaboration based on Eurobarometer and EU-SILC data, 2010.

Figure I. 35 | Causes of poverty – opinions; 2010



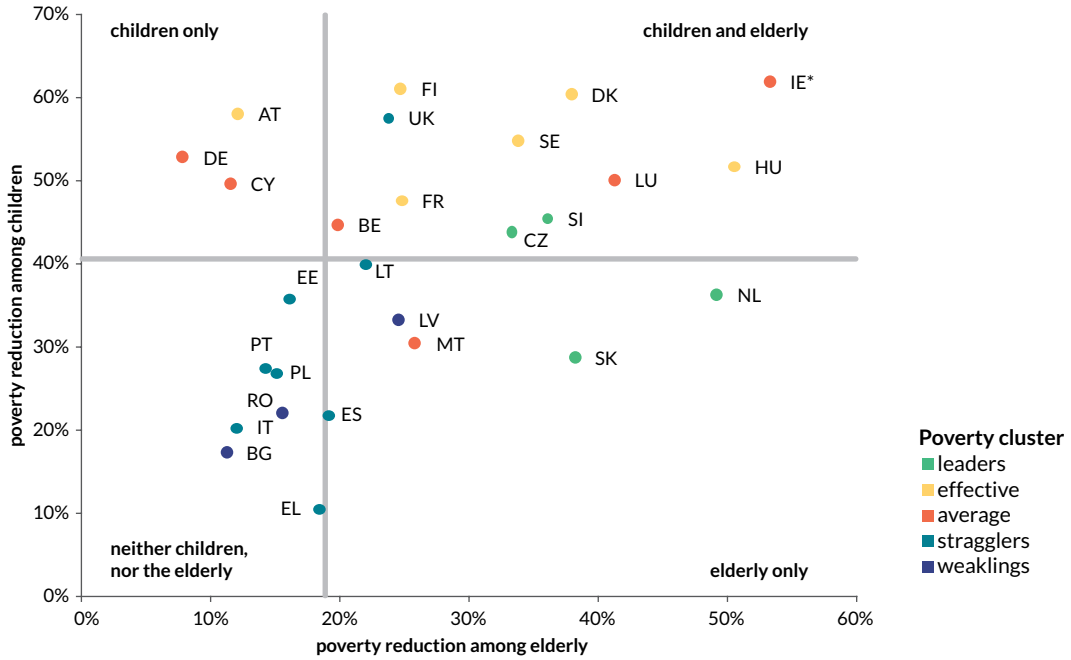
Source: own elaboration based on Eurobarometer data, 2010.

employed based on a permanent labour contract is enough to elevate such household's income above the poverty threshold. However, we should also take into account the more and more extensive upon European scale, phenomenon of the so-called working poor. The role of employment in the context of poverty and the phenomenon of the working poor have been described in Part 3 of this report.

The second highest perceived at-risk-of-poverty ratio has been ascribed to elderly people (over 40% of all declarations). However, in this case, public opinions are inconsistent with the statistics. Empirically, elderly people are, both in Poland and across the EU, one of the groups that are less threatened by poverty (16.0% in the EU, 14.7% in Poland), which can be ascribed to the character of pension payments. An old age pension may protect an individual against poverty just like a regular employment, which is particularly visible in Poland. Obviously, it cannot be ruled out that along with the gradual ageing of the EU population the level of protection of senior citizens will decrease, but it is still difficult to univocally assess the scale of such phenomenon. The issue of poverty among senior people has been raised in Part II of the Report. As compared to senior people, lower affluence chances can be observed among the disabled and chronically ill. In Poland, such individuals, except for those who have attained the retirement age, most frequently life off their disability/sickness benefits, which do not provide adequate protection against poverty. For these reasons, the perceived risk of poverty ratio in Poland in case of this group exceeds the EU average (the difference of 12 pp). This can be attributable to a number of correlated factors such as: low benefit values, the fact that caretaker obligations fulfilled by other household members interfere with their regular careers, and relatively high costs of institutional caretaker support.

Visibly underestimated social perceptions as compared to the actual poverty risk can be observed in the case of young adults (especially in Poland), single parents and children. Families with children often cope with very high and severe impoverishment. Statistically, every third single parent, and more than one out of five children are poor. At the same time, while the first and the second child (in a household including two adults) increases the poverty risk rate only insignificantly, the presence of each subsequent child affects such level to a large extent. These findings have been confirmed by the perceived poverty causes – in Poland, twice as frequently as in the EU, one such factors included having many children (24% vs. 12%), which is a negative forecaster when growing up in a poor family corresponds to worse opportunities (28% vs. 25% in the EU overall). Both these issues have been described in detail in Part II (i.e. children's poverty indicators) and Part IV of the Report (optimisation of the tax and benefit system in case of families with children).

Figure I. 36 | Poverty reduction rate among children and elderly people; 2010.



Note: data concerning Ireland – 2009.

Source: own elaboration based on EU-SILC data.

The EU citizens' opinions concerning the causes of poverty have been reflected by the efficiency of the actions that have been undertaken so far in order to eliminate poverty among children and senior people. The transfers contribute to the reduction of poverty rates among the elderly by 10-50% (depending on a country) and by 10-60% among children. In the countries representing the leaders and the effective group, such transfers tend to be targeted with above average precision in both groups. The situation looks differently in case of the stragglers and the weaklings. In such countries, the level of interventions aimed at improvement of living standards of children and the elderly is below the EU average. Also in this context Poland should be categorised as a straggler: limited extent and ineffectiveness of interventions can be observed both in case of elderly people and children. However, in case of children, severity of such status quo is higher: the poverty reduction rate due to transfers is 27%, as compared to 40.5% (the EU average), while in case of elderly people it amounts to 15% (18.9% in the EU).

Relatively low poverty risk tends to be ascribed to groups that are rather inactive in the social life such as immigrants, the Roma, and, to a lesser extent, also to the mentally disabled. Difficulties in getting a job (which are frequently due to certain educational decisions and strategies) result in limited possibilities of obtaining regular income and above average poverty risk. Due to their "invisibility", the poverty risk among representatives of these groups is perceived as relatively insignificant. Although there are no comprehensive quantitative data concerning the scope of poverty in such groups, the existing statistical breakdowns present an exceptionally pessimistic view.[17] If such outlook is true, this would mean that also in these cases the public opinion tends to underestimate the actual exposure of members of these groups to poverty and social exclusion.

17 cf. immigrants: http://www.euro.centre.org/data/1178099907_77304.pdf
the Roma: http://siteresources.worldbank.org/EXTROMA/Resources/roma_in_expanding_europe.pdf
Mentally disabled people: http://www.prawapacjenta.eu/index.php?pId=2000

3 POVERTY – A RANDOM EVENT OR A DESTINY?

3.1 POVERTY IN THE PUBLIC POLICY SPHERE

The hitherto analyses have proven that the definition of poverty is very capacious and its statistical indicators should measure a wide range of aspects. In fact, poverty does not only apply to such individuals who fail to attain a certain minimum income, but also to those whose expenditure differs from the standard adopted by a given society. At the same time, however, the extent of such difference has not been univocally specified. Statistical descriptions of the poverty phenomenon may involve a number of snags. For example, it should not be assumed that transgressing a certain predefined poverty threshold would automatically make one stop being poor. Meanwhile, literal treatment of various poverty thresholds seems to authorise such interpretations. At the same time, behind abstract statistical notions there are certain real-life problems which we can come across in our surroundings i.e. malnutrition, underequipped apartments, hereditary social exclusion, limited chances for successful life or isolation. As a society, we would like to have the scale and intensity of such problems minimised, keeping in mind certain moral, economic and political factors. Hence, the definitions and quantitative analyses based on such definitions also enable operationalisation of the issues of poverty and social exclusion in a manner that is perceived as adequate in view of the public policy, not an end itself. In such a way, we expand our knowledge about the nature of the phenomenon that we are struggling against, the socioeconomic areas to which it applies, and of the consequences it brings. On this basis, we are capable of designing actions aimed at reducing poverty and alleviating its consequences – especially those which are regarded most acute in the context of daily functioning, although they may difficult to capture by means of public statistics.

Public support is most effective for individuals who are not successful in life i.e. those who as a consequence of various existential obstacles have fallen into poverty, despite making attempts to counteract, and relinquish this *status quo*. There are two conclusions that may be derived from this observation. First of all, social policy should be regarded as a component of development policy aimed at economic prosperity in a broad sense, because in more robust economies there is a lower probability of individual risks such as: unemployment, decrease in wages or shadow economy employment. Secondly, one of social policy priorities should be reduction of the poverty threat in everyday situation such as e.g. parenthood, old age, unemployment, etc. Such functions are performed by the social security system. However, if despite such support, the poverty threat is still imminent, certain supporting instruments especially targeted at the poor should be activated. Such strategy allows protecting people against poverty and, at the same time, promote certain conducts that are desirable in view of other state policy objectives (e.g. higher economic growth thanks to more common and effective university education, higher fertility rates due to increasing the support for families with small children, or decrease in the ratio of the long-term unemployed as a consequence of effective macroeconomic policies and support in the form of active labour market policies and a flexible labour code). This means that the poverty prevention systems, apart from welfare transfers targeted at the poor, should also include certain actions promoting general economic prosperity (industrial policy, regulatory and institutional reforms, support of innovation and competitiveness), tax instruments promoting employment and protecting labour income household with many children against poverty (allowances, exemptions and lower tax rates) and support in-kind (active labour market policies, rehabilitation of the disabled, etc.). Secondly, the support should be structured in such a way as to give a sense of safety within a community, and, at the same time, gradate stimuli in a way that does not interfere with the activity of individuals or encourage moral

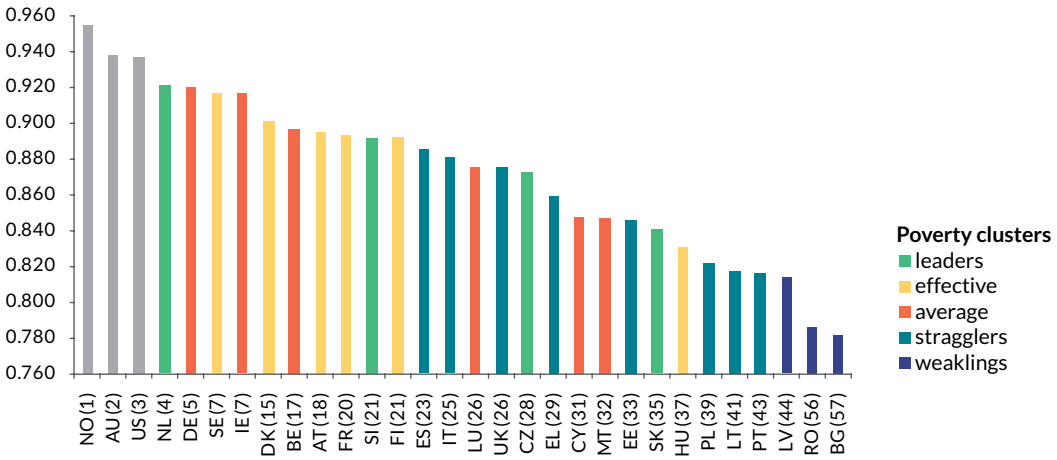
Table I. 10 | The sources of high HDI values in different parts of the world, 2013.

	HDI	Life expectancy	Average education (years)	Expected education (years)	Gross national income pc (USD PPP, prices 2005)
UE-27	0.865	78.6	10.8	**15.8**	**25672**
Including Poland	0.821	**76.3**	10.0	15.2	17776
South America and the Caribbean Isles	0.765	**75.5**	8.7	13.9	12636
Former Soviet Republics	0.755	70.7	**11.3**	13.7	9060

Note: 1. Arithmetic mean has been used. 2. Countries with very high/high HDI values have been included (0.712-1). South America and the Caribbean Isles: Antigua and Barbuda, Argentina, Bahamas, Barbados, Brazil, Chile, Costa Rica, Dominica, Ecuador, Grenada, Jamaica, Cuba, Mexico, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and Grenadines, Trinidad and Tobago, Uruguay, Venezuela. FRS: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Russia, Ukraine.

Source: own elaboration based on UNDP data.

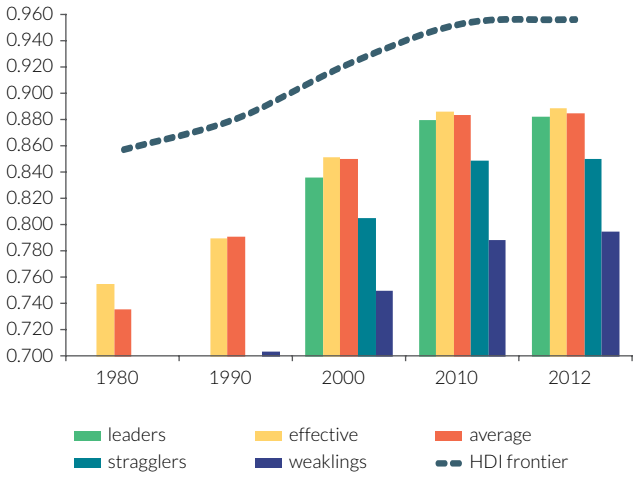
Figure I. 37 | Human Development Index 2013 – leaders vs. EU Member States



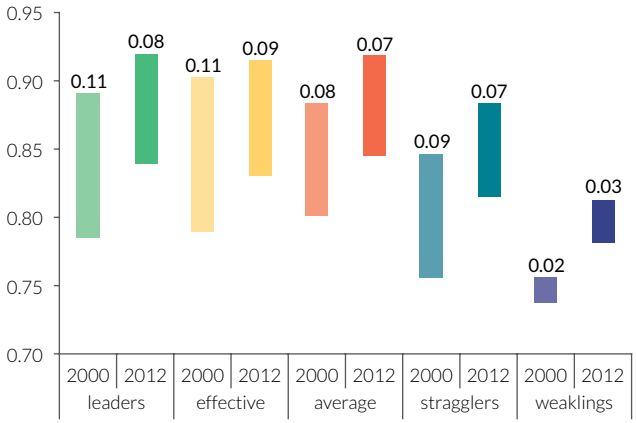
Note: rank has been specified in brackets.

Source: own elaboration based on UNDP data.

Figure I. 38 | Evolution of HDI levels by poverty cluster – the average value (left) and inter-clusteral diversification (right)



Source: own elaboration based on UNDP data.



Note: internal differences within clusters stem from maximal and minimal value of HDI within cluster in a given year.

hazard. Ideally, an individual should take all efforts in order to change his/her unfavourable circumstances or reduce the risk of falling into poverty in advance. In such case, even the smallest, but well-targeted support will be highly effective. Besides, the durability of such support will be greater if a beneficiary is provided with a fishing rod instead of a fish, which will also minimise the risk of its recurrence.

Offering either a rod or a fish would involve certain costs. For this reason, an argument that sometimes recurs in the public discourse points out to positive impacts that the limitation of redistribution may have upon the dynamics of the economic growth. However, this claim takes into account only part of the facts about poverty. Even though without the redistribution of income the economic growth could be improved in a short-term, the ultimate objective of economic policy, which includes raising the living standard of the entire society, would be neglected. Therefore, focusing upon improvements of economic indicators seems to be groundless. Moreover, consenting to the economic growth not accompanied by development, would lead to the growing polarisation of the society which, on a long-time basis, would be neither politically, nor economically desirable. The postulate for emphasising the quality of life can be reflected by the conviction - which is becoming more and more widespread among academic economists - that comparisons between specific countries should not be done by means of strictly economic indicators (e.g. GDP, GDP *per capita*), but using development indexes taking into account living standards (e.g. HDI, OECD Better Life Index). These indexes are aimed at reflecting the living standard of an average citizen more precisely than classical indicators, such as GDP. Moreover, multidimensionality of economic development indexes allows us to identify the areas where quality of life is the lowest, so as to ensure that public policy efforts would yield measurable results in the form of a real improvement of quality of life.

Table I. 11 | Specific indicators of OECD Better Life Index

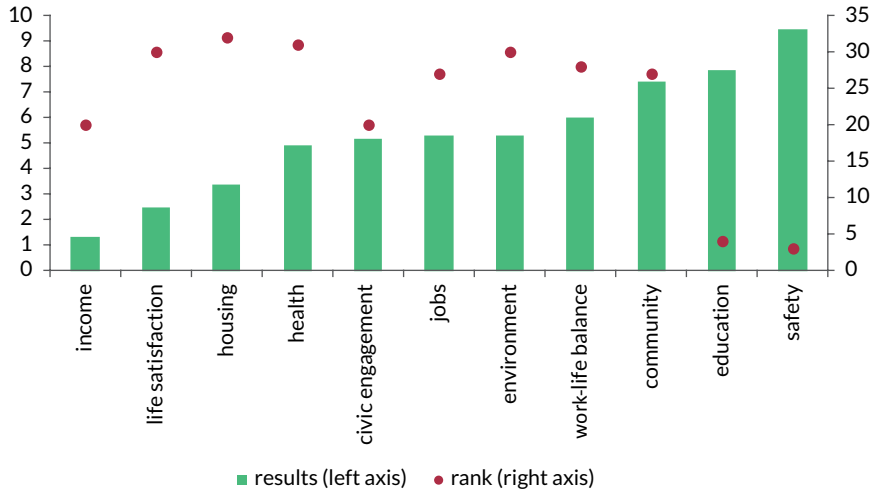
Specific indicators	index	interpretation
Housing	Rooms per person	Congested place of residence
	Housing expenditure	Housing cost to disposable household income ratio
	Basic facilities	Availability of the basic infrastructure enabling maintaining of personal hygiene
Income	Household disposable income	Material status of the household
	Household financial wealth	Accumulated resources possessed by the household
Jobs	Employment rate	Employed in productive age group
	Long-term unemployment rate	Unemployed for over 12 months in professionally active group
	Personal average remuneration	Productivity of work
	Job security	Employed for less than 6 months among working population
Community	Quality of the supportive network	People who admit availability of support when difficulty occurs
Education	Educational awards / distinctions	Adults who have at completed at least secondary education
	Average years in education	Period of education
	Skills in maths, reading and science	Level of competencies after completing obligatory education
Environment	Air pollution	Scale of environmental pollution
	Water quality	Scale of environmental pollution
Civic engagement	Voter turnout	Scale of engagement into political life
	Consultation on rule-making	Scale of engagement into legislative processes
Health	Life expectancy	Objective assessment of one's health
	Self-reported health	Subjective assessment of one's health
Life satisfaction	Life Satisfaction	Life satisfaction
Safety	Homicide rate	Endangerment of life and health
	Assault rate	Endangerment of life and health
Work-life balance	Employees working over hours	Relevant workload
	Time devoted to leisure and personal care	Recovery time

Source: own elaboration based on UNDP data.

The relatively least complex of all the indexes quoted above is the HDI (*Human Development Index*), which is published annually by the UN. Apart from *per capita* income, it takes into account healthcare issues (life expectancy) and access to education (average and expected years of schooling). Due to its general character, the index enables us to collect information concerning large populations in different parts of the world, also including the poorly developed countries. HDI index allows for tracing down the changes of the global socioeconomic development that have occurred over the past 30 years. It allows the developing countries to strive towards the achievement of such living standards which were attained in Europe or the United States long time ago. As a consequence, differences across the EU Member States are relatively small and they quickly diminish over time, while the most visible differences can be observed for economic aspects. However, it needs to be emphasised that income does not always contribute to high HDI values, as it happens in case of Europe. A relative advantage can be ensured by high life expectancy, as it happens in South America and the Caribbean Isles, or by long education process (e.g. the Post-Soviet states) (cf. Table I.10).

In terms of HDI, the global leaders are Norway and Australia, which attain systematically high ratings due to the co-occurrence of high income and other indexed social development symptoms i.e. education and life expectancy (Figure I.37). The group of countries with the highest HDI values (0.8-1.0) includes 25 EU Member States, excluding Romania and Bulgaria. In 2013 Poland, whose HDI result was 0.821, was rated as 39th the global rating, and as 22nd among the EU Member States, only overtaking Lithuania, Latvia, Portugal, Romania and Bulgaria. This result could be largely attributed to the low life expectancy (as compared to the EU-15), and short education period (as compared to NMS reporting comparable incomes, where pre-schooling education is more widespread). Over the past 13 years (2000-2012) Poland has made a relatively substantial progress (i.e. the index value has increased by 5.2%), even

Figure I. 39 | OECD Better Life Index in Poland



Note: 1. The index values range from 1 to 10, where 10 is the maximum value. 2. The analysis includes 36 countries in total.
Source: own elaboration based on OECD data.

though the process of raising of living standards in other NMS was faster, which resulted that some countries starting from lower levels (i.e. Lithuania, Latvia) caught up with Poland, while others who had the same starting point (Estonia) overtook it.

As time goes by, the EU Member States tend to pay more and more attention to development issues, which is manifested by the decreasing of the gap from HDI frontier (i.e. the leader's result). However, if we juxtapose HDI values against the poverty clusters described in Part 2, we will notice that there are no differences between the leaders, the effective and the average. At the same time, such values are visibly lower in case of the stragglers, and – to even greater extent - among the weaklings (Figure I.38, left panel). Besides, the latter group is the only whose internal variability increased in the years 2000-2012 (Figure I.38, right panel). This can imply that the struggle against poverty is more likely to be successful in case of those countries which exceeded the level of ca. USD 25K ***per capita*** (PPP). The less affluent countries typically report lower HDI, and are their efforts at counteracting poverty and inequalities are less effective.

As a synthetic indicator of the socioeconomic development HDI is sometimes described as being too simplified, which may result in imprecise measurements. Whereas quality of life in the developing countries may be evaluated based on life expectancy or access to education, in more developed countries the quality of life indicators include substantially more aspects. Therefore, HDI cannot be a fully satisfactory development measure in that group. In such a case, certain aspects that are less frequently taken into account in case of developing countries, are gaining importance. They include: environmental protection, civic engagement or work-life balance. An attempt at developing of an index that would describe the quality of life in developed countries more accurately has been taken by OECD by creating the Better Life Index. (Table I.11)

The quoted results confirm the suspicions regarding the quality of life deficits in Poland and identify new areas for improvements. Except from safety and education (3rd and 4th ranks, respectively), in terms of the remaining measures Poland ranges between 20th and 32nd rank among 36 countries participating in OECD survey. It should be emphasised that certain actions aimed at improvement of the quality of life measured by means of the Better Life Index, remain within various spheres of the social policy. These include: employment, education or residence. Others may constitute a grassroot initiative of the people themselves e.g. civic engagement, or establishment of supportive networks within communities. This means that the socio-economic policy, despite its obvious importance, is not the only factor that can elevate living standards. At the same time, however, in this context, social policy does not have to oppose economic policy, but both of them should rather be treated as constituents of the broader state development policy, whose objectives include: economic competitiveness, better living standards and social prosperity of citizens.

3.2 WHAT ARE THE POVERTY REDUCTION CHALLENGES THAT POLAND SHOULD FACE?

A considerable dropdown in the absolute poverty and material deprivation rates which have been observed over the last twenty years could be attributable, most of all, to the high economic growth. In fact, in the years 1990-2012, the values of the GDP per capita in Poland, as well as household remuneration and income more than doubled. Today the living standards of the overall majority of Poles are substantially higher than 20 years ago. Therefore, it can be concluded that the transformation of the centrally-planned system into the market economy enabled Poland to join the group of industrialised countries with diversified economic structures. At the same time, however, in terms of its affluence, Poland still considerably lags behind the

Table I. 12 | Objective economic trends triggering changes in Poland's social policy until 2050

	technological change	ageing	migration
What is changed/ affected?	• changes in industrial structure of economy, closing/ establishing new branches, • substitution of labour with capital, • increasing risk of structural unemployment, • change in wage distribution.	• changes in structure of working age (mobile/immobile), and post-working age populations.	• emergence of population groups with different demographic, economic, social characteristics, and different cultural, traditional and educational backgrounds, etc.
Why could it be regarded as a threat?	• lack or low propensity to update/ acquire new skills will lead to structural unemployment and shortages of workforce in certain (key) industries	• growing number/ proportion of elderly people (without any changes in pension system) will contribute to higher financial burdens related to e.g. institutional care.	• non-integration of migrants (in economic and social dimension) increases risk of their marginalisation, also including poverty and crime, and increases financial burden on social security system
Why could it be regarded as an opportunity?	• modernisation of the economy, • creating competitive advantage giving unique development opportunities, • higher productivity, • higher wages, • fostering creativity and entrepreneurship.	• elderly people have unique competencies and psychophysical potential due to their experience. • estructuring financial support system for elderly people will alleviate expected financial burden,	• due to ageing of population, workforce shortages are likely to occur in non-mechanised sectors such as nursing and miscellaneous services, • technological changes will intensify brain drain processes. Therefore, it is advisable to take advantage of the immigrant labour competencies.
How could it be turned into a success?	• preparation for change and anticipating its directions, • searching for branches that are likely to develop and invest in them, • providing accurate education in advance, • creating stimuli for flexible education, • improving quality of educational services, • developing and investing in know-how.	• shifting retirement age, • adapting pension system to projected burdens, • promoting economic activity in all age groups, including the elderly, • taking advantage of their competencies, • creating workplaces addressing the needs of the elderly, • preventing their discrimination	• promoting positive attitudes towards immigrants, • abolishing barriers to legal residence and employment, • taking advantage of the immigrant competencies and their different viewpoint.

Source: own elaboration based on Bukowski et al. (2012).

most developed countries, finding itself in the so-called middle-income zone (Bukowski et al. 2012) i.e. the group of countries whose income measured based on PPP ranges between ca. 50-70% of the income reported in the United States, Switzerland or Germany. [18]

The economic development, its strength and durability, and, implicitly, also the future absolute poverty and material deprivation levels, will depend on the shape of the public policy in Poland in the nearest decade. The transformational model of development which assumed transposing West European models, and competing with low labour costs, allowed Poland to achieve a stable and high development dynamics in years 1990-2008. However, looking at the experience of South European countries, the purely intuitive model becomes definitely less effective when the affluence level a given country is equivalent to more than ca. 50-60% of that of the United States (Bukowski et al. 2012), which Poland should exceed in the present decade. As a matter of fact, after 1980 the relation of labour productivity and wages reported e.g. in Greece, Spain, Portugal and New Zealand to comparable data observable the North European countries or the United States have remained virtually unchanged. This means that these countries have fallen into the so-called middle-income trap (Bukowski et al. 2012) i.e. such status where they have stopped narrowing the gap that separates them from the most developed countries, despite the fact that living standard differences are still substantial. The loss of the development dynamics in South European countries after reaching the affluence level corresponding to ca. 1/2-2/3 of the one reported in the United States, could be attributed to their inability to implement a number of structural reforms aimed at transforming of their imitative economic models into new ones based on innovation, regulatory and institutional competitiveness (Bukowski et al. 2012). At the same time, in terms of its economic structure, regulatory quality, innovation, or use of labour resources, Poland resembles South European countries, rather than those of the highly developed North Europe. As a consequence, the probability of Poland's following the South European path is relatively high. This threat has been

18 This definition roughly corresponds to the affluence gap that separates the two subsequent generations of the US citizens. In other words, the quality of life in Spain (66% of the US GDP per capita) is comparable to that in the US 18-20 years ago.

Table I. 13 | Modernisation challenges in Poland until 2015

modernisation challenges	state of play	targets
Innovation	• The virtuous circle cannot be achieved due to insufficient public spending in area of R&D; • Low innovativeness of enterprises and public institutions , • Limited reforms of scientific sector result in relatively low level of national innovativeness.	• Sources of financing innovation both from public and private sectors, • Innovations enabling to obtain / benefit from international competitive advantages
Labour and social security	• Poor economic activity on the labour market can be observed in all age groups i.e. the youngest (15-24), prime-age (25-54) and the elderly (55+). • Effective age of professional inactivation remains considerably below the statutory, • Low average age and large number of beneficiaries of the pension system • Complex pension system based on general taxation.	• Enabling reaching such income levels that would allow us to prevent poverty on a micro-scale, and limiting costs of social transfers on a macro-scale; • As a particular challenge in this area should be considered demographic changes and migrations, leading to decrease in workforce, with no interventions made in order to promote economic activity, especially on the labour market 'margins' (among elderly, the youngest, and among women)
Investment	• Low value of macro-investments, • Public investment effected over last years have been largely funded by the EU subsidies; • Low propensity to saving (traditionally determined) which is further strengthened by the existing legal and institutional solutions.	• Its role will remain vital as other resources will be optimised
Regulatory environment	• Negative assessments of economic regulations mostly due to low quality of legislative procedures and instability of law. • Quality of public services is highly unsatisfactory	• *A horizontal module* • Creating competitive environment for innovative actions, creation of new work places and promoting investment

Source: own elaboration based on Bukowski et al. (2012).

also noticed by Prime Minister Donald Tusk's Strategic Advisors (SA), whose members pointed out to the exhaustion of the transformational developmental drives and a high probability of occurrence of the so-called developmental drift (SA, 2009) i.e. a situation when the public policy will be limited to passive responding to current problems, at the same time, neglecting structural reforms which would guarantee long-term economic and social prosperity.

According to Bukowski et al. (2012), in order to prevent Poland from falling into the middle-income trap, reformatory efforts must be intensified in the following three domains: (i) innovative policies, (ii) labour market and social security policies and (iii) regulatory and institutional policies. Each of these domains can be treated as a separate modernisation challenge to be confronted until 2020 and in the subsequent decades. An urgent task in the field of innovation consists in doubling of the public R&D spending, and offering of tax and institutional incentives in order to encourage private sector to invest into R&D, and make scientists/researchers improve the quality and efficiency of their work and transform it into business practices. In case of the labour market Bukowski et al. (2012) and SAT (2009) point out to the necessity of continuing reforms leading to a higher labour supply and improving the operational efficiency of labour market institutions. Meanwhile, the major public policy task in the regulatory and institutional areas consists in improving effectiveness and friendliness of the revenue and justice systems, as well as the quality of legislation, so that they stopped to be a barrier to private savings and investments, thus improving Poland's current low rank in the international competitiveness ratings.

It ought to be emphasised that despite the fact that the state's development policy goals do not apply directly to the poor, due to their outcomes they indirectly affect the poverty rate and profoundness in a given country, and determine the possibilities of taking effective policy actions aimed at eliminating inequalities. It is no surprise that the countries that prevail among the industrialised nations which have found themselves in the middle income trap are South European countries which in terms of counteracting poverty and social exclusion have been classified into the stragglers, or at most, the average group (cf. Part 2). On the other hand, the countries which thanks to their effective economic policies managed to avoid the middle income trap nowadays often include the same countries which have been categorised, in terms of their social policies, as the effective or the leaders in the field of counteracting poverty (cf. Part 2). Therefore, ambitious and consistently implemented structural reforms aimed at improving innovation and economic competitiveness, as well as effective use of labour resources and assets, apart from contributing to better affluence of the middle class members, also facilitate maintaining effective

social policies targeted at counteracting (mostly absolute) poverty and promoting social integration.

It should be emphasised that making the economic policy a part of a bigger agenda of consistent structural reforms is nowadays necessitated by the on-going economic, social and technological processes (Bukowski et al., 2012). Such processes include, first of all, ageing of the population which limits the possibility of financing the traditional welfare state by means of labour taxation. Secondly, computerisation and mechanisation of the constantly growing areas of economy exerts a powerful competitive pressure upon the low- and medium-qualified workers and the unemployed. Thirdly, the ongoing globalisation processes intensify the phenomenon of international migrations. Apart from causing radical changes within the economic branch structure, these processes also modify specific branches and their operations internally. Firstly, ageing of the population leads to changing of the correlations existing between the generations at productive vs. post-productive age by modifying the labour supply structure and making the problem of human resources depreciation over lifetime more topical. Secondly, this problem intensifies the financial competition for limited taxation resources between the pension system and other social security components, potentially limiting the resources that could be allocated for poverty prevention and development policy in the broadest sense. Thirdly, ageing of the population coincides with certain globalisation challenges, including international migrations of people, which can be regarded both as an opportunity and threat for the labour market and traditional social security systems in developed countries. The opportunity would consist in the partial filling of the labour market gap occurring due to certain demographic processes. Meanwhile, the risk would be the poor social, cultural and economic integration of immigrants, and implicitly, the pressure that they might exert upon social security systems of developed countries. Fourthly, it can be expected that in the future particularly strong stimuli for economic enterprise will be provided by the selected, particularly innovative, sectors. This phenomenon will be reflected by the workforce demand structure in specific professions: some of them will gain, or lose their importance. Moreover, due to the cumulative character of technological changes, downsizing in obsolete branches is going to occur faster than in the past, which will result in the growth of structural unemployment among individuals whose skills are poorly adjusted to the labour market, caused by the lack of labour demand. The consequences of this status quo may include the growth of the scale and persistence of poverty due to the lack of employment prospects.

Technological changes can be anticipated by educating, providing opportunities for updating and modifying one's competencies, and by disseminating knowledge about the chosen direction of structural changes. We should keep in mind the fact that all such actions have been already commenced in some of the EU Member States. According to ***Eurobarometer 2010*** results, providing trainings and opportunities to gain new skills is the second method, after providing employment opportunities, of counteracting poverty that would be welcomed by the Europeans. Although this approach is still relatively unknown in Poland, avoiding the consequences of structural unemployment will soon become one of the key social policy challenges, which is likely to become more important in a long-term perspective than the question of providing the unemployed with a minimum income.[19]

We can also get ready for the process of ageing of the population, whose symptoms are already visible. The challenge like this would call for the fundamental restructuring of the labour market policies, pension systems and other areas of the public policy, so as to make it more responsive to the "silver economy" needs. This means that we will simultaneously need to: (i) adapt workplaces, especially in modern economic sectors, to the specific needs of the elderly in order to foster their economic activity (ii) get the pension system ready for the challenges related to the growing numbers/ratios of the elderly in those surroundings which do not attain any demographical benefits from high fertility rates, (iii) extend the scope of institutional care in such a way as to promote activity in all age groups, especially at the margins of the labour market.[20]

The third challenge is related to the fact that social and economic inclusion of immigrants is strongly correlated to both poverty and social exclusion. It is highly probable, that their numbers in developed countries will grow, for example due to partial filling of the gaps which have occurred as a result of ageing of the human resources, and the changing labour demand. Nevertheless, the immigrants need to be provided with such conditions which will enable them to function as equal members of the society, without being anyhow excluded in either economic or social terms.[21]

19 This topic was introduced in the report Employment in Poland 2009 - entrepreneurship for jobs.

20 This issue was the leading theme of the report Employment in Poland 2008 - work throughout life.

21 The issue was analysed in the report Employment in Poland 2010 - integration and globalisation.

Summary

Poverty is a socially unacceptable phenomenon, as it confirms that human resources potential on the labour market is not fully realised. Furthermore, poverty triggers a number of negative consequences that apply both to specific individuals and groups. Besides, it inevitably leads to material deprivation and increases risk of social exclusion i.e. excluding the poor from relevant spheres of life and activity. Therefore, the issue of poverty is a major public policy challenge, especially in the area of development policy and its components i.e. labour market, social security and welfare policies. However, while at intuitive level poverty along with its features, determinants and implications appears to be relatively clear, the literature so far has not provided a single and universally recognised definition nor methods of measurement. From macroeconomic perspective it is impossible to draw-up an exact borderline between poverty and non-poverty.

The uncertainty regarding definition of the term is reflected in statistical data. Depending on applied method, the scale of poverty in Poland in the year 2011 ranged from 900 thousand to 8 million individuals, which implies that the phenomenon is not marginal. Such considerable difference stems from imprecise definition of poverty borderline. The first value represents people living below biological minimum, the latter those below a minimum allowing active participation in social life. In comparison with other European countries, Poland is among stragglers, poverty ratio and its profoundness are high while the diversification of the poor - substantial. The reasons comprise both lower average income compared to Western Europe and inadequately targeted actions in social sphere resulting in limited ability to fight poverty. At the same time, the distribution of poverty in Poland is unequal: it is concentrated outside metropolises, among the unemployed, multi-child families and young people. The elderly, both pensioners and widows, are substantially less prone to impoverishment. It indicates that (i) the labour market channel has a fundamental role in limiting risk-of-poverty and (ii) social policy addresses the issue inadequately among some groups.

The economic growth observed over the last decade has contributed to an overall improvement of living standards, also among the poor. Years of economic boom (2005-2008) led to reduction in the number of poor people which was reflected in improvements of both simple and more complex indices, such as the assessment of own material situation or purchases of durable goods by the poorest households. It is worth noting that income level remains an important factor differentiating households, also if reference households are the median ones. If future economic growth is at least as inclusive as it was over the last decade, the gap shall not spread. It is crucial since limiting material deprivation should be treated as a chance to decrease probability of isolation and social exclusion of the poor.

Despite the fact that general self-assessment of material situation is sufficient or good, the sense of material impoverishment among the Polish people is still visible. Poland is still a country characterised by scarcity of both capital and durable goods. Nonetheless, its inhabitants aspire to better life standard. This implies that our expectations go beyond our actual capacity. As a consequence, substantial disparities between objective and subjective perceptions of poverty can be observed. For many families, improving living standards still requires substantial effort and sacrifice. The pace of catching-up with the EU leaders will depend on undertaken reforms. They have to compromise goals of economic policy (GDP growth, innovativeness, higher employment and lower unemployment rates) with social policy goals (decreasing scope of absolute poverty and income inequality, social reintegration of the excluded). Their implementation should result not only in improved indices, but also perceived quality of life. One has to keep in mind that the nearest future will bring a range of new challenges. Those include: prompt technological advancement which might result in structural unemployment, aging of the population (translating into shrinking workforce base) and increased migrations generating tensions previously unknown to homogenous society. All of these require a new approach of social and labour market policy since maintaining the current institutional and organisational status is likely to put at risk of poverty also groups that so far remained unaffected.

Bibliography

Acocella, N. (1998), The Foundations of Economic Policy: Values and Techniques, Cambridge University Press, Cambridge.

Alkire, S. (2007), Choosing dimensions: the capability approach and multidimensional poverty, CPRC Working Paper 88.

The World Bank (2005), Part 1: Poverty measurement and analysis, in: A Sourcebook for Poverty Reduction Strategies, The World Bank, Washington.

The World Bank (2005), Part 2: The definitions of poverty, in: A Sourcebook for Poverty Reduction Strategies, The World Bank, Washington.

Board of the Strategic Advisors to the Prime Minister of Poland (2009), Polska 2030 – Wyzwania rozwojowe, Warsaw 2009.

Broda-Wysocki P. (2012), Wykluczenie i inkluzja społeczna. Paradygmaty i próba definicji, Institute of Labour and Social Studies, Warsaw 2012

Buhmann, B., Rainwater, L., Schmauss, G., Smeeding, T. (1988), Equivalence Scales, Well-being, Inequality, and Poverty: Sensitivity Estimates Across Ten Countries Using the Luxembourg Income Study (LIS) Database, Review of Income and Wealth, 34, 11542, 1988.

Bukowski M. (2008) (ed.), Employment in Poland 2007 – Security on a flexible labour market, Warsaw 2008.

Bukowski M. (2010) (ed.), Employment in Poland 2008 – Work over the life course, Warsaw 2010.

Bukowski M. (2011) (ed.), Employment in Poland 2009 - Entrepreneurship for jobs, Warsaw 2011.

Bukowski M. (2011) (ed.), Employment in Poland 2010 – Integration and globalisation, Warsaw 2011.

Bukowski M., Gąska J., Śniegocki A. (2012), Between the North and the South - opportunities and traps in the development of Poland until 2050, 2050 – Low-emission Poland, Warsaw 2012.

Burguignon, F. (2004), The Poverty-Growth-Inequality Triangle, the lecture delivered on 04.02.2004 at the Indian Council on International Economic Relations.

Burniaux J.-M., Thai-Thanh Dang, Fore D., Förster M., d'Ercole M., Oxley H. (1998), Income Distribution and Poverty in Selected OECD Countries: Economics Department Working Papers No. 189.

Esping-Andersen, G. (1990), The Three Worlds of Welfare Capitalism. Cambridge: Polity Press & Princeton: Princeton University Press, 1990.

European Commission (2008), Child Poverty and Well-Being in the EU. Luxembourg: Office for Official Publications of the European Communities.

European Commission (2010), Europe 2020 – A strategy for smart, sustainable and inclusive growth, Brussels, KOM (2010).

European Commission (2010), Poverty and Social Exclusion Report, Special Eurobarometer 355, Brussels 2010.

European Commission (2010), Poverty and Social Exclusion Report, Special Eurobarometer 355, Brussels 2010.

Fields G. (2008) A Brief Review of the Literature on Earnings Mobility in Developing Countries Working Papers Available at: http://works.bepress.com/gary_fields/35.

Frieske K.W. (1999), Kumulacja czynników marginalności społecznej, [in:] Polityka społeczna. Wybrane problemy. Wybór artykułów z lat 1999-2005, Institute of Labour and Social Studies, Warsaw 2005.

Haughton, J., Khandker, S.R. (2009), Handbook on Poverty + Inequality, The World Bank, Washington 2009.

John Paul II (1991), Centesimus Annus, Vatican 1991.

Kakwani N., Silber J. (2008) (ed.) Many Dimensions of Poverty, Palgrave MacMillan, Basingstoke 2008.

Kapteyn, A., Kooreman, P., Willemse, R. (1988), Some Methodological Issues in the Implementation of Subjective Poverty Definitions, The Journal of Human Resources, Spring 1988.

Ken C., Kanellopoulos N. (2009) Low Pay Persistence in European Countries, IZA Discussion Papers 4183, Institute for the Study of Labor (IZA).

Kurowski, P. (2002), Koszyki minimum socjalnego i minimum egzystencji – dotychczasowe podejście, the paper dated 10.12.2002 presented to the Lower Chamber of the Polish Parliament.

Laderchi, C.R., Saith, R., Steward, F. (2003), Does it matter that we don't agree on the definition of poverty? A comparison of four approaches, QEH Working Paper Series No 107, University of Oxford, 2003.

Leon XIII (1891), Rerum Novarum, Vatican, 1891.

Lepianka D. (2002), Czym jest wykluczenie społeczne? Wprowadzenie do europejskich debat na temat ekskluzji, Kultura i Społeczeństwo 4/2002

Łukasiewicz, P., Koszela, G., Orłowski, A. (2006), Wpływ wyboru skali ekwiwalentności na wyniki w zakresie pomiaru ubóstwa i koncentracji dochodu, Zeszyty Naukowe SGGW - Ekonomika i Org. Gosp. Żywnościowej, No. 60, pp. 207-217

Marks-Bielska R. (2003), Marginalizacja społeczno-ekonomiczna w świetle polskiej literatury przedmiotu-lata 90, [in:] Polityka Społeczna, 3/2003.

Panek, T., Podgórski, J., Szulc, A. (1999), Ubóstwo: teoria i praktyka pomiary, Monografie i Opracowania 453, Warsaw School of Economics, Warsaw 1999.

Peace R. (2001), Social Exclusion: a concept in need of definition?, Social Policy Journal of New Zealand, 16, 2001

Pius XI (1931), Quadragesimo Anno, Vatican 1931.

Risse, M. (2003), What We Owe to the Global Poor, The Journal of Ethics, Vol. 9, No. 1/2, Current Debates in Global Justice (2005), pp. 81-117.

Sainsbury, D., Morissens, A. (2002), Poverty in Europe in the mid-1990s: the effectiveness of means-tested benefits.' Journal of European Social Policy, Vol. 12 (4).

Sen, A. (1980), Equality of What?, Tanner lectures on human values, Stanford University, 1979.

Sen, A. (1983), Poor, Relatively Speaking, Oxford Economic Papers, New Series, Vol. 35. No. 2 (1983) pp. 153-169.

Sirovatka T. , Mareš P. (2004), Patterns of Czech Poverty and the Role of Social Policy, an article from the conference entitled: "European Social Policy: meeting the needs of a new Europe", Oxford 2004.

Townsend, P. (1954), Measuring poverty, The British Journal of Sociology, Vol. 5, No. 2 (Jun., 1954), pp. 130-137, Wiley-Blackwell, 1954.

UN (2010), Millenium Development Goals Report 2010, the United Nations, New York 2010

Vidovic H. (2010) Working poor in Europe, Eurofund.

Zimmerman C.C. (1932), Ernst Engel's Law of Expenditures for Food, The Quarterly Journal of Economics (1932) 47 (1): pp. 78-101.

2. SOCIO-ECONOMIC DIMENSIONS OF POVERTY IN POLAND

Authors:
Piotr Lewandowski
Paweł Chrostek
Agnieszka Kamińska

LIST OF TABLES / Part 2

LIST OF BOXES / Part 2

LIST OF FIGURES / Part 2

INTRODUCTION

The role of Part II of this Report is to analyse the diversity of poverty in Poland across the socio-economic groups. It is devoted to a study of the nature of poverty across groups that are particularly vulnerable and experience poverty differently from other groups. We focus on poverty among children and families with many children, the elderly and people at an immobile age, and especially the unemployed and economically inactive among them. We also discuss the intergenerational transmission of poverty, and poverty in rural areas. The purpose of Part II is to present the multi-dimensionality of poverty in Poland, the diversity of its scope and persistence across different social groups and the specificity of poverty in each group.

In the first chapter we present the social and demographic aspects of poverty in Poland, using statistical and econometric analysis to identify the most affected groups. We carry out a decomposition of changes in the rate of poverty risk in Poland from 1998 to 2011 to quantify the contribution of changes in poverty risk in particular sub-populations, and the contribution of transformations in the population structure, in particular with regard to labour market status. These decompositions are complemented by a microeconomic analysis of interactions between labour market flows, and the entry into and exit from poverty.

The second chapter contains an analysis of the nature of poverty in selected socio-demographic groups. Children constitute the first group – under-15 year olds in Poland are particularly vulnerable to poverty, especially in families with three or more children. Accordingly, we also examine the poverty of many-children households and their situation in the labour market. Since poverty and related adverse events hinder child education, and consequently negatively affect their situation in the labour market when they become adults, the second section of this chapter is dedicated to the relatively poorly surveyed problem of intergenerational transmission of poverty in Poland. Then we examine the poverty of people aged over 45 – those at an immobile age (before retirement), and those at post-working age. Due to limited flexibility in the labour market, poverty in the immobile group is particularly severe and persistent; whereas those at post-working age enjoy a relatively low risk of poverty. The subject of the final section of the second chapter is poverty of the rural population, being twice as high as in urban areas and connected with the specific character of Polish agriculture. Part II is closed with a summary.

1 SOCIO-DEMOGRAPHIC ASPECTS OF DIVERSITY OF POVERTY IN POLAND

1.1 CORRELATES OF POVERTY

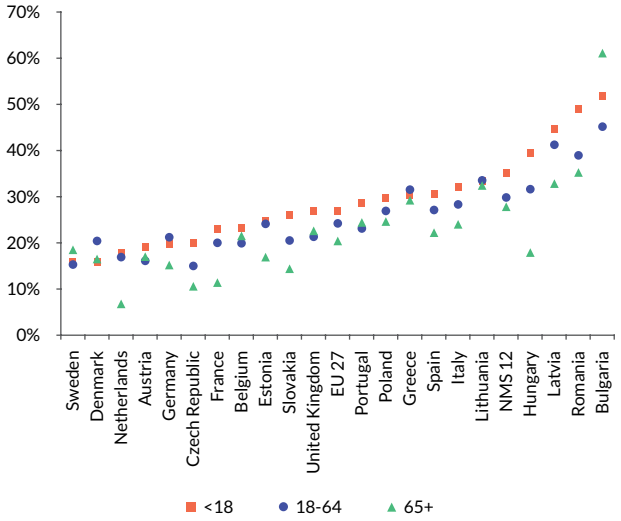
In Part I of this report we show that the incidence of poverty risk and its nature in Poland have evolved over the previous twenty years. However, the diversity of poverty has not only changed over time, but various socio-demographic and economic groups have also systematically changed their poverty risk rates.

Age is the main dimension of diversity in poverty risk – the risk of poverty by age differs significantly across European countries. Despite the relatively strong correlation between poverty risk among children and the 65+ group, in most European countries poverty risk rates are higher among children than among adults, including those at a post-working age. In 2011, the greatest differences were recorded in Hungary, Latvia, Slovakia and Romania, and in France, the Netherlands and Luxembourg, where the rates of relative child poverty were more than 10 percentage points (pp) higher than among individuals aged 65+. In contrast, in Scandinavian countries, the risk of poverty among the elderly was slightly higher than among children; importantly, both indicators in those countries were lower than the EU average. The situation in Cyprus was somewhat different, where a moderate poverty risk rate among children was accompanied by a high poverty risk rate among the elderly, as well as in Bulgaria where both indicators were among the highest in Europe. In 2011, the situation in Poland was in line with the Europe-wide trend - poverty risk among minors was 30%, whereas in the 65+ group it was below 25%. Both rates were slightly higher than the EU average.

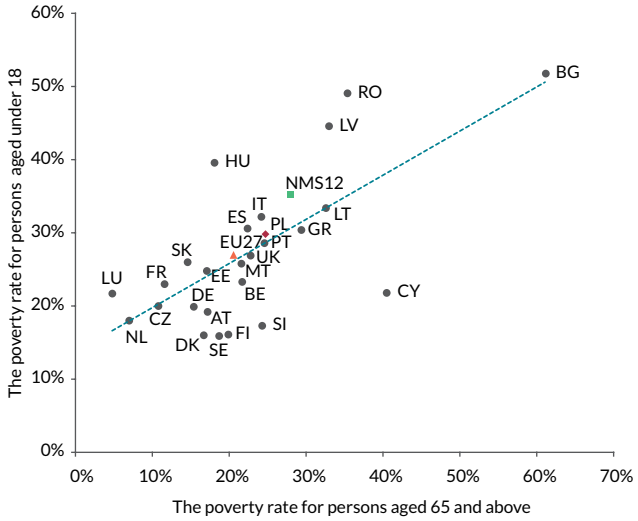
The rate of poverty risk among people over retirement age (women 60+ and men 65+) in Poland was also relatively low. Regardless of the measure of poverty, people at retirement age are at the lowest risk of poverty among the distinguished age groups (Figure II.3). Similar conclusions can be drawn from statistics based on the main source of income - in 2011 the proportion of poor among those living on a old age pension was only slightly higher (10%) than among workers (8%). The risk of poverty was much more common among the dependants (23% poverty risk rate in 2011), who accounted for nearly half of all at the risk of poverty in Poland. Furthermore, about 60% of individuals in this group were under 16 years of age.[1] In 2011, people aged up to 15 accounted for a considerable part (1/5) of all the relative risk of poverty in Poland, while those under 24 years constituted almost 1/3 of them. The poverty risk rate among children (0-15 years) and youths (16-24 years), both in relative and absolute terms, was higher than in all older groups (25+) (Figure II.3).

Figure II. 1 | At-risk-of-poverty rate by age in European countries, 2011.

by age group



child poverty rate vs. elderly poverty rate



Source: Eurostat.

1 Later in the text all persons under the age of 16 years are referred to as 'children'.

Figure II. 2 | Structure of the relatively poor by age group, 2011.

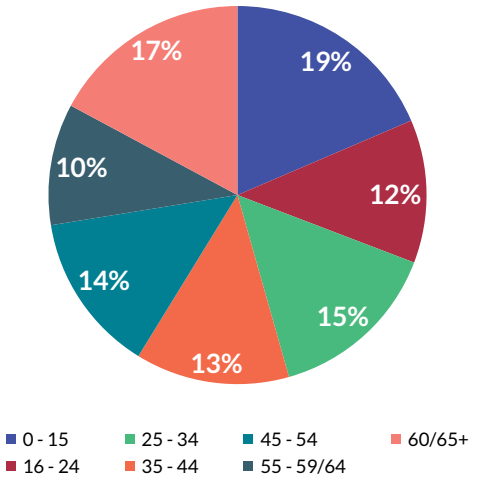


Figure II. 3 | Relative, quasi absolute (by 1998 threshold) and absolute poverty risk rates by age group, 2011.

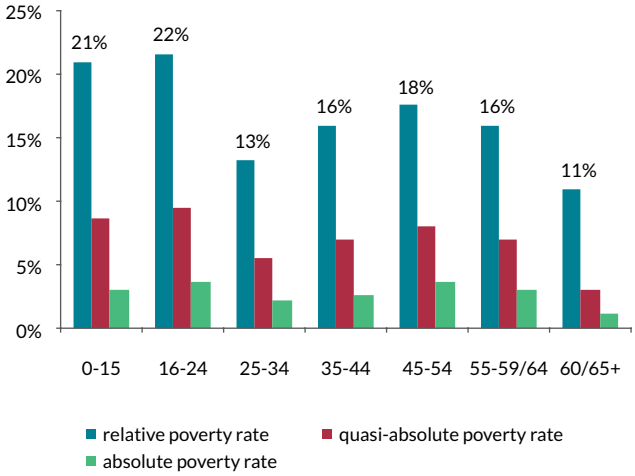


Figure II. 4 | Structure of the population at risk of relative poverty by main source of income, 2011.

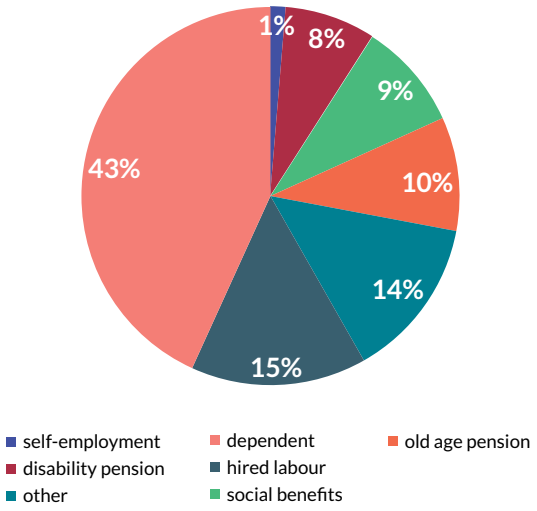
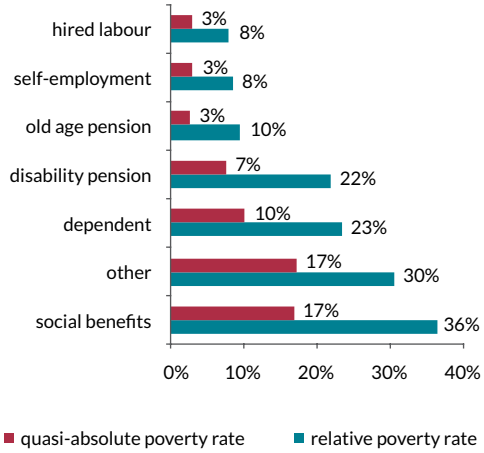


Figure II. 5 | Relative and quasi absolute poverty risk rates (by 1998 threshold) by main source of income, 2011.



Source: own elaboration based on HBS data.

Despite a significant decline in the child poverty rate in recent years, it is undoubtedly one of the most important social issues in Poland.

The immobile group, i.e. women aged from 45 to 59 or men aged from 45 to 64, is also at an above-average risk of poverty. In previous editions of *Employment in Poland* we have repeatedly pointed out that this group encounters more problems in the labour market than people aged 25-44, due to difficulties with updating and acquiring new skills, adapting to changing market requirements, and due to the early exit from the labour market. Due to their limited flexibility and mobility in the labour market, poverty in this group is particularly severe (depth of poverty is the highest, reaching 40%) and persistent. In contrast to retirees, people whose main source of income is a disability pension or other social security benefit are at a high risk of poverty (see Figure II.5); those in the immobile group are particularly affected.

Although more than 60% of the Polish population live in towns and cities, almost 60% of the relatively poor live in rural areas. In 2011 one in four rural residents depended on income below the threshold of relative poverty; in urban areas this was one in ten. This considerable disparity between urban and rural areas occurs regardless of age, economic activity and definition of poverty. Although many rural residents run their own farms, and data about their income in the Household Budget Survey may be underestimated, a comparison of poverty measures based on income and on consumption (Part I, section 1.2) shows that in both approaches the risk of poverty is at a similar level, and always higher in rural areas than in cities.

Figure II. 6 | At-risk-of-poverty rates by place of residence, 2011.

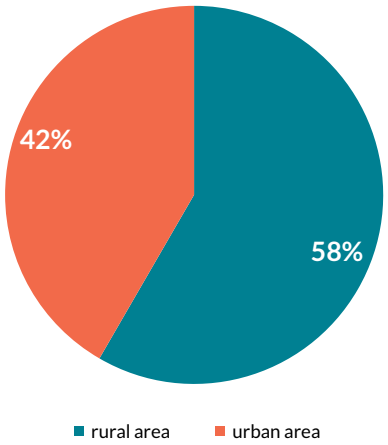
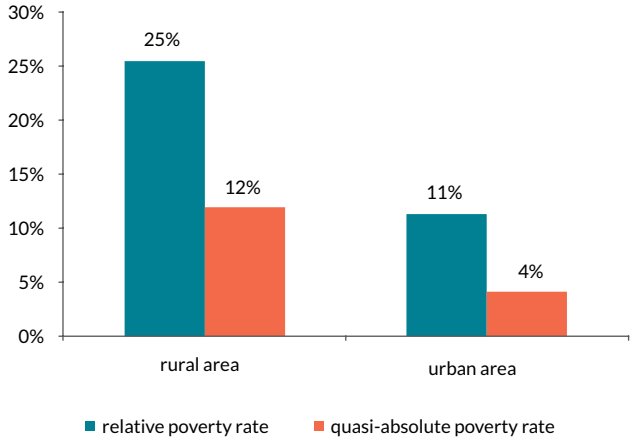


Figure II. 7 | The rate of relative and quasi absolute poverty risk (ref. 1998) by place of residence, 2011.



Source: own elaboration based on HBS data.

The above-presented descriptive statistics show the most important dimensions that differentiate the extent of poverty risk in various socio-demographic groups in Poland. However, households at risk of poverty often reveal a combination of various factors positively correlated with low income - low level of education, lack of jobs, several children, and residence in rural areas. To determine the relative importance of these factors and identify the strongest correlates of relative poverty risk at the household level, we used a probit model – the results allow a more precise identification of those groups which require more detailed analysis (the subject of the following chapter).

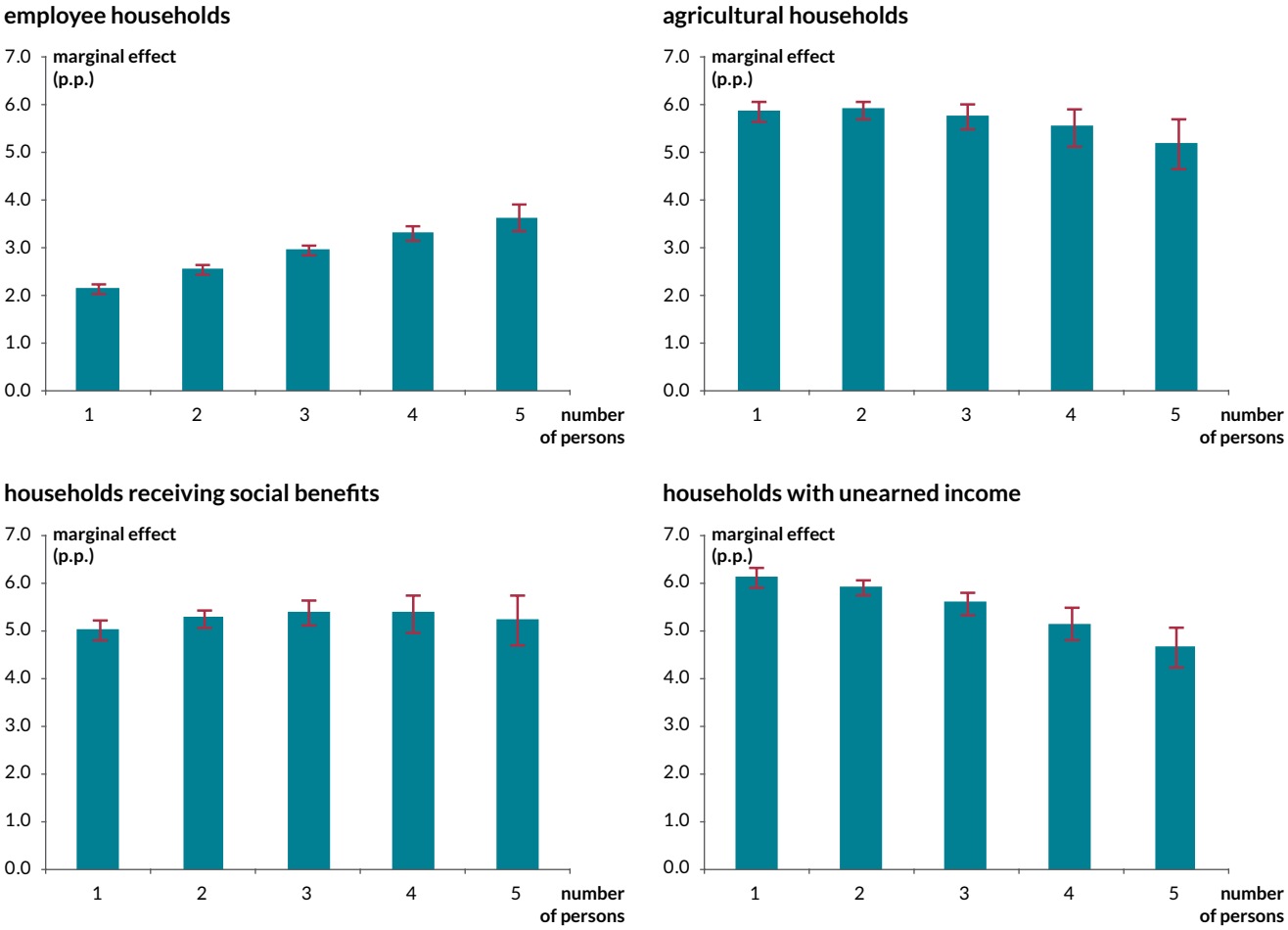
According to literature on the subject (Geda et al., 2001, Mok et al., 2007), taking into account the nature of the Household Budget Survey data and the available variables, our econometric model included the following variables: gender and education of the head of the household, the main source of income, the type of place of residence (by number of inhabitants), the region (voivodeship) of residence, the number of children in the household and the number of household members by age group.[2] The dependent binary variable was being at risk of relative poverty, and the estimation was done on a household dataset spanning 1999-2011 (a total of over 450 thousand observations). The influence of business cycle fluctuations and general changes in the poverty level on the situation of individual households was included in the standard way by including dummy variables corresponding to particular years of the study which controlled for the changes over time. The aspect of regional disparities was taken into account by including binary variables corresponding to the individual voivodeships. The estimated results of the model are presented in Table II.1.

The model indicates that the risk of poverty is highest when the head of the household is aged 45-54 (21% in 2011), and for households headed by a person aged 45+, the risk in question gradually decreases, even after taking into account other factors that influence the risk of poverty. Slightly higher poverty risk affects households headed by women, although the differences in comparison to (far more numerous) households headed by men are not large. When the household head is a pensioner, the risk of poverty is not significantly different than in households headed by a working person (see Figure II.5); even after taking into account other factors that influence the risk of poverty, including education. On the other hand, even after controlling for these factors, it appears that dependence on social benefits and unearned sources of income significantly increases the risk of poverty - the likelihood of poverty in households living on benefits was more than 20 pp higher than households of employees with the same other socio-demographic characteristics. High poverty risk among households of persons receiving benefits shows that transfer payments reach those with low overall incomes, and raises the question about the effect of particular benefits on the risk of poverty – the impact of public policy instruments on poverty is analysed in Part IV.

From the point of view of the social consequences of poverty, the risk of poverty among children, which in practical terms means low incomes and the risk of poverty among families with children, is of particular importance. The results show that each additional child in a household increases the likelihood of the risk of poverty by an average of 3 pp, and this influence is stronger than the case of additional household members from older age groups (see Table II.1). Interestingly, although the marginal impact of another child on the risk of poverty in households with a working household head increases for each subsequent child (from 2.1 pp in the case of the first child to 3.4 pp for the third and fourth child), these differences are not large enough to explain the considerable difference in the risk of poverty between households with one or two children, and those with three or more children. This means that the latter group more frequently exhibits other characteristics that increase the risk of poverty – a relatively

2 A child is defined as a person aged 15 or less.

Figure II. 8 | Effect of the number children on the likelihood of being at the risk of poverty, by the type of household in Poland.



Note: The Figure shows the average marginal effects on the probability of being at risk of poverty, estimated with the probit model. Marginal effects are calculated for each household type. Horizontal lines denote 90% confidence intervals.

Source: Own calculations based on HBS data.

lower level of education,[3] or the main source of income from a source other than work.

In households where agriculture is the main source of income,[4] the risk that equivalised income is below the relative poverty threshold, increases with the first child much more than in employee households. However, in the case of a greater number of children this difference decreases (see Figure II.8). Benefits received with each subsequent child in agricultural households are higher than in employee households (on average by about PLN 40 ~ EUR 10) and the share of benefits associated with having children in the total income of agricultural households with children is higher than among employee households (20% vs. 10% in 2011). Nevertheless, in agricultural households, the impact of having children on the risk of poverty on average amounts to 5 pp – about twice as high as in employee households.

The results confirm that even after taking into account differences in education levels and sources of income, rural households are at a greater risk of poverty than urban households. The likelihood of poverty decreases with the number of inhabitants in the place of residence. In cities with a population of 500 thousand or more, the probability is as much as 10 pp lower than rural households with similar other characteristics. Those that are particularly vulnerable live in agricultural households (in 2011 they accounted for about 12% of rural households), with a probability of poverty 13 pp higher than households of people working outside agriculture (with similar other characteristics). However, rural poverty is not exclusive to farming households - in the households of pensioners and those depending on benefits or other sources, the risk of poverty was on average even 50% higher than agricultural households (in 2011 it reached 60%).

The results indicate the socio-demographic groups that require special attention in the analysis of poverty in Poland can be distinguished by three main factors, i.e. age, economic activity and place of residence. Although in-work

3 Achieving each subsequent level of education statistically significantly reduces the likelihood of poverty (see Table II.1

4 Agricultural households are defined as those in which agriculture is the main source of income of the household head.

Table II. 1 | The estimation results of the probit model for poverty risk in Poland.

Explanatory variables	Average marginal effect	Explanatory variables	Average marginal effect
sex of the household head (reference: man)		region (ref. Mazowieckie)	
woman	0.02***	Dolnośląskie	0.02***
		Kujawsko-pomorskie	0.01***
education level of the head of the household (ref. secondary education)		Lubelskie	0.05***
tertiary education	-0.05***	Lubuskie	-0.02***
basic vocational	0.07***	Łódzkie	0.02***
lower secondary and below	0.13***	Małopolskie	0.00
		Opolskie	0.00*
main sources of income (ref. work)		Podkarpackie	0.04***
agriculture	0.13***	Podlaskie	0.03***
pension	0.03***	Pomorskie	0.00
disability pension	0.11***	Śląskie	-0.01***
social benefits	0.26***	Świętokrzyskie	0.03***
unearned sources	0.23***	Warmińsko-mazurskie	0.01***
		Wielkopolskie	-0.01***
number of persons aged 15 and less	0.03***	Zachodniopomorskie	0.00
number of persons aged 16-24	0.03***		
number of persons aged 25-34	0.00	year (ref. 1999)	0.02***
number of persons aged 16-24	0.03***	2000	0.00
number of persons aged 45-54	0.01***	2001	0.00
number of persons aged 55-64	-0.02***	2002	0.01**
number of persons aged 65 and more	-0.06***	2003	0.01***
		2004	0.02***
population of place of residence (ref. village)		2005	0.01***
500 thousand inhabitants and more	-0.10***	2006	0.02***
200 - 499 thousand inhabitants	-0.08***	2007	0.02***
100 - 199 thousand inhabitants	-0.07***	2008	0.02***
20 - 99 thousand inhabitants	-0.06***	2009	0.04***
below 20 thousand inhabitants	-0.04***	2010	0.05***
		2011	0.06***
Constant	-1.70***		
Number of observations		455483	
LR test statistics		73952.8***	

*Note: the dependent variable - being at risk of relative poverty (0 - not poor, 1 - poor). Marginal effects for the average values of the explanatory variables represent the impact of the incidence of a given characteristic on the likelihood of poverty in the household, for the average (in the sample) levels of other variables. For the variables describing the number of people from a given age group living in the household, we also included the square of this number, and the mean marginal impacts present the cumulative effect. Asterisk ***, ** and * denote significance determined at the level of 1%, 5% and 10%, respectively.*

Source: Own calculations based on HBS data, 1999-2011.

poverty is the subject of the Part III of this report, here we also need to consider the pattern of economic activity of individuals and households as it is directly associated with age and family responsibilities, especially relating to having children. Therefore, the groups that will be scrutinised in this second chapter are families with many children, persons at an immobile age and post-working age, and residents of rural areas.

BOX II.1 **Decomposition of changes in poverty risk rate between 1998 and2011.**

Change (difference) in total poverty rate in the population (p) between a given time (K) and the time of reference (O) can be decomposed into the contributions of changes in the structure (ZS) - changes in the share of the i-th group in the population, and changes in poverty rate in each group. Moreover, the decomposition includes a residual component (R).

$$SU_{Kp} - SU_{Op} = ZS_p + \sum_i ZSU_{pi} + R$$

$$ZS_p = \sum_i SU_{Opi}(\alpha_{Kpi} - \alpha_{Opi})$$

$$ZSU_{pi} = \alpha_{Opi}(SU_{Kpi} - SU_{Opi})$$

$$R = \sum_i (SU_{Kpo} - SU_{Opi})(\alpha_{Kpi} - \alpha_{Opi})$$

Where:
i – the index of a group, the groups are disjointed and together sum up to the total population p
α_{pi} – the share of the i-th group in the population
SU_{pi} – poverty rate in the i-th group
Calculations were based on the Household Budget Survey annual data for the period 1998-2011.

Source: own elaboration.

1.2 DECOMPOSITION OF CHANGES IN POVERTY RISK BETWEEN 1998 AND 2011

In the previous section we show that the risk of poverty in Poland is diverse with regard to socio-demographic characteristics such as age, sex, education or place of residence, yet is also related to economic activity and the main source of income of individuals and households. Changes in the population structure with regard to socio-demographic factors are usually minor, but they can be significant in the latter group of factors – those associated with business cycle fluctuations and changes in public policy. In such cases, a shift in the structure may be relevant to changes in total poverty risk rate, even if poverty risk rates in each subpopulation change only slightly. When people flow from a group at a high risk of poverty (and its share in the population decreases) to a group at a low poverty risk rate (and its share of the population increases), the total poverty risk rate decreases. Similarly, a flow in the opposite direction – from a group at a low risk of poverty to a group at a higher risk of poverty – results in an increased at-risk-of-poverty rate for the total population. The aim of this section is therefore to evaluate quantitatively the extent to which changes in total poverty risk in Poland between 1998 and 2011 has resulted from changes in the population structure (e.g. an increase in the share of workers and a decrease in the share of unemployed), and to what extent they were caused by changes in poverty risk in particular groups, distinguished by their labour market status or their main source of income. In order to do so we used decompositions described in Box II.1.[5]

1.2.1 DECOMPOSITION TAKING INTO ACCOUNT LABOUR MARKET STATUS

Decompositions concerning economic activity were carried out at two levels of aggregation: (i) total population and (ii) working population. At the first level we distinguished the employed, the inactive and the unemployed. Flows from one of these states to another are often directly connected with changes in the source and level of income. This in turn determines the levels of income of entire households and consequently influences the risk of poverty. Therefore, it could be expected that changes in the structure of the population at working age in terms of labour market status (structural factor) may be a significant factor behind changes in the at-risk-of-poverty rate.

However, we did find that this holds true only in the short term, and the role of the structural factor decreases with the duration of the analysed period. This is because the scale of net flows in the labour market is strongly related to business cycle fluctuations, which are short-term. In the long term the significance of the business cycle fluctuations decreases and changes in poverty rate are to a greater extent caused by changes in the level of income, in particular from work. As a result, the impact of changes in population structure (with regard to labour market status) on the change in overall poverty rate between 1998 and 2011 was only marginal.

Despite significant changes in the relative (increase) and quasi-absolute (decrease) poverty risk rates between 1998 and 2011, in both these terms the most crucial factors were changes in the poverty risk rate in particular subpopulations, especially importantly in two groups - the economically inactive and the employed. If the under 15 year olds are included in the decomposition as well, then a considerable impact of changes in

5 Temporal changes in the relative poverty rate may also be influenced by changes in the relative poverty threshold, determined based on the distribution of income in a given time. Of course this is not the case for absolute and quasi-absolute poverty. As the analysis of how changes in the distribution of income influence poverty is included in Part III of this report, here we focus on the significance of changes in the population structure in terms of labour market participation and sources of income. Changes in the relative poverty rate resulting from a change in the threshold, together with changes resulting from a change in income in a given group, constitute the total contribution of changes in poverty risk in the group to the changes in total poverty.

Figure II. 9 | Decomposition of changes in poverty risk rates in the total population, taking into account economic activity, 1998-2011.

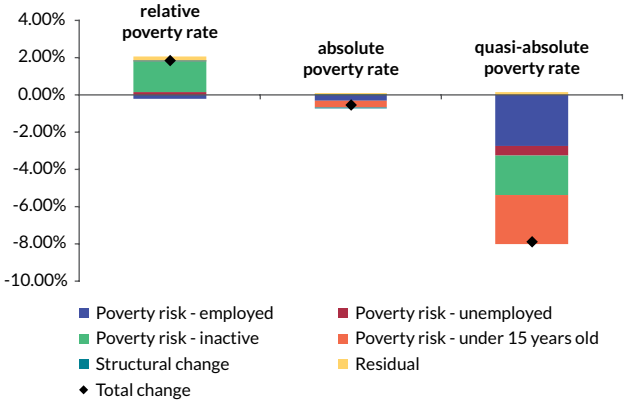


Figure II. 10 | Decomposition of changes in poverty risk rates in the population 15+ years old, taking into account economic activity, 1998-2011.

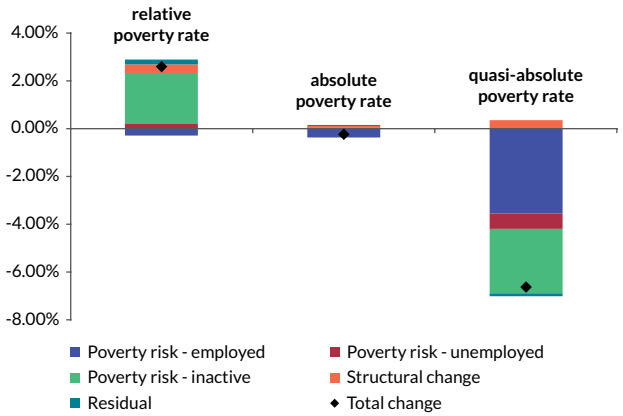


Figure II. 11 | Decomposition of changes in the poverty rates in the population 15+ years old, taking into account economic activity, 1998-2004.

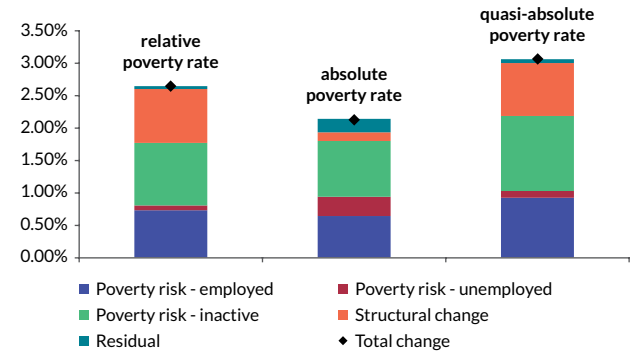
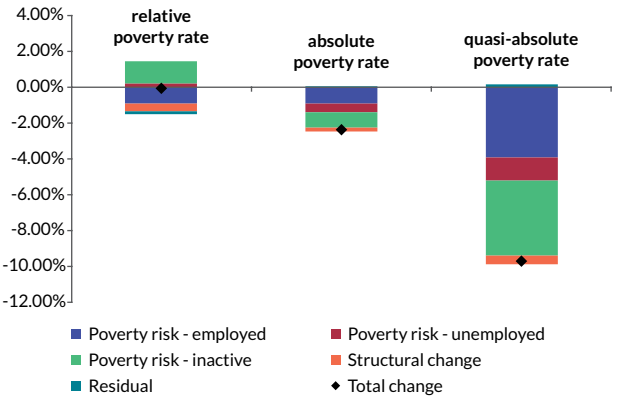


Figure II. 12 | Decomposition of changes in the poverty rates in the population 15+ years old, taking into account economic activity, 2004-2011.



Source: own calculations based on HBS.

Figure II. 13 | Decomposition of changes in the poverty risk rates of the 15+ population, taking into account economic activity, 1999-2001.

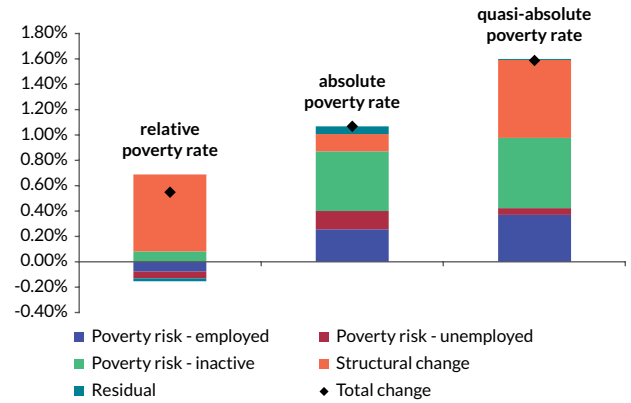
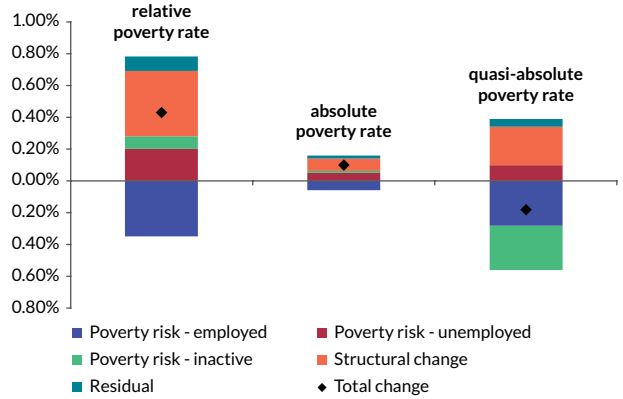


Figure II. 14 | Decomposition of changes in the poverty risk rate of the population 15+ years old taking into account economic activity, 2009-2011.



Source: own calculations based on HBS data.

the child poverty risk on changes in the total poverty risk rate is found - the quantitative contribution to change in the total poverty rate was comparable to the contribution of changes in poverty risk rates among the inactive and employed.

The particular factors, including the structural shifts, had a slightly different impact on the dynamics of the poverty risk rate during the economic downturn and increasing poverty (1998-2004), and in the period of recovery (2004-2011),

Figure II. 15 | Decomposition of changes in in-work poverty rates by employment sector, 1998-2011.

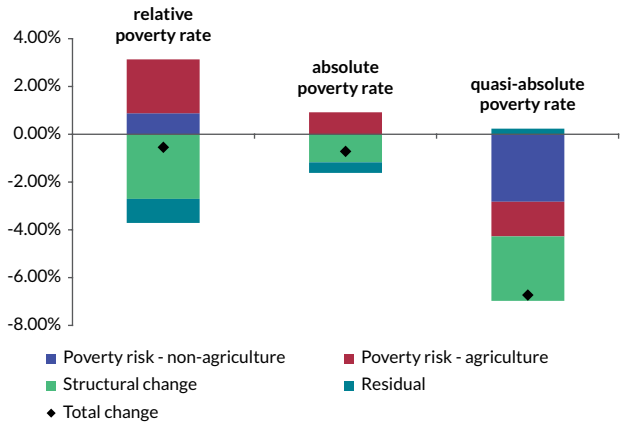


Figure II. 16 | Decomposition of changes in in-work poverty rates by employment sector and type of contract, 2005-2011.

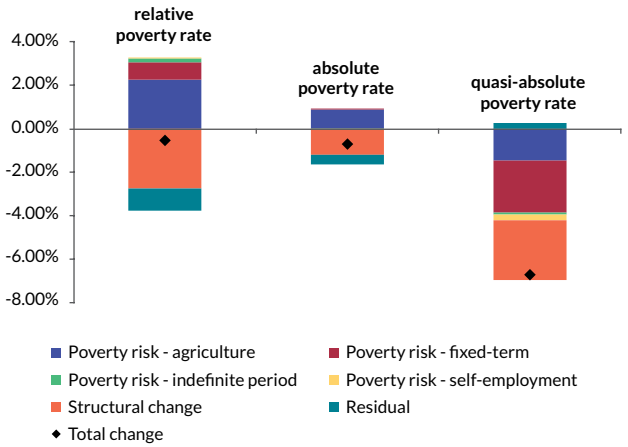


Figure II. 17 | Decomposition of changes in in-work poverty rates by employment sector, 1998-2004.

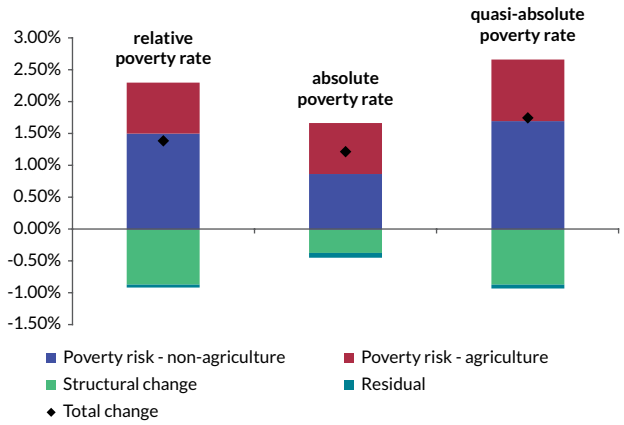
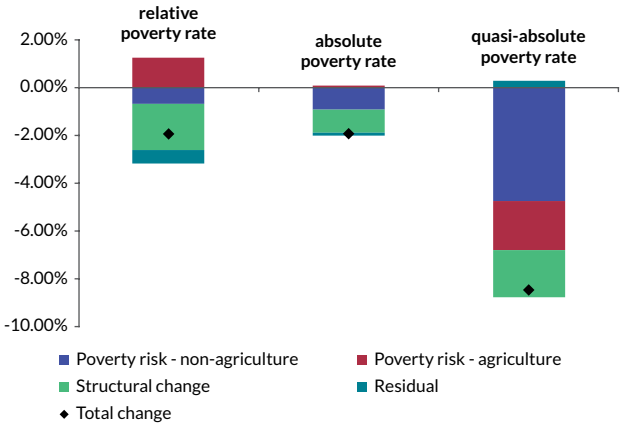


Figure II. 18 | Decomposition of changes in in-work poverty rates by employment sector, 2004-2011.



Źródło: obliczenia własne na podstawie danych BBGD.

improving prosperity and declining poverty.[6] Between 1998 and 2004, for each of the poverty measures, changes in poverty risk among the economically inactive and employed were jointly responsible for approximately 70% of the total change. Structural changes had a moderate but significant impact on the dynamics of poverty in that period, in contrast to 2004-2011 when the structural changes did not have any contribution to the dynamics of total poverty. Therefore, apart from the direction of changes in the poverty rate, it was the scale of impact of the structural factors that distinguished these two periods. Furthermore, between 1998 and 2004 the contribution of particular factors was similar for all measures of poverty, while between 2004 and 2011 the decline in poverty and the significance of particular factors were different for relative and absolute measures. Although similar to the period 1998-2004, changes in poverty risk in particular groups, especially among the economically inactive and employed, had a decisive impact on change in the total poverty risk rate, the absolute and quasi-absolute poverty risk rates fell in all groups, and the relative poverty risk rate declined among the employed and increased among the unemployed and economically inactive. Therefore, the relative poverty risk rate in the total population remained almost unchanged.

Limiting the time intervals of analysis to two-year and one-year periods shows that in the case of significant business cycle fluctuations, labour market flows to a large extent explain changes in total poverty risk rate in the short term (see Figures II.13-II.14). In contrast to changes in poverty rates for particular groups, which reflect the process of impoverishment or enrichment of a given group in absolute or relative terms, the changes in the labour market may in some cases reflect the strong response of economic agents to macroeconomic disturbances. Thus, the deteriorating situation in the labour market, both between 1999 and 2001 and between 2009 and 2011, resulted in an increased number of unemployed and inactive, and therefore contributed to an increased poverty rate - in those periods the structural factor was the most important factor in changes in the total poverty rate.

6 It does not refer to the relative poverty rate, which between 2004 and 2011 remained at the same level.

The results also show that in the medium term, changes in the total poverty risk rate in Poland were significantly influenced by changes in the in-work poverty rate. The phenomenon of the working-poor is discussed mainly in Part III, but here we decompose changes in the share of the working-poor among the employed, distinguishing those working in and outside agriculture. It turns out (see Figure II.15) that in this case the structural factor - a decline in employment in agriculture and growing share of other sectors of the economy - played an important role over the entire period. It can even be argued that with the extension of the analysed period, the structural factor has played an increasingly important role in contrast to the decomposition, focusing on total population and flows between employment, unemployment and inactivity. The long-term trend of declining employment in agriculture and the reallocation of labour from the agricultural sector (with a high risk of poverty) to the non-agricultural sector (where the share of working-poor is much lower) significantly reduced the level of in-work poverty and overall poverty rates, regardless of the business cycle fluctuations. The flow of workforce from agriculture to other sectors was an important factor in the medium-term, lifting the average level of prosperity.

Changes in total poverty risk rate were significantly influenced by changes in poverty risk rates among farmers. Despite a significant decline in employment in agriculture over the previous several years, farmers are still a relatively numerous group, and their poverty risk rate has been several times higher than the rate for those working outside agriculture. Therefore, changes in the poverty rate in this group have had a significant impact on the entire population. Figures II.17-II.18 show that between 1998 and 2004, poverty risk rates in agriculture increased for each of the three measures of poverty. Between 2004 and 2011 it fell for both absolute measures, but rose in relative terms. Therefore it may be argued that although since 2004 the standard of living of agricultural households has improved (poverty dropped in absolute and quasi-absolute terms), their distance from the standard of living of non-agricultural households has increased.

A more detailed breakdown of those working outside agriculture could be done, namely into those employed for an indefinite period, for a definite period and those self-employed. Due to the limited availability of data it would only be possible for the period 2005-2011, when the impact of changes in employment structure in terms of the thus defined type of employment was small compared to the impact of reallocation from agriculture to non-agricultural sectors (Figure II.16). This can be explained by the fact that people working outside agriculture are usually able to achieve an income that ensures a household has income above the poverty threshold. Hence, although the change in the type of employment often affects the level of income, it is usually not related to the entry into or exit from poverty.

1.2.2 DECOMPOSITION TAKING INTO ACCOUNT THE SOURCE OF THE HOUSEHOLD INCOME

The decompositions earlier were focused on labour market characteristics. However, poverty usually concerns entire households which often include members with different labour market statuses. Individuals may thus become poor or exit poverty even if their individual labour market situation has not changed. Therefore we carried out a decomposition that distinguishes between three categories regarding the main source of income - (i) own farm, (ii) employment or self-employment outside agriculture, and (iii) other sources (in practice, mainly social benefits). In this way, each person can be assigned a particular source of (main) income, and also each household its own (main) source of income – in this decomposition the change of status will concern all household members, including children.

The results of the decomposition by source of income for households and individuals, presented in Figures II.19-II.24, indicate a key difference between the two approaches. In the case of decomposition based on the source of household income, changes in the poverty rates of working households had a far greater contribution to the total change in poverty rates than changes in the poverty rate of households living on unearned sources. In contrast, decomposition based on the particular source of income shows that the total change in poverty rates was mainly determined by changes in the poverty risk rate of individuals with unearned sources of income. The structural factor significantly lowered the risk of poverty between 1998 and 2011 (in both approaches and for all measures of poverty), but this was entirely due to changes between 2004 and 2008 – i.e. employment growth and the increased share of individuals and households living from paid non-agricultural jobs. The contribution of the structural factor was also greater for the decomposition based on personal income source. A comparison of both decomposition results indicates that changes in poverty are significantly influenced by flows between work and joblessness by individual persons, even if another person in the same household invariably works and paid labour remains the main source of household income. About 25% of the changes in the poverty risk rate among all people with unearned sources of income between 1998 and 2004, and more than 40% between 2004 and 2011, can be attributed to changes in the poverty risk rate of the group of non-working individuals who are members of employee households. This shows the significance of jobs in avoiding poverty, while also suggesting that in some cases it requires more than one person in a household to be employed.

Figure II. 19 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of household income, 1998-2011.

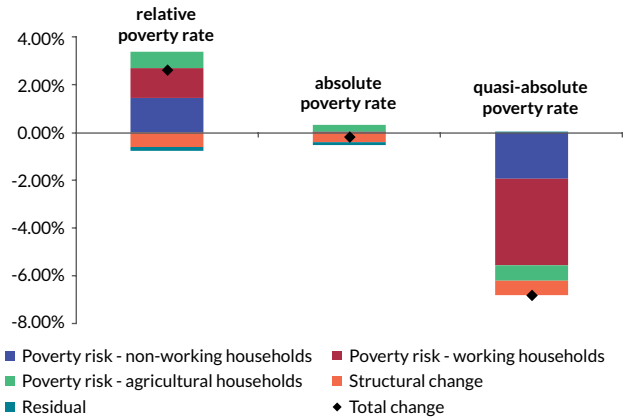


Figure II. 20 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of individual income,1998-2011.

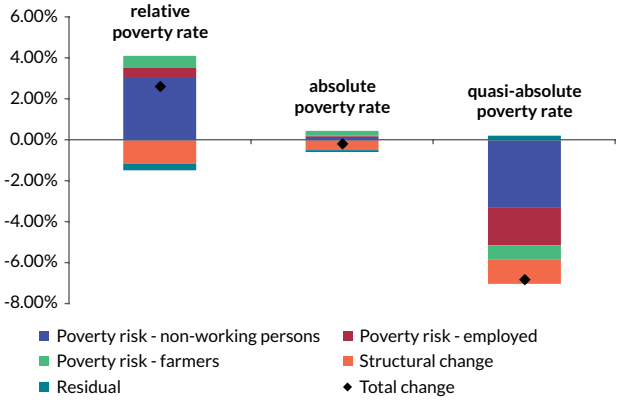


Figure II. 21 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of household income in the years, 1998-2004.

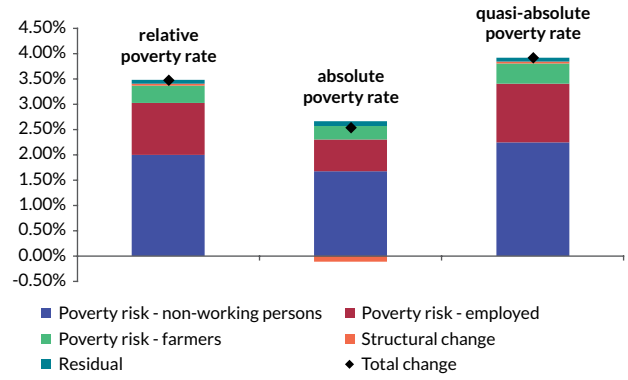


Figure II. 22 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of individual income, 1998-2004.

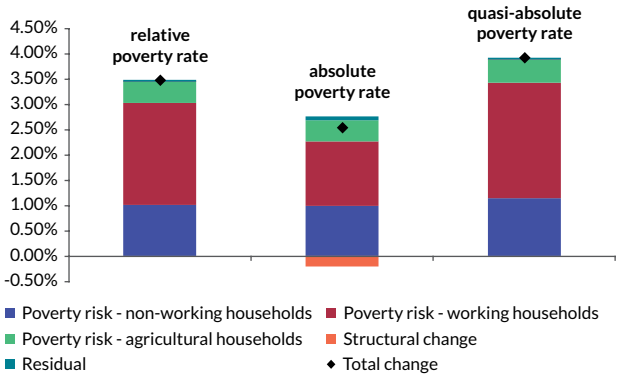


Figure II. 23 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of household income, 1998-2004.

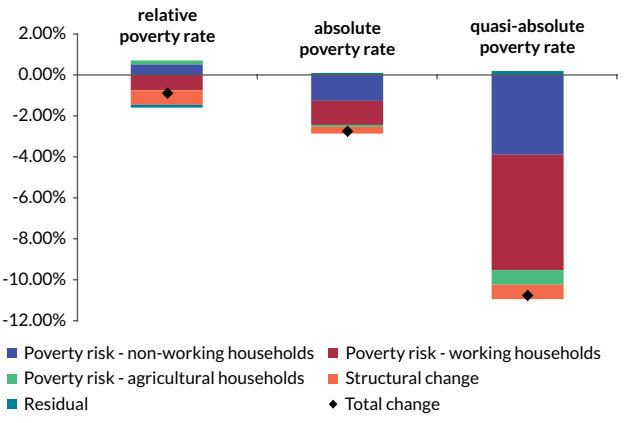
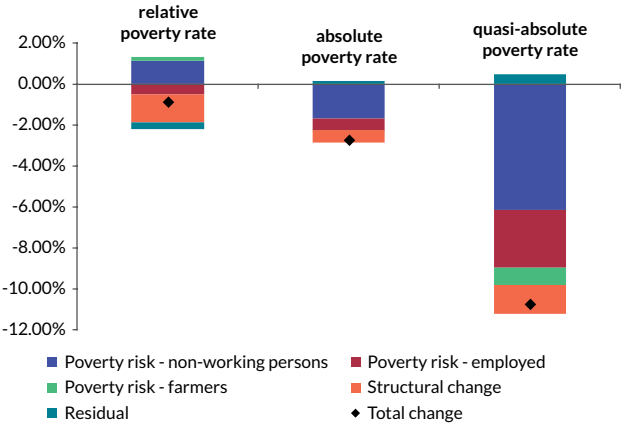


Figure II. 24 | Decomposition of changes in poverty risk rates of the population aged 15-64 years, taking into account the main source of individual income, 2004-2011.



Source: own calculations based on HBS data.

Figure II. 25 | Decomposition of changes in poverty risk rates among individuals aged 15-64 living in non-agricultural households, taking into account the number of workers in a household, 1998-2004.

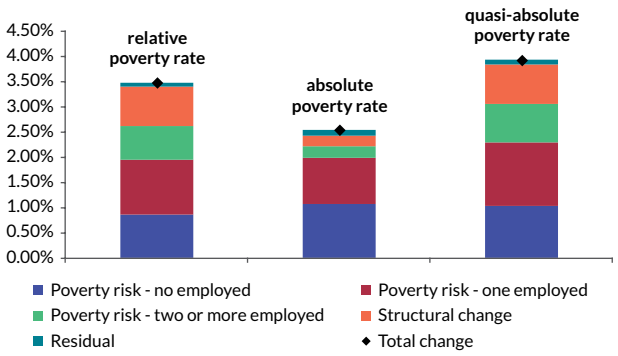
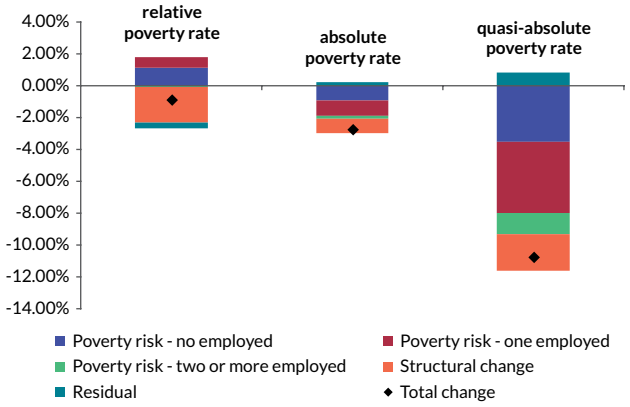


Figure II. 26 | Decomposition of changes in poverty risk rates among individuals aged 15-64 living in non-agricultural households, taking into account the number of workers in the household, 2004-2011.



Source: own calculations based on HBS data.

The distinction between non-agricultural households (i) without a working person, (ii) with one person working outside agriculture and (ii) with two or more people working outside agriculture,[7] leads to the conclusion that a change in employment structure had a significant impact on the dynamics of poverty risk rate among non-agricultural households (see Figures II.25-II.26). The dominant contributor was change in the share of individuals living in households where nobody works, with significant impact also exerted by changes in the share of people living in households with one working person. It was especially pronounced between 1998 and 2004, when an increase in the share of people living in households with no workers was responsible for about 55% of the structural factor contribution to the change in the poverty risk rate, with the increase in the share of people living in households with one worker about 40%.

Between 1998 and 2004, the deteriorating situation in the labour market was accompanied by a growing risk of poverty among all types of households, and an increasing share of people in households with relatively higher poverty rates – especially in households without any or with only one worker. The proportion of people living in households with at least two workers fell from over 40% to 35%. In 2004-2011 this structural factor contributed even more to the change in the poverty rate in the population living in non-agricultural households. Along the economic recovery, a pronounced change in the population structure with regard to households by number of workers occured. Between 2004 and 2008 the share of people living in households with two or more working members grew significantly (up to 47%), and at the same time the proportion of working-age population in households without any workers fell from 27% to 19%. However, the net change in the proportion of people living in households with one working person was marginal (around 3 pp). This may reflect parallel flows from households with no workers to the group with one worker, and flows from the group with one worker to 'two or more worker' households, parallel to the total employment growth. At the same time, the risk of poverty rate among those living in households with one worker decreased the most (by more than half in relative terms, and by two thirds in quasi-absolute terms).

1.2.3 POVERTY DYNAMICS VS. LABOUR MARKET FLOWS – THE MICROECONOMIC APPROACH

The importance of labour market flows for the dynamics of poverty is confirmed by the estimates based on microdata, presented in Table II.2. It shows the total matrix of labour market flows in conjunction with inflows to and outflows from relative poverty in Poland in 2006-2011.[8] These flows allow assessment of the extent to which changes in the labour market status at an individual level lead to exit or entry into poverty, and to what extent the outflow from poverty is associated with getting a job (and inflows to poverty with losing a job).

Inflows to employment outside agriculture were very important in avoiding and exiting poverty regardless of the initial labour market status of a person, although the strength of this effect was diversified. Finding a job was crucial for exiting poverty by the unemployed. In 2006-2011, on average 40% of the unemployed at risk of relative poverty got out (55% in the case of quasi-absolute poverty) and in half of the cases it was associated with finding a job outside agriculture. Roughly one in four unemployed ceased to be at risk of poverty without finding a job, due to the increased income of the household (incomes of other household members). The non-poor unemployed very

7 Agricultural households always have at least one working person, so they were excluded from this stage of the analysis, especially because employment in private farming is mainly subject to long-term changes rather than short-term fluctuations.

8 Results for quasi-absolute poverty are similar to relative poverty, so they are not shown in the table and only the most important differences are mentioned in the text.

Table II. 2 | Labour market flows, and inflows to and outflows from relative poverty in Poland, 2006-2011 (%).

	Agriculture / above poverty	Agriculture / poverty	Working outside agriculture / above poverty	Working outside agriculture / poverty	Unemployed / above poverty	Unemployed / poverty	Inactivity in working age / above poverty	Inactivity in working age / poverty
Agriculture / above poverty	68	15	7	1	1	0	4	1
Agriculture / poverty	35	49	5	3	0	1	2	3
Working outside agriculture / above poverty	1	0	87	3	2	1	4	1
Working / outside poverty	2	2	45	37	1	4	3	4
Unemployed / above poverty	2	0	37	2	30	7	17	3
Unemployed / poverty	2	3	21	11	10	32	6	12
Inactivity in working age / above poverty	1	0	10	0	3	1	73	6
Inactivity in working age / poverty	1	2	7	3	2	4	29	47

Note: Each line shows the structure of a group that in year t was in a given state (highlighted by the status on the labour market and being at risk of poverty or not), by labour market / poverty status in year t +1. Outflows to inactivity at retirement age are excluded, so some percentages do not add up to 1. Calculations based on annual flows, averaged over the 2006-2011 period.

Source: own calculations based on HBS data.

rarely became poor after finding a job (i.e. they rarely became working-poor). However, among the unemployed at risk of poverty, on average one in ten did not manage to get out of poverty, despite finding a job outside agriculture. In addition, among the poor unemployed who did not find a job, nearly one in five became inactive. In most cases this meant they remained at risk of poverty.

The most persistent poverty was recorded among the economically inactive, both at a working and post-working age (the results for this group are presented in section 2.3) - almost half of the relatively poor inactive persons who had not changed their labour market status for a year remained at risk of poverty (for quasi-absolute poverty it was more than 1/3). Among the economically inactive at working age, flows to employment amounted on average to 10%, and for those who were initially not poor, finding a job almost never resulted in entry to poverty. Among the inactive poor who undertook employment, seven in ten got out of poverty.

More than half of the working-poor outside agriculture got out of poverty within a year (2/3 for the quasi-absolute poverty), and in 90% of the cases it was associated with remaining employed and the relative improvement in incomes, while only 3% of those who kept working outside agriculture entered poverty a year later. On the other hand, an average of 13% of the working-poor lost their jobs within a year, and in more than half of these cases this meant a transition to inactivity (at working age) instead of unemployment. Two out of three of those people remained poor.

The microeconomic perspective confirms that a reduction of poverty in Poland considerably depends on relocation from agriculture to other sectors of the economy. Flows from employment in agriculture to other sectors involved on average about 8% of agricultural workers, both those at risk of poverty and those with incomes above the poverty threshold (for all poverty measures). For most of the agricultural working-poor who found a job in another sector, this meant exiting poverty (60% of those at relative poverty risk, 80% of those at quasi-absolute poverty risk). At the same time, agricultural workers were at about a 10 pp higher risk of falling into poverty than those working in other sectors. It was almost entirely due to the higher risk of falling into poverty despite continuous employment – outside agriculture that risk was very low, and in agriculture it affected 10-15% of the workforce.

2 POVERTY IN POLAND ACROSS THE SOCIO-DEMOGRAPHIC SPECTRUM

This chapter is devoted to analysis of the nature and causes of poverty in selected socio-demographic groups that are identified in chapter 1 as particularly significant for the overall picture of poverty in Poland. The first of these groups is children, or in a broader sense, households with children, especially those with many children. As the quality of life and social status of children are correlated with the socio-economic status of their guardians prior to achieving financial independence, child poverty may have important long-term effects. Therefore in the second subchapter we focus on the intergenerational dimension of poverty. Then we look at the population at immobile and post-working age, and finally we focus on poverty in rural areas. Bearing in mind the great importance of working or undertaking employment in avoiding or exiting poverty, we analyse the situation in each of the aforementioned groups with regard to their interactions with the labour market.

2.1 POVERTY AMONG CHILDREN AND FAMILIES WITH MANY CHILDREN

From the perspective of social policy, children are often seen as a financial burden to adults – they usually do not generate income, while the costs of childrearing are high and spread over many years (Huston, 1991). In addition, children are particularly vulnerable to poverty – their economic status is determined by the situation of their guardians, and cannot enter or exit poverty separate from the situation of the household (Brooks-Gunn, Duncan, 1997). In Poland, since 2004, the child poverty risk rate has decreased in all three terms: absolute (from 8% to 3% in 2011), quasi-absolute (from 17% to 8.7%) and relative (from 24% to 21%). However, the poverty risk rate of children in Poland is still slightly higher than the European Union average. In 2011, the relative poverty rate among under-16s was 21.3%, compared to 20.3% in the EU. The lowest child poverty risk rates in the EU are recorded in Denmark (9.4%), Cyprus (12.0%), Finland (12.0%) and Sweden (13.7%), i.e. countries where the poverty rate among the total population is relatively low. The highest relative child poverty risk rates are reported in Romania (32.4%), Bulgaria (28.8%), Spain (26.7%) and Italy (25.9%).

In recent years, the difference in poverty rates between children and adults in Poland has shrunk. According to SILC data, in 2005-2011 this difference in relative poverty rates in Poland fell by 6 pp (down to 4.3 pp) and thus came close to the EU average (4.1 pp). Thus, similar to the entire EU, in 2011 the child poverty rate in Poland was a quarter higher than the adult poverty rate. Hungary is one of the countries where this disparity is the highest – the Hungarian child poverty rate is almost two times higher than among adults. Although not only post-communist countries exhibit relatively high child poverty rates, by no means is it a rule across Europe; for example, in the Scandinavian countries it is even slightly lower than among adults.

The presence of a child in a household means certain costs. In addition to direct spending on the family member, the child's

Figure II. 27 | Child poverty rate in Poland, 1994-2011.

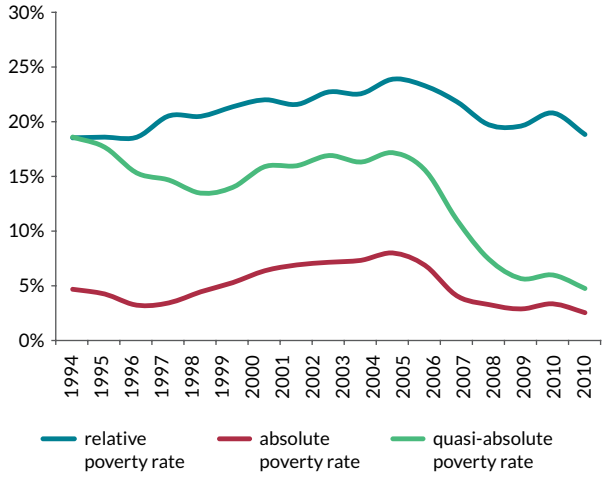
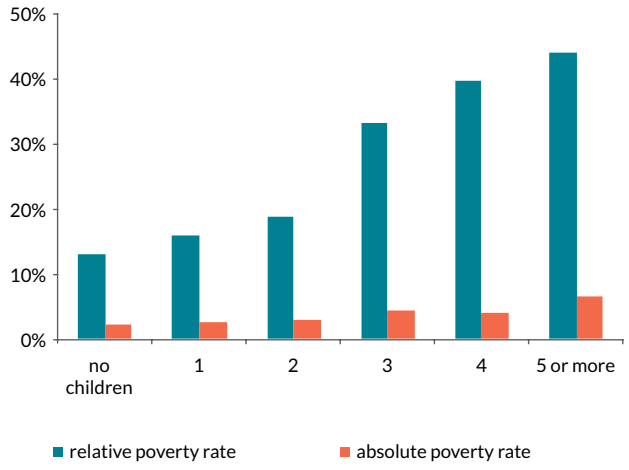


Figure II. 28 | Relative child poverty rate by number of children in a household in Poland in 2011.



Source: own elaboration based on HBS data.

Figure II. 29 | Relative poverty rate among adults in households with the head of household aged 25-50 years; the household consisting of a couple without children, or a couple with children (under-16s), 2011.

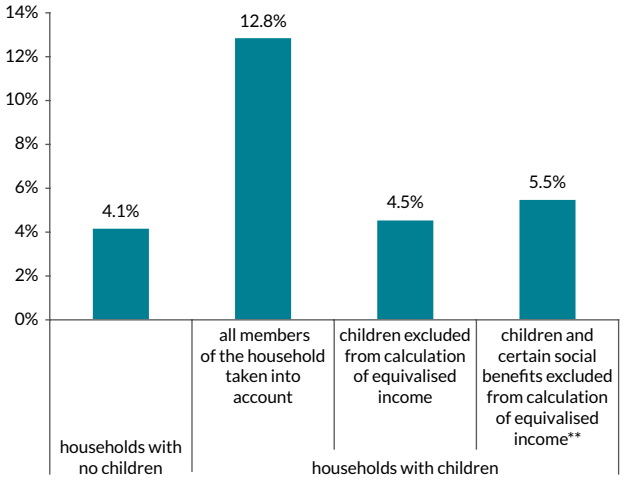
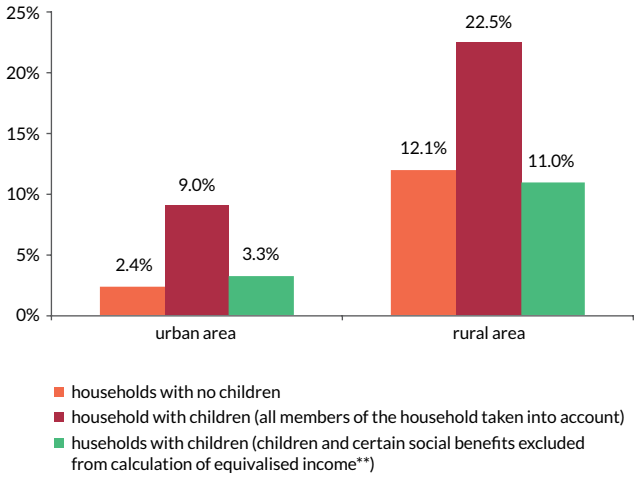


Figure II. 30 | Relative poverty rate among adults in households with the head of household aged 25-50 years, consisting of a couple without children, or a couple with children (under-16s), by place of residence, 2011.



*Note: * equivalised income was calculated excluding the presence of children in the household.*

*** equivalised income was calculated excluding the presence of children in the household and benefits associated with their presence (family benefits, benefits for single parents, additions to family benefits, allowance for the birth of a child, benefits of the Alimony Fund, grants).*

Source: own calculations based on HBS data.

guardians bear the cost of adjusting their economic activity to the situation. Income from work decreases or remains constant, and despite the social benefits related to children, the equivalised income of the household often decreases. The consequence is an increased risk of poverty in households with children. This hypothesis is confirmed by a significant difference in the relative poverty rates of people living in households with dependent children and households without children. Between 1994 and 2011, the rate of relative poverty in households with dependent children was on average 2.5 times higher than households without children, and in recent years there has been a slight increase in this disparity. The risk of poverty, both in relative and absolute terms, increases with the appearance of subsequent children in a household. The relative poverty rate among Poles living in households with two dependent children is a few percentage points higher than among those living in households with one child. A similar difference in the poverty risk is observed between (i) households with three or four and (ii) those with four or five persons aged under 16 years. By far the greatest increase in the rate of relative poverty can be observed between households with two, and households with three children, among whom the poverty risk rate amounted to 33% in 2011.

The above findings confirm the existence of a relation (signalled by the results of the probit model in the first chapter) between the presence of a child in the household and the poverty risk of its members. Of course, a significant share of households without dependent children are the elderly or young adults, whose incomes and economic activity patterns, to some extend due to their age, are slightly different from the population at childbearing and childrearing age. However, the relation between the poverty risk rate and the number of dependent children also emerges within the group of households of people at the age typical for starting and having a family - consisting of two adults (married or not) in which the household head is between 25 and 50 years old.[9] In 2011, the relative poverty rate among adults in this group of households was 11.4%. In households consisting only of a pair of adults, merely 4.1% of people were at risk of poverty, while among adults in households with children, the rate was more than three times higher at 12.1%. In order to assess to what degree the observed difference resulted from the presence of children in a household, and to what degree from the lower earning potential of adults who decided to have children, we calculated a hypothetical equivalised household income (i) excluding the presence of children in the household, and (ii) also excluding transfers that are associated with having children.[10] The results of the simulations are presented in Figure II.29. It turns out that if the income of a household with dependent children was divided only between the adult couple, the relative poverty rate among these households would fall from 12.8% to 4.5%, and without benefits associated with having children, the hypothetical at-risk-of-poverty rate in households with children would rise to 5.5%.

9 Of course, there are also children in households with younger and older heads of household, but in these age groups people with children are in a minority and a lot of young parents remain dependent, also because of their participation in education. Therefore, we took into account only those households where the head is in the age group typical for rearing dependent children and being economically active at the same time.

10 Total household income does not include family benefits, single-parent benefits, additions to family benefits, universal child birth benefit, benefits of the Alimony Fund and scholarships. However, we included the benefits meant to replace labour income during the period of child care (benefit for child care during parental leave).

Figure II. 31 | The relative poverty rate among people in households with a head of household aged 25-50, consisting of a couple with one or two children (aged under 16), 2011.

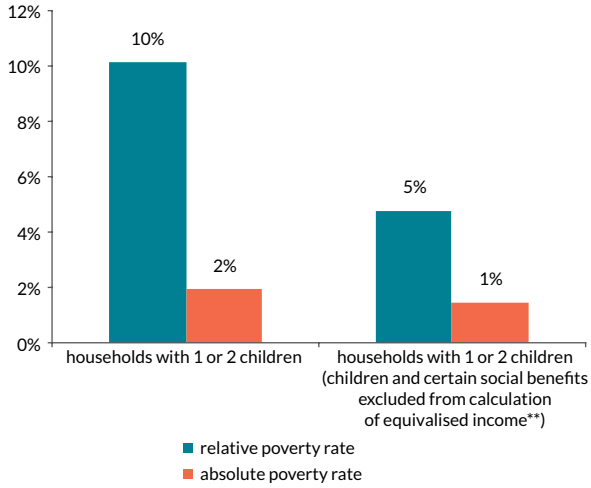
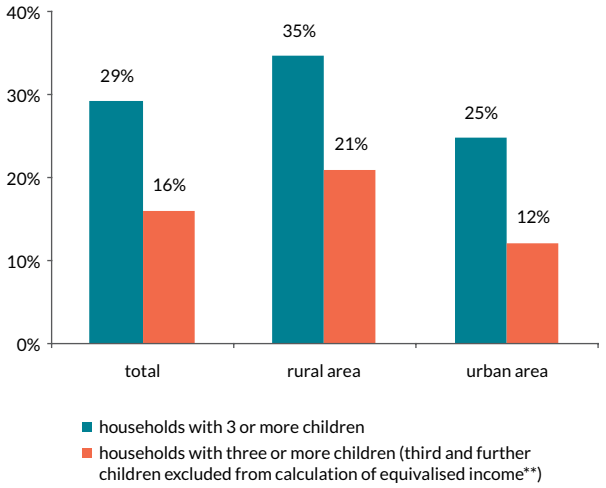


Figure II. 32 | The relative poverty rate among people in households with a head of household aged 25-50, consisting of a couple with at least three children (aged under 16), by place or residence, 2011.



*Note: ** equivalised income was calculated taking into account the first (oldest) child and the second child, but without the presence of a third and younger children in the household.*

**** "simulation" means omitting the presence of children in the household.*

Source: Own calculations based on HBS data.

These results suggest that having children significantly increases the risk of poverty in households - in two thirds of the households which were at risk of poverty (in the analysed sample of households headed by individuals aged 25-50), the same income would be sufficient to avoid relative poverty if the couple did not have children. Although the relative poverty rate for households with children after the hypothetical exclusion of children was still higher than for couples without children, the difference was small (only 1.4 pp). Hence the income potential of couples raising a child (children) may be slightly lower than that of couples without children, yet this difference may also result from a reduction in labour supply due to various parental duties.

In addition, the relation between having children and the risk of poverty differs in intensity depending on the place of residence. Among urban households, the "exclusion" of children and related benefits from a household resulted in a decrease in the rate of relative poverty risk to 1/3 of its initial value, while among rural households it reduced the poverty rate by half. Thus it may be concluded that having children in urban households is more strongly connected to (relative) poverty than in rural households. However, this regularity is related to a generally higher rate of poverty in rural Poland. The hypothetical poverty rate of rural households with children, after the exclusion of children and related transfers, would be lower than the rate for rural households without children. Thus, rural households with children generally do not differ in terms of income from childless rural households, and the two-times higher poverty rate results from a greater number of dependent household members.

As mentioned earlier, households with many children are more often at risk of poverty than those with one or two dependent children. In the analysed subpopulation of households composed of adults aged 25-50 (typical for starting and having a family), the poverty risk rate in households with one or two children in 2011 equalled 10%, while in those with a greater number of children, 29%. As the children from many-children households constitutes 25% of all under-16s in Poland, the problem of poverty of these households is all the more important. Thus, to understand the nature of their poverty and create an adequate public policy, it is crucial to examine poverty in households with many children and the potential difference from the poverty of households with one or two children. To this end, in Figure II.31 we present a simulation of equivalised income that is analogous to the previous one, but this time concerns only households with one or two children. Figure II.32 shows a simulation for households with three or more children, while assuming that those households have only two children.[11] If households with one or two children were obtaining the same incomes (less child-related transfers) and had no children, the relative poverty rate would be reduced by half. In other words, in half of the households with one or two children which are at risk of poverty, this is associated with their relatively lower income earning potential, while the other half is at risk of poverty because the income turns out too low to avoid poverty, but only with dependent children in the household.

11 Unlike other simulations, for households with at least three children we now do not consider the situation of not having children at all, as then the assumption of obtaining identical income would be unrealistic. Instead we assume that these households now have two children, which is related to the fact that the greatest difference in poverty risk is observed between households with two and those with three children.

Figure II. 33 | Adults in households headed by 25-50-year-olds and consisting of a couple with one or two children (under 16 years of age), by labour market status and simulation results , 2011.

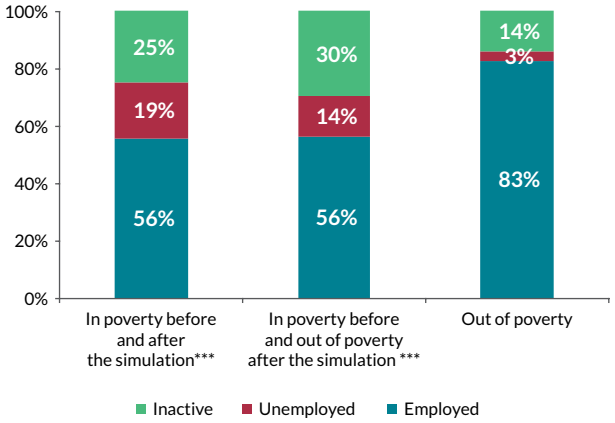


Figure II. 34 | Adults in households headed by 25-50-year-olds, consisting of a couple with at least three children (under 16 years of age), by labour market status and simulation results , 2011.

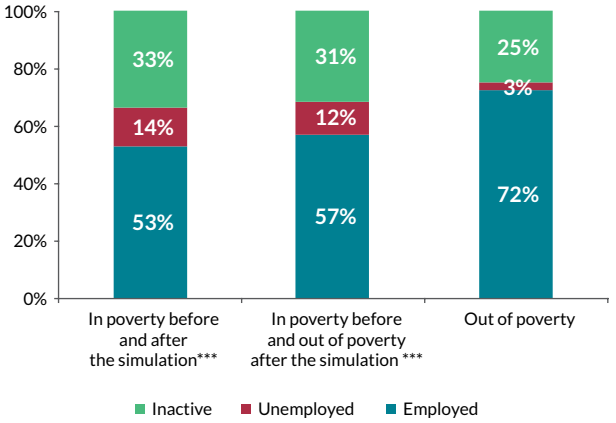


Figure II. 35 | Households headed by 25-50-year-olds, consisting of a couple with one or two children (under 16 years of age), by main source of income and simulation results , 2011.

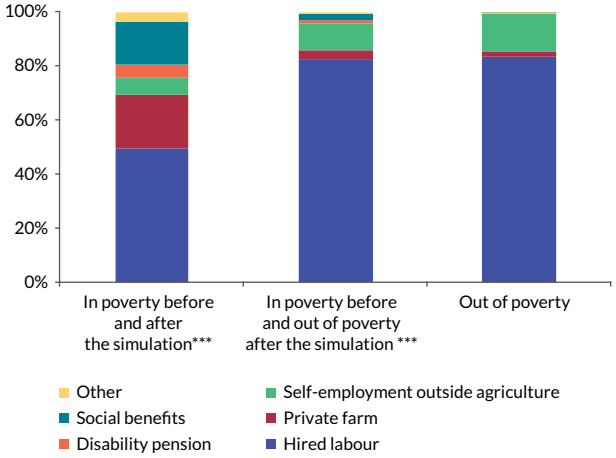
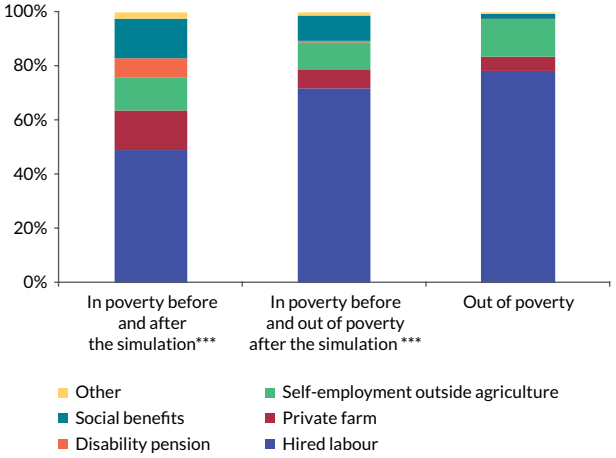


Figure II. 36 | Households headed by 25-50-year-olds, consisting of a couple with at least three children (under 16 years of age), by main source of income and simulation results , 2011.



*Note: ** equivalised income was calculated taking into account the first (oldest) child and the second child, but without the presence of a third and younger children in the household. *** "simulation" means omitting the presence of children in the household.*

Source: Own calculations based on HBS data.

In comparison, in families with three and more children, the proportion of relatively poor persons was 29% (35% in rural and 25% in urban areas).[12] If the income of these households with many children was at the disposal of adults and only two children, the poverty rate among would fall by 13 pp, to 16% (21% in rural and 12% in urban areas). Thus, in about one in eight households with at least three children, poverty emerges only with the birth of the third and subsequent children. This means that if these households had only two children, their incomes would be sufficient to avoid poverty. On the other hand, one in six households with at least three children would remain at risk of poverty even if they had only two children (assuming they do not change their labour supply or income). This latter group includes more than 50% of all the poor living in households with at least three children.

At the heart of the differences between (i) households which are not at risk of poverty, (ii) those with incomes too low to avoid poverty risk while having dependent children, and (iii) those that would be at risk of poverty even without any children (or having only two if they had three or more), lie the patterns of economic activity and sources of income. Figure II.33 shows that among households with at most two children, the main difference between households at risk of poverty and those that are not, is in the employment rate (27 pp lower for the former in 2011). Interestingly, the employment rate was identical in both subgroups of households at risk of poverty, i.e. those that would be poor without children and those with sufficient

12 36% in the entire population, and much greater in rural than in urban areas (39% vs. 32%).

incomes to avoid poverty risk if the household consisted only of adults. However, an important difference between them was in the structure of the main sources of income (Figure II.35). The proportion of households living from hired labour was about 33 pp higher In households that would not be at risk of poverty if they had no children, than among households with incomes too low to avoid poverty risk even without children – in the latter group only about half of the households were living on incomes from work. After taking into account self-employment outside agriculture, this difference is as high as 40 pp, and the households that would not be at risk of poverty if they had no dependent children exhibited very a similar structure by main income sources to non-poor households with one or two children. It can therefore be argued that the distinction between households with up to two children both below and above the relative poverty line results from a higher proportion of households with only one working person (and related lower income) in households at risk of poverty. Households that would be at risk of poverty even without children distinguish themselves mainly with the high share (40%) of household depending on individual farming, pensions and social benefits (whereas just a few percent of households in the other two sub-groups depend on such income sources).

Among households with at least three children, the patterns of differences in economic activity and sources of income between the three types of households are similar. Non-agricultural employment was the main source of income for 92% of households that are not at risk of poverty and for 82% of households that would not be at risk of poverty while having two children. Importantly the employment rate among households with incomes above the relative poverty line was about 15 pp higher than among those at risk of poverty. Among households that would be at risk of poverty even with only two children, only 60% depend on non-agricultural employment and 20% on pensions and other social benefits. The employment rate in that group only slightly exceeds 50%, and one in three adults is inactive. A high child poverty risk in Poland is therefore partly related to the income gap emerging in some households due to having children (in spite of maintaining economic activity comparable to non-poor households), and partly to the presence of children, often multiple, in households only marginally attached to the labour market.

2.2 THE INTERGENERATIONAL DIMENSION OF POVERTY

Poverty experienced by children and families with many children is a particularly acute problem due to the strong correlation between living standards and social status, and the socio-economic status of the guardians prior to the financial independence of the children. This relationship is a consequence of limited intergenerational social mobility, i.e. change in the position of children in the social strata compared to the position occupied by the parents. This refers to changes within all aspects of social status, but the risk of poverty is strongly linked to the income dimension of this phenomenon. Limited intergenerational income mobility among those at risk of poverty leads to the transmission of poverty.

The phenomenon of intergenerational transmission of poverty in Poland has not been as well examined as in Scandinavian countries or the UK. For several decades many European countries have been collecting detailed panel data on the socio-economic situation of their populations. Such datasets enable analysis of relations between the financial status of a family and a child's subsequent income. Due to a lack of similar data, it is very difficult to come up with an exact diagnosis of the transmission of income and poverty in Poland.

Figure II. 37 | The proportion of relatively poor in Poland, depending on the duration of experienced poverty spells during teenage years (by year of birth).

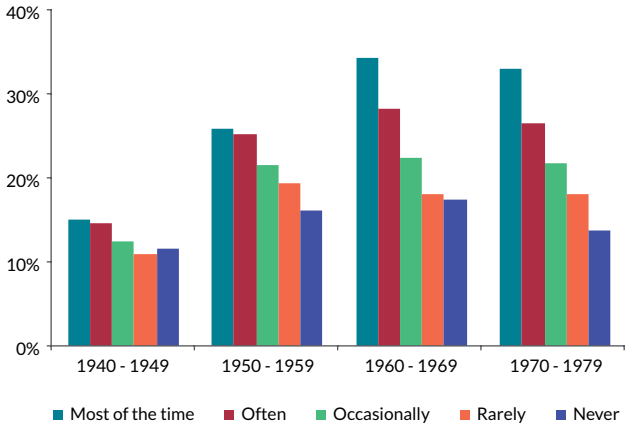
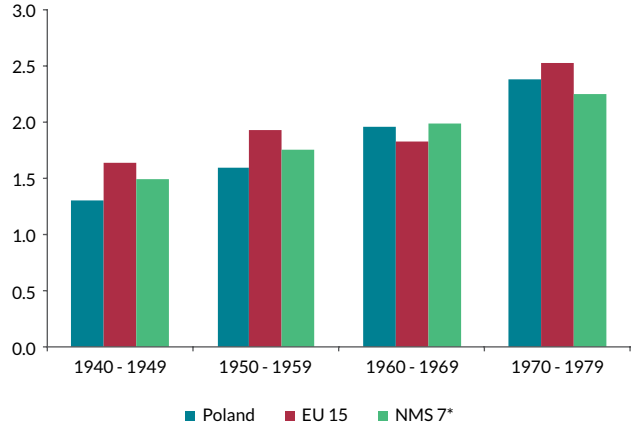


Figure II. 38 | The probability of poverty for a person who experienced poverty most of the time during teenage years vs. a person who did not experienced poverty, in Poland, EU-15 and NMS7 (by year of birth).



*Note: * NMS 7 – countries which joined the EU in 2004 - Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, Slovenia (excluding Poland, Cyprus and Malta).*
Source: own elaboration based on EU-SILC 2005.

BOX II.2 Determinants of the intergenerational transmission of poverty.

Understanding of the mechanism of intergenerational transmission of poverty is crucial in counteracting poverty. Poverty is not transmitted to the next generation as a feature, or state, but as a set of factors that increase the likelihood of poverty in the future (Moore, 2005). They are often highly complex and interdependent on one another. Numerous studies have indicated the existence of a number of factors that contribute to the occurrence of intergenerational transmission of poverty.

GENETIC FACTORS

Genetic factors, such as inherited personality traits and cognitive abilities are important for intergenerational transmission of income and, therefore, for the inheritance of poverty. Intelligence is to some extent inherited. IQ tests conducted in Germany among parents and their children show a clear correlation between parents' IQ and their children's cognitive abilities (Anger & Heinecke, 2008). However, contrary to expectations, the inheritance of intelligence contributes little to the intergenerational correlation of income (OECD, 2008). More importantly, inherited personality traits and inclination to certain behaviours are, which are only partly genetically determined.

EDUCATION OF PARENTS

Education is one of the key determinants of wages, living standards and social status. In all European countries there is a clear correlation between the level of education of the parents and their children (European Commission, 2008). Intergenerational transfer of education can take place on many levels. There are three basic channels of parental influence on the children's educational attainments. Firstly, there is a relationship between the abilities of a child and the parents, resulting, inter alia, from their genetic similarity (Juárez, 2011). Secondly, appropriate conditions for learning, access to scientific sources and external help are largely dependent on the financial situation of the family. The help from the family is often crucial for the ability to study at a university. Thirdly, the fact of having a certain level of education by parents and their demands on the children may also influence the child's educational choices (Belley & Lochner, 2007).

HEALTH STATUS

There is a strong correlation between health status and achievements. Even among 7-year-olds health exerts a significant impact on school performance (Case, Fertig, & Paxson, 2005). Health in childhood has been shown to influence the future position in the labour market. If the income of parents affects the child's health, then the health status may be another channel of intergenerational transmission of poverty (Doyle, Harmon, & Walker, 2005). The financial situation of the family impacts on children's health in two ways (d'Addio, 2007). First, parents with high income can afford access to medical services and resources not available in poorer households. In this way, earnings directly affect the health status of children. Second, a significant impact on the physical and mental health of children may be influenced by factors that correlate with the level of income. These include, inter alia, eating habits, housing, substance abuse and health awareness of parents.

NEIGHBOURHOOD

The spatial concentration of poverty and social problems enhances the persistence of poverty (Tarkowska, 2007). In early childhood the influence of the neighbourhood has a low impact on intellectual and emotional development (Ellen & Turner, 1997), but increases with age and involvement in relationships with people outside the family. The impact of neighbourhood on quality of family life is emphasized in many studies (e.g. Edwards & Mromfield, 2010, Ellen & Turner, 1997). There are several planes on which it can influence a child's development. First, the quality of and access to local health care, educational, cultural and social institutions, and transportation, affect the quality of family life and a child's development. Second, the socio-economic characteristics of the neighbourhood have an impact on the behaviour of parents towards their children (e.g. the style of parenthood, extent of parental authority and control). Moreover, the social structure and relations among residents in the neighbourhood, including children and adolescents, can have a strong influence on a child's motivation and educational choices.

FAMILY STRUCTURE

Whether a child is being raised by a single parent or a couple is relevant to their development. In general, children raised by single parents show poorer academic performance than their peers coming from two-parent families (OECD, 2011). Many studies have also shown the negative effects of family instability on the physical and mental health of children (Waldfogel, Craigie, & Brooks-Gunn, 2010). Events such as the death of a parent or separation adversely affect the child's development (OECD, 2009). If a family lives in poverty, difficult experiences associated with family break-up can contribute to the intergenerational transmission of poverty.

GENDER

Women are more affected by poverty and its intergenerational transmission than men (Tarkowska, 2007). Studies conducted in the UK between 1974 and 2000 (Blanden & Gibbons, 2006) clearly indicate the negative impact of poverty in childhood on the later standards of living, with women at greater risk of poverty persisting after their teenage years.

In addition, intergenerational income mobility may also be conditioned by factors such as ethnicity, household structure, and the age at which a child experienced poverty (Jenkins & Siedler, 2007). However, it must be remembered that the impact of a particular factor on the transmission of income may also depend on the education system, instruments of public policy, economic development and social norms in a given country.

Source: own elaboration.

Figure II. 39 | The probability of achieving higher education by a person with a parent with higher education to a parent with just primary education, in Poland, EU-15 and NMS7 * (for mother/father by year of birth).

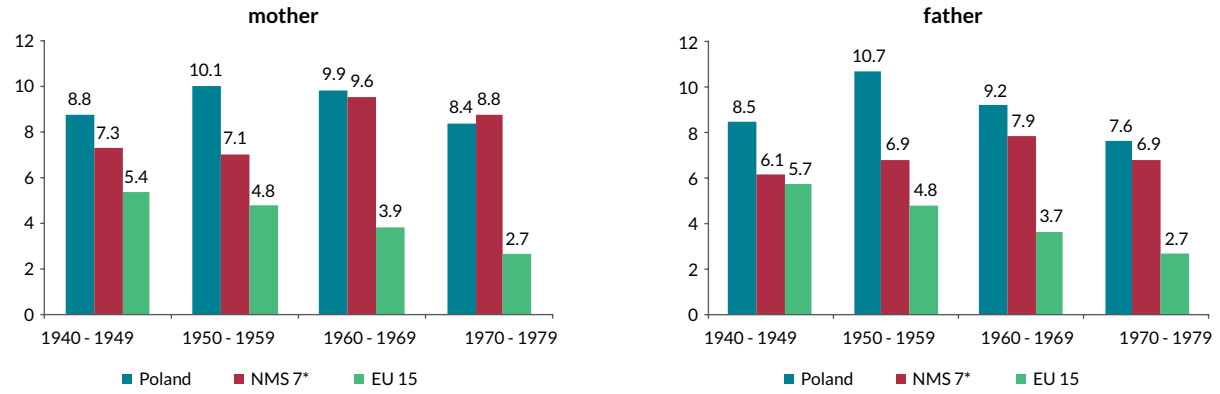


Figure II. 40 | The share of people at risk of poverty among individuals brought up in families with different parental structures (population aged 25-64).

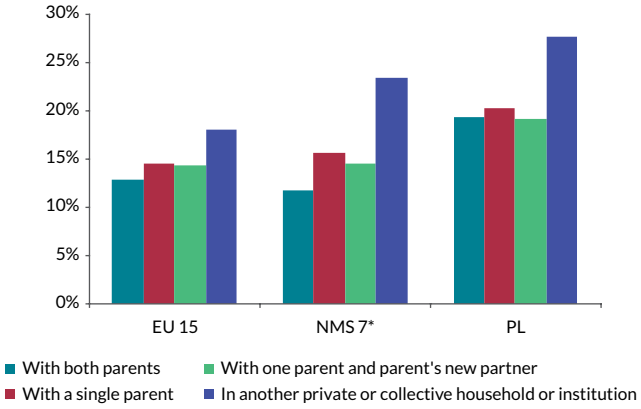
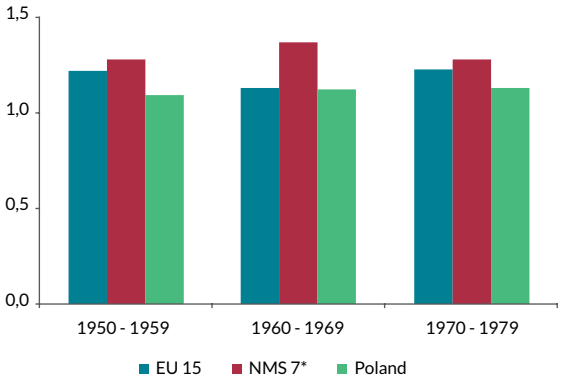


Figure II. 41 | Probability of being at risk of poverty for a person brought up by single parent in relation to both parents (by year of birth).



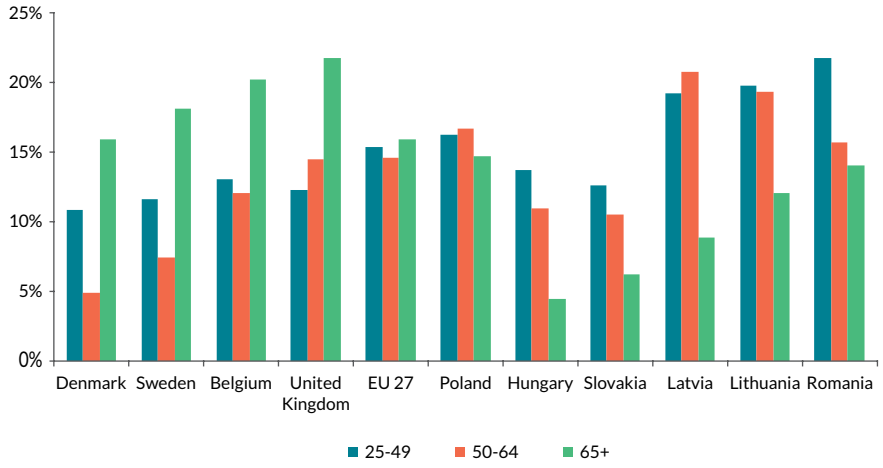
*Note: * NMS 7 – countries which joined the EU in 2004 - Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia, Slovenia (excluding Poland, Cyprus and Malta).*
Source: own elaboration based on EU-SILC 2005.

According to available data (SILC module 2005), the strength of links between the situation of the family and the child's subsequent income in Poland is comparable to that observed in other European Union countries (Figure II.38). The proportion of those at risk of poverty among people who grew up in a family in difficult financial situation is much higher than among those who did not experience childhood poverty (Figure II.37). Moreover, differences in at-risk-of-poverty rate between such distinguished groups of people in Poland are higher for subsequent cohorts born between the 1940 and 1970. However, this phenomenon should not be directly understood as changes in poverty transmission rates. The differences observed between the subsequent cohorts may result both from a change in the severity of this phenomenon over the previous few decades and also from an age-related decline in income inequalities between people who experienced poverty in childhood and those who did not. A similar pattern of increase in the relative poverty risk in subsequent cohorts is also observed in the EU15 and other EU New Member States, although these changes are not as pronounced as in Poland.

Education is one of the main determinants of income. The intergenerational transmission of education in Poland looks far less favourable against other European countries than income mobility. In the EU15, a person born between 1970 and 1979 to a parent with a higher education level has a 2.7 times higher probability of obtaining a higher educational degree than a person whose parents attained only primary education (based on SILC data 2005). This disparity seems small compared to the differences observed in Poland - for those born between 1970 and 1979, children of the best educated parents are 8 times more likely to obtain higher education than the children of the worst educated parents. Importantly, this relation between the education of parents and children has been gradually decreasing compared to the subsequent cohorts born between 1950 and 1970, mainly thanks to an increase (in subsequent cohorts) of the proportion of children with higher education among poorly educated parents.

The degree to which the status of parents is passed on to their children can also be influenced by family structure. People who did not grow up with both parents are more vulnerable to

Figure II. 42 | Relative poverty rate in selected EU countries, by age group , 2011.



Source: own elaboration based on EU-SILC data.

poverty in adulthood than those raised by both parents (Figure II.40). Poverty in adulthood is most likely for those who did not grow up with either of their parents. This applies particularly to the poorer EU countries. Among children raised by a single parent, poverty risk is lower for those who lived with two guardians (mother or father and their new partner). Interestingly, in Poland, where the relative poverty rate among 25-64 year-olds was higher than in the EU15 and NMS7 (SILC 2005), the relation of probability of poverty of a person brought up by one parent against a person brought up by two parents was lower than in the EU-15 and NMS7 (Figure II.41).

2.3 POVERTY AT IMMOBILE AND POST-WORKING AGE

People at an immobile age, i.e. women aged 45-69 and men aged 45-69, reveal distinct characteristics compared to the younger working age population.[13] They are less prone to change their job, profession or to upgrade skills. Due to their limited flexibility, any deterioration in the labour market may lead them to financial problems. This may be one of the reasons behind a relatively high relative poverty rate (17%) among those at an immobile age in Poland. Although this rate is the same for the total population in Poland, it is much higher than for 25-44 year olds. In comparison, in 2011, only 11% of those at a post-working age (60+ women and 65+ men) had an income below the relative poverty threshold. This low rate may seem surprising, but as Figure II.41 shows, the relative financial status of Polish old-age pensioners is quite good compared to other EU countries. Nonetheless, the material situation of people both at an immobile age and post-working age is more stable than among the younger population, while the chance of exiting poverty among the 45+ is relatively lower than for those aged 25-44.

According to SILC data, the poverty risk rate among Poles aged 50-64 was slightly higher than the EU average, and lower for those aged 65+.[14] A relatively low poverty risk rate at post-working age is not the norm in the EU. In countries such as Denmark, Sweden, Belgium and the UK, the poverty rate among the elderly (and also children) is relatively high. Poland belongs to those countries in which poverty risk usually decreases with age (in Poland with the exception of those at an immobile age). A similar situation can be observed in all countries of the previous Eastern Block (except Bulgaria) and countries such as Germany, France, Italy and Spain.

Who are the 45+ years old at risk of poverty?

In the last ten years or so, Poland has seen an increase in the relative poverty rate among those at immobile and post-working ages, with a simultaneous stabilisation of poverty rates in the other age groups. At the end of the 1990s, the relative poverty rate among those at post-working age did not exceed 8%, and in 2000-2003 it decreased. This was partly related to stagnation in the financial situation of the rest of the population – between 2001 and 2003 the relative poverty threshold increased by only 3% in nominal terms and remained at the same level in real terms. People at post-working age, secured against inflation by the indexation of old-age and disability pensions, experienced a relative improvement in their financial situation against those with income from other sources, especially work. However, over the longer period, income from work grew faster than incomes from other sources, which resulted in an increase in the relative poverty threshold (by 30% in real terms between 2005 and 2008), so between 1998 and 2011 a significant increase (by 6 pp) in the relative poverty rate among those at an immobile age was recorded. Since 2004 the increase in relative poverty rate among individuals aged 45+ has been accompanied by a decrease in the share of the poor in quasi-absolute

13 This group is defined as older than 45 and before retirement age valid until 2012.

14 In the comparison between countries, the immobile group included only persons aged 50-64, due to the availability of data in the Eurostat database and the fact that with the different retirement ages, a conventional age range results in the most reliable comparison.

Figure II. 43 | Relative and quasi-absolute poverty rates at immobile, post-working and prime age subpopulations in Poland, 1998-2011.

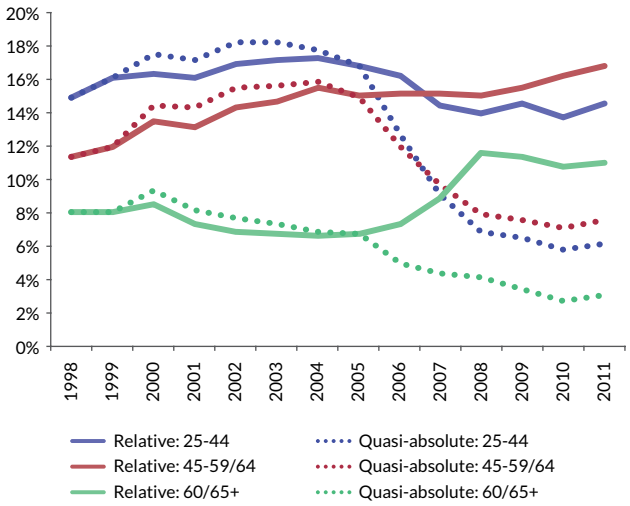
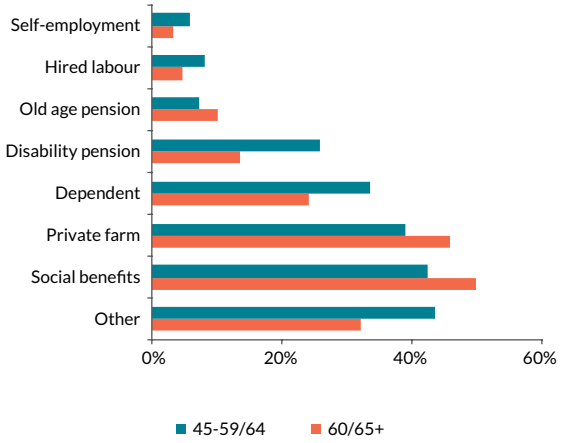


Figure II. 44 | Relative poverty rate of people at an immobile and post-working age by main source of income, 2011.



Source: own elaboration based on HBS data.

Figure II. 45 | Structure of the immobile age population at risk of relative poverty, by economic activity*, 2011.

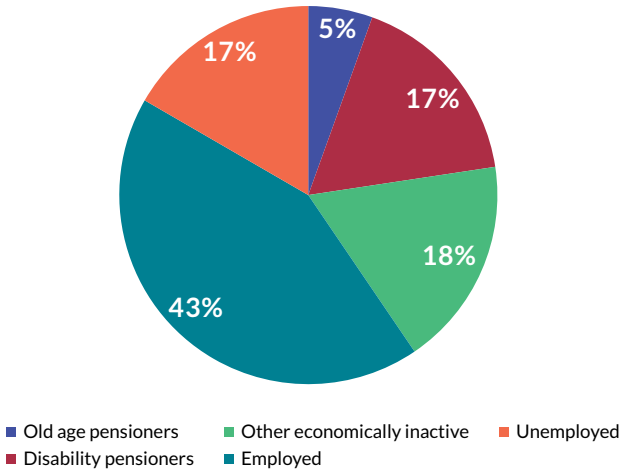
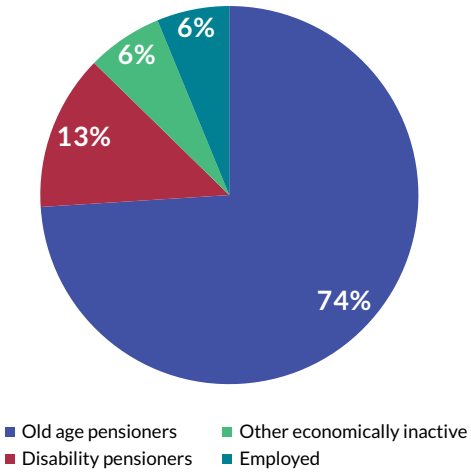


Figure II. 46 | Structure of the post-working age population at risk of relative poverty, by economic activity*, 2011.



*Note: *categories of old-age and disability pensioners and other inactive persons include only the economically inactive (pensioners who work are included in the working group).*
Source: own elaboration based on HBS data.

terms. Therefore, despite the deteriorated financial situation in these age groups against the younger population, their financial condition was improving in absolute terms, although more slowly than among those at prime age, who were the first and the most efficient to benefit from the improved situation in the labour market.

Among the relatively poor at an immobile age, the share of working individuals (43%) is much higher than in the total population, nevertheless the poverty rate among immobile workers is quite low. One of the reasons behind the high poverty risk rate in this age group is an almost identical share of economically inactive (old-age and disability pensioners and others) who exhibit poverty risk rates a few times higher than their working peers. The unemployed constitute almost 20% of all individuals at risk of poverty at an immobile age. The age of 60 for women and 65 for men are the boundaries after which the poverty risk significantly decreases and also changes its character. The poverty of women and men aged 65+ is a poverty of the economically inactive – only 6% of them works. For almost 90% of people in this group, the main source of income is an old-age or disability pension.

People at an immobile age don't upgrade their skills or change jobs as often as younger people. Fewer than 2% declared participation in lifelong learning (formal and non-formal),

Figure II. 47 | People at an immobile and retirement age, by the main source of income, 2011.

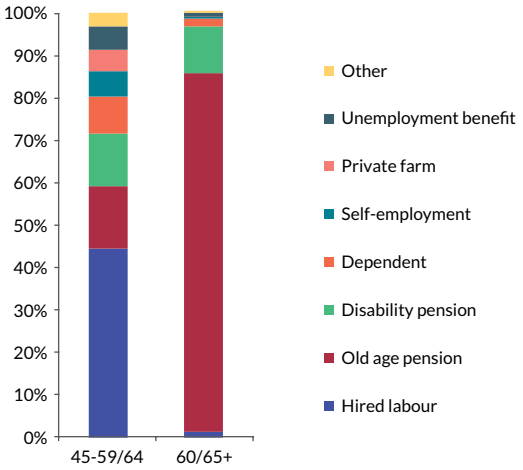


Figure II. 48 | Probability of exit from and entry into relative and quasi-absolute poverty within one year from the time of the survey, by age, 2006-2010.

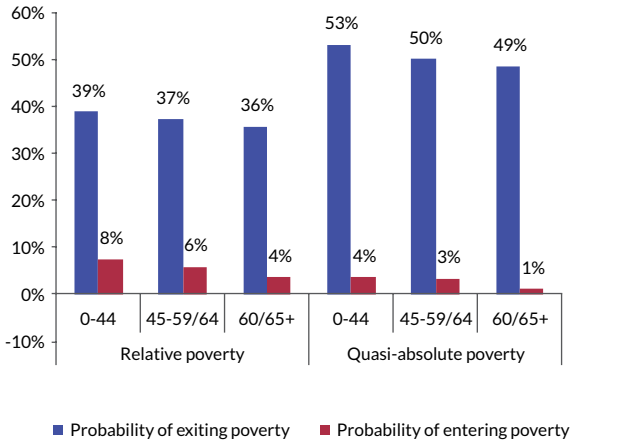


Figure II. 49 | Probability of exit from and entry into poverty within a year from the time of the survey, among people at an immobile age by economic activity, 2006-2010.

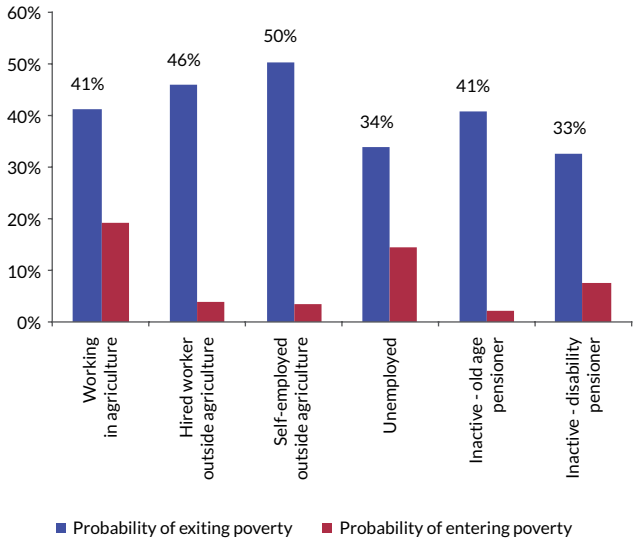
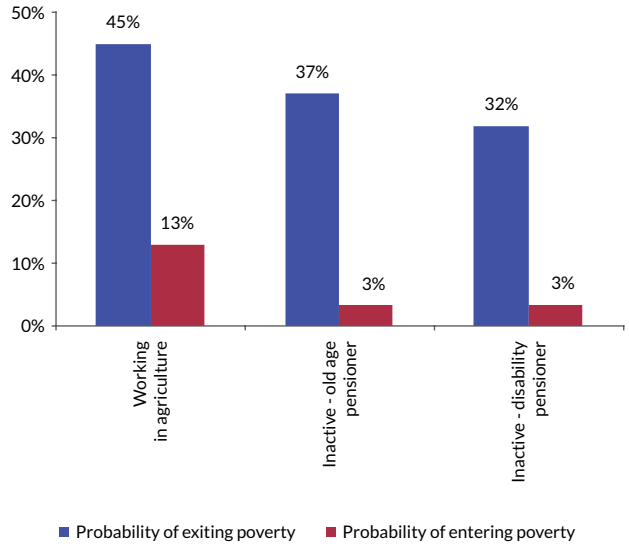


Figure II. 50 | Probability of exit from and entry into poverty within a year from the time of the survey, among people in the post-working age by economic activity, 2006-2010.



Source: own calculations based on HBS data.

which is several times lower than in the population aged 25-64 years (IBS/CRZL, 2008). The ensuing relatively low labour market flexibility is responsible for persistent poverty in this group. Inevitably, the probability of exit from relative and quasi-absolute poverty within a year (from the moment of participating in the HBS) among persons aged 45+ is lower than in younger age groups. The opposite trend can be observed for the probability of entering poverty, which decreases with age.[15] This is particularly evident in the group of people at retirement age where the vast majority receive a fixed monthly income (pension) which usually exceeds the relative poverty threshold, and even more so in absolute and quasi-absolute terms. Inflows to and outflows from poverty are lower than in the younger ages and thus the situation of those at immobile and post-working ages is more stable than in the younger groups, although poverty is more persistent. This, in turn, is strongly connected with labour market status – both among people at working and post-working ages, the risk of poverty is highest among the economically inactive and the unemployed, while lowest among non-agricultural workers (see Figure II.49).

The persistence of poverty increases with age and is primarily associated with lower labour market flows among those aged 45+ compared to younger people (with the exception, of course, of early exits from the labour market at immobile and post-working ages), in particular with lower inflows to employment.

15 Relatively small portions of the observed flows occur close to the poverty threshold.

Figure II. 51 | People at risk of relative poverty in the reference year, by age and status (financial and in the labour market) in the subsequent year, 2006-2010.

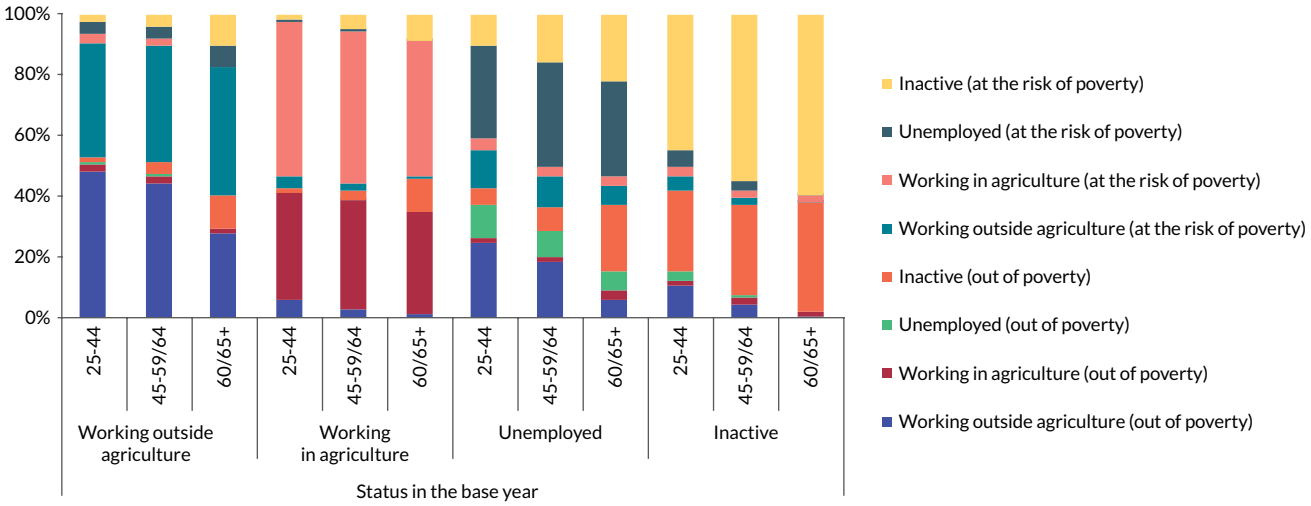
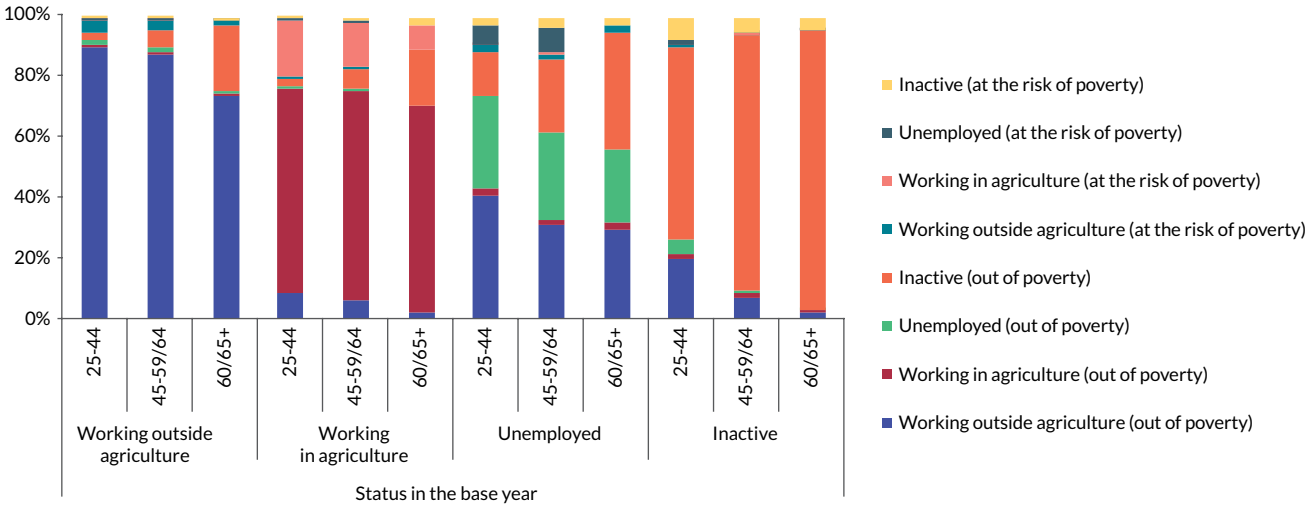


Figure II. 52 | People above the relative poverty threshold in the reference year, by age and status (financial and in the labour market) in the subsequent year, 2006-2010.



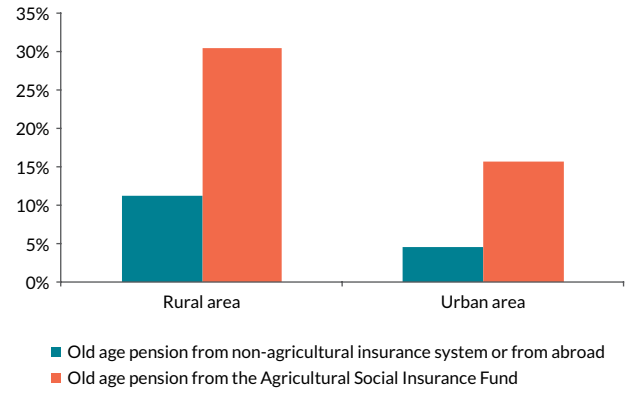
Source: own calculations based on HBS data.

Secondly, poverty persistence is connected with the fact that among the unemployed and economically inactive, the chance to get out of poverty after finding a job decreases with age; for those aged 25-44 it is 63%, while at a post-working age it is only 48%. Among the unemployed at working age it strongly depends on the sector where they find a job. The inactive and the unemployed who start working in agriculture are much less likely to get out of poverty than those who become non-agricultural workers. A higher age also decreases the chance of exiting poverty among the working-poor. On the other hand, workers who are not at risk of poverty are also increasingly less likely to become working-poor or unemployed with increasing age. The labour market and income status of individuals stabilises over the life course – flows from poverty, unemployment and inactivity decrease, while opposite inflows to poverty and unemployment also decline. Retirement plays a significant role here – most of the working-poor (in relative terms) outside agriculture exit poverty after retiring and undertake old-age pensions. Among the working- poor in agriculture, and among the unemployed and the inactive, this figure is lower at 30%-40% of those retiring.

The financial situation of pensioners

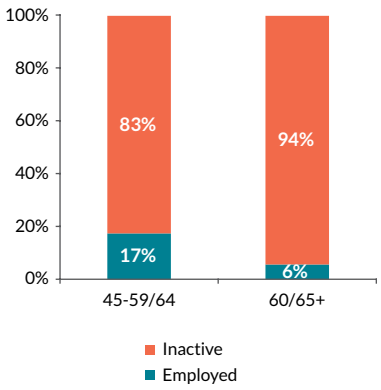
The financial situation of pensioners largely depends on the source of the pension. Poverty risk among those obtaining agricultural pensions (from the KRUS system) is much greater than those receiving non-agricultural pensions. This is the main source of the high difference in the poverty rate between pensioners living in rural (18%) and urban areas (5%). Despite the relatively low risk of poverty in this group, about 8% of pensioners do work. In the post-working age group, 6% of disability pensioners and 17% of early retirees are economically active, and over a half of them are employed in services. One in three economically active pensioners works in agriculture

Figure II. 53 | Relative poverty rate among pensioners, by source of pension , 2011.



Source: own elaboration based on HBS data.

Figure II. 54 | Pensioners by age group and economic activity , 2011.



(at an immobile age this share is 25%, and at a post-working age, 36%). Some elderly farm owners continue working at a post-working age despite receiving old-age pensions or other benefits. Moreover, the pensions of farmers are usually lower than in the non-agricultural pension system. Economically active pensioners outside agriculture usually work as teachers (6.3%), medium administrative staff (6.5%), security staff (5.3%), doctors (4.5%) and cleaners (4.4%).

Despite obtaining pensions and working at the same time, the relative poverty rate among all working pensioners amounts to 7%. It must be emphasised that 92% of all working and relatively poor pensioners work in agriculture, and the rate of poverty among pensioners working outside agriculture is lower than 1%. Importantly, the additional income from work is necessary in many cases for avoiding poverty – if such income from work was excluded from the income of a household with a working pensioner, then the poverty rate among working pensioners would be 30%. It can therefore be concluded that the work of pensioners is largely triggered by their difficult financial situation.

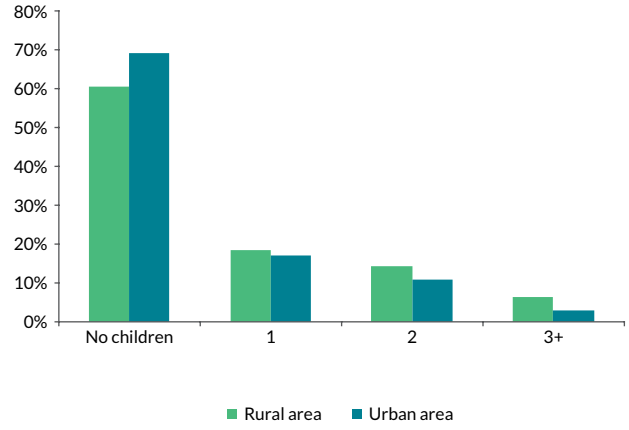
2.4 POVERTY IN RURAL AREAS

Inhabitants of rural areas constitute nearly 60% of all the relatively poor in Poland, even though less than 40% of the Polish population live in the countryside. One in four residents in rural areas live below the relative poverty threshold, and one in twenty are poor in absolute terms. These levels are significantly different from those observed in urban areas, where in 2011 the at-risk-of-poverty rate was 11% in relative terms and 1% in absolute terms. The reasons behind this state of affairs can be found in differences in the structure of households and the agricultural specificity of the Polish rural areas. In this subsection we present rural poverty in the light of crucial characteristics of households, with a focus on the interactions between poverty and the agricultural activity of rural households.

Rural households

Differences between rural and urban households are already visible in their structure. Rural households have a higher (by 1) average number of household members and more children, which is especially visible in the share of households with

Figure II. 55 | Structure of the population of rural and urban households, by number of children, 2011.



Source: own elaboration based on HBS data.

Figure II. 56 | Structure of rural and urban populations, by education level attained, 2011.

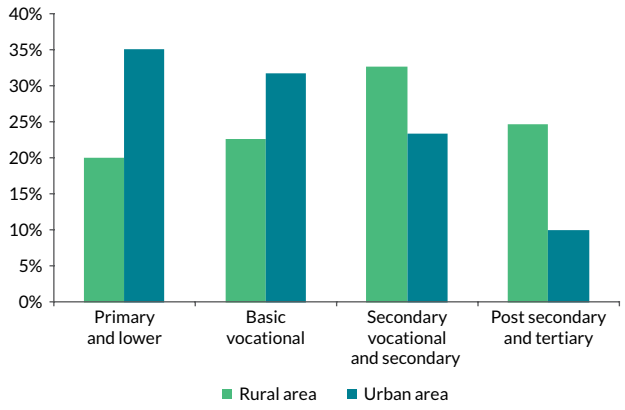


Figure II. 57 | Relative poverty risk rate by main source of income and place of residence, 2011.

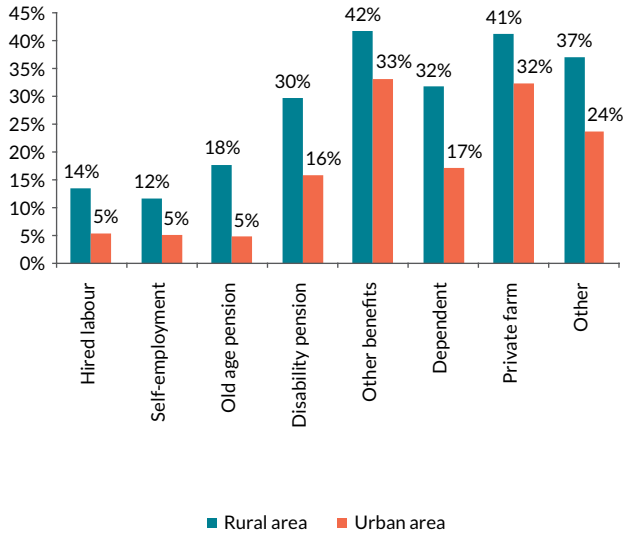
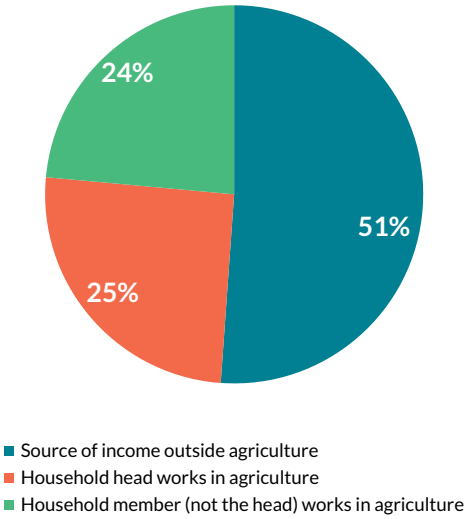


Figure II. 58 | The proportion of members of particular household groups in the total number of relatively poor in rural areas, 2011.



Source: own elaboration based on HBS data.

Figure II. 59 | The share of particular types of households in the total number of rural households, 1998-2011.

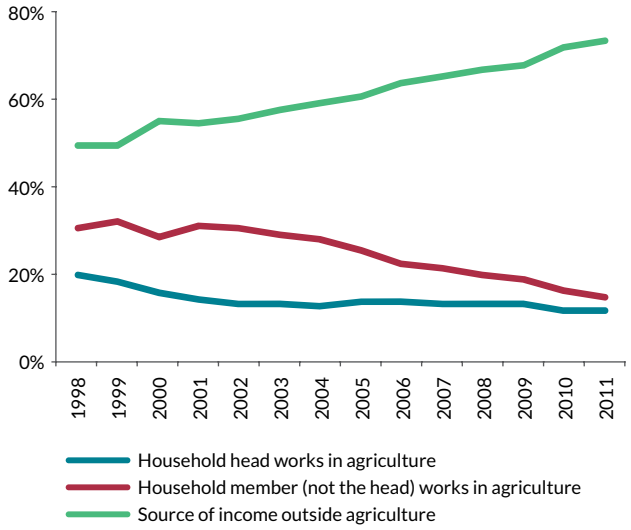
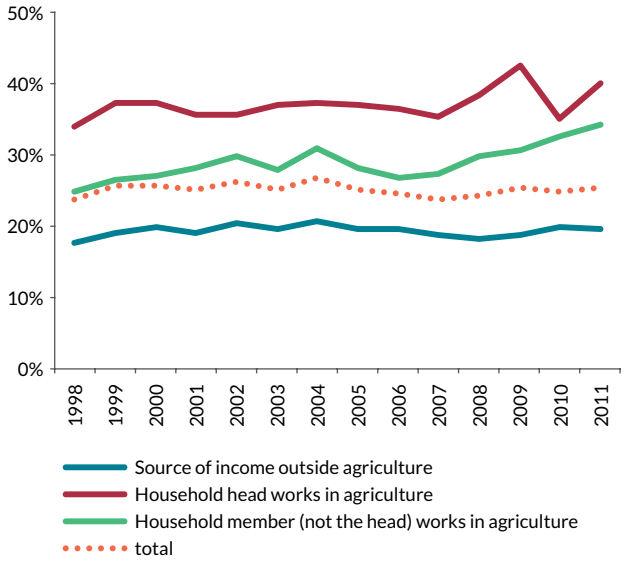


Figure II. 60 | Relative poverty rate among rural inhabitants depending on the type of household, 1998-2011.



Source: own elaboration based on HBS data.

at least 3 children being two times higher than in urban areas. Importantly, the higher number of people in rural households is not linked to the number of workers in a household as strongly as in cities. In rural households, there are more individuals that depend on another person – 5 persons per 10 rural households, while only 3 per 10 for urban households. All these features contribute to a higher poverty risk among rural households.

Moreover, rural households exhibit a lower average level of education – the proportion of those with just primary education (junior high school and lower) is almost ¾ higher than in urban areas. It is also important that the number of people who live in rural areas decreases with each subsequent level of education. Among those with higher education, only 20% live in rural areas.

The characteristic feature of rural poverty is the strong difference between the types of households, as distinguished by the source of income: agricultural (i.e. running or working on a private farm being the main source of income), partly agricultural (additional income from agriculture) and non-agricultural. Below we present the characteristics of non-agricultural households and compare them with urban households, and then we move to the interactions between private farming and rural poverty.

Figure II. 61 | The structure of the population at risk of relative poverty in non-agricultural households, by main source of household income, 2011.

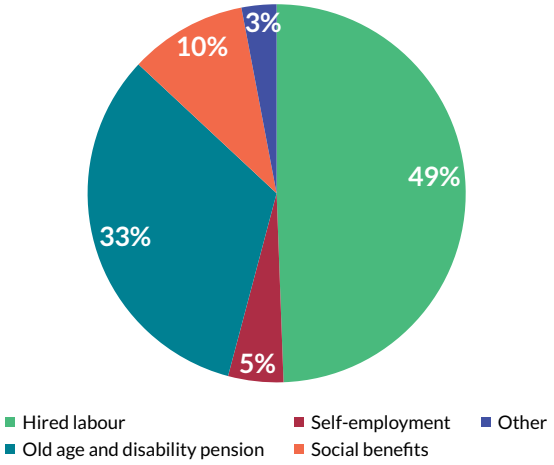


Figure II. 62 | The structure of population at risk of relative poverty in urban households, by main source of household income, 2011.

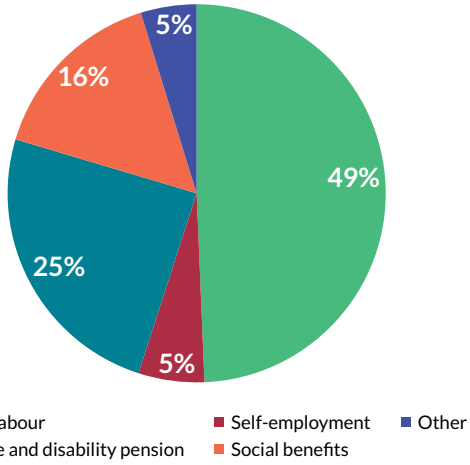


Figure II. 63 | The structure of the population at risk of absolute poverty in rural households, by main source of household income, 2011.

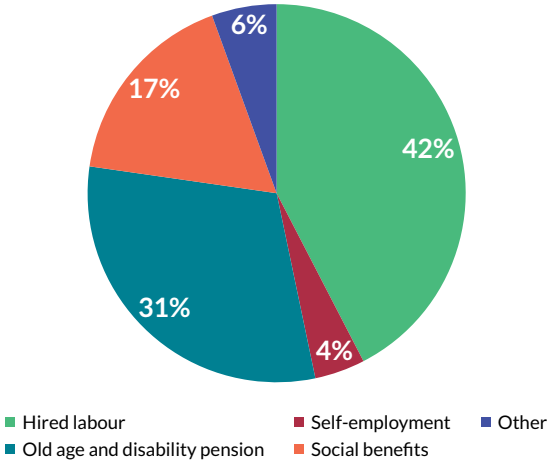
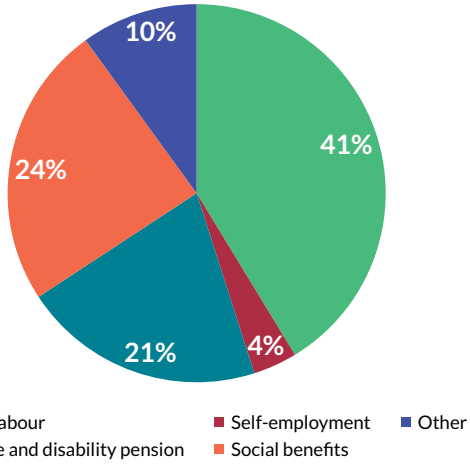


Figure II. 64 | The structure of the population at risk of absolute poverty in urban households, by main source of household income, 2011.



Source: own elaboration based on HBS data.

Poverty of non-agricultural rural households

Although the relative poverty rate among inhabitants of rural areas was 25% in 2011 (with minor fluctuations between 1998 and 2011), the poverty rate among rural persons living in non-agricultural households was about 5 pp lower every year, and similar to the poverty rate in the total population, although still significantly higher than in urban areas. In this regard, interactions between non-agricultural households and the labour market may be compared to their urban counterparts, and the differences that exist reveal the character of rural poverty not directly linked to the specificity of agriculture.

Classification by main source of income shows that almost half the people living in rural non-agricultural households live on income from work outside of agriculture. This figure is similar to urban areas, which indicates the potential significance of in-work poverty in rural households. Differences do appear with regard to social transfers, as in rural areas a greater share of those at risk of poverty (and living in non-agricultural households) depend on old-age and disability pensions. At the same time, the share of relatively poor in rural households who depend mainly on social benefits was lower than in the cities. However, if social benefits are put into one category with old-age and disability pensions, then the share of such a category is similar in rural and urban areas, although the structure of transfers paid to poor households is different – in rural areas, poverty in households depending on old-age and disability pensions is much more common.

Figure II. 65 | Share of partly agricultural households with the main source of income from hired labour and old-age and disability pensions in a given subpopulation, 2011.

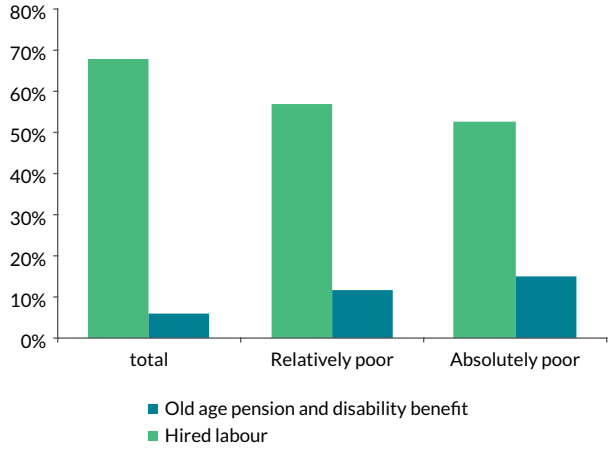
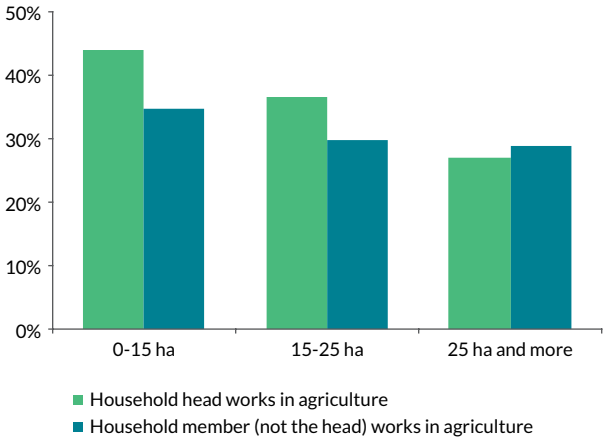


Figure II. 66 | The relative poverty rate in rural households in which at least one person works in agriculture, by the acreage of arable land.



Source: own elaboration based on HBS data.

Figure II. 67 | Structure of the population of agricultural pensioners at risk of relative poverty, by main source of income in a household, 2011.

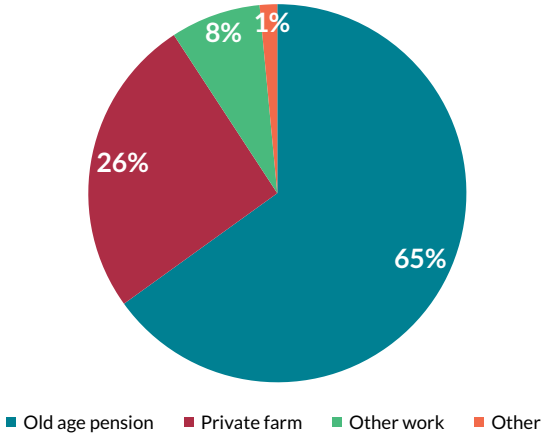
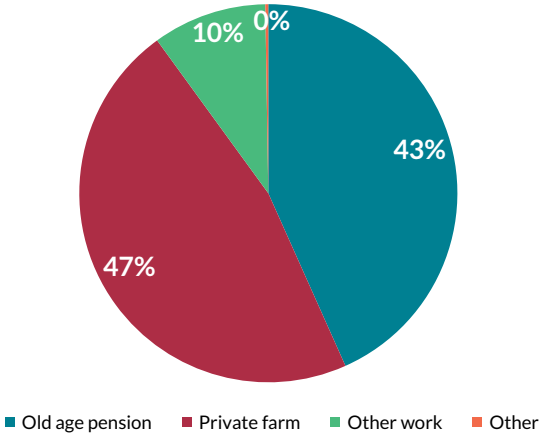


Figure II. 68 | Structure of the population of agricultural pensioners at risk of absolute poverty, by main source of income in a household, 2011.



Source: own elaboration based on HBS data.

Poverty of agricultural households

Rural non-agricultural households, despite their considerable number, are not responsible for the scope of poverty in rural areas, as the risk of poverty in this group is lower than the average for all rural households. It is the (decreasing) group of agricultural households that strongly increases the poverty rate in rural areas. Persons living in households depending on agriculture constitute almost a half of all rural area inhabitants who are at risk of poverty. Poverty risk in these households depends largely on the scope of agricultural activity. Among agricultural households that are not at risk of poverty, income from agriculture yields about ¾ of the total income, while in relatively poor households it is only ½.[16] Moreover, there is a negative dependence between the poverty risk rate and the acreage of agricultural land owned by the agricultural household, which suggests that agricultural activity does not increase the poverty risk if it is conducted on a sufficiently large scale. The data of the National Agricultural Census show that between 2002 and 2010 the average farm acreage increased from 5.76 ha to only 6.82 ha. The persistent dispersion of acreage and low-productivity of farms enhance differences between the incomes of people living in agricultural households (and in consequence in all rural households) and the income of urban residents who work in non-agricultural sectors, with faster increasing productivity and wages. The share of the relative poor among the employed (outside agriculture) in rural areas is three times lower than among those depending on agricultural activity, but at the same time it is three times higher than the rate of the working-poor in cities.

16 The issue of income structure in farms is discussed in detail in Part III.

Households with income from agriculture as only an additional source of income form a specific group of rural households. They may be named 'partly agricultural' as their members are only partly involved in agriculture, treating income from farming as a supplement to their main income from other sources, either from tradition or habit. In most cases, these households depend mainly on hired work, but if we limit the population of interest to only the relatively poor among them, the share of rural employee household members decreases while the share of those depending on old-age and disability pensions increases. The share of pensioners and disability benefit recipients in this sub-population is even greater if absolute and quasi-absolute measures of poverty are used, while the share of employees is still smaller than in the case of the relative measure.

Persons receiving pensions under the agricultural social insurance system (KRUS) in most cases live in households where the main income comes from old-age pensions. However, there are also many who receive a KRUS pension and at the same time are members of an agricultural household. It is especially visible for absolute poverty, where such persons constitute more than 45% of agricultural system pensioners at risk of poverty. It shows a link between the poverty of farmers and pensioners in rural areas. Old-age pensions in agricultural households at a high risk of poverty are often a form of benefit for all the household members. On one hand, low agricultural pensions make it possible for some to quit agricultural activity, while on the other hand, even if they combine their pension with the agricultural income, the total is not enough for all household members to avoid poverty.

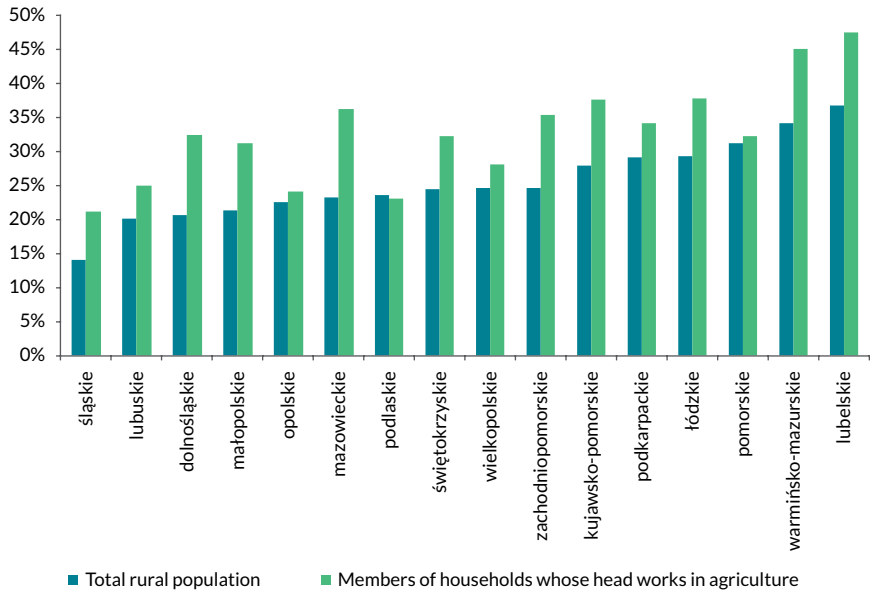
In effect, although the relative poverty rate for young and working-age inhabitants of rural areas is two times higher than in urban areas, at post-working age it is three times (women) and four times (men) higher than in cities. This disparity results mainly from differences in the level of old-age pensions paid from agricultural and non-agricultural systems. One in three rural old-age pensioners receive pensions under the agricultural system, on average visibly lower than the pension from the non-agricultural system. In urban areas, only 7% of pensioners receive a KRUS pension.

There is a strong connection between the widely understood agricultural activity (including agricultural pensions paid to former private farm owners and workers) and rural poverty. However, the importance of agriculture has evolved in the last ten or so years. As late as in 1999, half of rural households had at least one person working in agriculture, and for 40% of them agricultural labour was the main source of income. According to LFS data, the number of people working in agriculture has dropped by 40% since the mid 1990s. In effect, currently most rural households (74%) are those that do not have anybody working in agriculture, and the share of rural households depending mainly on agriculture has dropped to 15%. The decompositions and flow estimations presented in Chapter 1 show that both in microeconomic and aggregated approaches, the outflow from agriculture to other sectors has contributed to a decrease in poverty. However, the increase in the share of non-agricultural households has resulted mainly from the transformation of households that included a person working in agriculture who was not the head of the household. An analogous flow of heads of agricultural households has been much lower.

Regional disparities in rural poverty

The high rural poverty rate is not a rule across the entire country. Although in most regions (voivodeships) the rural poverty rate is about two times higher than in urban areas, there are some regions where it is relatively low. One example is the Silesian (Śląskie) voivodeship where the rural poverty rate was 14% in 2011, similar to Silesian urban areas (12%). Interestingly,

Figure II. 69 | Rural poverty rate and poverty rate in households in which at least one person works in agriculture, 2011.



Source: own elaboration based on HBS data.

Figure II. 70 | Relative poverty risk rate in rural areas vs. the Gini coefficient for the acreage of agricultural farms, by voivodeship, 2011.

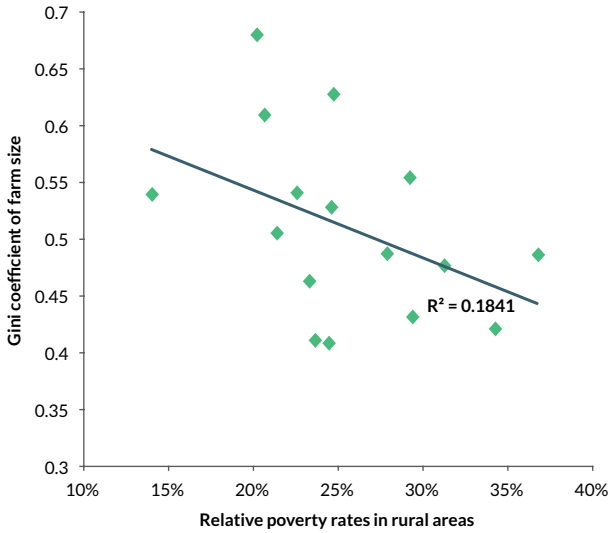


Figure II. 71 | Absolute poverty risk rate vs. the Gini coefficient for the acreage of agricultural farms, by voivodeship, 2011.

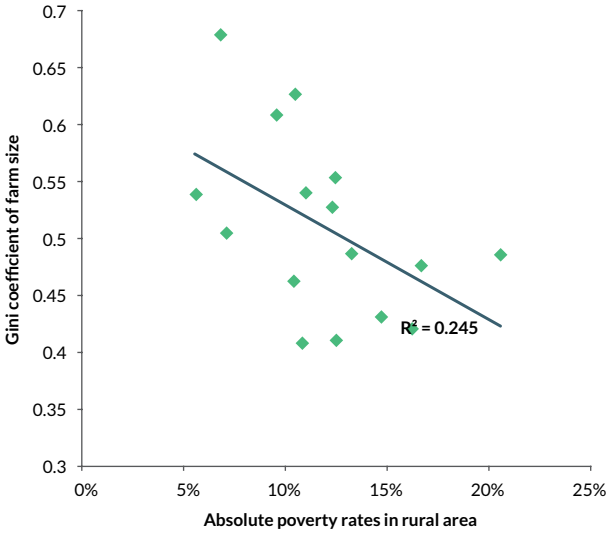


Figure II. 72 | Rural relative poverty rate vs. average income of the relatively poor in rural areas, 2011

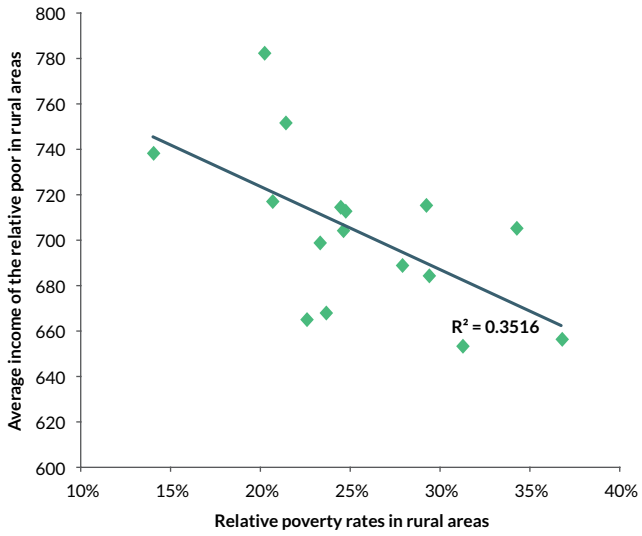
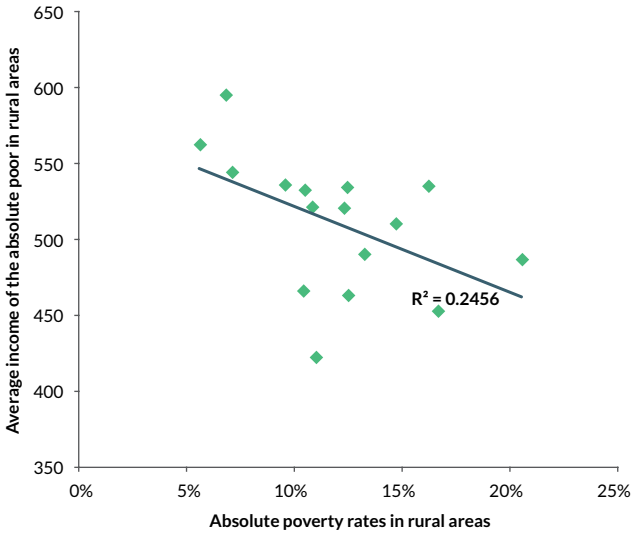


Figure II. 73 | Rural absolute poverty rate vs. the average income of the absolutely poor in rural areas, 2011.



Source: own elaboration based on HBS data.

the Silesian voivodeship is a region with the lowest share of agriculture in employment in Poland (according to LFS data, 2.9% in 2011). At the other end, the highest rural poverty risk was observed in Lubelskie voivodeship where it was 2.5 times higher than in urban areas, and agriculture employs 28% of all workers, more than anywhere else in Poland. However, despite these figures, there exists no statistically significant relation between the scale of employment in agriculture and rural poverty rates across the regions of Poland.

One of the correlates of rural poverty across Polish regions are disparities in the acreage of farms – the greater the disparities in a given voivodeship, the lower the risk and depth of rural poverty (Figures II. 70–II.71). However, there exists no correlation between the average acreage and the poverty rate in voivodeships. Perhaps in Poland, where most agricultural farms have a low acreage, the presence of a more varied arable land structure with more medium and large farms is accompanied by a higher productivity in agriculture and hence lower rural poverty rate.

Moreover, voivodeships with a higher poverty rate in rural areas also have a greater depth of poverty (Figure II.72-II.73). This indicates a strong interaction between the severity and prevalence of rural poverty, and signals an important problem for socio-economic policy aimed at the reduction of rural poverty. In areas which are at the greatest risk of poverty, public policy needs to address a potentially numerous group of people and also compensate for the depth of poverty in individual regions.

Summary

The aim of this Part of the Report is to explain the diversity in the incidence and character of poverty in Poland, especially in those socio-demographic groups that are most affected by poverty or that due to certain characteristics, such as age, have a limited chance to exit poverty on their own. The problem of in-work poverty has been noticed and discussed across Europe, but in Poland poverty mainly affects jobless people. The lack of work, and especially dependence on social benefits and unearned sources of income, significantly raises the risk of poverty, and the widening income gap between inactive and working Poles has resulted in the increased risk of relative poverty among the economically inactive. Decompositions presented in Chapter 1 show that the changes in poverty rates between1998 and 2011 were mostly influenced by changes in poverty risk among the economically inactive, while also among workers and children. Within the working population, the structure of the population was the most important factor. A slight increase in the risk of relative poverty among the working population (due to an increase in income disparities) was balanced by reallocation of the workforce from agriculture to other sectors, which contributed to a decrease in in-work and overall poverty, regardless of business cycle fluctuations.

The deterioration in the labour market between 1998 and 2004 was so strong that it increased the risk of absolute and quasi-absolute poverty, mainly due to a decrease in the employment rate and increase in the risk of poverty among the economically inactive. The increased risk of poverty was mainly related to an increased share of households without any workers, and higher risk of poverty among single-worker households. Confronted with stagnant wages, labour income of a single person in a household was often not enough to avoid poverty risk. These processes were reversed in late 2000s and in 2011 the rates of absolute and quasi-absolute poverty risk were distinctly lower than in 1998, for all three groups in the labour market – workers (decrease of in-work poverty rate in nearly 50% resulted from the reallocation of workforce from agriculture to other sectors), the unemployed and inactive. After 2005, the decrease in poverty risk was mainly caused by the employment growth, but the high wage growth also brought about a distinct decrease in absolute and quasi-absolute poverty risk among single-worker households. However, in the significant wage growth also caused an increase in relative poverty rate among non-working households, especially in old-age pensioner households, and slightly in single-worker households. The importance of employment for avoiding poverty risk is confirmed by the flows at the individual level that are analysed in the Chapter 1. Between 2005 and 2011, 57% of people who got out of poverty within a year, increasing income above poverty threshold was associated with earnings from paid job (which in 2/3 of cases was outside agriculture).

Between 1994 and 2011 the relative poverty rate in households with children was on average 2.5 times higher than in households without under-16 year olds, and in recent years this disparity has slightly increased. The greatest disparity, a ten or so percent increase in the relative poverty rate, occurs between households with two children and those with three or more. More than 1/3 of members of households with three persons below 16 years of age are relatively poor. Results presented in Chapter 2 suggest that having children greatly increases the risk of poverty among households headed by 25-50 year olds. In 2/3 of such relatively poor households, an identical level of income would be enough to avoid relative poverty if the couple had no children and did not receive any children-related benefits. The main difference between these relatively poor households and households with one or two children that are not at risk of poverty, is their slightly lower employment rate and higher proportion of households with only one earner. A slightly different situation can be observed among households with three or more children. More than half the relatively poor households in this group would be poor even if they had only two children, i.e. their incomes would not be enough to avoid poverty, and subsequent children only deepen their relative poverty. Only 60% of households with three or more children depend on non-agricultural work (only half the adults in these households have a non-agricultural job), and 20% depend on disability pensions and other social benefits (one in three adults is economically inactive). Both non-poor households with at least three children and those that would avoid poverty if they had two children, depend in the vast majority on non-agricultural work, and the employment rate is decidedly the highest among households not at risk of poverty. This indicates that public policy aiming to prevent child poverty should not only utilise transfers that close the gap in equivalised income resulting from having children, but also should try to stimulate economic activity, support working parents (in terms of child care) and prevent the long-term exit from labour market by parents.

In Poland, the strength of links between the financial situation of a family and the child's future income is similar to that in the EU countries. The share of the relatively poor that were brought up in a family with a difficult financial situation is much higher than among those that have not experienced poverty. Low health status, no possibility of further education and the lack of family support, result in a very difficult situation for such individuals. People who experienced poverty in childhood or adolescence are also more likely to become parents early, which deteriorates their already low financial status (Warzywoda-Kruszyńska & Golczyńska-Grondas, 2010). A low labour market status and no ability to support oneself and one's children creates a risk of intergenerational poverty transmission, a significant challenge for public policy.

Looking at the characteristics of incomes of persons who usually do not have small children, i.e. aged 45+, one can notice that among those at this immobile age (45-59/64) and after retirement, the financial situation is more stable than among younger individuals. This has two sides. First, at an immobile age poverty risk is greater than among those aged 25-44, especially if paid work is not the main source of income. Second, the chance of exiting poverty is lower, except for reaching retirement age. Contrary to the widespread belief that the elderly are at a high risk of poverty, those at a post-working age were at the lowest risk of poverty among all the distinguished age groups above 24 years of age. The low relative poverty rate among people aged 65+ is characteristic for other post-communist countries. However, working pensioners would often be in a difficult situation if they did not work. In addition, if a pensioner works and is still relatively poor, then it usually means that they are farmers. Among agricultural pensioners (under KRUS), the poverty rate is much higher than among non-agricultural pensioners (under ZUS) and those who receive foreign pensions. The fact that the former often still work, usually on their own farm, is not enough to close the gap in income.

As a result, although 60% of the Polish population live in urban areas, almost 60% of the relatively poor live in rural areas. One in four rural residents is relatively poor, and about ¼ of them depend on non-agricultural work. Non-agricultural workers in rural areas are usually less educated than their counterparts in towns and cities, but are at a lower risk of poverty than those rural inhabitants who work in agriculture. A further ¼ of the relatively poor in rural areas live in households that depend mainly on social benefits, among which the share of old-age and disability pensioners (especially those receiving agricultural pensions) is higher than in cities. The remaining half of the relatively poor in the country live in households where agricultural work is the main or an additional source of income. The risk of poverty in agricultural households depends largely on the scale of agricultural activity, as relatively poor households usually are small and have some additional sources of income (benefits, non-agricultural work) which often do not suffice to get them out of relative poverty. In the last ten or so years reallocation to other sectors has happened in a large fraction of households in which there was a person working in agriculture, has which contributed to an improvement in living conditions in these households. However, heads of households have rarely left agriculture and hence the related persistent low productivity in agriculture and small acreage of farms. The persistent dispersion of land and low-productivity in agriculture deepens disparities between the incomes of those living in agricultural households (and so generally in rural areas) and urban households, where people work in non-agricultural sectors where productivity and wages grow faster.

Bibliography

Anger, S., & Heineck, G. (2008), Do Smart Parents Raise Smart Children? The Intergenerational Transmission of Cognitive Abilities. Nuremberg: Labor and Socio-Economic Research Center.

Belley, P., & Lochner, L. (2007), The Changing Role of Family Income and Ability in Determining Educational Achievement. Toronto: NBER Working Paper No. 13527.

Blanden, J., & Gibbons, S. (2006), The persistence of poverty across generations. London: London School of Economics and Political Science.

Brooks-Gunn, J., Duncan, G.J. (1997), The Effects of Poverty on Children; The Future of Children and Poverty Vol. 7, No. 2; 1997.

Case, A., Fertig, A., & Paxson, C. (2005), The lasting impact of childhood health and circumstance. Journal of Health Economics (24), pp. 365–389.

d'Addio, A. (2007), Intergenerational Transmission of Disadvantage: Mobility or Immobility across Generations? A Review of the Evidence for OECD Countries. Paris: OECD Social, Employment and Migration Working Papers.

Doyle, O., Harmon, C., & Walker, I. (2005), The Impact of Parental Income and Education on the Health of their Children. IZA Discussion Paper No. 1832.

Edwards, B., & Mromfield, M. (2010), Neighbourhood influences on young children's emotional and behavioural problems. Family Matters (84), pp. 7-19.

Ellen, I., & Turner, M. (1997), Does neighborhood matter? Assessing Recent Evidence. Housing Policy Debate , Vol. 8 (4), pp. 833-866.

European Commission (2008), Child Poverty and Well-Being in the EU. Luxembourg: Office for Official Publications of the European Communities.

Geda, A., Jong, N., Mwabu, G., & Kimenyi, M. (2001), Determinants of poverty in Kenya: a household level analysis. ISS Working Papers - General Series 1765019095, International Institute of Social Studies of Erasmus University (ISS), The Hague.

Huston, A.C. (ed.) (1991), Children in poverty. Child development and public policy; Cambridge University Press; New York, 1991.

Jenkins, S., & Siedler, T. (2007), The Intergenerational Transmission of Poverty in Industrialized Countries. Berlin: DIW-Diskussionspapiere.

Juárez, F. (2011), Intergenerational transmission of education - Uncovering the mechanisms behind high intergenerational correlations. ECINEQ Working Papers.

Moore, K. (2005), Thinking about youth poverty through the lenses of chronic poverty, life-course poverty and intergenerational poverty. Manchester: Chronic Poverty Research Centre.

Mok, T., Can, C., & Sanyal, A. (2007), The determinants of urban household poverty in Malaysia. Journal of Social Sciences 3 (4), pp. 190-196.

OECD (2009), Doing Better for Children. Paris: OECD Publishing.

OECD (2008), Growing Unequal? Income Distribution and Poverty in OECD Countries.

OECD (2011), Pisa 2009 at a Glance. Paris: OECD Publishing.
Tarkowska, E. (2007), Oblicza polskiej biedy. Warsaw, Institute of Philosophy and Sociology Polish Academy of Sciences.

Waldfogel, J., Craigie, T., & Brooks-Gunn, J. (2010), Fragile Families and Child Wellbeing. Fragile Families , Vol. 20 (No. 2), pp. 87-112.

Warzywoda-Kruszyńska, W., & Golczyńska-Grondas, A. (2010), Wzmocnić szanse i osłabić transmisję biedy wśród mieszkańców miast województwa łódzkiego - WZLOT. The final report, Lodz, University of Lodz

3. JOBS VS. INEQUALITY AND POVERTY

Authors:
Maciej Lis
Monika Potoczna

LIST OF TABLES / Part 3

LIST OF BOXES / Part 3

LIST OF FIGURES / Part 3

Introduction

This Part is dedicated to the impact of the labour market on income inequality from the perspective of equal opportunities and outcomes. While the public policy based on equalising income through transfers from the rich to the poor is relatively simple to implement, its efficiency is not obvious. In contrast, increasing the equality of opportunity is much more of a challenge, although more reasonable in legislative and efficiency terms. In this Part, we examine equal opportunities defined as the relation between the current economic situation and future incomes of households across a period from one to eight years long, and as the impact of wealth in childhood on adult income.

The most important source of household income is work and therefore in this Part we focus on the interaction between the labour market and poverty. We begin with setting a hypothesis that the risk of relative poverty is a reflection of income inequality and we verify this through examination of differences amongst countries. Then we move on to the analysis of changes in inequality in Poland in response to structural and business cycle changes in the labour market after 1994. We show that a real-terms decline in absolute poverty in Poland has been mainly due to an increase in income, while the increase in income inequality has been significant for the depth of poverty.

Then we deepen our analysis by examining changes in wage inequality, labour intensity and the structure of household income. Labour income is the main source of household revenue and we should look for sources of income inequality and poverty in employment and wage disparities. Therefore we first characterise the structural and cyclical dynamics in labour intensity in poor and non-poor households, and then quantify in real terms the importance of changes in employment, the level and the diversity of wages on poverty dynamics. We note that changes in wage inequality translate only slightly into a reduction in the realm of poverty, for which the most significant factor is the average level of employment and labour income.

While an increase in income and shocks affecting the labour market, and their absorption, explain most changes in poverty in Poland, low wages alone do not explain the scope of in-work poverty. Therefore, in the second Chapter of this Part we focus on the working-poor. The analysis of this phenomenon within an international context leads to the conclusion that the relationship between income inequality and total work poverty is not obvious. An increase in relative poverty risk among workers, associated with a relative improvement in the situation of non-working individuals, leads to a reduction in income inequality at the macroeconomic level. As only a small part of the working-poor receive low wages, it is low labour intensity in households that pushes people with relatively high wages into poverty. High labour intensity in a household protects low-wage workers from poverty.

The final analysis of this Part is devoted to persistent poverty, in other words – the issue of equal opportunities. We present persistent poverty in Poland in comparison with other European countries. We also examine the significance of poverty spells for the situation of individuals and households, as well as the importance of the hysteresis effect. We show that the experience of poverty, even as early as in childhood, is important for the current income situation. While income inequality shows whether a society is egalitarian with regard to the outcome of economic activity (i.e. income), the degree of poverty persistence and income mobility are indicators of the equality of opportunity. Therefore, in the following step we move to analysis of total income mobility to provide a more detailed description of income mobility of the poor.

We also examine changes in the income of the poor over a year and the impact of these changes on outflows from poverty. We observe that in real terms the absolute reduction in poverty is rather due to reduced inflows than greater outflows from poverty. A summary of correlates of the inflow and outflow rates indicates the differences between the risk of persistent and transient poverty among households. We analyse in detail the impact of the number of working individuals in a household and their economic activity on the risk of falling into poverty, especially persistent poverty. Keeping in mind the distinction between low wages and in-work poverty, we present conclusions concerning wage mobility in Poland in comparison with other OECD countries.

1 POVERTY AND JOBS

1.1 CHANGES IN THE LABOUR MARKET AND INCOME INEQUALITY

Moving away from understanding poverty as a subsistence income and instead linking it with the average income in society, means that the poverty rate becomes one of the measures of income inequality, and that the so-defined poor in one country may live at the level of well-off people in another (see Part I). Therefore we begin this chapter with a presentation of theories and empirical results that indicate the connection between the level of growth, income and income inequality. In an analysis of growth in Poland over the last 20 years, we examine the importance of income evolution and income inequality for the reduction of poverty in real terms. Then we characterise in detail the changes that have taken place in the labour market in Poland and quantify the impact of changes in employment, wages, and their inequality, on the risk of poverty in real terms. In an in-depth analysis of interactions between poverty and labour we show the significance of income structure and labour intensity for poverty prevalence and we characterise the phenomenon of in-work poverty.

Evaluation of the level of growth in different countries should not be limited to purely macroeconomic variables, such as economic growth, employment, unemployment and inflation. No less important carriers of information on the state of socio-economic advancement are indicators that measure income inequality and social cohesion.

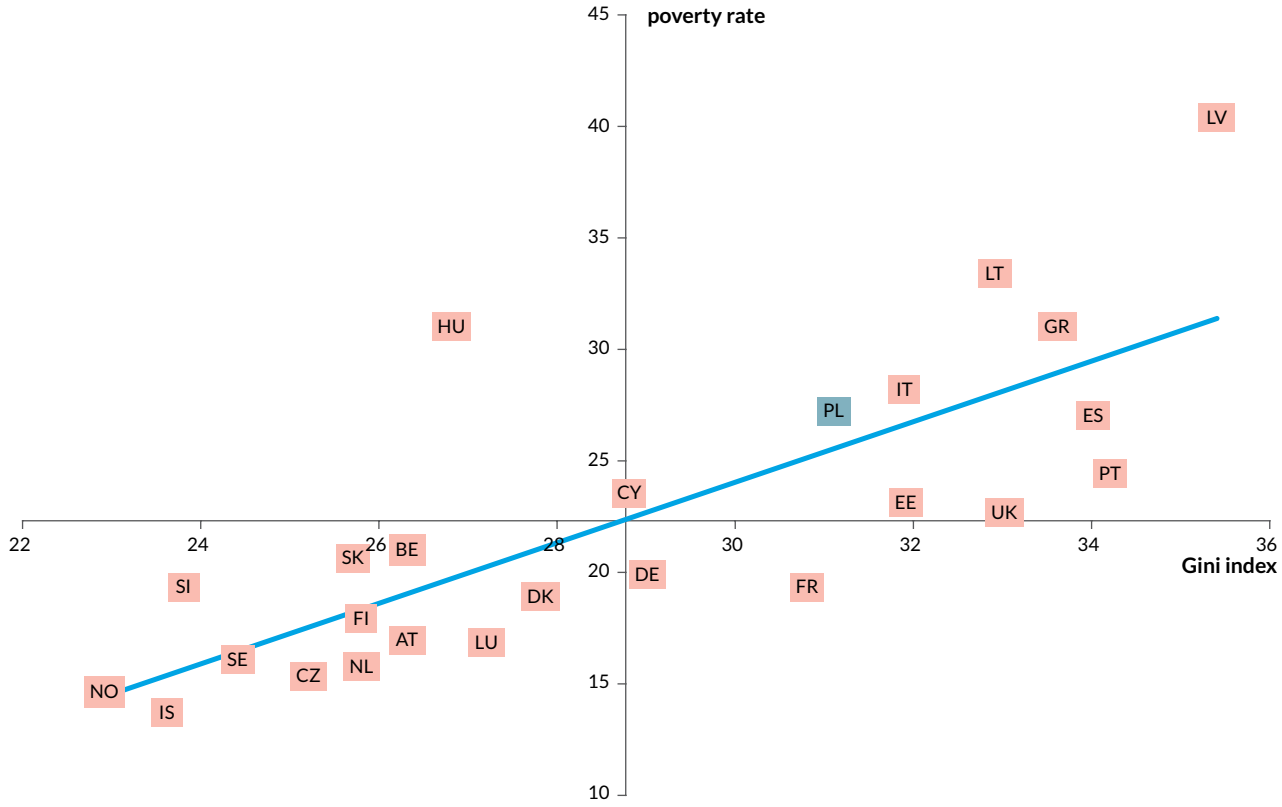
A high concentration of resources in the hands of relatively small elite is generally judged as undesirable (OECD, 2012). However, the relation between the level and dynamics of economic growth and the inequality of income and property is not so obvious on theoretical and empirical grounds. According to some authors (Barro, 1999), the relation between inequality and level of growth should assume the shape of an inverted U: relatively small differences in income in under-developed countries, maximum inequality in countries experiencing intensive industrialisation and again a decrease in income inequality in the post-industrial stage. However, this hypothesis has failed to provide convincing empirical support. Scientific papers which take into account the diverse characteristics of countries in different periods when analysing correlations between the growth rate and inequality, show that the relation between these two is rather negative: a reduction in inequality by one standard deviation entails an average increase in the growth rate by about 0.5 pp (Benabou, 1996). Theoretical reasons for this negative relationship are provided by political economy (Persson, Tabellini, 1994), the theory of imperfect capital markets (Loury, 1981), and institutional economics, which indicate the influence of uncertainty over property rights on inequality and economic growth (Alesina, Perotti, 1996).

Political economics explains the differences in economic performance and inequality between countries with influences of various sections of society on the political decision making process. Due to the asymmetry of the distribution of income, the majority of the electorate always have an income below the median income in the economy. According to the theory of political economy, in a democratic system, parties supporting the redistribution of income from the relatively affluent to those less wealthy are always going to be more popular. On one hand this leads to a decrease in inequality, while on the other hand results in a reduction in the savings rate, and thus in the overall level of investment and economic development. In this way, the theory shows a negative impact of lower inequality on growth, i.e. if this is achieved through increased income redistribution by the state. But since no strong correlation has been observed between the level of inequality in a country and the extent of redistribution, the empirical confirmation of this theory on a global scale is rather problematic (Benabou, 1996).

The opposite direction of impact of income redistribution is implied by the models of imperfect capital markets. Credit constraints affect mainly microenterprises and poorer households, reducing their economic activity and the optimal level of investment in the economy. Empirical research shows an important link between the availability of credit and the rate of investment, which is even more apparent when we include the availability of loans to people from the two lowest quantiles of the income distribution (Perotti, 1994). Redistribution of income by the state to poorer households could overcome liquidity constraints in some of them, and thus promote the growth of investment, and support economic growth at the macroeconomic level.

Predictions about the nature of the relation between inequality and growth are also provided by institutional economics which indicates a probable relation between the level of uncertainty concerning the enforcement of ownership rights, and the extent of concentration of income and wealth in the society. According to institutional economics, political uncertainty leads to lower certainty of business contracts and is higher in less egalitarian societies. This is due to the pressure on change in the system of redistribution, which one day could deprive the owners of some of their goods or property rights (such as dividends). In turn, the uncertainty regarding property rights reduces the rate of investment and economic growth, at least temporarily. Empirical studies seem to confirm these predictions, indicating a correlation between the stability of property rights and social inequality. On the other hand, evidence of the direct impact of the degree of protection of property rights on economic growth is rather vague (Benabou, 1996).

Figure III.1 | Income inequality vs. the risk of poverty, 2011.



Note: Gini coefficient for equivalised income.

Source: own elaboration based on Eurostat data.

Although in the light of theoretical predictions and empirical evidence the connection between inequality and economic growth is not straightforward and not stable over time and in an international cross-section (Lundberg, Squire, 1999), it does not preclude the existence of policies that are considered to simultaneously enhance growth and reduce inequality. Such policies include the dissemination of public education, equalizing legal protection of employment in different types of contracts, increased spending on active labour market policies and the reduction of discriminatory practices in the labour market, in particular those concerning women and immigrants (OECD, 2012).

It is worth noting that the differences in relative poverty rates amongst European countries are almost fully explained by income inequality, and that the correlation between the Gini coefficient and the poverty risk rate amounts to nearly 0.8 (see Figure III.1). This relation is particularly strong in countries with low inequality. By contrast, in countries with greater income inequality (Gini coefficient above 30), including Poland, the Baltic states, southern European countries and the United Kingdom (see Part I), the poverty rate is also influenced by factors other than income inequality.

Differences in income inequality among countries depend mainly on labour income inequality, the level of labour force participation and generosity of the social security system. Some English speaking countries (United Kingdom, Australia, Canada) are characterised by strong inequality of wages and a large share of people working part-time, which leads to both high wages and large income disparities among those who work, which is only partially reduced by social transfers. At the other end of the spectrum are the Scandinavian countries and Switzerland, with much lower labour income inequality and high levels of employment rates. In these countries, transfers are common but play a smaller role in redistribution. Poland qualifies in the group of countries with high inequality, caused mainly by labour income inequality (see Part I). This phenomenon is accompanied by low levels of employment, similar to Hungary, Greece and Spain. At the same time tax and transfer systems are only slightly progressive, leading to a level of inequality and poverty close to the OECD average (OECD, 2012).

In the previous two decades, income stratification in OECD countries has increased on average by 1.7% per year, mostly in English-speaking countries, Nordic countries and Israel (OECD, 2011). Most frequently this phenomenon is explained by technological progress that favours those highly skilled (known as the skill-biased technological change), and in the short term by an increase in income inequality induced by the financial crisis of 2008. Workers performing routine jobs are subject to competition from automation resulting in a decreasing demand for this type of work, and declining wages of people in the middle of wage distribution. On the other hand, the productivity of highly

qualified people is enhanced by computerisation with a simultaneous increase in demand for low-skilled work concerning tasks not amenable to automation.

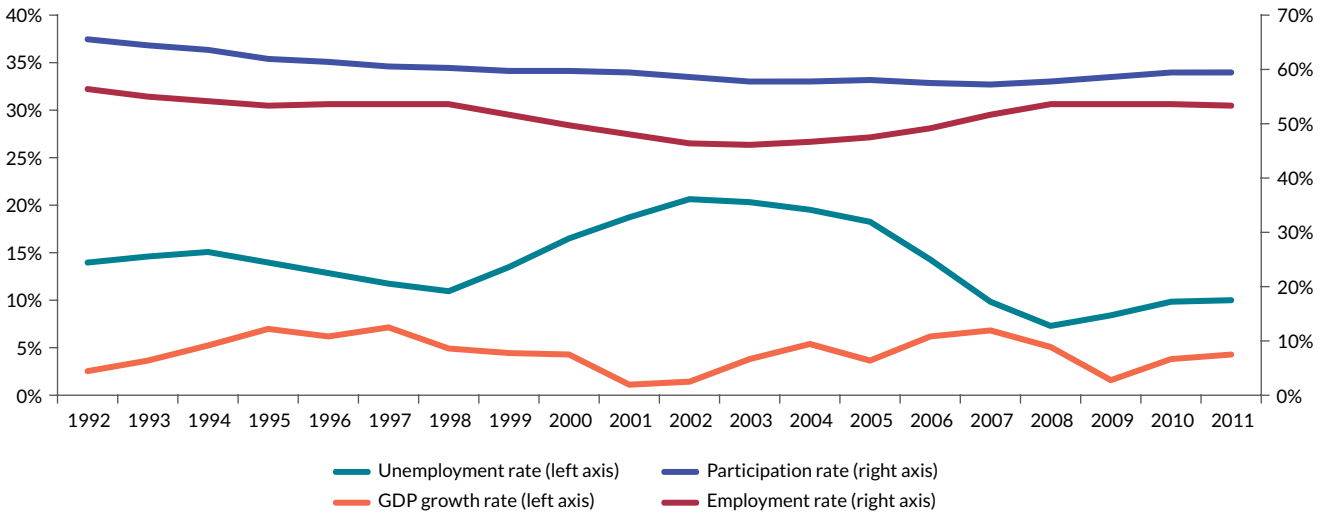
These phenomena lead to a relative reduction in wages of the semi-skilled, which is observed in international comparisons (Author et al., 2006; Goos et al., 2009). Globalisation of markets and production also leads to a greater concentration of demand for high and low-skilled workers in the international division of labour, increasing demand for relatively more skilled workers in developed countries and reducing demand for the less-skilled, in effect leading to greater inequality (Feenstra, Hanson, 1996). In addition, the opening of borders increases competitive pressure on low-productive companies, which additionally contributes to deterioration in the relative status of people with low-wage jobs (Helpman et al., 2010).

In addition to long-term technological change, income distribution may vary due to events such as economic crises. Crises usually occur in the aftermath of a bubble burst in selected sectors of the economy, such as ICT (dotcom bubble in the early 2000s) and real estate (the crisis of 2008). A downturn in the overheated sector results in a fast and yet profound reallocation of resources to other industries and large scale divestment. Inevitably, this leads to the restructuring of employment in the shrinking industry and its contractors elsewhere, a temporary increase in unemployment and a shift in the structure and level of wages in the economy. Previous analyses of the significance of macroeconomic disturbances affecting the Polish economy after 1990 have focused particularly on identifying the impact of the Russian crisis on the Polish labour market at the macroeconomic level (Bukowski et al., 2008; Bukowski et al., 2013), the evaluation of changes in income inequality (Magda, Szydłowski, 2008) and evolution of the wage gap between the sexes (Matysiak et al., 2010). In a further part of this Chapter, we try to complement these works by focusing on the significance of macroeconomic disturbances on income inequality in Poland over the last two decades.

Among other things, economic changes after 1990 were manifested from deep change in the structure of labour demand. Adjustment of labour supply to the changed structure of demand has not been flexible enough to avoid a significant increase in unemployment. Not without significance, especially after 2008, were inflexible wages, hindering the absorption of demand shocks in the labour market through channels other than strong fluctuations in unemployment (Bukowski et al., 2013). Gradually, individual sectors were subject to increasing international competition, especially after 1995, when the integration process with the European Union stepped up, finalised by a full formal integration in May 2004. This additionally intensified pressure on the restructuring of the Polish economy, thus enhancing the risk of increased inequality and poverty. A particular turning point was the year 1998, in which Poland and several other countries in the region were affected by the Russian crisis.[1] These consequences resulted in a second wave of restructuring, accompanied by significantly increased unemployment, and lower employment.

While in most countries in the region, the situation in the labour market started to improve as early as 2001, in Poland a significant improvement was recorded as late as five years later, in 2006 (Ministry of Labour, 2008), accompanied by a considerable increase in wage and income inequality

Figure III.2 | Labour market characteristics in the 15-64 age-group and GDP growth rate (year-on-year) in Poland, 1992-2011.



Source: own elaboration based on BAEL and OECD data (GDP).

1 The financial crisis in Russia in 1998 was related to the devaluation of the ruble and the suspension of repayment of foreign debt, i.e. a partial bankruptcy of the country. This resulted in considerable turmoil in international financial markets, affecting mostly the countries of Central and Eastern Europe due to the collapse in demand for their goods (cf. Ministry of Labour, 2008).

Figure III. 3 | Median of equivalised income in Poland, 1994-2011 (constant prices of 2010).

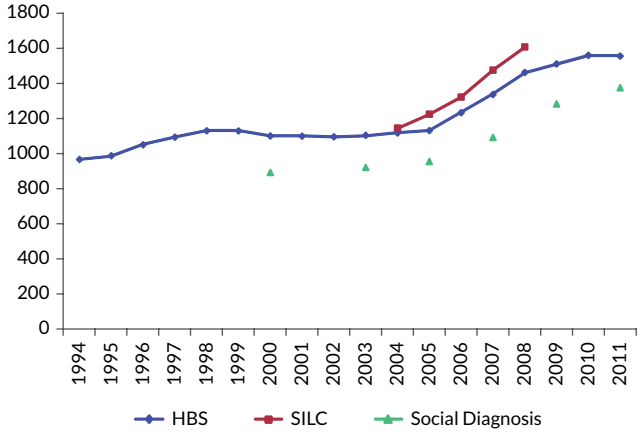


Figure III. 4 | Gini coefficient in Poland, 1994-2011.

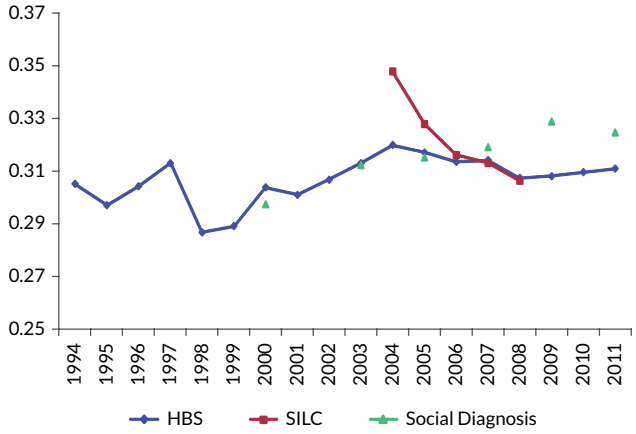


Figure III. 5 | The first decile of equivalised income distribution in Poland as the percentage of median, 1994-2011.

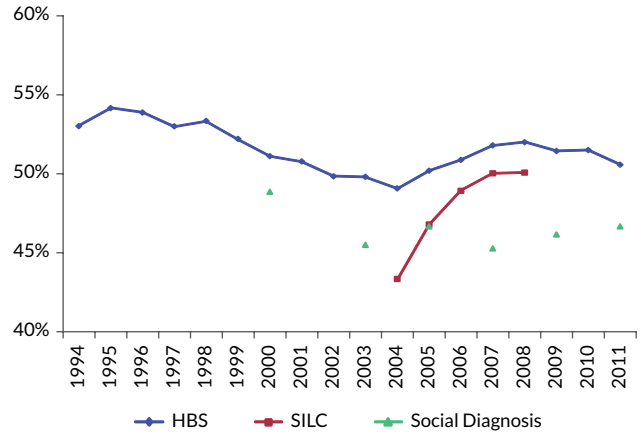
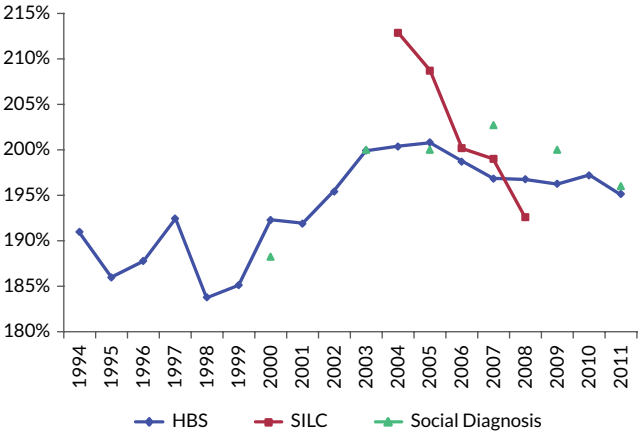


Figure III. 6 | The tenth decile of equivalised income distribution in Poland as the percentage of median, 1994-2011.



Note: income at constant prices of 2010. Large changes between years prior to 1998 may result from a slightly different methodology of the Household Budget Survey and the lower reliability of surveys conducted in that period.

Source: own calculations based on data from the Central Statistical Office, Eurostat and Social Diagnosis reports.

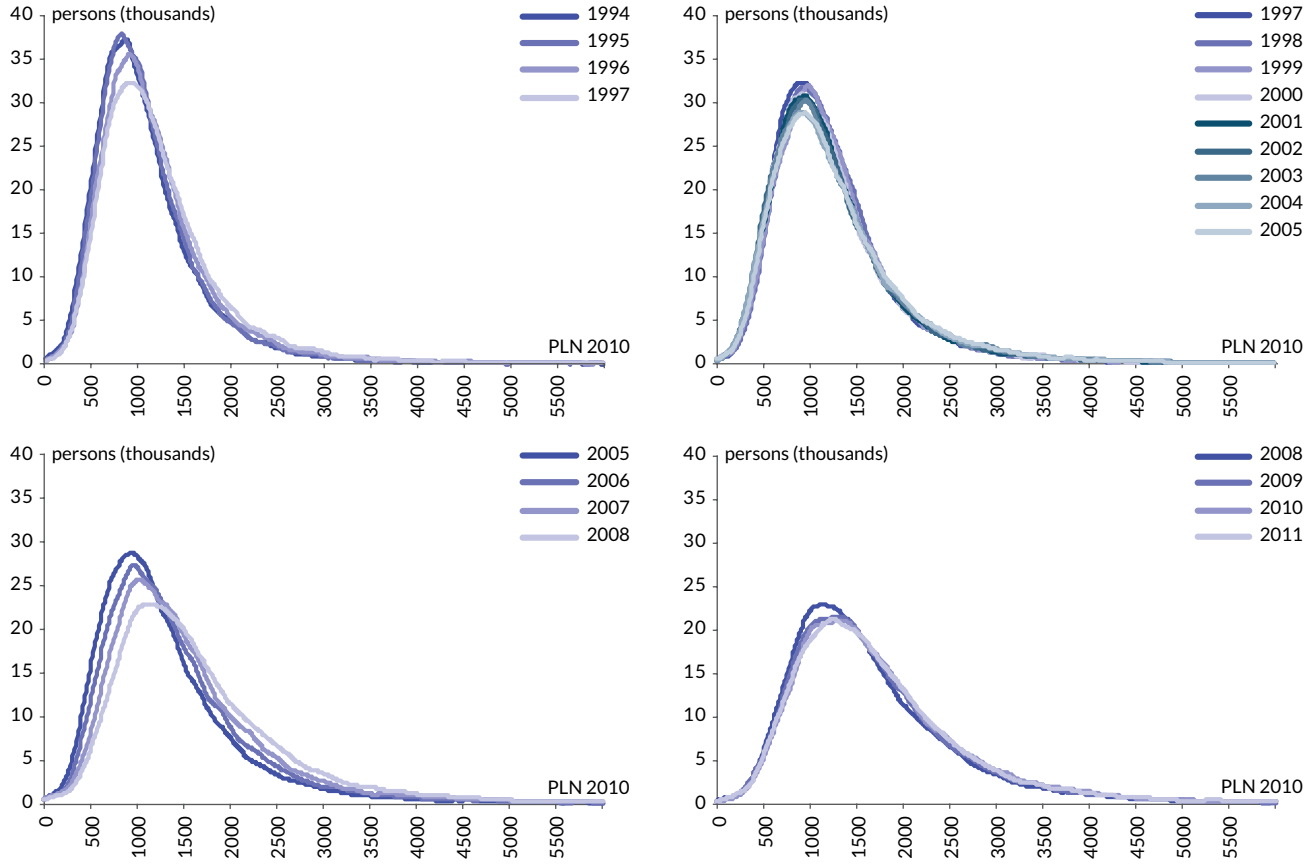
(Magda, Szydlowski, 2008). The fast growth in GDP and employment and decrease in unemployment after 2005 was interrupted by the global financial crisis at the end of 2008. Although Poland was the only country in Europe to avoid recession, the growth of the economy was significantly eroded, and the slowdown did bring about a relatively small increase in unemployment. In 2011-2012, the second wave of the crisis in Europe affected Poland in a similar way, reinforcing the negative trends in the labour market, decreasing real income and keeping the employment rate from increasing.

Fluctuations in economic growth, employment and unemployment have been accompanied by changes in income inequality. Over the whole period, the Gini coefficient for Poland ranged from 29 to 32. Both cyclical and long-term changes do not indicate any clear trend in this respect, locating Poland among countries with an average level of inequality in the OECD. The figures are consistently lower than in South America, the USA and the countries of southern Europe, where the Gini coefficient permanently exceeds 35, but are much higher than in Nordic countries, Japan and Korea, where the Gini coefficient is below 25 (Eurostat, OECD).

Economic changes and changes in the scale of income inequality between 1994 and 2011 can be divided into four main stages: (i) economic expansion until 1998, (ii) 1999-2003 crisis, (iii) rapid growth between 2005 and 2008 and (iv) stability between 2009 and 2011.

In the first stage, increasing income inequality contributed to increased poverty. Shortly before the Russian crisis (1997-1998), this trend reversed, but in general the Polish economy was in such a bad need of structural changes for accession to the European Union in 2004 that rapid economic growth and the parallel increase in income was accompanied by a noticeable increase in inequality. In that period GDP grew primarily due to an increase in labour productivity rather than capital accumulation or employment growth (see Ministry of Labour, 2008), and the employment rate in the group of 15-64 years old was about 53%. Because income inequality increased at the same time, it may

Figure III. 7 | Evolution in the density of equivalised income distribution in Poland, 1994-2010 (constant prices of 2010).



Note: the population size is normalised in all bases against CSO data. Distribution density is estimated using a non-parametric kernel density estimator. Distribution density is calculated only for households with a positive income.

Source: own elaboration based on HBS and CSO data.

be suspected that the changes in the economic structure until 2004 favoured people with high qualifications at the expense of those with lower and middle level skills. Rapid economic growth in 1994-1998 was also associated with a relative deterioration in the situation of the poorest (first decile of wage distribution) and the relative enrichment of the richest (tenth decile).

As a result of the economic slowdown after the Russian crisis, the relative stabilisation on the labour market was over. Between 1998 and 2005 the rate of economic growth fell markedly, and significantly, the median real income stopped growing. At the same time there was a sharp rise in unemployment, up to 21% in 2002. Social transfers, in particular unemployment benefits, early retirement and disability pensions, were generally not sufficient to alleviate the consequences of the loss of jobs for incomes, and did not prevent a deepening of income inequality. A significant increase in the ratio between the incomes of the tenth decile and the median of income distribution, and adequate reduction in the relative size of the income of the poorest, indicates that the period 1998-2005 favoured mainly those that were relatively better-skilled, and initially adversely affecting the least productive individuals (see Figures III.3-6).[2]

The economic recovery between 2005 and 2008 resulted in a reversal of this negative trend. The increase in demand for labour was reflected in an increased employment rate, from 46% in 2002-2004 to 53% in 2008.[3] The rise in employment and wages increased household incomes, even among the poorest. In contrast to 1994-1998, the median of the income growth rate was higher than GDP growth. Between 2005 and 2008, the median of real equivalised income grew by 8.5% a year. Social inequality distinctly decreased - the Gini coefficient fell from almost 32 to 30.7 in 2008, while the income of the poorest 10% of households grew from 49% to 52% of the median, and the income of the richest 10% of households decreased from 201% to 196.7% of the median of the equivalised income.

The weakening of economic growth between 2008 and 2011 affected the labour market much less than previously. Thanks to the increased supply of labour, the employment rate remained at 53%, despite the fact that at the same time the unemployment rate increased from 6.7% to 9.7%.[4] Real wage growth slowed to 2.1% year on year, with simultaneous stabilisation of the Gini coefficient and a freezing of the relative status

2 Increase in inequality is confirmed by data from both HBS and Social Diagnosis.

3 BAEL data for 15-64 year olds.

4 BAEL data for 15-64 year olds.

of the richest and poorest households. Therefore the slowdown in growth resulted in a halting of the trend of reduction in relative poverty, and the median of household income stopped rising. On the other hand, the economic downturn did not cause a significant increase in income inequality.

These processes are clearly visible in the density distribution of equivalised income. Income distribution is right-skewed, which means that the average income is higher than the median and the mode of the distribution. A decrease in inequality should be visible in a shift of the income distribution to the right, reduced skewness and flattening of the distribution. To a small extent this situation occurred between 1994 and 1997, when a slight decrease in inequality was observed. Between 1998 and 2005 the income distribution was slightly flattened, which, together with the relative impoverishment of the poorest, visible in its shift to the left, resulted in an increase of inequality measured by the Gini coefficient. This stands in contrast with the subsequent strong changes in the shape and position of the income distribution between 2005 and 2008, i.e. strong flattening and shift to the right. Hence it was the strongest inequality-reducing and pro-poor growth in Poland since 1994 (see Figure III.7).

An increase in income translates directly into a reduction of absolute poverty (cf. Part I), if this increase spreads evenly across the entire society. However this is not the case in relative poverty measures, as the equal enrichment of a society results in a shift of the poverty threshold and the entire distribution moves to the right. The level of income stratification is maintained and so the rate of relative poverty does not change. Not all changes in the shape of the income distribution have an effect on the level of poverty. For example, increasing incomes of the wealthiest part of society will not have significance for the situation of the poorest and for the depth of absolute poverty. Similarly, a slight increase in the income of those situated far below the poverty threshold will not have any significant impact on the total poverty level. Changes of this type are observed relatively rarely. More frequently we observe an increase in income only in selected social groups, and an imbalanced dispersion of the fruits of productivity growth across society. Sometimes, these changes benefit the relatively poor (as was the case in Poland between 2004 and 2008), and sometimes the wealthier groups (1998-2003).

BOX III.1 The importance of income and wage inequality to poverty – methods of decomposition

Decomposition of changes in poverty risk by income inequality

Changes in the risk of poverty and depth of poverty can be decomposed into parts resulting from a change in: average income (A), distribution (B - measured by the Lorenz curve) and the residual part (C), resulting from the inseparable effect of shifts and changes in the distribution:

$$\Delta ZU = \underbrace{[ZU(\mu_1, L_0) - ZU(\mu_0, L_0)]}_{A} + \underbrace{[ZU(\mu_0, L_1) - ZU(\mu_0, L_0)]}_{B} + \underbrace{[I]}_{C}$$

Where: ZU – the share of the poor in the population, μ_i – average equivalised income in the period i, L_1 – distribution of equivalised income in the population, represented by the Lorentz curve in period i. This methodology is used in World Bank studies (Lokshin, Ravallion, 2006). To eliminate the impact of changes in the poverty threshold, decomposition uses a poverty threshold using the values from a selected year (i.e. quasi-absolute poverty threshold).

Simulation decomposition of changes in poverty by labour income

To assess the impact of changes in employment, wages and income inequality on poverty, the poverty risk may be decomposed into poverty risk arising from changes in: median wage (A), wage inequality (B), the number of those with income from work (C) and a residual component, resulting from changes in the other components of income and the interactions between the aforementioned factors. Such decomposition may be written as follows:

$$\Delta ZU = \underbrace{[ZU(m_1, D_0, z_0, PD_0) - ZU(m_0, D_0, z_0, PD_0)]}_{A} + \underbrace{[ZU(m_0, D_1, z_0, PD_0) - ZU(m_0, D_0, z_0, PD_0)]}_{B} + \underbrace{[ZU(m_0, D_0, z_1, PD_0) - ZU(m_0, D_0, z_0, PD_0)]}_{C} + R$$

Where: ZU – the share of the population in households with equivalised income below the poverty threshold, m_i – median income from non-agricultural activity in the period i, D_i – distribution of labour income among non-agricultural workers, represented by the empirical cumulative distribution function in the period i, z_i – employment rate in the period i, PD_0 – other incomes during the period 0, R – residual component.

This decomposition is carried out as a simulation. Impact of wage levels is evaluated by means of shifting the wage distribution from the t0 year, so that the median corresponds to that from year t1 and for the quasi-absolute poverty threshold the difference in the rates of poverty is compared. The effect of inequality is estimated by the rescaling of the income distribution in year t0, to correspond to the decomposition of income in year t1, and a comparison of the risk of poverty in year t0 and the counterfactual situation. The third component – employment, consists in ascribing a wage or the loss of wage by an individual in the case of a person in the period t0, so that the employment rate equals that from period t1. Assigning a wage or the deprivation of wage is simulated using the estimated probability of being employed in a given period.

Source: own elaboration.

Figure III. 8 | Decomposition of changes in the risk of quasi-absolute poverty (left panel) and the depth of poverty (right panel) into components resulting from an increase in equivalised income and change in distribution of the equivalised income, 1994-2011 (pp).

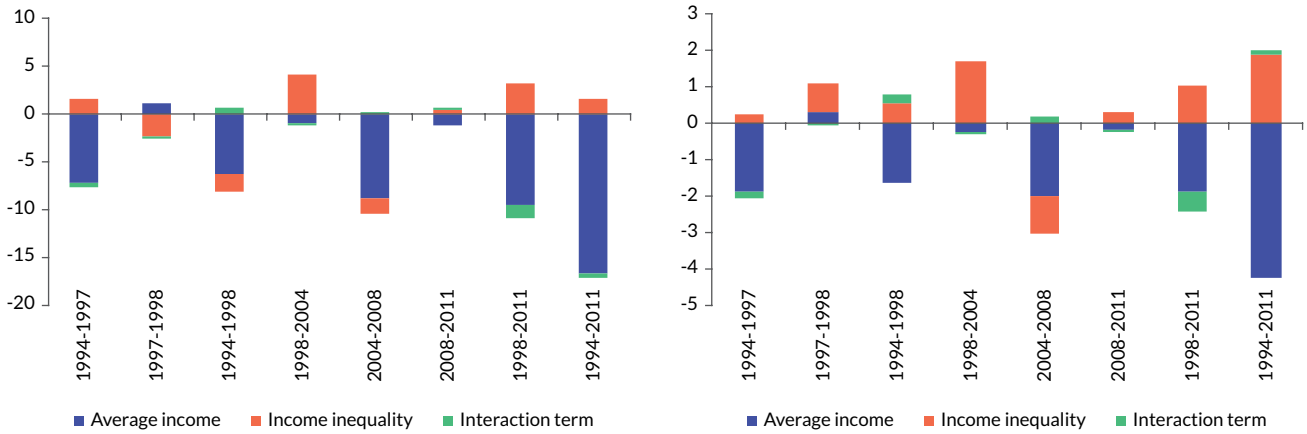
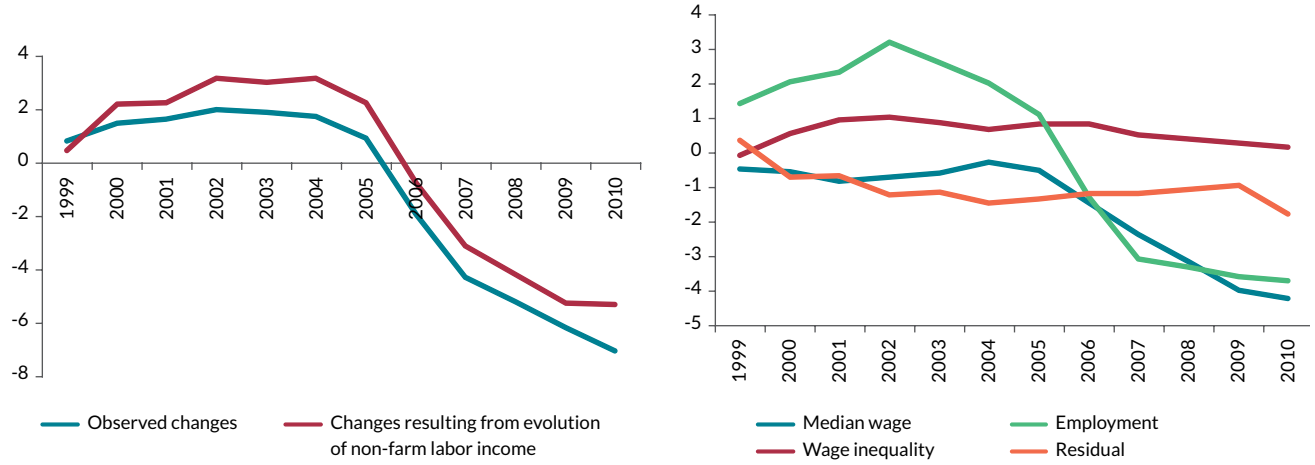


Figure III. 9 | Changes in poverty risk compared to the fixed threshold of 1998, decomposed into changes resulting from changes in employment, wages and their stratification (right panel) and total impact of income from non-agricultural work (left panel) in Poland, 1998-2010 (pp).



Note: poverty threshold at 60% of the median of equivalised income from 1998, adjusted in the next years with the inflation rate.

Source: own elaboration based on HBS and CSO data.

To quantify the significance of an increase in income and change in distribution to the risk of poverty in Poland in 1994-2011, we used a methodology developed by the World Bank, limiting the analysis to quasi-absolute poverty based on the 1998 threshold (see Box III.1).[5] Then we deepen the analysis using the simulation method, enabling distinction between the impact of employment, wages and labour income inequality on the reduction of poverty in real terms in 1998-2010 (see Box III.1). The risk of poverty, using a fixed reference, decreased from 23% to 7%, i.e. by 16 pp in 17 years. Most significantly, an increase in average income in the economy resulting from increased employment and wages. It is worth noting that the contribution of increased income inequality was 10 times less significant for the change in the quasi-absolute poverty rate between 1994 and 2011. A change in the shape of the income distribution was relatively more significant for the changes in the depth of poverty. If income inequality had remained at the level from 1994, the depth of poverty would have decreased by 4 pp between 1995 and 2011, i.e. about two times more than happened in reality (see Figure III.8).

The increase in poverty, referred to the fixed level at the beginning of the period after the Russian crisis, was mostly caused by a decrease in employment, and to a lesser extent by an increase in wage inequality. The resultant decrease in labour income was partly compensated for by other sources of income, especially unemployment benefits, pre-retirement benefits and early retirement pensions. Thanks to those, between 1998 and 2004 poverty increased by 1.7 pp and not by 3.2 pp, as would have been directly induced by the decrease in employment and wages. That period strongly contrasts with the boom from 2005-2008 when employment and wages of the relatively

5 Measured as 60% of equivalised income from 1998, in subsequent years corrected with the inflation rate.

low-skilled rose quickly and income inequality decreased. After 2007 the level of employment stabilised, and a reduction in poverty resulted from the increase in wages and lower inequality. In the time of fast growth, the role of income from other sources decreased, while between 2004 and 2009 they contributed to the increased risk of quasi-absolute poverty (see Figure III.9).

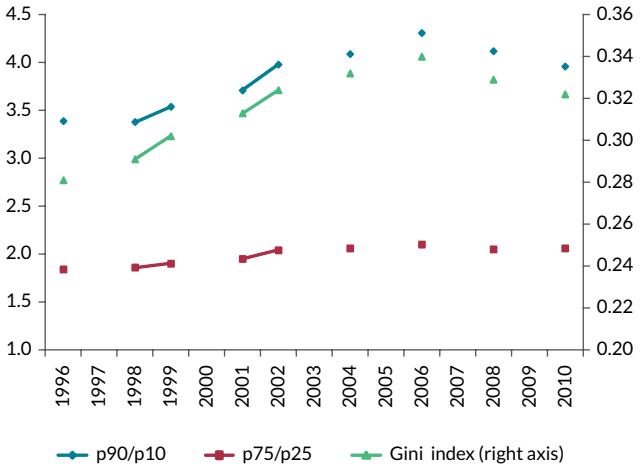
Analysis of relations between changes in the labour market and inequality and poverty is complemented by analysis of changes in the wage dispersion. The most reliable data on wage dispersion in Poland is provided by the Structure of Earnings Survey in October, thanks to the high number of surveyed companies, but it also must be remembered that the survey concerns companies hiring more than 9 individuals, which significantly limits its macroeconomic representativeness. Nonetheless, in comparison with alternative sources of data (LFS, HBS), the Survey provides the most complete and the most reliable data on remuneration for work. The main indicators that describe the evolution of distribution after 1996 are presented in Figures III.10 and III.11, and in Table III.1. Conclusions from their analysis confirm those presented in former sections concerning the distribution of income (covering not wages, but also other sources of income, such as pensions, capital income, etc.).

Along with the transition to a market system after 1989, wage dispersion started to grow while employment started to decrease. However, the increase in inequality was not completed immediately after the first years of transformation, but lasted until 2006, from when we may observe a systematic reduction in wage dispersion (see Figure III.10). The decrease in wage inequality began two years after the first increases in employment and decreases in income inequality. After the wage inequality stabilised between 1996 and 1998, which was associated with the balanced increase in wages, the collapse in the labour market after the Russian crisis resulted not only in an increase in unemployment, but also brought about a relative deterioration of the situation of low-paid workers. The ratio of wages in the ninth and first decile of the wage distribution increased from 3.4 to 4.3, indicating an ever greater disparity between the two extreme groups in the distribution (see Table III.1). This state of affairs was due to both an increase in wages of the best paid 10% of the population, and the fact that the lowest wages decreased in real terms. Most changes in the D9/D1 ratio can be attributed to changes in the wage dispersion of people with earnings below the median (see Figure III.11).[6]

This negative trend in wages reversed with the economic recovery after 2003, but not before 2006, i.e. three years after the beginning of recovery and two years after the decrease in income inequality began. In that period the lowest wages grew most, which resulted in a significant decrease in wage inequality: the Gini coefficient for wages decreased by 0.02. Immediately before the global downturn, i.e. in 2006-2008, the increase in wages in Poland was spread evenly across all income groups (see Figure III.10). In the final stage of the economic recovery, the lowest wages started to grow even faster than the highest wages (see Figure III.11). That trend was maintained after 2008, when the GDP growth dynamics in Poland decreased due to the global downturn (see Table III.11). A decrease in wage inequality was maintained despite a slight increase in income inequality since 2009. While increases in employment after 2001 were faster to occur in smaller companies (10-20 individuals), decreases in employment after 2008 were concentrated in the largest companies (more than 250 workers).[7]

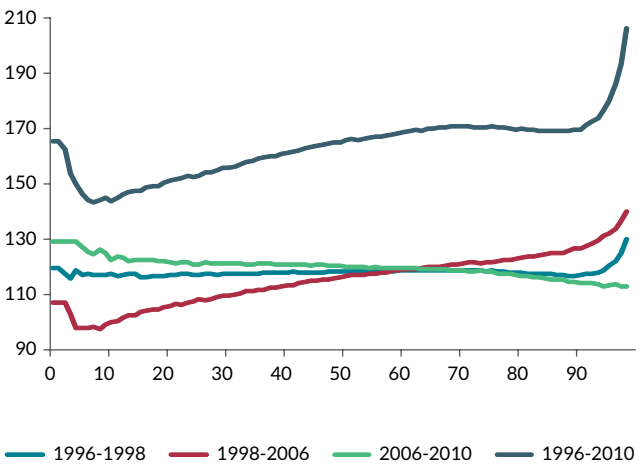
It is worth noting that the qualitative change in income of the population was similar in both spells of the slower economic growth after 1994, i.e. in the periods 1998-2003 and 2009-2011. In the latter period, the scale of response of wages and other labour market aggregates to the slowdown was, however, decidedly lower, as the less favourable conditions after 2009 had a much lower impact on the labour market

Figure III. 10 | Selected indicators of wage dispersion in Poland, 1996-2010.



Source: own elaboration based on Structure of Earnings Survey data.

Figure III. 11 | The relative change of percentiles in the distribution of real wages, 1996-2010



6 From the 8%-high variation in the D9/D1 ratio, 6.3 pp may be attributed to variation in the D5/D1 indicator.

7 Based on Structure of Earnings Surveys, 1996-2010.

Table III. 1 | Selected indicators of wage dispersion in Poland, 1996-2010.

	p90/p10	p90/p50	p50/p10	p75/p25	p75/p50	p50/p25	Gini	Variance
1996	3.39	1.96	1.72	1.84	1.38	1.33	0.28	0.23
1998	3.38	1.94	1.75	1.86	1.38	1.35	0.29	0.24
1999	3.54	2.00	1.79	1.90	1.40	1.35	0.30	0.26
2001	3.71	2.01	1.85	1.95	1.40	1.39	0.31	0.27
2002	3.98	2.04	1.96	2.04	1.43	1.43	0.32	0.30
2004	4.09	2.07	1.96	2.06	1.44	1.43	0.33	0.31
2006	4.31	2.11	2.04	2.10	1.44	1.45	0.34	0.32
2008	4.12	2.04	2.02	2.05	1.42	1.45	0.33	0.30
2010	3.96	2.01	1.97	2.06	1.42	1.45	0.32	0.29

Source: own elaboration based on the Structure of Earnings Survey.

in Poland than between 1998 and 2003, and the scale of internal restructuring in companies was smaller. That is why the relatively slight increase in unemployment observed in 2012 raised expectations that the global downturn would ultimately have a weaker impact on the rise in inequality and poverty risk than ten years ago (see Figure III.2).

Despite quantitative differences, the negative situation in the labour market must result in a decline in real income of the poorest households, in relation to the income of the wealthier households. Usually it is the poorest that are most affected by worse working conditions and job loss due to the economic downturn. Since the character of technological changes induces a constant growth in productivity and wages of better qualified individuals, the average income do not stop growing even during the recession, at the expense of growing income inequality, increased poverty risk and its depth.

1.2 LABOUR INTENSITY AND HOUSEHOLD INCOME STRUCTURE

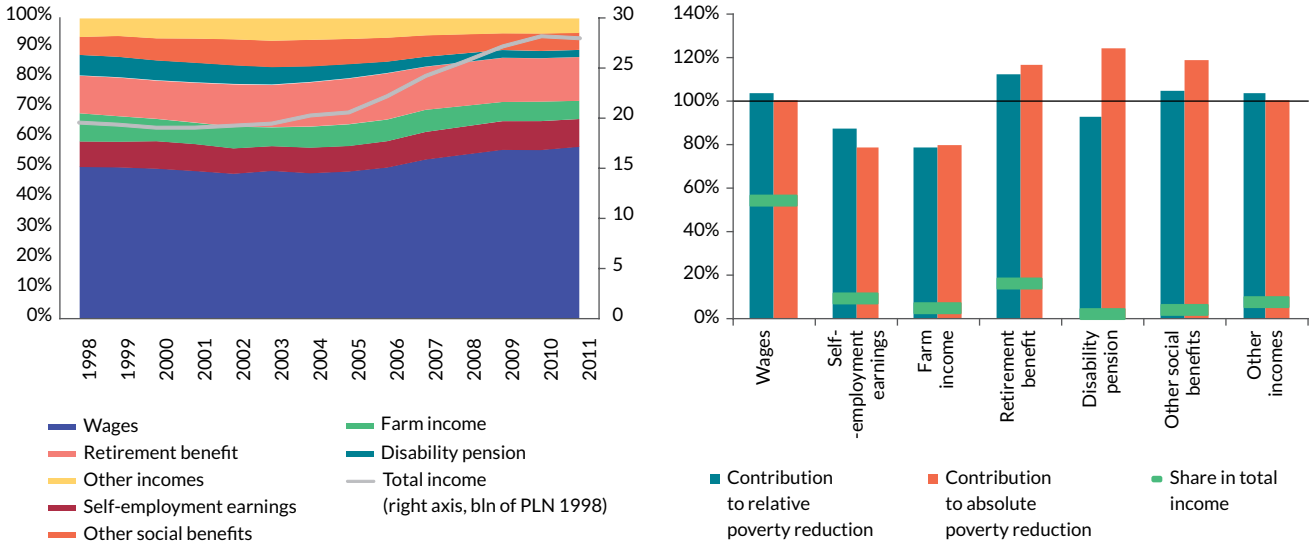
In the previous section we showed the changes in income, poverty depth and scale of inequality are caused by fluctuations in employment, unemployment and wages. Changes in labour intensity and in sources of income among poor and non-poor households complement the analysis of significance of household structure for the dynamics of poverty presented in Part II of the report. A detailed analysis of sources of income other than hired labour shows the extent of their contribution to the reduction of poverty, casting an additional light on the significance of the household structure on the poverty of household members, especially in-work poverty. A more detailed examination of labour intensity dynamics and income structure makes it possible to track the response of the poor and non-poor households to short-term demand shocks in the labour market, and the long-term structural trends that transform the labour market.

External shocks have an impact on the labour market and in consequence affect the incomes of the population. The economic slowdown between 1998 and 2001 and the accompanying high inflation, which in 2000 exceeded 10%, resulted in a decrease in the real income of households. After 2001 real income began to grow again, and between 2006 and 2007 its dynamics exceeded 8%. That strong growth resulted mainly from increased income from non-agricultural hired labour and self-employment, the share of which in total income increased from 45.6% and 8% in 2005 to 53.7% and 9.8% in 2011. Except for 2005-2007, when the income from agricultural work began to be strongly influenced by the introduction of the Common Agricultural Policy in Poland, we observed a declining share of agricultural income in the total income of households (from 6.9% in 1998 to 4.3% in 2011).

Loss of income from work during the economic slowdown is partly compensated for by social benefits, among which a significant role is played by unemployment benefits and early-retirement benefits. The share of these benefits in the income of the population increased from 5.9% in 1998 to 8.8% in 2004, to fall again to 5.5% in 2009 due to the positive impact of the economic recovery between 2003 and 2008. The very mechanism of wage indexation of pensions was not sufficient to maintain the share of pensions in the income at a stable level of 19-21% during the time of the strong increase in employment and wages after 2005. The relative share of benefits in the total income was the increase in criteria of granting disability pensions was not without significance, which shrank in share in total income from 7.6% in 1998 to 2.5% in 2011. In the same period, the total share of disability and old-age pensions decreased only by 3 pp, from 25% to 22%, where some disability pensions were converted into old-page pensions, and the aging of the population increased total inflow to the pension system (see Figure III.12).

This picture may be complemented by examination of the scale of poverty reduction depending on the inclusion of a given type of income to household budgets. To this end, we first assume zero incomes from all sources, assuming all households to be poor. Then we add the particular types of income to enables identification of their relative impact on the decrease in proportion of the poor in the economy. This experiment is repeated

Figure III. 12 | Structure of household income in Poland, 1998-2011 (left panel), and the relative contribution of particular components of income to poverty reduction, 2010 (right panel).



Note: negative income from agriculture was deemed to be zero, at constant prices of 2008. The scale of poverty reduction by a given type of income was divided by the share of a given type of income in total income. 100% means that the contribution to the reduction of poverty of a given type of income is identical to its share in total income.

Source: own elaboration based on HBS and CSO data.

many times to allow for every combination and then the results are averaged.[8] As a result, we obtain an approximate contribution of particular types of income to the reduction in poverty, both in relative poverty terms (PLN 931 ~ EUR 223 in 2010) and the minimum living standards defined by The Institute of Labour and Social Studies (PLN 472 ~ EUR 110 in 2010), which we compare with the share of a given income type in the total income.

The significance of hired labour income in the reduction of poverty is not significantly different from the share in total income (i.e. 53%). However, there is a distinct disparity between the contribution of hired labour income to the reduction of poverty and the contribution of income from agriculture or self-employment. The impact of the two latter types of income is distinctly weaker compared to hired-labour income, which is related to the fact that agricultural income is on average too low to exceed the poverty threshold. At the same time, income from self-employment remains an additional revenue in households whose other sources of income make it possible to exceed the poverty threshold. Pensions and social benefits play a very important role in the reduction of poverty among the elderly. Old-age pensions are high enough to exceed the relative poverty threshold, and disability pensions and other benefits usually protect against absolute poverty, although not the relative poverty threshold (see Figure III.12).

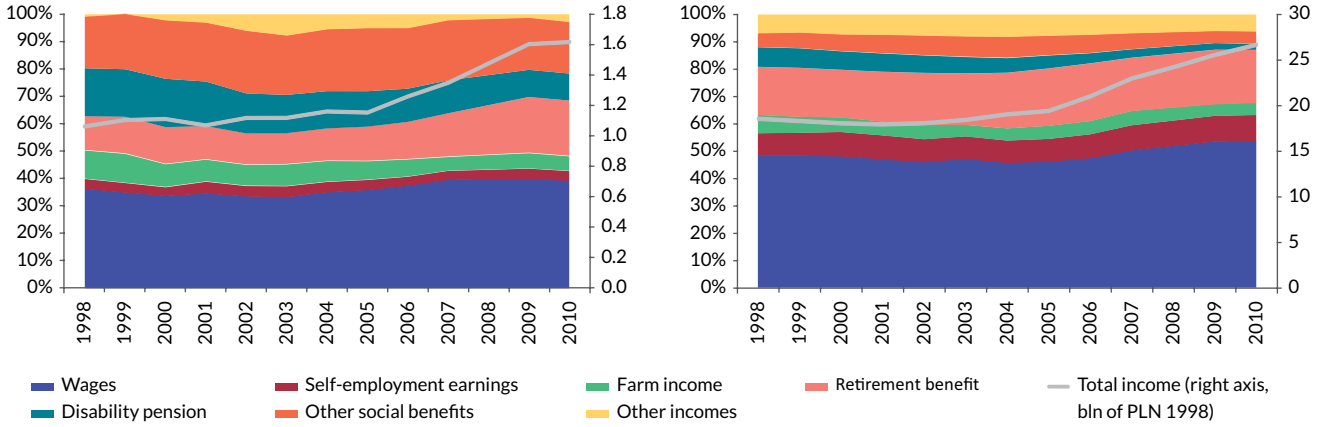
The poverty of households in Poland results mainly from the large number of non-working individuals at working age. Poor households have more than a two-times lower intensity of non-agricultural labour and almost a two-times lower employment rates than non-poor households. In 2011 only 44% of their income came from work, compared to 64% in non-poor households. In all types of households, labour intensity is from 1/3 to 2/3 lower than in non-poor households, albeit in 1998-2011 it increased the most in poor, agricultural and old-age pension households, and also non-poor households depending on disability pensions and poor households depending on other benefits (See Table III.2).

In the perspective of 13 years, the increase in non-agricultural labour intensity has been accompanied by both decreasing employment and activity in poor households, regardless of the main source of income. Leaving work in agriculture has the greatest impact on this phenomenon, but it is more associated with an early exit from the labour market than with finding a job outside agriculture and occurs mainly among poor households. The growing unemployment rate is accompanied by a decrease in economic activity in agricultural households, which indicates a lack of demand for the work of farmers looking for employment elsewhere, and leads to their persistent inactivity. The decrease in the number of people in agricultural households, mainly non-poor, is accompanied by an increase in non-agricultural labour intensity in poor agricultural households, resulting from finding jobs with wages lower than the agricultural income and not enabling an exit from poverty risk. On the other hand, a decrease in the number of non-poor agricultural households is connected with the cessation of agricultural activity or receiving a disability pension or other benefits.

At the same time, agricultural income in non-poor agricultural households remain at the stable level, which in combination with an almost 50% decrease in number of these households, means a significant per capita increase in agricultural

8 The impact on the reduction of poverty is calculated starting with zero income and 100% poverty risk, and then by adding the subsequent types of income we observe a decrease in poverty risk. This procedure is then repeated for each possible permutation and after averaging, the Shapley's value is calculated.

Figure III. 13 | Income structure in poor households (left panel) and non-poor households (right panel) in Poland, 1998-2010.



Note: poverty threshold at the level of 60% of the median of equivalised income, negative income from agriculture was deemed to be 0. Total income is presented in fixed prices from 1998.

Source: own elaboration based on HBS and CSO data.

income. There is a distinct phenomenon of finding jobs outside agriculture by the members of agricultural households that are not household heads, mainly in poor households.

Agricultural activity, when carried out on a sufficiently large scale, does not lead to poverty and is not a factor that strongly drives the members of agricultural households to look for work elsewhere. As non-poor agricultural households depend mainly on agriculture, in poor households agriculture yields only half of the income and does not even have a complementary significance for households depending on other sources of income. Only in households which depend mainly on disability pensions or social benefits have we observed significant increases in income from agricultural labour.

Large labour reserves exist in poor households, where unemployment rates are decidedly higher than the non-poor, while labour intensity is much lower. Cyclical changes in employment affect the poor the most as the variation in the intensity of non-agricultural labour is two-times lower in poor households than the non-poor. The non-poor households are affected by fluctuations of labour demand, but changes in labour supply are observed mainly among households that depend on benefits and transfers, and in poor employee households. This is indicated by the higher variation of employment rate in non-poor households and the concentration of variation in labour intensity and employment rates in poor households, as well as high fluctuations in economic activity in households depending on benefits. Low-skilled workers, with a human capital less adapted to the demands of the economy and an ensured minimum income from sources other than work, are only employed during a sufficiently high increase in labour demand, while during production cuts they are the first to lose their jobs. This greater variation in labour intensity in poor households is accompanied by a greater variation in their income. This dependence does not include agricultural households.

Social benefits (except old-age and disability pensions) are a four-times more significant source of income for poor households than the non-poor, with this difference increasing. The compensatory and transitional role of benefits means something different for these two groups. In non-poor households, benefits help avoid poverty as they compensate for a transient decrease in labour income. Among poor households, these benefits are a constant source of income and temporary fluctuations in benefits are much less significant. Over the previous decade, the role of social benefits for working households has distinctly decreased, while it has increased for agricultural households and those depending on disability pensions. Benefits other than disability or old-age pensions are not sufficient to exit from poverty if they are not accompanied by income from other sources.

Differences in the average income per capita between employee, agricultural and old-age pensioner households are low, with the greatest increase in income observed for employee and agricultural households. At the current dynamics, in a few years employee households will become richer than pensioner households. The greatest difference between the average income of poor and non-poor households is observed for agricultural income, which may result partly from the inaccuracy of monthly measurement of agricultural income, but also confirms the strong diversity in this group of households. The lowest difference between poor and non-poor households concerns households depending on benefits, among which even non-poor households are only a little richer than poor pensioner households. Among households that depend mainly on transfers, including old-age and disability pensions, a convergence exists, i.e. a faster growth of income of households with a lower income. The lowest benefits and disability pensions grow faster than the relatively high old-age pensions, but slower than employee income. At the same time, the income of poor households grows at a similar rate, regardless of the type of household (see Table III.2).

Table III. 2 | Changes in selected types of income and in activity in the labour market by types of households in Poland 1998-2011.

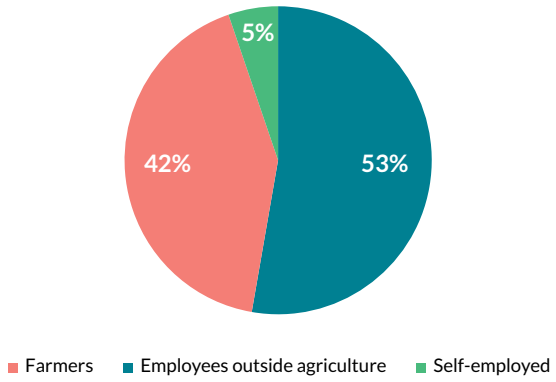
		households by main source of income											
		all		non-agricultural		agriculture		old-age pension		disability pension		other benefits	
		non-poor	poor	non-poor	poor	non-poor	poor	non-poor	poor	non-poor	poor	non-poor	poor
intensity of non-agricultural labour [9]	2011	60%	26%	68%	41%	12%	7%	52%	29%	43%	12%	24%	10%
	variation coefficient	4%	9%	3%	5%	20%	24%	3%	29%	7%	24%	27%	22%
	relative change	11%	15%	5%	-1%	34%	80%	14%	37%	33%	4%	59%	79%
employment rate	2011	61%	38%	70%	47%	71%	67%	29%	21%	31%	16%	26%	16%
	variation coefficient	4%	6%	3%	4%	2%	2%	8%	9%	10%	10%	30%	20%
	relative change	0%	-22%	2%	-10%	-13%	-15%	4%	-41%	1%	-40%	18%	-10%
activity rate	2011	65%	55%	74%	62%	74%	71%	34%	44%	37%	32%	39%	55%
	wsp. zmienności	2%	2%	1%	2%	1%	1%	6%	6%	6%	8%	11%	7%
	zmiana względna	2%	-11%	3%	-5%	-10%	-11%	8%	-19%	4%	-22%	8%	-5%
unemployment rate	2011	7%	31%	6%	24%	4%	6%	15%	53%	15%	48%	34%	71%
	variation coefficient	28%	20%	27%	20%	24%	29%	32%	19%	30%	23%	29%	14%
	relative change	23%	40%	15%	23%	184%	281%	25%	53%	21%	48%	-14%	2%
share of labour income	2011	64%	44%	86%	80%	12%	35%	14%	5%	19%	8%	28%	10%
	variation coefficient	4%	4%	1%	2%	20%	25%	15%	24%	22%	22%	34%	29%
	relative change	13%	9%	5%	3%	39%	155%	63%	21%	59%	48%	144%	94%
share of agricultural income	2011	4%	5%	1%	1%	75%	50%	0%	2%	2%	1%	1%	1%
	variation coefficient	9%	9%	9%	10%	3%	12%	34%	18%	26%	17%	48%	45%
	relative change	-37%	-51%	-33%	-59%	0%	-17%	-14%	-34%	112%	-54%	134%	41%
share of income from other benefits	2011	5%	20%	3%	12%	3%	19%	2%	6%	43%	34%	44%	62%
	variation coefficient	17%	7%	14%	6%	15%	10%	15%	11%	9%	6%	14%	3%
	relative change	-12%	4%	-25%	7%	54%	55%	22%	-13%	66%	44%	-19%	-15%
real income per capita	2011 (PLN)	1315	406	1333	411	1492	335	1347	554	1129	472	725	313
	variation coefficient	6%	10%	6%	10%	9%	7%	4%	11%	7%	11%	8%	10%
	relative change	49%	40%	53%	38%	56%	43%	38%	33%	46%	38%	64%	35%
number	2011 (million)	31.4	6.3	21.3	2.8	1.4	0.9	6.6	0.9	1.4	0.7	0.3	0.7
	variation coefficient	1%	4%	6%	7%	9%	11%	5%	13%	14%	8%	41%	20%
	relative change	-4%	10%	-2%	13%	-45%	-28%	18%	106%	-49%	-21%	15%	24%

Note: all changes are between 1998 and 2011. The coefficient of variation was calculated as the average deviation from the value of the trend line. Other benefits include all social benefits other than disability and old-age pensions. Households are grouped by main source of household income. Labour intensity is defined as the ratio of the number of persons employed outside agriculture in the household to the number of people aged 15-64 who do not study, unless they combine education with work. Employment, activity and unemployment rates are calculated for the age group 15-64.

Source: own elaboration based on HBS data.

9 Labour intensity is calculated as the ratio of the number of individuals working outside agriculture weighed by the number of hours worked and the number of person potentially working in the household. For individuals working full-time the weight is 1, and for not full-time employment it is 0.75 (based on LFS , see Box III. 3). The potential workers include all persons aged 15-64 years.

Figure III. 14 | Structure of the working-poor in Poland, 2011.



Source: own elaboration based on HBS data.

Figure III. 15 | The risk of relative poverty among workers in Poland, 2011.

Source: own elaboration based on HBS data.

Total household income is dominated by non-agricultural income and the share is both pro-cyclical and systematically growing. Hired labour income is more effective in protecting against poverty than self-employment and agricultural work. A relatively high replacement rate results in the fact that pensions are usually enough to get out of the risk of poverty, and combining pensions with work protects against relative poverty. Pensions and other benefits help avoid absolute poverty but are often insufficient to exceed the relative poverty threshold.

The most significant difference between poor and non-poor households is a two and a half higher labour intensity in the non-poor. Although in some households low labour intensity is difficult to overcome due to a disability resulting from health status, economic activity in Poland has significant reserves which, if released, would increase the income of those households and decrease their relative poverty rate.

To sum up, the level and dispersion of labour income are the basic sources of income inequality in Poland. Income from work constitutes most of the total household income (70% in 2010), mainly from hired labour, while agricultural labour and self-employment amount to 20% of total income from labour. Income from social transfers are less significant both for prosperity and income dispersion. The next sources of income in terms of level are pensions (16.5%). The share of disability pensions and other social benefits does not exceed 7% of the total household income, whereas other sources of income (e.g. private transfers, damages and alimony) do not exceed 5%. Non-poor households differ from poor households mainly in higher activity and non-agricultural labour intensity. Poverty is often a result of non matching skills or experience of household members to the labour demand, and the high unemployment rate among the poor. A decrease in employment in agriculture is associated with an early exit from the labour market by farmers more than employing them outside agriculture. Benefits and social transfers, except old-age pensions, are a constant source of income for poor households, and among non-poor households they act as cushions to help stabilise real income during economic slowdowns.

1.3 LOW WAGES AND IN-WORK POVERTY

Although work is the main source of income for households, even those who work may be at risk of poverty. Accordingly, this section is dedicated to the phenomenon of the working-poor, a subject of considerable interest to policy-makers since the 1970s (Pena-Casas, Latta, 2004), and especially significant in the context of international trends in the fight against the poverty, i.e. focusing on an increase in employment and quality of work (European Commission, 2001).

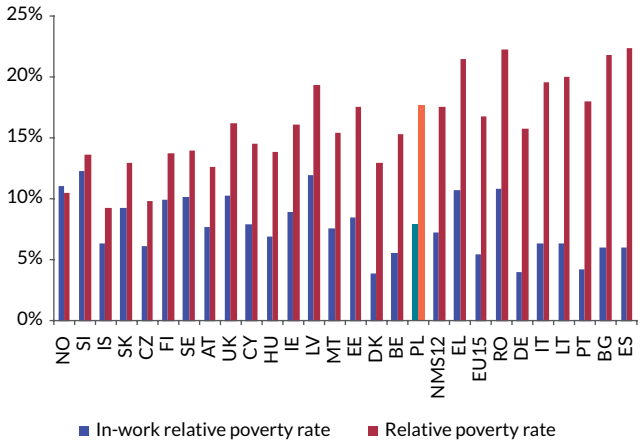
Analysis of in-work poverty requires a more detailed definition of a few issues, including the very term working-poor. It must be remembered that poverty is defined at the level of a household and not individuals, as the situation of an individual depends also on the income of the remaining household members. Those who work (workers) are defined as aged 15 and more years, who during the 7 days prior to the survey performed any paid work or worked but did not perform any tasks at the time.[10] The working-poor are therefore working members of a poor household.

Among the so defined working-poor in Poland, half work in agriculture where the risk of poverty is much higher than for employees (see Figure III.14). Farmers constitute more than 12% of those working, and the difference in poverty risk between them and employees was as much as 30 pp in 2011, which translates into a 40% share of farmers among the working-poor (see Figure III.14). However, due to the fact that agricultural households are the subject of a detailed analysis in Part II, for the purposes of this chapter we have excluded farmers from the analysis of the working-poor. It is also worth noting that Eurostat does not include farmers in the group of working-poor.

Poland, similar to other post-communist countries, has a relatively high risk of in-work poverty. According to EU-SILC data, the share of working-poor in the working population

10 Definition is based on the LFS definition with modifications resulting from the construction of the HBS survey. Literature on the subject also uses a Eurostat definition according to which a worker has worked for 6 months over the year prior to the survey (see Eurostat, 2010 and Hanzl-Weiß, Vidovic, 2010).

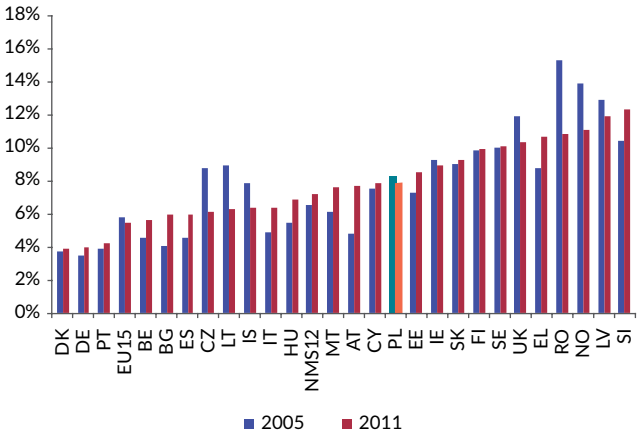
Figure III. 16 | Total poverty rate and in-work poverty rate in Europe, 2011.



Note: countries are presented in ascending order, by absolute difference between the risk of poverty in the total population and the working population.

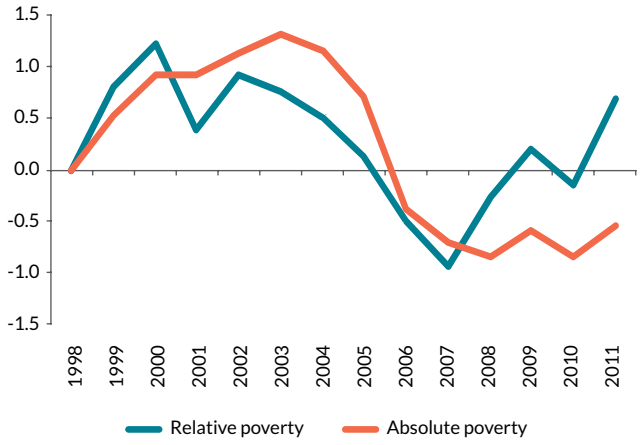
Source: own elaboration based on Eurostat and EU-SILC data.

Figure III. 17 | In-work poverty in Europe, 2005-2011.



Source: own elaboration based on Eurostat and EU-SILC data.

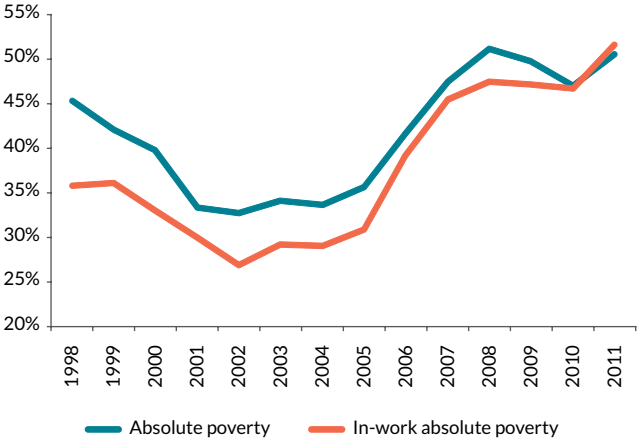
Figure III. 18 | Dynamics of the gap in the risk of relative and absolute poverty between the total population and working individuals in Poland, 1998-2011 (pp).



Note: working-poor without farmers.

Source: own elaboration based on HBS data.

Figure III. 19 | The depth of absolute poverty among the working-poor and all poor in Poland, 1998-2011



in this group was 7.9% in 2011 (see Figure III.16). The rate of in-work poverty in the new member states (7.2%) is higher than in the EU15 (5.5%), which is associated with the relatively high level of pensions compared to the average wage in some of the countries in the region, including Poland. The lowest rate of in-work poverty is observed in countries with the high economic activity – Denmark and Germany (4%), and the highest rate in Latvia and Slovenia (12.3%). In 2005-2011, among the European countries the highest decrease in in-work poverty occurred in the post-communist countries – Romania, Czech Republic and Lithuania, and the highest increase was observed in Austria (Figure III.17).

In all European countries, except Norway, the poverty level among the working population is lower than in the total population. The difference between the total and in-work poverty rates is 11 pp in the EU27. In Poland this gap is 10 pp, but both rates are higher than the EU27 average. The differences between the total and in-work poverty rate result from the relative level of net wages in relation to transfers and social benefits, and the incidence of households without employees. To achieve a very low level of total income inequality, the situation of employee households must not differ significantly from non-employee households. That is why the lowest levels of total income dispersion are observed in countries with high tax and transfer rates which decrease the income of workers (PIT) and increase the income of those who do not work (old-age and disability pensions, etc).

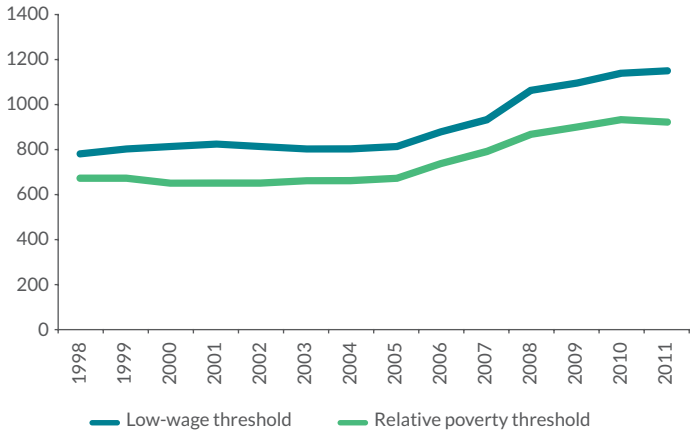
BOX III.2 Definition of a low-paid worker

A low-paid worker is a person whose monthly income from non-agricultural labour does not exceed 2/3 of the wage median calculated for all non-agricultural workers. A lack of 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% of workers were deemed to be low-paid. Among them, about 30% (2011) worked part-time, i.e. 10% of all paid non-agricultural workers.

Assuming the same definition of low-paid labour for the data from the Structure of Earnings Survey, a low-paid worker earns less than 1938 PLN gross (2010), i.e. 1416 PLN net (assuming a 19% tax rate without a tax-free amount). The obtained wage level is higher than in the HBS (1136 PLN in 2010). This results from the Structure of Earnings Survey not accounting for companies with less than 10 workers and the self-employed, whose wages are lower than in larger companies.

From 1998-2011 the difference between the low-paid labour threshold and poverty threshold according to the HBS increased from 70 to 230 PLN. In the case of a single-person household, a wage at 2/3 the labour wage median is enough to avoid poverty (Figure III.20).

FIGURE III. 20. COMPARISON OF LOW-PAID WORK AND RELATIVE POVERTY THRESHOLDS IN POLAND, 1998-2011 (IN PRICES OF 2010).



Source: own elaboration based on HBS data.

Source: own elaboration.

In Norway, the in-work poverty rate exceeds the rate in the total population. However, this country has the lowest income inequality in Europe and has one of the lowest poverty rates in the world, thanks to the developed social policy financed by the production of oil and gas (Dahl et al. 2005). At a high labour market participation rate, the generosity of the social security system (especially for those with children), and the relatively high level of pensions and high labour income tax rates, the financial situation of Norwegian workers and non-workers differs only slightly.

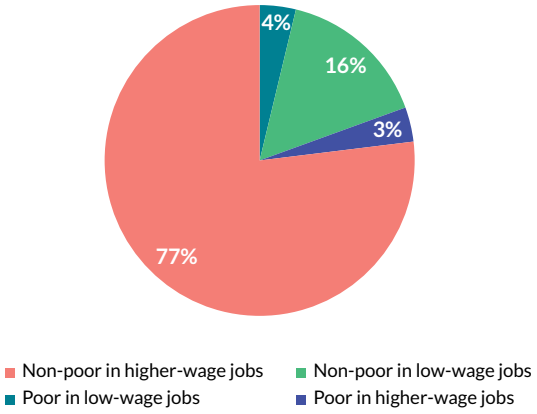
Importantly, in European countries with the lowest in-work poverty rates, total poverty is two to three times higher. On one hand there are richer countries with moderate inequality and generous but active labour market policies (Denmark, Germany). On the other hand, there are poorer countries with lower indicators of labour market participation, with high levels of total inequality and much less developed social security systems, in which unemployment drives an individual into poverty (Bulgaria, Portugal).

Differences in the risk of total and in-work poverty result not only from the model of social policy but also from the structure of households in those countries (Hanzl-Weiß, Vidovic, 2010). In countries such as Belgium, Cyprus, Ireland, Poland and the UK, low paid workers usually live in households with other workers, and in the total population the risk of poverty is high, especially among households without a single working person. This results in a lower risk of poverty among those who work, with a simultaneous high risk of poverty for the entire population.

In Poland, having a job significantly decreases the risk of poverty – the risk of relative in-work poverty is almost two times lower than for the entire population, and four times lower than among the unemployed. However, despite this fact, a significant share of workers is still at risk of poverty. In 2011, 7.4% of workers lived in poor households (11.1% including farmers) and in the total population the share was 16.7%.[11] Having a job was not enough for all workers to earn enough to purchase a basket of goods ensuring existence at an elementary level.

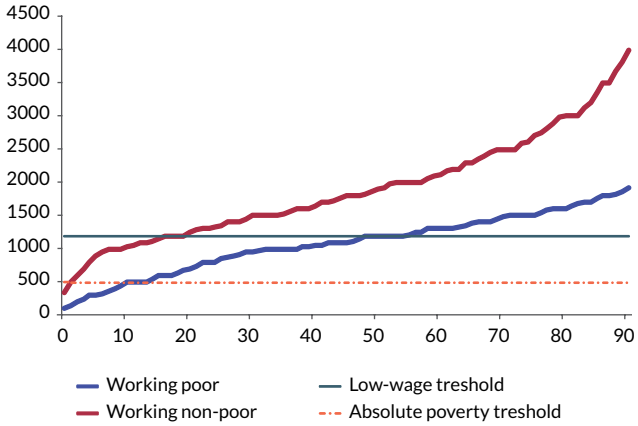
11 In this chapter, unless stated otherwise, statistical data is based on the HBS from 2011.

Figure III. 21 | Structure of the employed outside agriculture in Poland, 2011.



Source: own elaboration based on HBS data.

Figure III. 22 | Distribution of net labour income in Poland, 2011.



Note: the graphs present the cumulative distributions of wages.

Source: own elaboration based on HBS data.

Between 1999 and 2005 about 4% of workers lived in households with income below the poverty threshold, understood as the subsistence minimum. In recent years the situation has improved and has recovered to the level from before the Russian crisis in 1998, i.e. 2%.

Both positive and negative changes in the labour market are less significant for the financial situation of workers than in the total population. The risk of absolute in-work poverty during a downturn grows slower than in the total population. In 1998-2003 the gap between total and in-work absolute poverty increased from 2.5 pp to 4 pp. The improvement in the labour market in 2008 translated into a decrease in the gap to 1.5 pp (see Figure III.18). A similar trend was observed for the relative poverty risk, although here there was an increase in the gap after 2007 resulting from the increased total poverty risk and the steady level of in-work poverty risk.

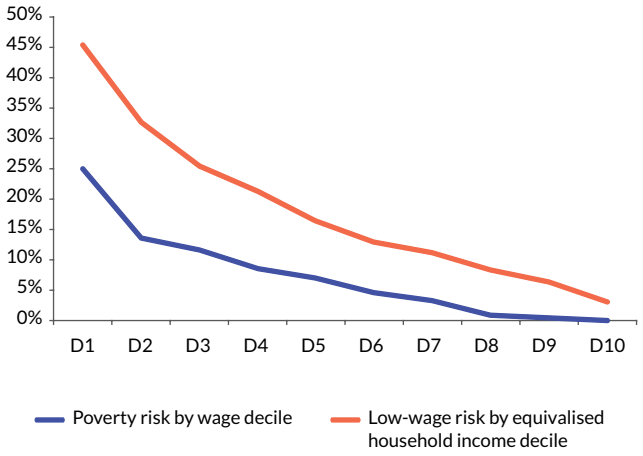
In-work poverty is less severe than poverty among non-workers, both in absolute and relative terms. The depth of relative in-work poverty was 22% in 2011, i.e. 6 pp lower than in the entire population and this relation remained stable across the entire observed period (see Figure III.18). The situation is slightly different when poverty risk is understood as the subsistence minimum. The gap in the depth of absolute poverty between the working and non-working population was equal in 2010, while in 1998 it was as high as 7pp (Figure III.19). This is a result of an increase in the share of the inactive 55-65 year group in absolutely poor households with workers, from 3.7% to 7.8%, and a decrease in the average number of workers in those households, from 1.9 to 1.3 between 1998 and 2011. Early pensions or disability pensions are lower than labour income and increase the severity of absolute in-work poverty. The gap in the depth of absolute and relative poverty is distinctly anticyclical. During economic slowdowns, when total absolute poverty rates were the highest, the depth of in-work poverty was lower than total poverty (Figure III.19).

Intuitively, low wages are the obvious cause of in-work poverty. However, as many as 80% of low-paid workers are not poor, and almost half of the working-poor have higher-paid jobs (see Figure III.21). Not just in Poland but also in most OECD countries, low-paid jobs are not necessarily associated with poverty (Marlier, 2000; Crettaz, Bonoli, 2010). Low wages and poverty are simultaneously observed in only 3% of those employed outside agriculture. The fact is that wages received by the working-poor are much lower than among non-poor workers (Figure III.22). Nonetheless, half of the working-poor are higher-paid. In all the deciles of the equivalised income of households the share of low-paid employees is higher than the poverty risk in the individual deciles of wages (Figure III.23).

A lower level of wages among women is connected with their higher risk of low-wages (Ministry of Labour and Social Policy, 2008). One in four women working outside agriculture receives wages below the low-pay threshold, compared to only 15% of male workers. This difference is not explained by the short-term character of women's jobs, as the share of low-paid women and men working part-time are similar – at about 30%. Such a high share of women among the low-paid workers results from frequent employment in low-paid jobs, such as housework and cleaning (85% of those employed there are women) (Blau et al., 2012). Moreover, even in the case where men and women work in a similar job, they tend to get different wages (Francois, 2000).

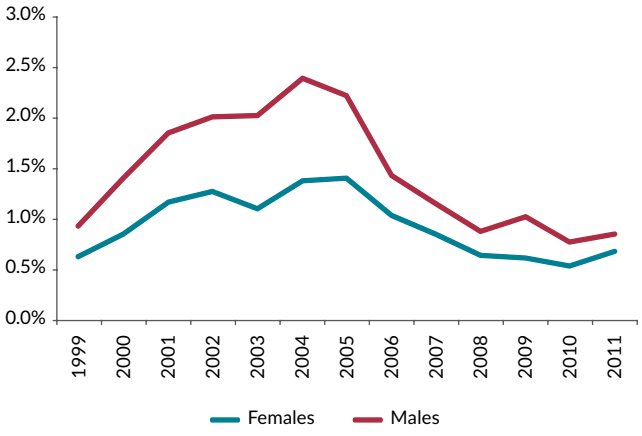
Women work more frequently in companies, sectors and jobs where wages are lower (EC, 2006). Even there they still earn less than men, and so are at higher risk of low wages (Ministry of Labour, 2008). Among small companies, we also observe a relatively high risk of bankruptcies. Only companies with a significant competitive edge are capable of increasing their turnover. In consequence, larger companies are more productive and offer higher wages than smaller enterprises. Importantly, the share of women among workers decreases with the growing size of a company. In 2010, 36% of women worked in companies

Figure III. 23 | The risk of relative poverty and the risk of low-wages among the employed outside agriculture in Poland, 2011.



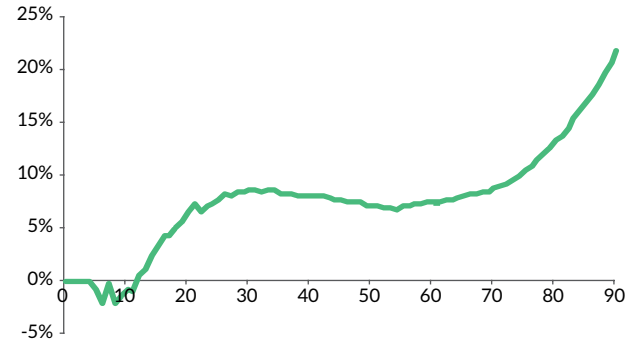
Source: own elaboration based on HBS data.

Figure III. 24 | The absolute in-work poverty rates by sex, 1999-2011.



Source: own elaboration based on HBS data.

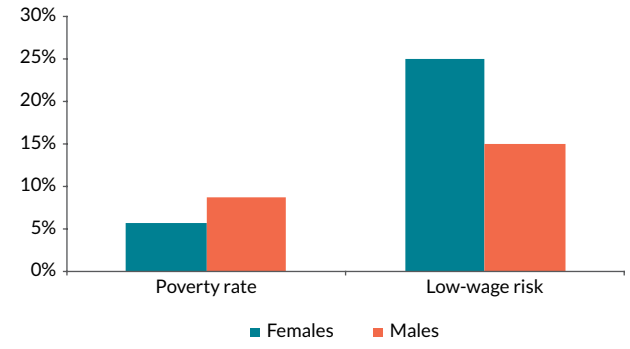
Figure III. 25 | Relative difference between the distribution of wages of men and women in Poland, 2010.



Note: the graphs show the difference in cumulative distribution of wages among men and women.

Source: own elaboration based on SES data.

Figure III. 26 | The risk of poverty and low wages by sex in Poland, 2011.



Source: own elaboration based on HBS data.

hiring from 10 to 49 workers, whereas for men this share is less than 30%. Only in this group of companies is the risk of low wages among women lower than among men (33% vs. 38%).[12] In larger companies women have lower-paid positions, work part-time more often and are promoted less frequently than men (*glass ceiling*, see OECD, 2006), and hence the risk of low wages among women is 1/3 higher than men. [13]

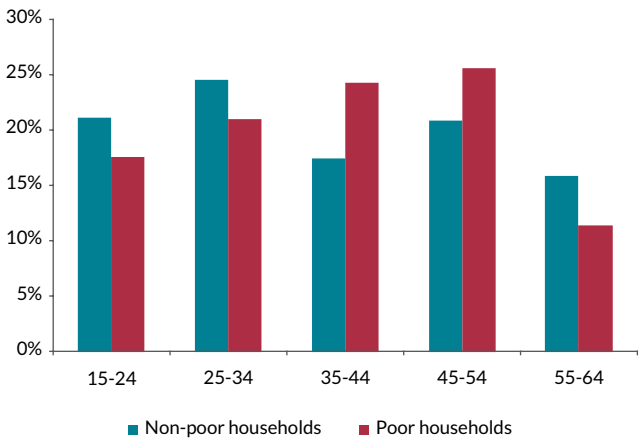
The greatest differences, by over 30%, between the wages of women and men concern the highest-paid workers, while for those with the lowest wages the difference is nearly insignificant. The higher risk of low wages among women results from their relatively higher number among workers with the lowest wages. For those earning below the 7th decile, the wage gap between men and women does not exceed 10%, albeit for workers in the 2nd decile, it is on average about a half lower. Above the 7th decile, the difference between the wages of both sexes increases rapidly (see Figure III.25).

The higher risk of low wages among women does not mean a higher risk of poverty. On the contrary, poverty affects working women less frequently than men (see Figure III.26). Nearly one in ten working men is poor, whereas among working women only one in twenty lives in a household with income below the relative poverty threshold. Working women live in households with other working individuals more frequently than men. In 2011, 70% of working women lived in households with other working individuals, while for men the share was only 55%.

12 Using the Structure of Earnings Survey, 2010.

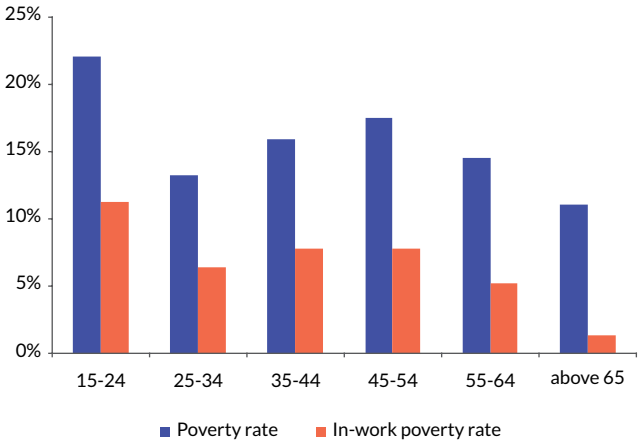
13 Low-wage threshold for data in the Structure of Earnings Survey was defined as 2/3 of the gross wage median of 1938 PLN in 2010. The threshold calculated for the Household Budget Survey in 2010 was lower (1137 PLN), which results from the availability of information on net wages and inclusion of data on companies with less than 10 workers.

Figure III. 27 | The share of low-paid workers, by the age of the worker in poor and non-poor households.



Source: own elaboration based on HBS data.

Figure III. 28 | The risk of relative in-work and total poverty by age group in Poland, 2011.



Source own elaboration based on HBS data.

Women have the greatest chances of avoiding poverty when they live in households in which other adults also work. In-work poverty risk for those is only 4%, and importantly the income from women's work is usually not the main income in the household. If a woman is a head of household (one in four households), then in 80% of cases she is a higher-paid worker. Women who are not heads of the household are low-paid workers more frequently than men with an analogous position in the household. This translates into a similar risk of poverty among working female and male household heads – 8% vs. 9%. In the case where they support not only dependent children but also dependent adults, the risk of poverty grows to 20% and is 10 pp higher than among single mothers.

While the lower wages of women do not lead to a higher risk of poverty compared to men, when we allow for differences in the structure of households and labour performed by the members, we see the fact of being a woman only slightly increases the risk of poverty. In other words, if we exclude the impact of the aforementioned factors on the income of households using the probit model, we will see that working women have a 0.3 pp higher probability of being poor than men. This corresponds to the observed differences in the wages of women and men (see Figure III.25). The fact that working and low-paid women are better protected against poverty than low-paid men is associated with factors outside the labour market, especially different types of households in both groups.

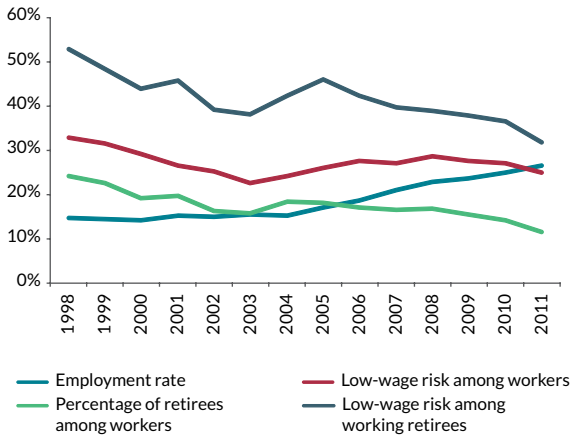
Individuals with higher education not only work more frequently and have better wages, but also often tend to live as couples in the same household. In consequence, low paid workers, similar to the poor, are individuals with vocational or at most lower secondary school education - in 2011 they constituted about 75% of both these education groups. High education protects workers against poverty, given their qualifications are used at work. A risk of poverty is observed for only one in a hundred working individuals with higher education, but in the case of work in professions that do not require higher education, the risk of poverty grows to 16%. Given the remaining traits of individuals and households, workers with higher education are at about a 2pp lower probability of being poor than those with medium education (Figure III.30).

Low wages are an important factor that increases the risk of poverty among the 35-54 age group, i.e. when they the main earners in the household. The lowest risk of poverty is observed among workers aged above 55 years, and the highest among the youngest workers, aged 15-24 years (see Figure III.28). Nonetheless, the young (15-34) and also older (55-64) low-paid workers are less often poor than workers from the middle age groups (see Figure III.27) [14]. In the case of young individuals, their dependence on parents seems to be the most crucial, while among the older workers it is associated with benefits or living together with working children.

The risk of poverty among young workers is much lower than the average for the population (11% vs. 22% in 2011), but higher than among other workers (see Figure II, 28). 40% of young workers are low-paid whereas in the older age groups this share is lower, at 17%. The lower human capital of young people, associated with the lack of professional experience, results in lower wages. However, young people live mainly with their parents, and only one in five aged below 25 years has own household, and usually these are higher-paid employees. That is why lower wages are not a poverty risk factor for this age group. In the case of young low-skilled workers, experience gained during low-paid work may increase their chances for better paid work in the future. However, such an experience for the high-skilled may be a warning signal for their future potential employers (Mosthaf, 2011). Nonetheless, low wages at an early age do not entail poverty in the subsequent periods of life.

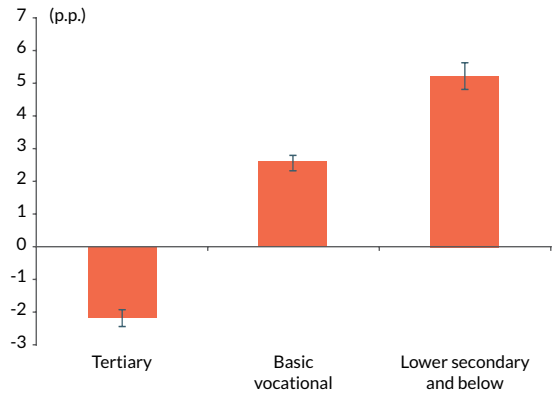
14 The youngest group is about 10% of the population working outside agriculture and is as numerous as the group of workers aged over 55 years.

Figure III. 29 | Changes in the employment of individuals aged 55-64 in Poland, 1998-2011.



Source: own elaboration based on HBS data.

Figure III. 30 | The effect of education on the probability of being working-poor.



Note: the graph presents the mean marginal effects from the probit model for the probability of being poor. Horizontal lines denote 90% confidence intervals.

Source: own elaboration based on HBS data.

In the age group 35-54 low wages are very significant for poverty, as the working person at this age is usually the main earner in a household. The risk of poverty among low-paid workers in this age group is five times higher than for higher-paid workers at 22%. Low-paid workers are mainly aged 35-54 (60%), while one in five low-paid workers is at an immobile age. Those at immobile age have a relatively high poverty rate and high persistence of poverty (see Part II). The workers aged 35-54, whose wages can be considered low, are often the heads of households (about 40% of households are headed by a person aged 35-54 years) in which their wage is the main component of the household budget, but is not enough to exceed the poverty threshold, especially when there are non-workers in the household.

The eldest low-paid workers are rarely poor as they combine work with pensions. The low-paid individuals at pre-retirement age are often the head of the household (30% of all households). Despite low wages they are not as much at risk of poverty as the low-paid workers aged 35-54, which results from the combination of income from labour and from other sources. One in three low-paid workers at this age is an old-age pensioner. Nonetheless, their share among working pensioners has been decreasing systematically since 2006 (Figure III.6). The combination of work, even low-paid, with pensions does significantly decrease the risk of poverty. More precisely, among low-paid workers who do not depend on an old-age pension, the risk of poverty is 22% (2011), while for low-paid old-age pensioners it is only 2%. One in four individuals aged 55-64 works (this share has been systematically growing since 2005), and ¾ of these are higher-paid employees. The low risk of poverty in this group may result from the return on human capital, accumulated over the entire professional career.

Higher labour intensity significantly helps avoid poverty among the working-poor. Among all workers not living in rural areas, low wages and poverty are found only among 2.5% of non-agricultural workers, while in rural areas this share is 5.5% although rural poverty is not just the domain of agricultural households (see Part II). Given all the characteristics of workers, the probability of poverty among the residents of the largest cities (more than 500 thousand people) is about 5 pp lower than in the country. A high risk of poverty in rural areas (compared with cities) results from differences in labour market characteristics. In cities, especially the larger ones, a worker has more alternatives concerning work and the work is more frequently better-paid (in 2011 the share of low-paid workers in cities with more than 500 thousand people was 11%, while it was twice as high in villages). A greater chance of finding employment in cities is also reflected in the much higher intensity of labour in urban households. In cities with more than 200 thousand inhabitants, more than half the households have a majority of household members working, whereas in the country only ¼ of households can boast a similarly high labour intensity.

In-work poverty in Poland is geographically diverse. In the Lubelskie region, non-agricultural workers are at the highest risk of poverty (12%), while the lowest risk of poverty is observed in the Śląskie, Dolnośląskie and Mazowieckie regions, i.e. regions with the highest GDP per capita (CSO, 2009). After factoring out the sectoral and professional structure of workers, the lowest risk of poverty is in the Mazowieckie, Lubuskie and Zachodniopomorskie regions. This regional diversity is only partly due to differences in median equivalised income in employee households (Figure III.31), but the stratification of income within individual voivodeships is also very significant. In the Pomorskie voivodeship, in which the high equivalised income there is accompanied by a high probability of being working-poor, the share of low-paid

Figure III. 31 | The risk of poverty vs. level of equivalised income by voivodeship in Poland.

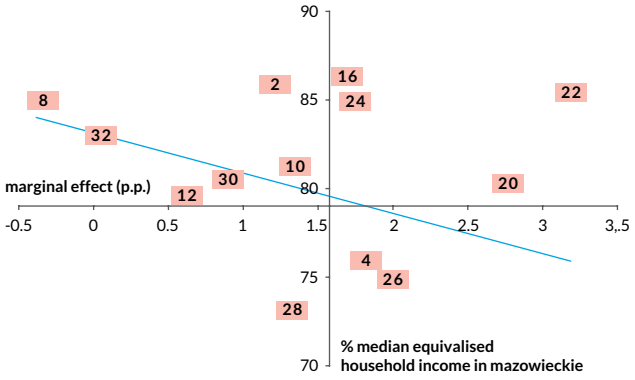
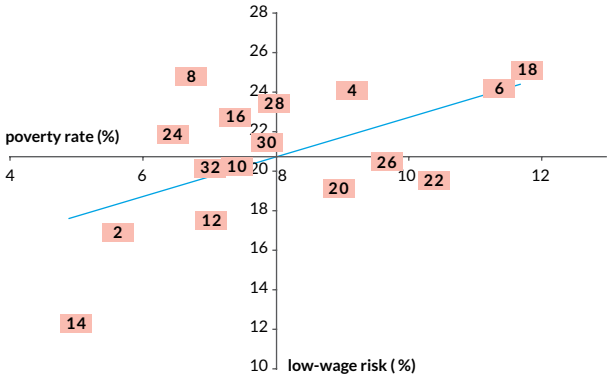


Figure III. 32 | The risk of in-work poverty vs. share of low-paid workers by voivodeship in Poland



Key:

2.	dolnośląskie	14.	mazowieckie	26.	świętokrzyskie
4.	kujawsko-pomorskie	16.	opolskie	28.	warmińsko-mazurskie
6.	lubelskie	18.	podkarpackie	30.	wielkopolskie
8.	lubuskie	20.	podlaskie	32.	zachodniopomorskie
10.	łódzkie	22.	pomorskie		
12.	małopolskie	24.	śląskie		

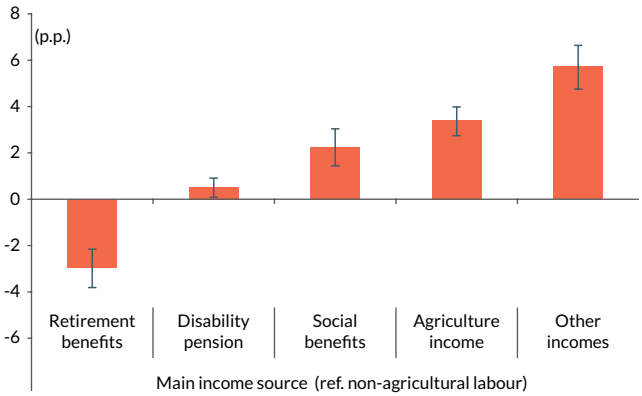
Note: the graph presents the mean marginal effects from a probit model for the probability of being poor in relation to the Mazowieckie voivodeship. Only those voivodeships which significantly differ from the Mazowieckie voivodeship are shown.

Source: own elaboration based on HBS data.

Source: own elaboration based on BBGD data.

Figure III. 33 | In-work poverty in the groups of professions.

Figure III. 34 | In-work poverty by main source of income in a household.



Note: aggregation of job classification based on Whelan et al. (2011). The graph presents the mean marginal effects of the probit model for the probability of being poor. Horizontal lines denote the 90% confidence intervals.

Source: own elaboration based on HBS data.

Note: the graph presents the mean marginal effects of the probit model for the probability of being poor. Horizontal lines denote the 90% confidence intervals.

Source: own elaboration based on HBS data.

workers is similar to the Lubelskie and Podkarpackie voivodeships (see Figure III.32).

The type of work contract is associated with the level of wages and is similarly related to the risk of poverty and low wages. Both among the working-poor and the low-paid workers about 85% are those hired for an indefinite period, 10% are self-employed and 5% work for a definite period. Self-employment, similar to work for an indefinite period, decreases the risk of poverty. In the case of self-employment the risk of poverty is similar to work for an indefinite period at 6.5%. The risk of low wages in both these groups is about 20%.

Figure III. 35 | The structure of non-poor households with low-paid workers in Poland, 2011.

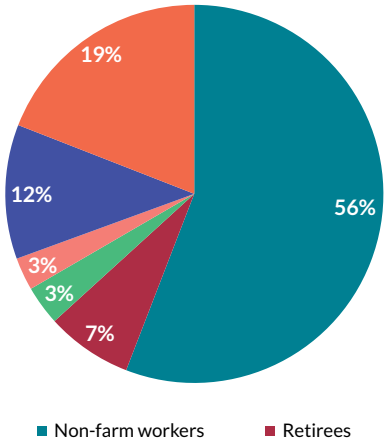


Figure III. 36 | The structure of poor households with low-paid workers in Poland, 2011.

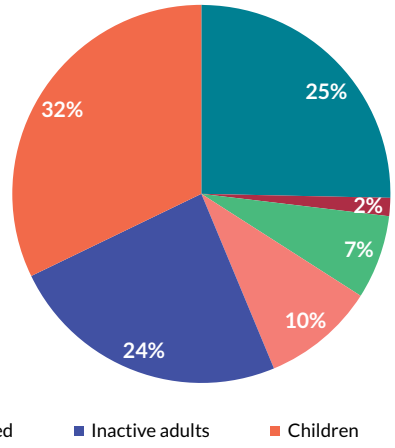


Figure III. 37 | The structure of poor employee households, 2011.

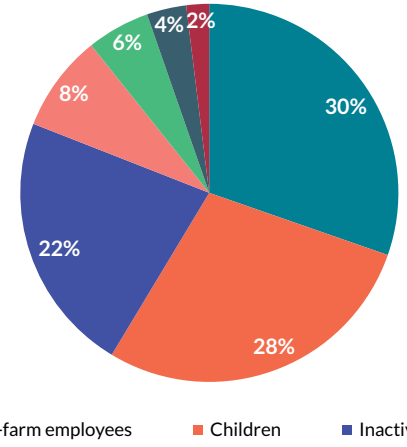
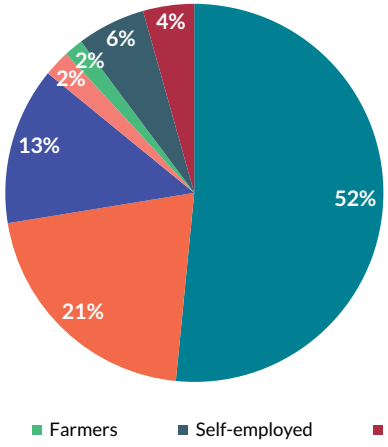


Figure III. 38 | Structure of non-poor employee households, 2011.



Source: own elaboration based on HBS data.

An especially high risk of poverty can be observed among those working for a definite period (38%). They most frequently have low-paid jobs and are employed by companies operating in less productive sectors. Only 30% of workers with a definite period work in jobs requiring high skills, whereas among workers with an indefinite period this share is almost 60%.[15] Even if we allow for conditions such as the place of work and household structure, work for a definite period increases the risk of poverty by 2.5 pp compared to work for an indefinite period. This type of labour is treated as additional source of income, as only less than 1 percent of households are headed by part-time workers. In combination with other incomes in a household work for an indefinite period improves the chance for avoiding poverty, but less than work for a definite period.

Part-time work does not differentiate the risk of in-work poverty, provided the work is higher-paid. The risk of poverty among the higher-paid, regardless of the time of work, is only 4% (more than of the 95% of higher-paid work is full-time), whereas among low-paid workers (among these 70% work part-time) part-time work raises the risk of poverty to 24%. Part-time workers are at risk of poverty especially when they have no possibility of finding another job and the entire household depends on their wages (Wóycicka, 2010).

Both low-paid workers and the working-poor are mainly employed in the private sector. The probability of being poor is about 0.5 pp higher than in the public sector, allowing for other characteristics. Not taking into account other characteristics, this difference is 3 pp. In the private sector, one in five workers is at risk of low wages, whereas in the public sector it is only one in ten. The high risk of poverty in the private sector corresponds well to its higher inequality compared to the public sector (Marcinkowska, 2008).

Low-paid workers, similar to workers in general, are concentrated in the service sector (70% of low-paid workers in 2011 worked in the service sector), albeit there is not a single dominant group among the working-poor. The risk of in-work poverty is higher for jobs in the manufacturing industry than in the services sector. In the services sector, the risk of poverty is

15 Classification of labour according to *Whelan et al. (2011)*.

BOX III.3 Working time based on LFS.

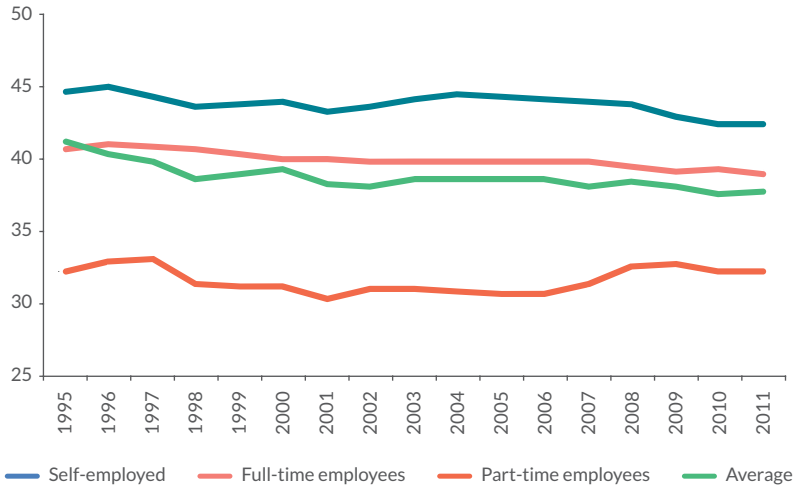
TABLE III. 3. THE NUMBER OF WORKERS BY WORKING HOURS, 1995-2011 (IN THOUSANDS).

Type of work		1995	1996	1997	1998	1999	2000	2001	2002	2003
self-employment		3506	3494	3508	3436	3338	3255	3236	3126	2968
hired labour	full-time	10398	10550	10880	11191	10782	10546	10226	9904	9904
	part-time	887	925	789	729	636	724	745	752	745

Type of work		2004	2005	2006	2007	2008	2009	2010	2011
self-employment		2926	2894	2903	2932	2970	2979	3017	3052
hired labour	full-time	10107	10480	11001	11630	12133	12218	12289	12450
	part-time	762	741	662	643	651	629	616	597

Source: own elaboration based on LFS data.

FIGURE III. 39. NUMBER OF HOURS WORKED PER WEEK UNDER VARIOUS FORMS OF EMPLOYMENT IN 1995-2011.



Most hired labourers work full-time. In the entire analysed period, the number of hours worked systematically decreases. The self-employed declare working longer than full-time employees, but their real work time is also decreasing. An opposite trend is observed for part-time workers who have worked increasingly longer in recent years. The real number of hours worked is about 25% lower than for full-time workers.

Source: own elaboration based on LFS data.

slightly higher for market services than for non-market, but low wages are less frequent in this sector. In the case of the manufacturing sector, sections are much more diverse in terms of poverty. Those working in companies where the main activity is construction or the production and supply of electricity, gas and water, or waste disposal, are at the greatest risk of poverty among those employed in manufacturing. In these industries low-paid workers are found often, e.g. one in five working in construction earns below the low-wage threshold (HBS, 2011) The risk of poverty is strongly dependent on the level of wages in particular sectors and indicates a similar dispersion of income in those sectors.

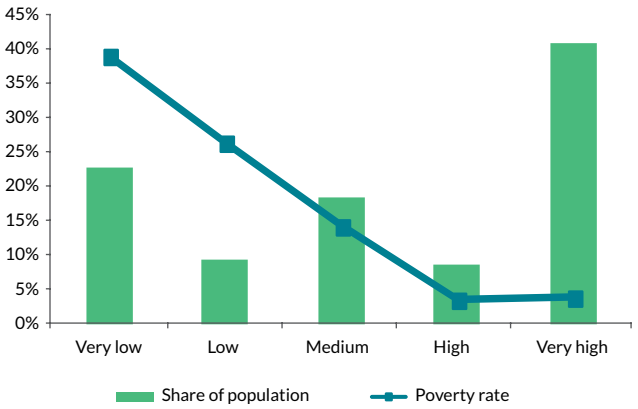
Half of the working-poor perform physical tasks requiring special-skills, such as electricians or miners, although only 15% in this group are low-paid. They constitute one third of all non-agricultural workers. In comparison to workers performing manual tasks not requiring any special skills (which in 43% have low wages), they have about 4 pp lower risk of in-work poverty (see Figure III.33). Chances of avoiding poverty are most enhanced by having a non-manual job that requires high qualifications. This group take 40% of all workers, and the risk of poverty in this group is only 1.5%. Nearly a half of the low-paid workers (40%) are medium skilled office workers, for which the risk of poverty is three times lower than for those performing simple manual tasks. Along with development of the economy based on knowledge and the further development of information technologies, the demand for specialists will continue to grow, which may lead to a deepening of poverty among non-skilled workers (Gallie, 2000).

Figure III. 40 | The impact of individuals in a household on the risk of in-work poverty.

Note: the graph shows the average marginal effects of the probit model for the probability of being poor. Horizontal lines indicate 90% confidence intervals. In the model, the number of people is entered as a continuous variable. Marginal effects were calculated only for households which already had at least one person from a given group

Source: own elaboration based on HBS data.

Figure III. 41 | Labour intensity in a households vs. risk of poverty in Poland, 2011.



Note: very low intensity 0-19%, low: 20-39%, medium: 40-59%, high: 60-79%, very high, 80-100%.

Source: own elaboration based on HBS data.

Low wages result in in-work poverty of those at middle age with just junior high school education or lower or basic vocational education, who are often skilled manual workers, i.e. mainly those who are the head of the household. Low-paid workers often achieve a level above the poverty threshold thanks to the labour income and other sources of income of the other members of the household, and as many as almost 80% of them do not live in a poor household.

The low-paid avoid poverty thanks to other individuals that receive regular income (other hired labourers and pensioners). In poor households with low-paid workers the share of individuals with a regular income is 31%, while in non-poor households this is the share of non-working dependants (i.e. also 31%) (Figures III.35-III.36). A high share of agricultural workers in households increases the risk of poverty as the income from agriculture, in contrast to wages from hired labour and pensions, is irregular and even in combination with low wages often does not allow going above the poverty threshold. The workers in the most difficult situation are those living in households in which their earnings are not combined with any other regular source of income.

The lowest risk of poverty is observed among those workers which live in households where a pension is the main source of income. The likelihood of being working-poor in those households is about 3 pp lower than when the main source of income comes from work (Figure III.34). Pensioner households are the second most numerous group of households that include working individuals. An uncertain income, e.g. in agriculture, puts workers in agricultural households at a higher risk of poverty than if they depended on social benefits.

In-work poverty is caused by household members who do not work and have no income. In poor households with working heads of households, the share of children, inactive and unemployed exceeds the share of workers (Figure III.37), while in analogous non-poor households, workers are in the majority (Figure III.38). Each subsequent self-employed individual increases the chance of staying outside poverty in a similar way to a person working for a definite period. Meanwhile, a person employed for a definite period decreases the risk of poverty only slightly. An increase in the number of pensioners in a household has only a little lower effect on remaining above in-work poverty than the number of self-employed (Figure III.40).

Each additional worker in a household has a positive impact on the financial situation in the household. Two models of labour intensity are dominant in households: either all those able to work do actually work, or almost no-one works. In more than half of the total households, more than half of those able to work do work.[16] The risk of poverty decreases significantly the moment more than 60% of household individuals work, i.e. for example in a household with three adults, two workers are enough to avoid poverty. Any further increase in labour intensity increases the household income but is not related to the risk of poverty.

In Poland, in most cases, in-work poverty is not caused by low wages but by the lack of income earned by other members of the household. If all the working poor in Poland lived in a single-person household, 70% of them would cease to be poor. Hence the risk of in-work poverty would decrease to 2% (2011), deepening the poverty of the non-working members of the household. In this sense, the significance of a household for in-work poverty is greater in Poland than in Germany or the UK at 60%. It is still much lower than in Belgium where only 6% of the working-poor would remain

16 See Table III. 2.

poor if they did not share their labour income with anybody (Strengmann-Kuhn, 2002, ECHP data from 1996). But taking into account the low-paid individuals in non-poor households, the total impact of the household structure reduces the risk of in-work poverty. If all workers had a single-person household, the risk of in-work poverty would increase to 8.8% compared with 7.4% in 2011.[17]

To sum up, in-work poverty does not result solely from low wages but is the result of low labour intensity in households. The greatest risk of poverty is observed for those with low general human capital (education) and low specific human capital (years worked, associated with age). The presence of other employees or pensioners protects against the risk of poverty, although self-employment only slightly more contributes to the reduction of poverty than work for a definite period. Work for a definite period and part-time work have a low significance for the reduction of poverty among the working population, even after factoring out the fact that such contracts are more often found in low-wage sectors and jobs. The stability of employment and lower diversity of wages in the public sector results in a lower risk of poverty than in the private sector. The regional poverty risk diversity is considerable and does not result only from the variation of average level of wages and the observed differences in the production structure and urbanisation levels amongst regions. In countries with a low labour market participation and labour intensity, the risk of in-work poverty is accompanied by a high risk of poverty in the entire population.

17 Assuming a constant poverty threshold.

2 POVERTY PERSISTENCE

2.1 POVERTY SPELLS

One of the most important dimensions of poverty is its persistence. A high rate of poverty is much more widely accepted and incurs lower social costs if poverty spells are short and do not lead to permanent deprivation. This section begins with the evaluation of the persistence of poverty in Poland compared to other European countries.[18] As the ability of individuals and households to exit poverty is one of the important determinants of equal opportunities in society, and not only of the sphere of poverty, we also look at total income mobility, again comparing the situation in Poland to other countries. In the last section we focus on the income mobility of the poor, evaluating differences between factors influencing inflows to and outflows from poverty – all those that indirectly determine the persistence of poverty. We pay particular attention to the effect of flexible forms of employment.

In most egalitarian leader-countries and effective-countries in Europe (see Part I of the Report), the share of persistently non-poor (those who during the four years of observation have not once fallen below the poverty threshold) exceeds 80%. The share of permanently poor (those that during the whole period were below the poverty threshold) does not exceed 4%. At the other extreme are very diversified countries, such as Luxembourg, Greece and Latvia, where the share of people remaining above the poverty threshold is about 60% and the share of persistently poor approaches 10%. Greece and Latvia are relatively poor countries with high income inequality. Luxembourg has a very high poverty threshold, only second to Norway, and therefore much of the poor in Luxembourg would not be poor in other European countries, while its system of transfers is not as developed as in Norway, where the share of persistently poor is low.

Poland, along with other countries classified as the stragglers (see Part I of this Report), is characterised by >6% share of people who were poor for 4 consecutive years and a <70% share of those who were never poor in the same period. Despite the fact that the poverty risk in Poland was at 17-20%, income of 30% of population dropped below the relative poverty threshold at least once during the four year period (see Figure III.42). If the probability of getting out of poverty was the same for all the poor and equal to the outflow rate, then for four consecutive periods the share of the poor in the entire Polish population would be 20%, and the share of the persistently non-poor would constitute about 3.5% less.[19] These values indicate a significant although limited diversity of the expected persistence of poverty in the population.

The number of past spells of poverty and the time between these events strongly differentiate the probability of being at risk of poverty in the future. Households that have not been poor for the previous three years face a 6% risk of going below the poverty threshold. Even one spell of poverty in the past increases the likelihood of poverty by three times. Households that are currently poor, but in the previous two years had not been poor, face a 50% chance of becoming poor in the next year. For those households which are poor and at least once earlier had been poor, the likelihood of poverty in the next period exceeds 70%. This means that despite the relatively high outflows from poverty (35%) over a year, a significant share of the outflow return to poverty after some time. This is partly due to changes in the level of the relative poverty threshold. Therefore, poverty in Poland is relatively persistent, although the significance of a previous experience of poverty to the likelihood of poverty in the future is similar to the EU-15 (see Figure III.43).

Temporary loss of income, e.g. resulting from cyclic phenomena in the labour market, is less socially dangerous and less frequently requiring permanent assistance than a permanent loss of the ability to generate income by a household, e.g. due to a loss of health. If finding a job allows leaving that state permanently, then short-term social transfers, including active labour market policies may be effective in the reduction of poverty. In contrast, long-term poverty to a greater extent contributes to deprivation and may lead to dangerous social phenomena.

The importance of poverty spells for the probability of being poor results from two reasons. Some households have such a low capacity to generate income, due to low human and social capital, that they either cannot exceed the poverty threshold or cross it only temporarily. On the other hand, a poverty spell alone may result in discouragement, social stigma or deprivation – states that enhance the persistence of poverty. The distinction is very important because of the implications for social policy. In the former case, transfers are much less effective than policies aimed at enhancing the ability to generate income. In the latter, temporary financial assistance that allows leaving the area of poverty can have lasting effects. In scientific research, this distinction is called the heterogeneity of the poor and state dependence.

Econometric distinction between heterogeneity, including unobserved heterogeneity which is elusive to measure in social studies (e.g. level of motivation), and state dependence, is not easy and requires observation of the same households over several years in a row. A commonly used model is the Heckman two-step estimator (1981) and the easier to implement and computationally less demanding versions by Wooldridge (2005) and Orme (2001). These differently modified dynamic

18 Poverty persistence in Europe is calculated based on EU-SILC 2009, covering income in 2005-2008.

19 Calculated as: $P(u_{2005},u_{2006},u_{2007},u_{2008}) = UB_{2005}*(1\text{-}ORSTU)^3$, where $P(u_{2005},u_{2006},u_{2007},u_{2008})$ is the probability of remaining in poverty in 2005-2008, UB_{2005} is the poverty rate in 2005, and ORSTU is an the average rate of outflow from poverty in 2005-2008.

Figure III. 42 | Structure of households by the number of poverty spells in selected European countries, 2005-2008.

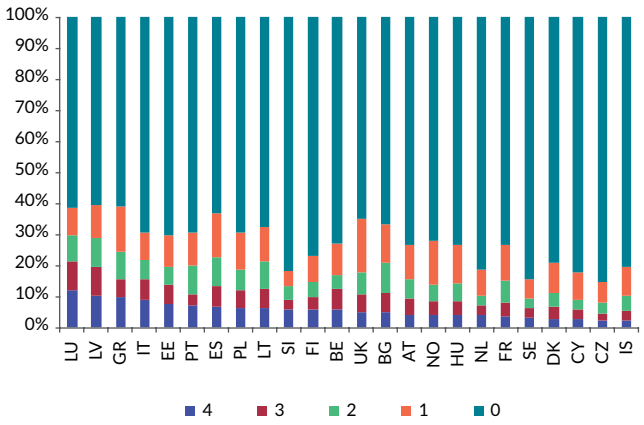
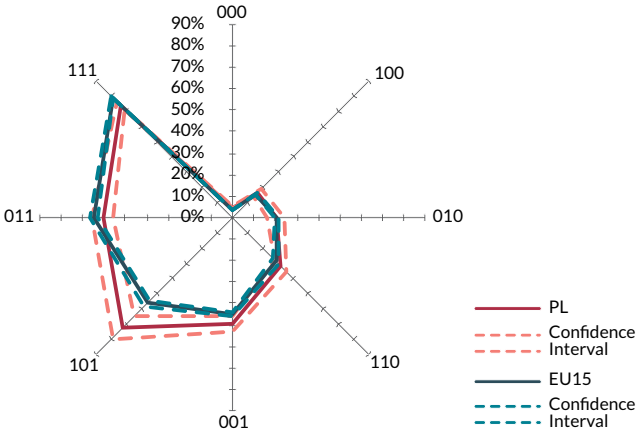


Figure III. 43 | The probability of poverty in relation to poverty spells in the past in Poland, against EU-15, 2005-2008.



Note: the structure of households only for those who were present in the four successive years of the study. Path of poverty spells denotes the history of poverty (t-3, t-2, t-1), i.e. (0,0,1) means that the person has been poor in the most recent period, and was non-poor in the previous two, while (1,1,0) means that the person was non-poor in the most recent period, but was poor in the previous two. Charts are complemented by a 95% confidence interval.

Source: own elaboration based on EU-SILC 2009.

Figure III. 44 | Raw and true impact of poverty spells on the likelihood of being poor in the EU countries, 2005-2008 (pp).

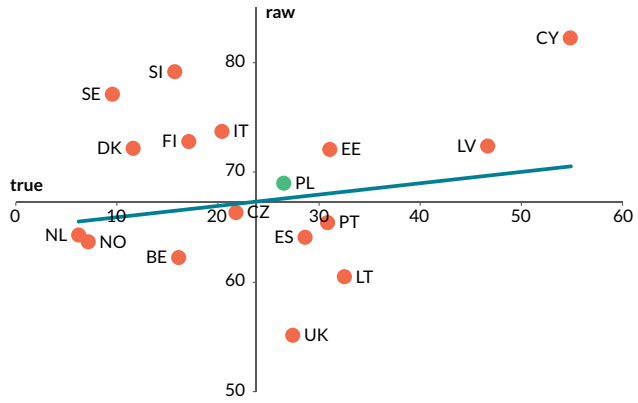
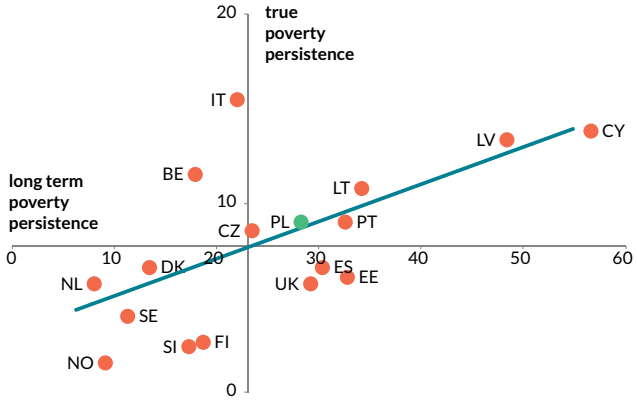


Figure III. 45 | True persistence of poverty vs. the importance of childhood poverty in selected European countries, 2004-2008.



Note: the raw impact of a poverty spell on remaining in poverty is calculated as the difference in the share of the poor among those who have been poor and non-poor in the previous period in a panel sample. The true impact is the difference in average probability of poverty conditioned by the fact of being poor and non-poor in the previous period, calculated using the panel probit model according to Orme 2001, separately for each country.

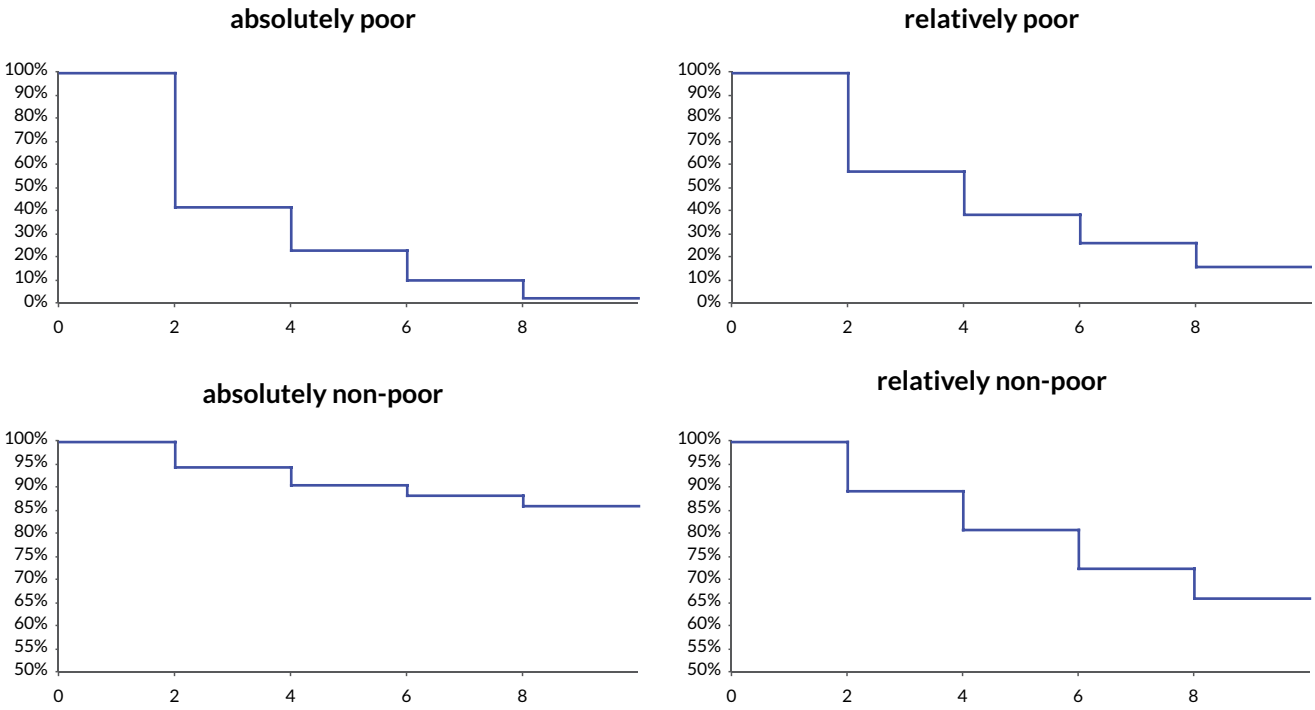
Long-term persistence is calculated as the difference in poverty risk between persons who reported that in their teenage years their households did not experience financial problems, and those who claim that financial problems were constant in their adolescence (two extreme responses on a five-grade scale). The sample is limited to countries in which the intergenerational module was performed in 2005.

Source: own elaboration based on EU-SILC 2009.

panel random-effect probit models allow incorporation of unobservable traits, thanks to observations of the same individuals over successive periods. Comparisons of these methods, using EHCP data (Sousonis, 2008) and Monte Carlo experiments (Mirinda, 2007), leads to the conclusion that they all give very similar results. For the purposes of this report, we used the Orme methodology (2001), estimating the poverty persistence model for EU-SILC data for 2005-2008. In this way, we received 'true' poverty state dependence in each country, which shows how the probability of poverty is influenced by poverty alone in the previous period, excluding the impact of the observed and unobserved heterogeneity (see Figure III.44). The term of true state dependence, sometimes called genuine state dependence, was introduced by Heckman (1978).

The true impact (i.e. allowing for the unobserved diversity of the poor) of falling into poverty is always lower than the raw impact, calculated as the difference in poverty risk in the next period between poor and non-poor. The difference between true and raw impact strongly differentiates the examined countries. In some countries, the true persistence of poverty is lower than raw persistence by about 30%, e.g. in Cyprus and Latvia,

Figure III. 46 | Duration of poverty and non-poverty in Poland (years).



Note: Kaplan–Meier estimator, in the period between 2000 and 2003 surveys were treated as 2-years long.

Source: own elaboration based on Social Diagnosis Survey data, 2000-2011.

while in some true persistence is lower by as much as 90%, as in the case of the Netherlands and Norway. In Poland, the true state dependence is 27 pp compared to raw at 67 pp. This means that among the currently poor, the probability of remaining poor in a year is about 67 pp greater compared to the non-poor, while the poverty spell alone increases the likelihood of poverty in the next period by only about 27 pp. The remainder (40 pp) can be ascribed to the observed and unobserved characteristics of poor households. In terms of true poverty persistence, Poland is among the laggard countries, such as Portugal, Greece, Spain and the United Kingdom, and much weaker than Norway, the Netherlands, Iceland, Denmark, Sweden and Hungary, where the importance of the poverty spells fluctuate around 10 pp. The greatest significance of previous poverty spells for the likelihood in the future is recorded in Latvia and Cyprus (see Figure III.44).

True persistence of poverty is strongly associated with the importance of these spells in childhood (see Part II of this Report) - correlation of these variables at a country level is greater than 60%. The significance of the financial problems experienced in childhood on the future of individuals is a measure of equal opportunities in a given society (see Corak, 2006). Egalitarian societies (e.g. the Nordic countries) are characterised by a low impact of both poverty spells and the experience of poverty in childhood. Some countries with relatively high income inequality and high risk of poverty (United Kingdom, Estonia, Spain) show a considerable persistence of poverty, and a simultaneously low impact of childhood poverty. Long period of dependence on parents and strong family ties in Italy, which even result in the inheritance of jobs ensured in collective agreements (Bentolila, Ichino, 1999), translate into the greatest significance of childhood poverty in the future compared to other countries, with the average true persistence of poverty lower than average. Despite a significantly lower income inequality and poverty risk in the Czech Republic than Poland, both countries are similar in terms of poverty persistence figures (see Figure III.54).

In Poland, the evaluation of poverty persistence in the medium term is possible thanks to the Social Diagnosis research, in which households have been recorded every two years since 2000. [20] Some of them have already been observed six times in 11 years. With these data it is possible to estimate the survival function for poverty duration and remaining out of poverty (see Figure III.46). It shows the relation between the probability of remaining in a given state and time spent in the state so far. Concerning poverty, this relation can be interpreted as the probability of being poor or non-poor, conditional upon the timespan in/out of poverty. As for the annual flow, estimated on HBS data, less than half of poor households remained absolutely poor over the last two years. In the subsequent waves of research the probability of exiting from poverty is similar and so less than 3% of the absolutely poor remain in this state for more than eight years. Outflow rates for relative poverty are lower than for absolute poverty. For the first two years, the probability of getting out of poverty is 42%, and in subsequent periods it decreases to about 30%. In eight years, 15% of the relatively poor will remain poor (see Figure III.46).

20 The exception is the second wave of the Social Diagnosis Survey, which took place in 2003, three years after the first one.

BOX III.4 Persistence of poor housing conditions

The observation of poverty persistence based on income and spending is partly interfered by the irregularity of both these factors. Meeting housing needs seems to be a more stable measure of wealth and permanent income. Therefore, similar to Part I, our analysis will also include poverty of housing, which denotes households in which: (1) the floor area is limited or (2) at least one of the basic utilities is missing (water supply, flushing toilet, bathroom or running water). Standard floor area in a household was based on rules used in granting a housing allowance: 20 m^2 for a single-person household, 30 m^2 for a double household, 30 m^2 + 5 m^2 for each subsequent person.

FIGURE III. 47. THE RISK OF POVERTY OF HOUSING CONDITIONS AND QUASI-ABSOLUTE POVERTY, 1998-2011.

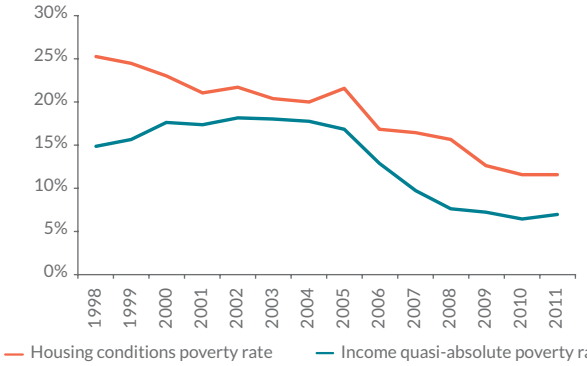
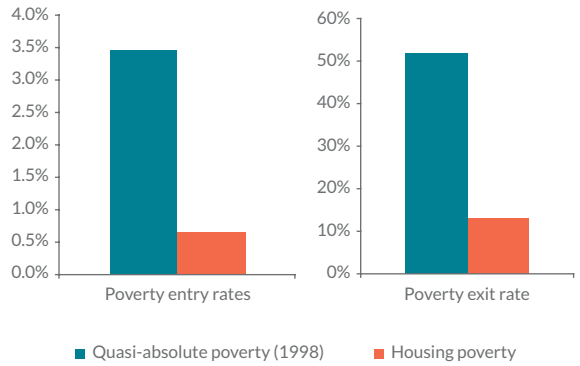


FIGURE III. 48. INFLOW VS. OUTFLOW RATES FOR POVERTY OF HOUSING AND QUASI-ABSOLUTE POVERTY.



Note: the real poverty threshold is 60% of the equivalised income median for households in 1998 at current prices. Differences in the length of the series result from the quality of panel data from before 2005 at the level of households.

Source: own elaboration based on HBS data.

The risk of poverty of housing has been decreasing systematically since 1998 – from 25% in 1998 to 12% in 2011. The scale of this decrease is similar to the quasi-absolute poverty, measured using the threshold from 1998. The decrease in the risk of poverty of housing is less subject to business cycle fluctuations than the drop in relative poverty, measured using the threshold from 1998 indexed by inflation (Figure III.47).

In 1998-2011 the size of the population decreased by 3%, whereas the total area of apartments increased by 20%. The greatest increase in residential area, measured in square metres per person in a household, was experienced by households from the two lowest income deciles. This testifies to the improved housing situation among the poorest in financial terms. The poverty of housing rate decreased mostly in the 25-34 age group. Nonetheless, in 2011 about 1% of households had at least one basic utility missing and too little floor area. The volume of mortgage loans has increased in recent years: according to the Polish Bank Association, in 2002 the number of active mortgage loans was 289 thousand, while ten years later it was as many as 1.7 million.

Poverty of housing has a much lower scale of flows and a greater persistence than total poverty. The inflow rate is almost three times lower than for quasi-absolute poverty, and the outflow rate is as much as five times smaller (see Figure III.48).

TABLE III. 4 | FLOWS BETWEEN POVERTY IN THE HOUSING AND INCOME APPROACH IN A PANEL, 2010-2011.

Status in 2010	Status in 2011			
	poor in both dimensions	income: non-poor housing: poor	income: poor housing: non-poor	non-poor in both dimensions
poor in both dimension	**51%**	42%	2%	4%
income: non-poor housing: poor	6%	**79%**	1%	14%
income: poor housing: non-poor	1%	0%	**44%**	54%
non-poor in both dimensions	0%	1%	3%	**96%**
population structure in 2011	2%	9%	5%	84%

Note: the values in rows may not add up to 100% due to rounding. Flows do not include newly formed households.

Source: own elaboration based on HBS data.

Poverty of housing and income poverty overlap very little. Only one in three of those affected by poverty of housing, and one in five of the income poor, are poor in both dimensions. An individual that is poor in these two dimensions at the same time is more than 45% likely to exit income poverty, but only a 6% chance to get out of the poverty of housing. At the same time it almost never happens that a person who is non-poor in both these dimensions becomes poor in terms of income and housing. In this group, the risk of entering the poverty of housing is three times lower than for income poverty (see Table III.4).

Source: own elaboration.

The likelihood of inflow to absolute poverty is 5% over the period of two years, but if after two years a household is still non-poor, the chance of inflow to absolute poverty is halved and is maintained at this level in the future. Because of this as many as 85% of the absolutely non-poor households remain in this state for the eight years. However, the chance of remaining relatively non-poor in the same period is only 66%. This means that one in three non-poor households will fall into relative poverty within eight years' time. Equally importantly, the likelihood of being relatively poor remains stable at around 10%, regardless of the duration of the non-poverty spell – from zero to six years.

In terms of socio-economic characteristics, the chronically poor do not differ significantly from the temporarily poor. As noted in Part II of the Report, the greatest risk of poverty is observed for low labour intensity households headed by individuals with a low level of education, or whose members are retirees, as well as agricultural households and households with more than one child. The significance of these characteristics for persistent and temporary poverty is similar. However, there are factors that differentiate the temporarily poor from the permanently poor. [21] One such variable is the presence of an old-age pensioner in a household. The stability of a retirement benefit results in a lower incidence of poverty in a households headed by a retiree, with a two times stronger effect on temporary than permanent poverty. Temporary inflows to and outflows from poverty are therefore possible from changes in additional income or the household structure. Labour income is less certain and higher, which means employment is more important for persistent than temporary poverty. Each worker in a household contributes to a reduction in both persistent and temporary poverty, but much more with regard to permanent poverty. The risk of losing a job means that even high labour intensity in a household does not completely protect against temporary spells of poverty. However, periods of unemployment are usually short enough that the temporary unemployment does not lead to chronic poverty.

The Social Diagnosis Survey is a sociological study allowing inclusion of the analysis of social capital. While people involved in the life of the local community are significantly less poor, either permanently or temporarily, and a greater number of friends does not protect against temporary poverty, it helps to exit poverty earlier and therefore contributes significantly to the reduction of persistent poverty. This conclusion is consistent with the theory of social capital, according to which extensive social networks facilitate looking for a job, and most workers are employed on recommendation. It is an important component of breaking the information barrier (Granovetter, 1995). On the other hand, social life can be a luxury that can be afforded only by those that are at least non-poor.

21 Based on a comparison of poverty risk logit models based on data from the Social Diagnosis Survey data. LThe long-term poor households were observed to be poor at least three times poor, and for the temporarily poor, which were observed at least three times, and were poor only once.

2.2 INCOME MOBILITY

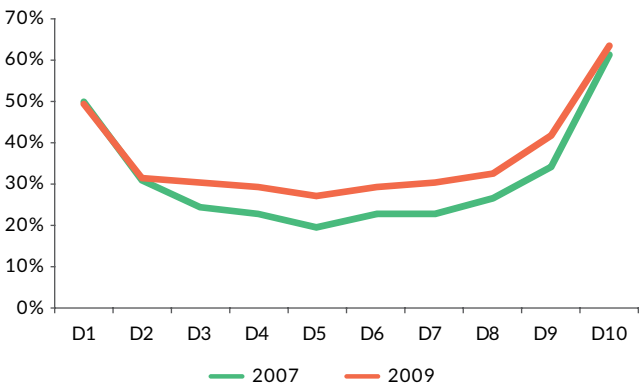
Persistence of poverty is part of the phenomenon of general income mobility. High persistence of poverty is often associated with the stability of the other levels of the income ladder. Therefore, our analysis of the mobility of the poor will be preceded by the characteristics of general mobility. In Poland, we observe a U-shaped relationship between the probability of staying in the equivalised household income decile and the level of income (Figure III.49). The chance to maintain income at the previous year's level did not change significantly from 2002-2007. Then between 2007 and 2009, i.e. during a period of stabilisation in the labour market that occurred after the strong employment growth, the probability of remaining in the same decile of household with average financial situation increased by half. The increase in mobility hardly affected the poorest and the richest. Regardless of the year of the study, the probability of remaining in the same decile of equivalised household income distribution was significantly higher for the first and last decile – 50% and 64%, respectively. For the other deciles, the likelihood of changes in income that do not allow exceeding the threshold of the next decile range from 20 to 40% depending on the year.

Income mobility in Poland relates mainly to changes by one decile up and down in income distribution - changes of this type account for about 50% of flows in each decile, except for the extreme deciles (Table III.5). The likelihood of income change over a year by more than one decile is about 15% for households from the middle of the income distribution. Already in the fourth decile the likelihood of deterioration in relative position is greater than that of improvement. Flows over more than one decile account for more than half of outflows from the first decile.

Polish households are characterised by a mobility of income closer to the EU-15 than the NMS7 average, particularly with regard to the probability of income change in the perspective of two or three years (Figure III.51). Among all the analysed countries, the distinct majority of flows take place between neighbouring deciles. It is most likely that a given household will not change its income sufficiently to move to another income decile within a year. Analysing the situation of households three years after the first test we see a significant difference between the mobility of households in the NMS7 vs. Poland and the EU-15. In the EU15 and Poland the chances of staying in the same income group decrease and flows take place largely between neighbouring deciles. The opposite situation can be observed among households in NMS7 countries, where after three years, the chances of household income changing by more than two deciles significantly increased.

Income mobility differs between households. The younger the head of the household, the greater the income mobility of the household (Shi et al., 2012). This is associated with the fact that young people have a higher individual wage mobility (Bachmann et al. 2012), although on the other hand, Aristei

Figure III. 49 | The probability of remaining in a given decile of income distribution within a year, 2007 and 2009.



Source: own elaboration based on HBS data.

Table III. 5 | Matrix of flows between the decile groups of equivalised household income distribution, 2009-2010 (%).

			decile in 2010									
			1	2	3	4	5	6	7	8	9	10
		threshold (PLN)	785	1000	1181	1357	1536	1745	2000	2363	3025	*
decile in 2009	1	724	**50**	20	9	6	3	3	2	2	2	2
	2	943	24	**32**	20	8	6	5	2	2	1	1
	3	1115	8	22	**31**	16	9	6	5	2	1	1
	4	1293	5	10	17	**30**	16	10	6	3	2	1
	5	1467	3	6	9	18	**27**	16	9	5	3	2
	6	1671	3	3	6	9	19	**29**	15	9	4	2
	7	1918	2	4	4	6	9	17	**30**	16	7	4
	8	2262	1	1	2	4	6	9	19	**33**	18	6
	9	2932	1	2	1	2	2	4	10	19	**42**	16
	10	*	2	0	1	1	2	2	3	6	19	**64**

Note: thresholds in 2010 prices.

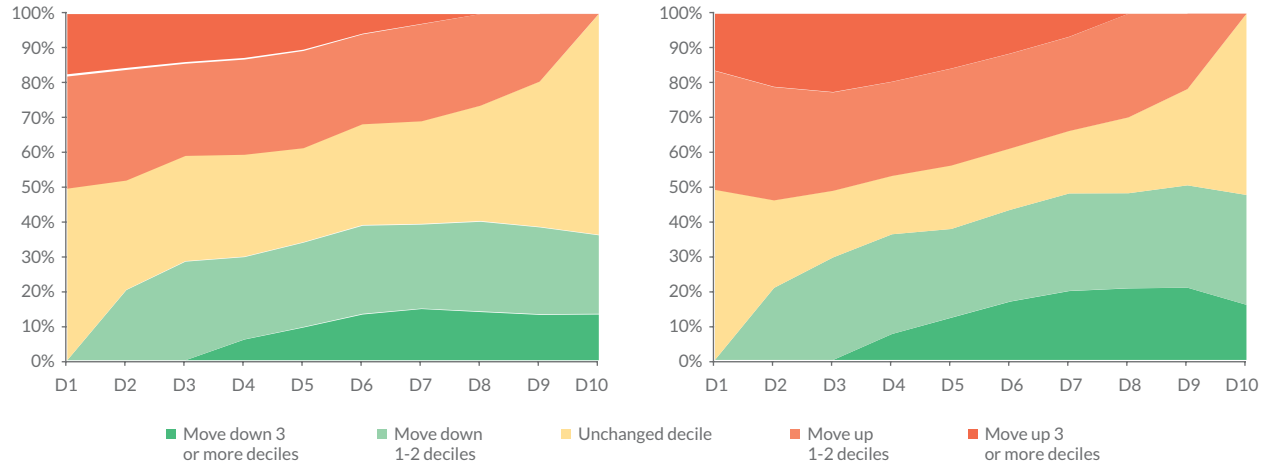
Source: own elaboration based on HBS data.

BOX III.5 Income mobility vs. expenditure mobility in Poland

Income and spending are the result of partly independent decisions of a household. The possibility of saving or borrowing means that expenses do not directly follow income. Hence, expenditure mobility is different from income mobility.

In the case of households from the middle distribution, a greater variability is observed for expenditure distribution than for income distribution. It is worth noting that the chances of moving up the distribution are similar to the risk of going down, at around 15-20%, for either distribution. The main difference between income and spending is observed for the chance of remaining in the same decile group. This probability for households in the middle of the distribution is lower by about 10 percentage points in expenditure than income distribution.

FIGURE III. 50. PROBABILITY OF CHANGE IN INCOME (LEFT PANEL) AND EXPENDITURE (RIGHT PANEL) OVER A YEAR IN VARIOUS INCOME AND EXPENDITURE DECILES, 2009-2010.

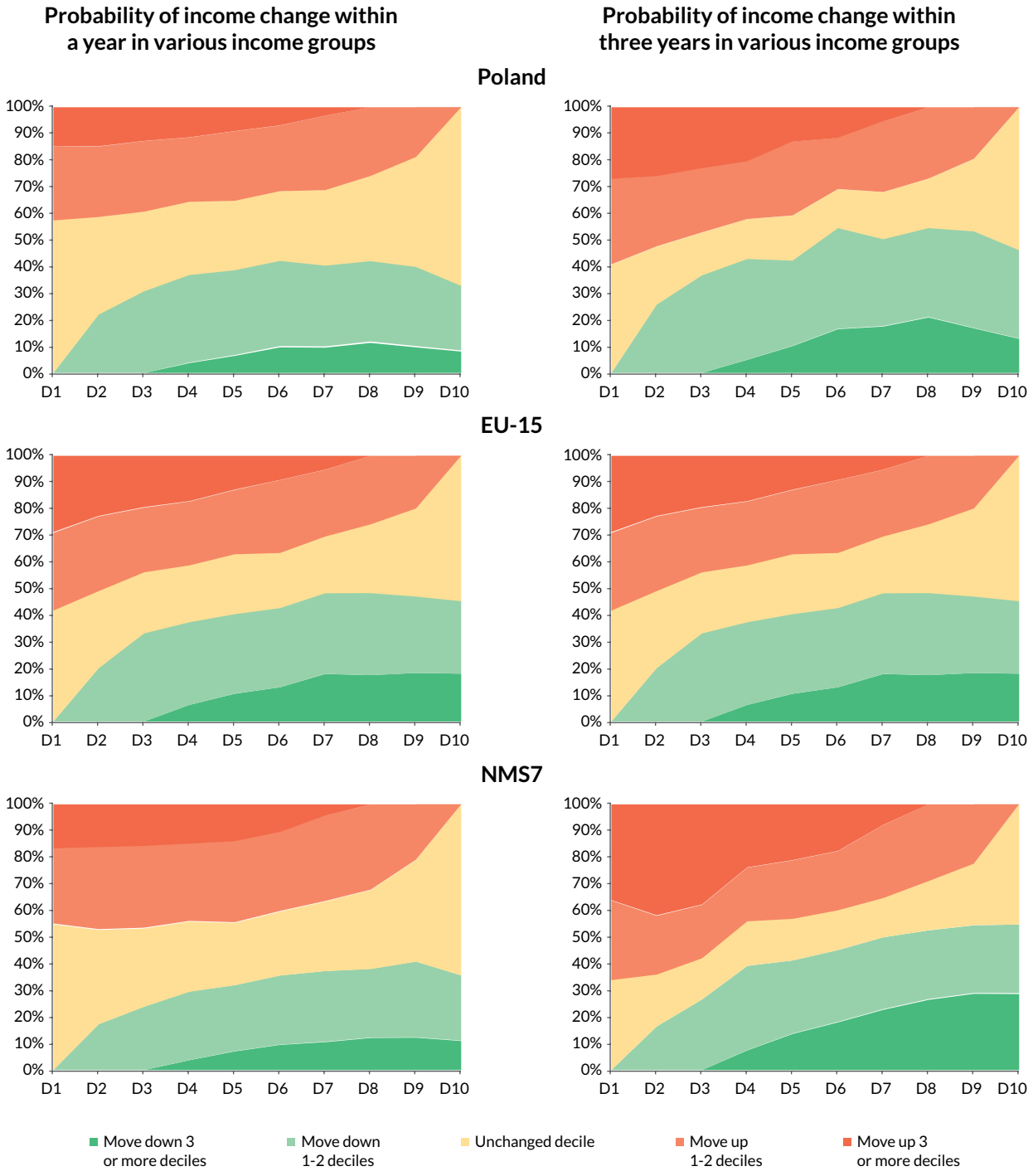


Source: own elaboration based on HBS data, 2009-2010.

and Perugini (2012) show a lack of significant dependence between the age of the head of household and mobility in liberal-regime countries (UK, Ireland, Iceland). The importance of the head of the household for mobility is ambiguous. Some reports indicate that households headed by a woman reveal lower mobility (Woolard, Klasen, 2004 – for South Africa). On the other hand, Aristei and Perugini (2012) show a greater mobility in European households headed by a woman. This is not a universal conclusion, as for the Baltic states the sex of the head of household has no importance for mobility.

The high level of human capital allows climbing the income ladder. The higher the level of education among household members, the higher the mobility (Shit et al., 2012), regardless

Figure III. 51 | Income mobility in Poland and Europe.



Źródło: opracowanie własne na podstawie EU-SILC, 2009.

of the fact whether we take into account the head of the household or other members of the household. Higher human capital contributes to the increase in productivity and chances of employment. The greater labour intensity leads to an increase in income. Mobility grows fastest with the increased share in employees hired for an indefinite period of time. A slower growth was observed for definite period contracts, and the lowest among the self-employed. An increase in the share of unemployed translated into a lower income mobility in a household (see Aristei and Perugini, 2012).

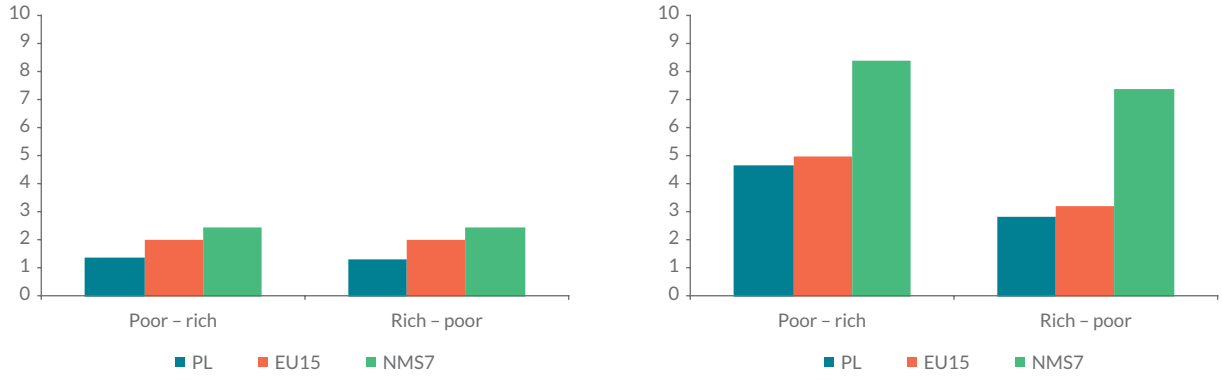
Household income in the initial period is particularly important for income mobility. This relation is connected with the concepts of absolute convergence and conditional

BOX III.6 From rags to riches?

80% of changes in income of households in Poland are not more than two deciles up or down. It is interesting that there are situations when the change in income is large enough so that in a year a household moves from the first decile to the top decile in the next year. In the 2009-2010 year, this meant a change in equivalised household income by at least 2000 PLN (so for a household consisting of two adults and one child, total income increased by more than 3600 PLN) (Table III.5). Such cases proved to be very rare. Changes in income from the lowest to the two highest deciles were experienced by about 2% of persons from the first decile. Significant declines in income are similarly rare over a year. This kind of mobility in Poland is lower than the EU-15 and NMS7 averages.

A significant increase in the chance of fundamental change in income means that these are not only apparent flows associated with the uncertainty of surveys. Over a three year period, the chances of a significant improvement in the income situation in Poland and the EU-15 countries doubled, and the risk of its deterioration increased only slightly. However, in the NMS7, the chances of flows of this magnitude increased fourfold in three years. The chances for a significant change in income in Poland are relatively low, which is good news for those with higher income, but it can lead to a problem of persistent poverty, especially when the history of a household has an impact on its current status.

FIGURE III. 52. THE PROBABILITY OF A FLOW BETWEEN THE HIGHEST AND THE LOWEST DECILE OF EQUIVALISED HOUSEHOLD INCOME DISTRIBUTION WITHIN A YEAR (LEFT PANEL) AND THREE YEARS (RIGHT PANEL), 2005-2008 (%).



Source: own elaboration based on EU-SILC data, 2009.

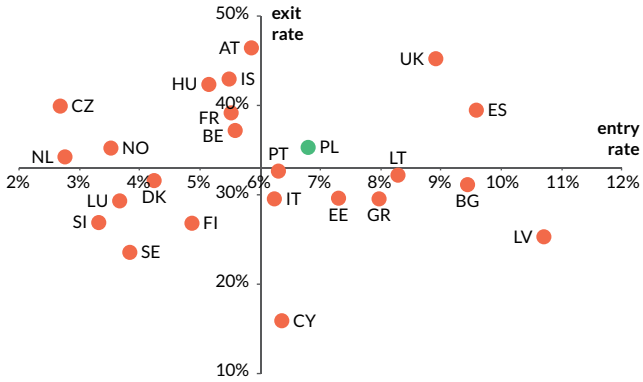
convergence. The former refers to the situation where poorer households experience higher income growth than the richer households. Empirical studies in this type of convergence yield mixed results, although this phenomenon has indeed been observed in Indonesia, Venezuela and South Africa (Fields, 2008). In the case of conditional convergence, which involves a greater mobility of poor households, but only among similar households, research rather confirms the existence of such a mechanism – e.g. Aristei and Perugini (2012) for 25 European countries, and Fields et al. (2003a) for Indonesia, Spain, Venezuela and South Africa. However, this is not a universal regularity – in 1998-2002 China experienced a divergence of income (Yingi et al., 2006).

In conclusion, the relation between mobility and the level of income is U-shaped, both in Poland and in other countries. People with average incomes are most likely to change their relative income position. Most frequently the mobility is between neighbouring income deciles and changes by more than two deciles are rare. Mobility of expenditure is significantly lower than the mobility of income. In terms of mobility, Poland is more similar to the EU-15 than the countries that joined the EU together with Poland (NMS7). This latter group of countries is characterised by higher mobility.

Mobility of the poor is a special case in general income mobility. Mechanisms of entry and exit from poverty are partially independent phenomena and outflow and inflow rates hardly correlate among countries (see Figure III.51). The Nordic countries, Slovenia and the Czech Republic are characterised by low rates of inflow into poverty (2-5%) and low to moderate outflows (20-40%). These are the leaders and effective countries according to the classification from Part I. Among the rest of the countries in these categories (Austria, Hungary, France, Belgium), the probability of hitting the poverty threshold is average (about 6%), but the duration of poverty spells is short, associated with an above-average outflow rate (35-50%). Poland, along with most laggard states (Estonia, Greece, Portugal, Italy, Bulgaria, Latvia) has an above-average inflow rate (6-10%) and above-average persistence of poverty at outflow rates of 30-40%. In the United Kingdom and Spain, the higher risk of poverty is influenced both by higher outflow and inflow rates (see Figure III.53).

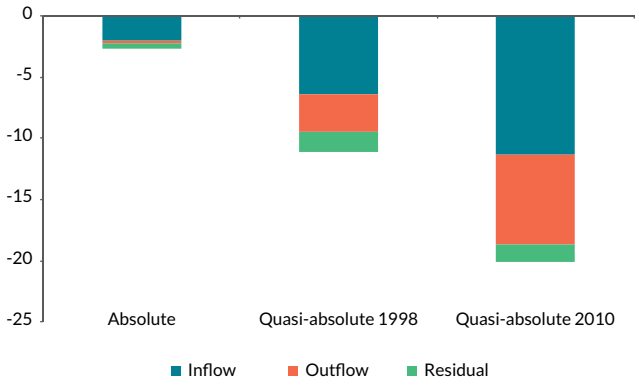
Monthly income data are less reliable than the annual data due to accidental and irregular changes of registered income. The scale of the reduction of flows to and from relative poverty based on annual data (EU-SILC) compared to monthly data (HBS) is more important for outflows. Inflows decrease from

Figure III. 53 | The rates of inflow to and outflow from poverty within a year in the EU countries, 2005-2008.



Source: own elaboration based on EU-SILC data, 2009.

Figure III. 54 | The importance of inflows and outflows for the change in poverty risk, 2003-2011 (pp).



Note: decomposition is based on the impact of changes in inflow and outflow rates on equilibrium poverty defined as: UR=SN/(SO+SN), i.e. poverty which is stable at given inflow and outflow rates. The risk of quasi-absolute poverty in 1998 and 2010 denote the risk of poverty determined based on the relative poverty threshold from those years, in real terms for the other years based on the price index.

Source:own elaboration based on HBS data.

Figure III. 55 | Structure of the absolutely poor by status after a year, 2003, 2006 and 2011.

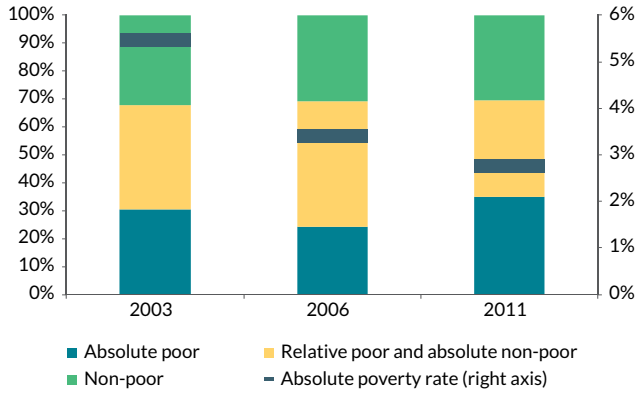


Table III. 6 | Relative distance of the median household income from the relative and absolute poverty threshold by the types of flows, 2002-2011.

Type of flow	Relative poverty		Absolute poverty	
	in the first period	in the second period	in the first period	in the second period
inflow to poverty	27% (1.0)	-15% (0.8)	103% (52)	-32% (9.9)
outflow from poverty	-17% (0.7)	30% (1.9)	-30% (7.6)	105% (52)
remaining in poverty	-26% (1.3)	-25% (0.6)	-43% (11)	-38% (8.3)
remaining outside poverty	93% (3.7)	94% (4.7)	207% (31)	219% (29)

Note: the relative distance is defined as the ratio of the distance between the poverty threshold of the median household in a given group to the poverty threshold. Average values for the period 2002-2011. In parentheses are standard deviations between the years, expressed in percentage points.

Source: own elaboration based on HBS data, 2002-2011.

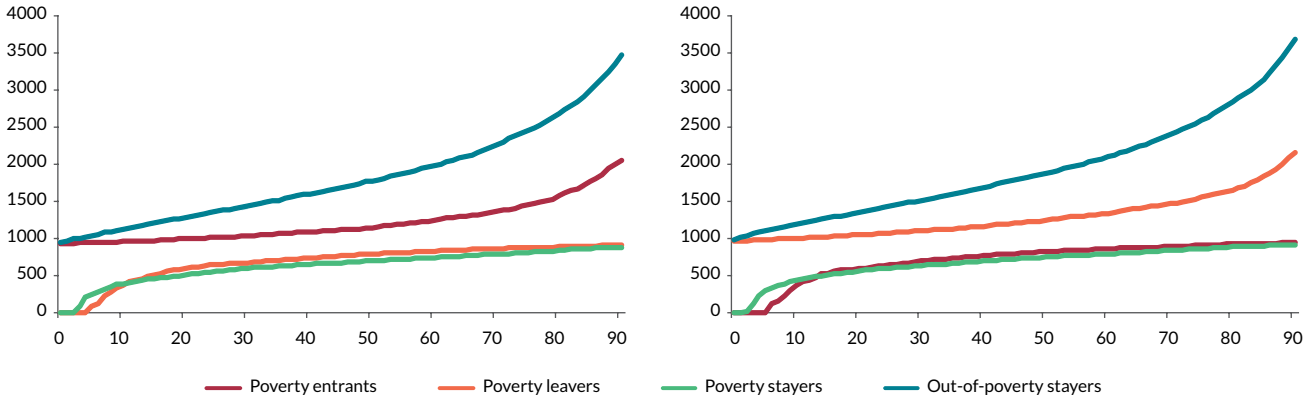
8% to 7%, and outflows from 44% to 35%. Spending mobility is similar to income mobility. The scale of annual flows determined on the basis of monthly expenditure is not significantly different from that based on income, and amount to 8% and 42% respectively. [22] During a decline in poverty, outflows grow and inflows decrease, but the scale of flows is stable over time (see Box III.5).

A reduction in the real (quasi-absolute) poverty threshold usually occurs from a decrease in the number of people who become poor, rather than as a result of exits from poverty and reduced poverty persistence. This phenomenon is stronger the lower the poverty threshold (see Figure III.54). In the case of absolute poverty, a 74% decrease is accounted for by changes in inflows, and in the case of quasi-absolute measures, 57%. Poverty reduction results from fewer households becoming poor, while the situation of the poor improves to a lesser extent.

Absolute poverty is a decidedly more temporary phenomenon. Between 2003 and 2011 the rate of outflow from absolute poverty fluctuated between 60% and 70% (according to the HBS). Hence, about two thirds of people with incomes below the subsistence minimum got out of this state within a year. However, the changes in income leading to an exit from absolute poverty were not enough to avoid relative poverty.

22 Average for the 2005-2008 period, calculated based on the EU-SILC and HBS data.

Figure III. 56 | Cumulative distribution of income of selected households before (left panel) and after (right panel) the changes of status.



Note: levels in 2011 prices.

Source: own elaboration based on HBS data, 2010-2011.

The chances that income of an absolutely poor household increases over the relative poverty threshold within a year are only 30% (Figure III.54).

The situation of people persistently below the absolute poverty threshold changes only slightly under the influence of changes in the labour market. The decrease in absolute poverty between 2003 and 2011 resulted almost entirely from a decrease in inflow rate, while the outflow rate remained relatively stable. The share of persons remaining in absolute poverty, among the absolutely poor, was about 30% between 2003 and 2011. Strong growth in income during the economic recovery between 2005 and 2008 was associated with an increase in the relative poverty threshold. As a result, the absolutely poor found it harder to leave the sphere of relative poverty, and although the rate of outflow from absolute poverty did not change significantly, outflows above the relative poverty threshold were less frequent (see Figure III.57).

Inflows to and outflows from poverty concentrate in a small band around the poverty threshold. Enrichment leading to an exit from poverty often is not sufficient to move far. An increase in income to a level exceeding the poverty threshold by more than 100 PLN (25 EUR) concerned ¾ of those leaving poverty risk, but exceeding it by more than 500 PLN (125 EUR) was possible only for ¼ of them. Households which got out of relative poverty increased their average equivalised income by about 450 PLN (110 EUR), and out of absolute poverty, by about 600 PLN (150 EUR). Similarly, the impoverishment of households is associated with falling into poverty that is less deep than among households remaining in this state persistently. Falling into relative poverty is associated with an average decrease in equivalised household income by about 400 PLN (100 EUR), while falling into absolute poverty is related to a 800 PLN (200 EUR) decline (see Table III.6).

The situation of households remaining in relative poverty does not change, while the situation of those persistently at risk of absolute poverty improves slowly (see Table III.6). The latter group includes about one third of all absolutely poor, i.e. less than 1% of the Polish population. These are people whose income does not satisfy their basic needs on a regular basis. Social assistance programmes find it very difficult to reach this group. In addition, it is worth noting that the analysed social surveys (HBS, SILC, Social Diagnosis) do not include the homeless because flats and houses are the main sampling units.

Some households are classified as poor in terms of income due to inaccuracy in measurements, e.g. not taking into account temporary delays in getting wages. This seems to be the explanation for the fact that the poorest 10% of households remaining in poverty have a higher income than the poorest 10% of households exiting poverty within a year. In the case of inflows to and outflows from absolute poverty, income distributions are similar to relative poverty (see Figure III.56).

The scale of income mobility of the poor differs very significantly between the different types of households. Younger households are more likely to flow into poverty, but more frequently than for older households, these are short poverty spells. Households headed by <35 years old are the least likely to remain in poverty, even though the probability of inflow into poverty is quite high. In relation to households of persons aged 35-44 years, the probability of getting out of poverty in a year is about 5-8 pp higher. This is the period of life with more intense family formation and career development in the labour market. Households in which the earner is aged 55+ are less likely to flow into poverty, but if they become poor, they are less likely to leave that state than households headed by a person younger than 35 years. The higher risk of poverty among households run by women is due to the greater chance of inflow to poverty among such households, but is not reflected in the persistence of poverty expressed by the probability of outflow (see Figure III.57).

BOX III.7 Income poverty vs. consumption smoothing

In Part I we describe the differences in the dimensions of poverty: income, expenditure and housing. At this point, we compare the mobility of the poor in these dimensions.

In the period 2002-2009 the rate of inflow to relative expenditure poverty was higher than to relative income poverty by about 1 percentage point. Outflow rates from relative poverty according to both approaches were at the same level, with a significantly higher rate of outflow for income distribution in 2006, which corresponds to the beginning of real wage growth during that period.

TABLE III. 7. FLOWS BETWEEN POVERTY IN THE INCOME AND EXPENDITURE APPROACH IN A PANEL, 2009-2010.

Status in 2009	Status in 2010			
	poor in both dimensions	income: non-poor expenditure: poor	income: poor expenditure: non-poor	non-poor in both dimensions
poor in both dimensions	**50%**	13%	17%	21%
income: non-poor expenditure: poor	13%	**33%**	5%	48%
income: poor expenditure: non-poor	17%	5%	**29%**	49%
non-poor in both dimensions	2%	5%	4%	**89%**
Population structure 2010	8%	8%	10%	75%

Source: own elaboration based on HBS data.

Note: the values in rows may not add up to 100% due to rounding.

Half of the poor in terms of income and expenditure remain poor in the following period according to both measures (Table III.7). The poor in terms of income fall into both dimensions of poverty within a year less frequently than those in expenditure poverty. For both dimensions, about 30% of the poor in one dimension remain poor only in this dimension next year.

According to the permanent income hypothesis, temporary decreases in income should only be slightly reflected in the level of consumption. Experiencing a drop in income, which leads to income poverty, households limit their spending less compared to an income decrease. For most households that fell into relative income poverty, spending declines less when compared to income (Table III.8).

The measurement uncertainty of monthly income and expenditure is demonstrated by the fact that spending increased for 30% of households that entered income poverty. If the household spending falls so that it gets below the expenditure poverty threshold, household income falls less than spending, which may result from an increase in other costs in the household (e.g. repayment of loans). A similar relation is observed for outflows from both dimensions of poverty. The correlation between the change in spending and income at a level of 0.3 is significantly greater than 0, but much smaller than 1.[23]

TABLE III. 8. CHANGES IN EQUIVALISED EXPENDITURE AND EQUIVALISED INCOME OF HOUSEHOLD FLOWING INTO POVERTY IN A PANEL, 2009-2010.

Type of inflow	Change in equivalised expenditure			Change in equivalised income		
	p10	p50	p90	p10	p50	p90
Inflow to income poverty	-714	**-161**	**284**	-1423	**-415**	-110
Inflow to expenditure poverty	-793	**-339**	-113	-677	**-73**	**406**
Outflow from income poverty	**-343**	**139**	677	184	**528**	1865
Outflow from expenditure poverty	129	**355**	823	**-194**	**172**	777
Remaining in income poverty	-322	11	358	-214	19	306
Remaining in expenditure poverty	-167	3	167	-301	30	395
Remaining outside income poverty	-72	15	771	-560	48	725
Remaining outside expenditure poverty	-732	11	782	-635	54	820

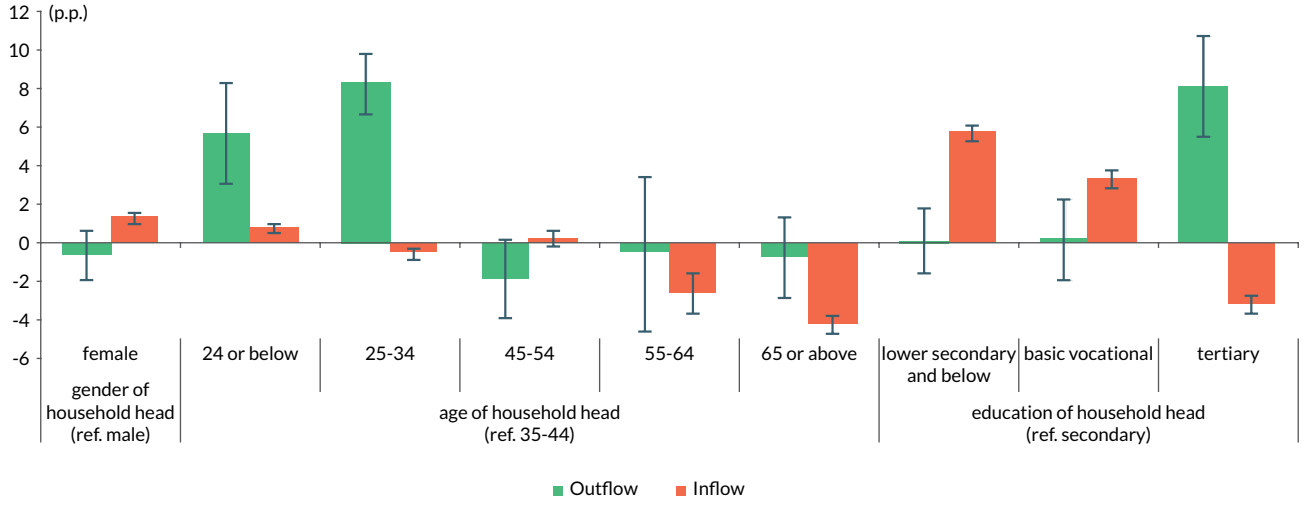
Note: p10, p50 and p90 denote the 10th, 50th and 90th percentile. Levels expressed in 2010 prices.

Source: own elaboration based on HBS data.

Source: own elaboration

23 Correlation measured using the Spearman's rank correlation coefficient.

Figure III. 57 | Characteristics of the head of household vs. probability of outflow from and inflow to poverty within a year.



Note: the graph above shows the average marginal effects obtained from logit models for the probability of outflow from poverty and inflow to poverty. Vertical lines indicate 90% confidence intervals.

Source: own elaboration based on HBS data.

Higher education of the head of the household is associated with higher economic activity and higher wages, which decreases the risk of poverty or the duration of poverty spells. Such households have 8 pp chances of outflow from poverty and have a 3 pp lower risk of falling into poverty within a year than households headed by individuals with just secondary education, regardless of sex. Households headed by persons with education lower than secondary are particularly exposed to poverty risk, and its persistence is similar among persons with just secondary, vocational or elementary education (see Figure III.57).

Apart from the traits of the head of the household, inflows into and outflows from poverty are influenced by the structure of the household. Households with children are at a higher risk of poverty and have a lower chance of exit from poverty than households with no children and the probabilities are constant for subsequent children (see Figure III.58). Similar results are obtained in research on poverty in other countries (e.g. Baulch, Vu, 2011; Woolard, Klasen, 2004; Hussain, 2002).

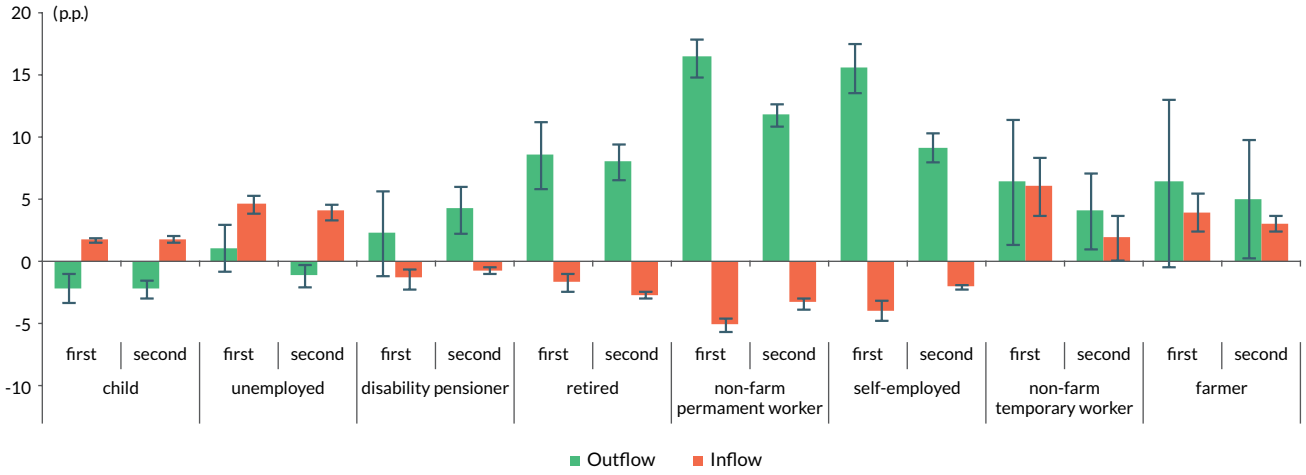
The appearance of an unemployed person in a household where no unemployed had lived before increases the risk of inflow into poverty by 5 pp, while the appearance of a child by only 2 pp. Subsequent children, similar to subsequent unemployed, increase the risk of inflow into poverty. The significant difference lies in the persistence of poverty. The importance of the first and subsequent children in a similar way influences poverty persistence, decreasing the likelihood of getting out of poverty within a year by 2 pp. Due to the average duration of a job search of about 12 months, [24] one unemployed person in a household does not significantly decreases the chances of leaving poverty within a year. However, the next unemployed person extends the expected time of poverty and decreases the likelihood of outflow from poverty by about 1 pp. So while children symmetrically influence inflows into and outflows from poverty (they are permanent changes in the household structure), the unemployed increase the probability of inflow into poverty, and to a lesser extent influence the persistence of poverty.

The most efficient manner of getting out of poverty by a household is hired labour for an indefinite time, both by the first and subsequent persons in a household. While the first person working for an indefinite period increases the probability of outflow from poverty by 18pp, the subsequent person increases the probability by a further 11pp. Even one working person is enough to protect the household against poverty, and even if a household does become poor, then quite quickly it can exit poverty.

Self-employment has practically the same reducing effect on the likelihood of poverty and the expected duration of a poverty spell as hired labour for an indefinite period. In contrast, the first and next household member hired for a definite period increase the risk of poverty, although decrease the expected duration of a poverty spell. While persons hired for a definite period are at a higher risk of poverty, these are temporary poverty spells and the very fact of working with such a contract shortens the expected duration of poverty spell by about 7 pp. A subsequent person in a household with the same type of contract does not influence the probability of inflow into poverty, but shortens the time of a poverty spell almost as much as the first person. Employment for a definite period is found relatively often in poor households, yet the poverty is rarely persistent.

24 Based on LFS data, 2012.

Figure III. 58 | Household structure vs. inflows into and outflows from poverty.



Note: the graph above shows the average marginal effects for changes in the number of people in the group, depending on whether it is the first or second person from a given group in the household, derived from the logit model of inflow into and outflow from poverty. Marginal effects were calculated only for households in which there is at least one person from a given group. Vertical lines indicate 90% confidence intervals. Inflows and outflows are based on the relative poverty threshold. Disability pensions concern only those associated with the inability to work.

Source: own elaboration based on HBS data.

Poverty in agricultural households is higher than in other households and inflows into poverty in this group are also higher, at a scale comparable to the impact of workers for a definite period and the unemployed. With regard to the expected worth, households with one or more farmers are poor for a shorter period of time, but the variation of this effect is so high that results are statistically insignificant. In the analysis of rural poverty in Part II and in the structure of income in Part III, it is shown that the measurement of monthly agricultural income is associated with the greatest 'noise', which results in the ambiguity of poverty persistence in households in which farmers live. So while there is a group of small agricultural households with income barely sufficient to meet the basic needs of its members, the general variation of agricultural income predominates and the average poverty persistence in the entire group of agricultural households is lower than in other types of households.

Average old-age pensions are high enough to decidedly decrease the risk of poverty, and when a household comprises two pensioners then the risk of poverty is almost non-existent. When households with one and more pensioners become poor anyway, they remain poor for a shorter period of time. These results are controlled for the age of the head of household – poverty spells in households headed by a person at post-working age are not shorter, but the presence of a pensioner in the household decreases the persistence of poverty.

Although disability pensions are on average lower than old-age pensions, this type of income in a household decreases the risk of inflow into poverty by about 1 pp. A second disability pension decreases the risk to a lesser degree than the first, but is significantly more important for decreasing the persistence of poverty, increasing the probability of outflow by 4 pp, i.e. similar to a worker for a definite period.

2.3 WAGE MOBILITY

The causes of income mobility arise mainly from wage mobility. Labour market institutions and regulations differ between countries and translate into different wage mobility. The classification of countries by institutional regimes proposed by Esping-Andersen (1990), allows an empirical verification of the importance of institutions on wage mobility. The classification takes into account the existence and level of minimum wages, the burden of regulations protecting workers, the share of workers in trade unions, and the coverage by collective agreements. There are four main types of regimes: continental (Austria, Germany, France), Nordic (Denmark, the Netherlands, Finland), southern (Portugal, Italy, Spain, Greece) and liberal (UK, Ireland).[25] Countries from the continental group have a higher level of labour market regulations than the other groups. The share of unionised workers is not high, but a significant part of the employed is covered by collective agreements. The Nordic countries have a highly unionised workforce and centralised collective bargaining which covers all workers. In southern countries the activity of trade unions is limited, but the state strongly controls the labour market. The liberal group is characterised by low interference by the state with the labour market (see Table III.9).

The diversity of wage mobility in European countries is significant. The probability of a change in wage by more than one decile in the wage distribution ranges from 10% to 35% (Figure III.59). The highest wage mobility is observed in Denmark (33% 1999-2000) and the lowest in Portugal (11% 1999-2000). High wage mobility, above 20% occurred also in the Netherlands (24%), Ireland (24%), Italy (24%) and Spain (28%). Apart from Portugal, wage mobility lower than 15% is observed in Germany and the UK. In the perspective of changes of time, Greece experienced a distinct decrease in wage mobility over

25 The classification of countries based on Pavlopoulos et al. (2010). Data for selected countries comes from ECHP, for 1994-2001.

Figure III. 59 | The probability of change in wage by more than one decile within a year.

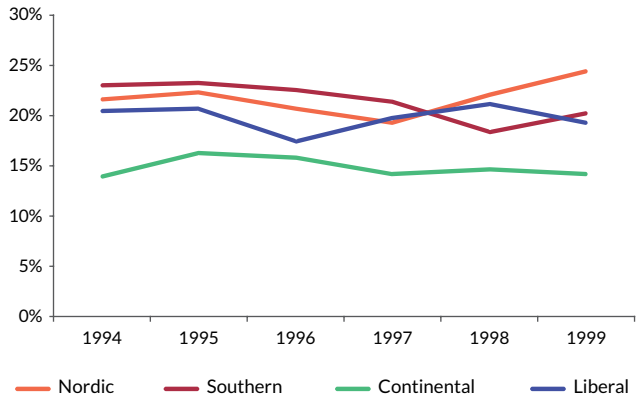
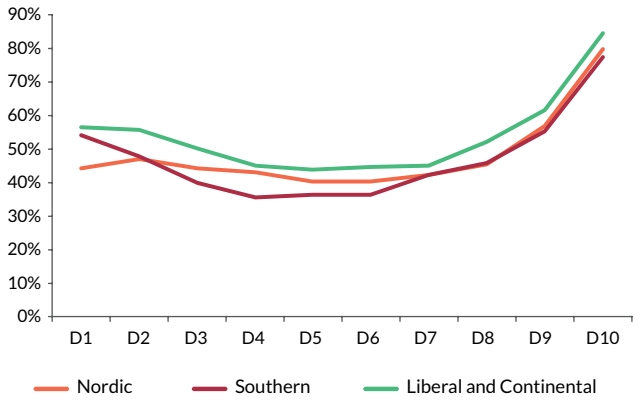


Figure III. 60 | The probability of remaining in the same decile in the wage distribution within a year.



Source: own elaboration based on Pavlopoulos et al. (2010).

Table III. 9 | Characteristics of the labour market vs. wage mobility in European countries.

Institutional regime	Countries	Labour market characteristics	Wage mobility
Liberal	Ireland, United Kingdom,	No state interference and low level of protection of workers in the labour market.	High wage mobility.
Southern	Spain, Portugal, Italy	Low unionisation, high protection of workers.	Relatively high wage mobility.
Continental	Austria, Germany, France	Significantly regulated labour market. High coverage with collective bargaining agreements, low unionisation.	Low wage mobility.
Nordic	Denmark, Finland, the Netherlands	High unionisation and coverage by collective bargaining agreements coordinated at the central level. Strictly regulated labour market.	High wage mobility. In particular, higher than in the liberal countries.

Source: own elaboration based on Esping-Andersen (1990) and Pavlopoulos et al. (2010).

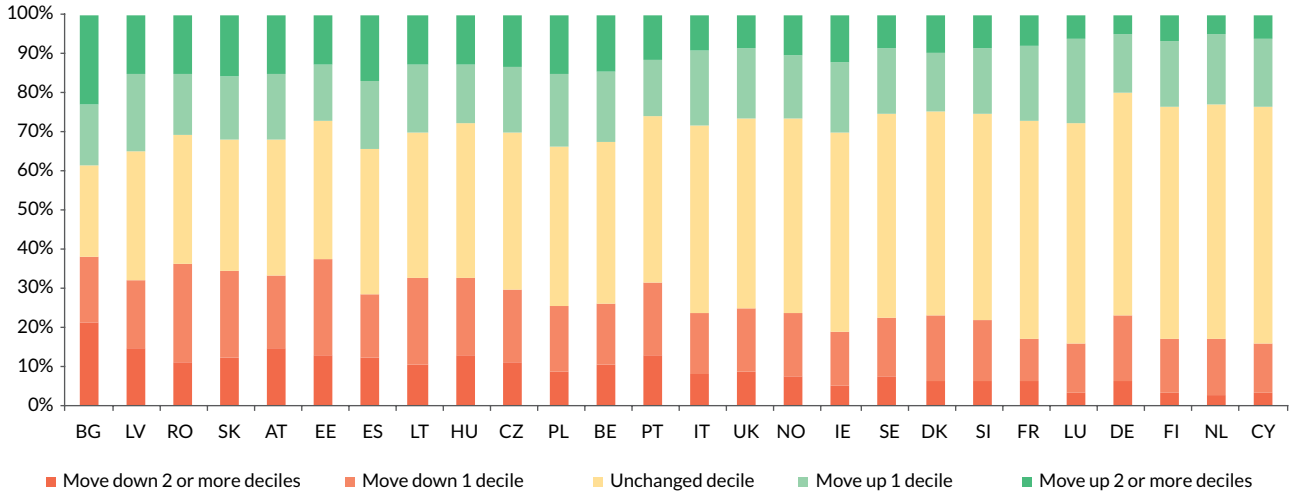
several years from 1994 falling by 10 pp. Spain and Denmark were in a quite different situation with an increase in wage mobility by 5 pp. The ranking of countries in terms of wage mobility sees considerable changes during that period of time.

Wage mobility in liberal countries was lower than the average, and in southern countries it was above average. In the countries of Southern Europe, workers show high wage mobility, with the exception of Portugal. Moreover, apart from Spain, wage mobility in those countries decreased over time. Nordic countries had different levels of wage mobility but their common characteristic is the fact the mobility distinctly grew during the studied period. The countries of the continental regime have the lowest wage mobility, which partly results from the exceptionally low wage mobility in France. These countries had a similar decrease in mobility compared to the initial period. In countries described as liberal, results are ambiguous. On one hand, Ireland has high wage mobility, but the UK does not. Wage mobility for these countries fluctuated during the studied period, showing no particular trend (see Figure III.59).

The relation between the extent of regulations and wage mobility is not linear. In particular, in liberal countries mobility is lower than in countries with stronger regulations. Therefore, a low extent of regulations does not directly translate into an increase in workers' chances to change the labour market situation. Moreover, workers in the southern regime countries have higher wage mobility than indicated by the level of regulations. Characteristically, the wage mobility in southern regime countries occurs within the company and not through finding a new job. Moreover, the high mobility in southern regime countries may result from the high share of the self-employed. Nonetheless, the common characteristic of all countries is a U-shaped dependence between the level of wages and mobility within the wage distribution (Figure III.60).

Wage persistence, measured by the chance of remaining in the same wage decile, is a little lower in Poland than the average for European countries (Figure III.61). Chances for a change in status by one decile up or down are similar across Europe, with significant differences occurring for the probability of changes in wage by two or more deciles. The likelihood of moving to any other wage decile in the wage distribution in Poland is similar to that in the southern regime countries (Spain, Portugal and Italy). In Poland, the chances of going up the distribution are greater than dropping, albeit the flows up the distribution are couples with an increase in inequality in the upper deciles (OECD, 2012). OECD classifies Poland as a country with a moderate labour income inequality, which translates into a poverty rate and inequality in household income at an average level for OECD countries.

Figure III. 61 | Flows between deciles of the wage distribution in Europe, 2004-2008.



Source: own elaboration based on ESDE 2011 and EU-SILC, 2009.

Table III. 10 | Probability of flowing into and out of low-paid employment, 1994-2001 (%).

Country	Probability of low-paid labour	Probability of inflow into low-paid employment	Probability of outflow from low-paid employment
Austria	8	2	53
Belgium	7	3	61
Denmark	8	3	51
France	17	5	44
Germany	13	4	38
Greece	16	6	45
Ireland	19	4	39
Italy	7	3	53
Netherlands	10	3	45
Portugal	19	6	35
Spain	19	7	49
UK	16	6	45

Source: own elaboration based on Clark, Kanellopoulos (2009).[26]

The mobility of workers at the lowest wage is a significant aspect of general wage mobility, especially in the context of poverty. The question of the permanence of low-wage employment is particularly important.[27] Low-paid labour, especially for young workers, may be a chance to gain professional experience and help find a better-paid job in the future (ESDE, 2011). On the other hand, if the low wage is the result of discrimination in the labour market (Grimshaw, 2011) and if persistent, then it may increase the risk of deprivation.

Amongst European countries there is a significant diversity in terms of the persistence of low-wage employment (Table III.10).[28] The greatest probability of remaining in a low-wage job is observed in Ireland, Germany and Portugal – more than 60% (Figure III.62). At the same time, Portugal had a relatively high probability of inflow into low-wage jobs and the lowest probability of outflow, which indicates low wage mobility among those at the lowest wage. A different situation was in Belgium, Italy, Denmark and Austria, which are characterised by high wage mobility with regard to low wages – with more than a 50% chance of outflow from a low-wage job. The probability of changing job status is highly state-dependent in Portugal, Germany and Ireland, while this dependence is low in Belgium, Austria and Italy (Figure III.63). The previously described regimes vary greatly in terms of permanence of low-wage employment.

26 The paper by Clark and Kanellopoulos (2009) used the data of the European Community Household Panel (ECHP) from the period 1994-2001.

27 Low-wage is defined as below 2/3 of the wage median in a given country.

28 Persistence of low-wage employment is defined here as the probability of having a low-paid job by those in low-wage employment in the previous period.

Figure III. 62 | Probability of remaining a low-paid worker.

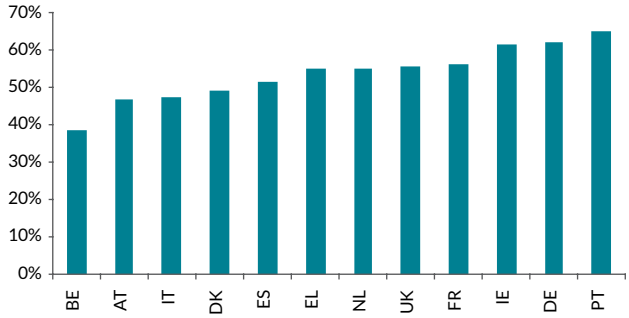


Figure III. 63 | The impact of a low-paid job in the previous period on the probability of a low-paid job in the current period.

Note: state-dependence was defined as the difference between the probability of a low wage under the conditions of a low wage in the previous period, and a low wage following higher-wage labour in the previous period.

Source: own elaboration based on Clark, Kanellopoulos (2009).

In the US in the period 1986-1991, the probability that a low-paid worker would have a low-wage job the following year was 58%,[29] which is considerably higher than in European countries. In comparison, in Denmark the probability was 8%, in Germany 26%, and in France 32%. Labour market institutions in the U.S. are comparable to those in the UK (Pavlopoulos et al. 2010). In the UK the probability of remaining in a low-paid job is quite high (39%), but still distinctly lower than in the US.

To sum up, labour market institutions are significant to wage mobility, but the dependence is not straightforward. Liberal countries have wage mobility similar to the Nordic countries, in which labour mobility regulations are much broader. In Europe, workers from the bottom of the wage distribution face low wage mobility. The only exceptions are in Nordic countries (Denmark, the Netherlands and Finland) in which the probability of remaining in the same decile within a year is similar for the lowest and middle deciles. Institutional regimes do not influence the persistence of low wages in a straightforward manner. In the Netherlands the importance of a low-paid labour spell on remaining in a low-paid job is one of the highest in Europe, while wage mobility is relatively high.

29 Based on Keese et al. (1998).

Summary

Economic growth in Poland in the period 1994-2011 had a varying impact on income inequality. The years of economic boom before the Russian crisis (1998) were characterised by a rapid increase in labour productivity, and real income in poor households also and their relative position was stable. The increase in inequality alone translated into increased depth of poverty despite a stable rate of relative poverty risk. In the period 1998-2004, average real income stabilised, but at the same time there was a significant increase in the scale of inequality and poverty risk. Between 2004 and 2009 a marked improvement in economic conditions resulted in a decrease in unemployment and inequality, improving both the absolute and relative situation of people at risk of poverty. The real poverty reduction was a result of growth in real income, and the role of inequality was of secondary importance. Despite these changes, stratification of income in Poland is at a stable average European level of 29-32 (Gini coefficient) and does not seem to be subject to any steady change.

The poverty of households is mostly due to the low-intensity of non-agricultural labour. Poor matching of skills to the labour demand often does not allow members of poor households to find a job, pushing households into poverty. Labour income is by far the greater part of non-poor household budgets than in poor households in which benefits and disability pensions are much more important. The replacement of disability pensions with old-age pensions after 2005 did not allow the covered poor households to exit poverty. Poor agricultural households depend on agricultural incomes less than do non-poor agricultural households, depending more on employment outside agriculture. Income from benefits and transfers are also more important in poor agricultural households. Similarly, in poor households with a main income not related to labour, labour incomes are more important for their budgets than for the non-poor households in this category.

Wage inequality in Poland grew until 2006, since when it has revealed a steady decline. The difference in remuneration between men and women relates mainly to higher wages. Changes in the risk of poverty in Poland over the period 1998-2010 were mostly influenced by changes in the employment rate, and since 2005 also by an increase in wages. Despite the counter-cyclical character of the Gini coefficient, income inequality has a much lower impact on poverty depth than the employment rate and rising wages.

Changes in the labour market explain the vast majority of changes in the risk of poverty. During the downturn, the poverty risk was significantly influenced by a decrease in employment and increase in unemployment. During the economic recovery, both employment and wage growth similarly contributed to the reduced risk of poverty. This means that an increase in wealth resulting from the economic growth in Poland, especially in the period 2005-2008, was largely a pro-poor growth, contributing to the growth of employment and wages among the poorest groups in the society also.

In-work poverty is associated very little with low wages. Labour intensity in households is more important. Young people with low incomes often depend on their parents, while the older low-paid workers combine labour with old-age pensions to avoid poverty. The poverty rate among Polish non-agricultural workers is slightly higher than in the EU-15 (about 7-8%), although the difference between in-work and total poverty risk is similar to other EU-15 countries. The risk of poverty among farmers exceeds 40% and this group has been the subject of a separate analysis (see Part II). The gap between in-work and total poverty is counter-cyclical.

Outflows from and inflows into poverty weakly correlate between countries. Poland, similar to other countries with high levels of income inequality and a high risk of poverty, is characterised by relatively high rates of inflow into poverty (6%) and an average persistence of poverty with outflow rates at 35%. At the same time, the rate of persistent poverty in Poland is higher than the European average (about 6%), while a lesser share of people are permanently non-poor (70%). The dependence of poverty risk on any previous poverty spells is similar to the EU-15 average.

No exit from poverty within a year significantly reduces the chance of an exit in the future. Similarly, remaining above the poverty threshold for a longer period reduces the chance of falling below that limit. The chance of remaining in absolute poverty for more than eight years is almost non-existent, but in the case of relative poverty it exceeds 10%. A more variable income (e.g. wage) protects against persistent poverty less than a more stable income (e.g. old-age pension). Similar to labour, high social capital allows an early exit from poverty.

The reduction of poverty in Poland in the period 2003-2011 owes much more to decreased inflows into poverty than the reduced duration of poverty spells. This regularity is more pronounced for lower poverty thresholds. The probability of entry into and exit from poverty are strongly dependent on the depth of poverty. The richer poor have a better chance of becoming non-poor and the less wealthy non-poor are at a greater risk of inflow into poverty. Income poverty is a slightly different phenomenon than

expenditure poverty or poverty of housing, but persistent poverty among people who are poor in at least two of these dimensions is higher than among those poor in only one dimension. Some characteristics of households can at the same time reduce or increase the likelihood of becoming poor or the persistence of poverty (higher education, gender, number of employees and retirees, number of children), while others can increase the risk of poverty while reducing the persistence (households of young workers with flexible forms of employment).

Poverty rates result from labour intensity, and the only long-term effective method against poverty is increasing employment and wages. Therefore, the most effective elements of public policy aimed at reducing poverty are active labour market policies and creating conditions for economic growth, which in turn result in wage increases. Particular attention should be paid to social transfers which may create incentives to exit the labour market. An inadequate incentive structure may result in a decline in labour intensity, leading to poverty, and may also increase the tax burden on labour income, which pushes workers into poverty. Policies intended to increase individual productivity through human capital accumulation have a very important role. Education and high skills are practical protection against poverty if they are tailored to the needs of the labour market. Even high skills for which there is no demand in the labour market do not increase the chance of employment or the level of remuneration.

Bibliography

Alesina A., Perotti R. (1996), Income distribution, political instability, and investment, European Economic Review, Elsevier, vol. 40(6), pp. 1203-1228.

Andriopoulou E., Tsakloglou P. (2011) Once Poor, Always Poor? Do Initial Conditions Matter? Evidence from the ECHP, IZA Discussion Papers 5971, Institute for the Study of Labor (IZA).

Aristei D., Perugini C. (2012) The Drivers of Income Mobility in Europe, ECINE Working Paper, The Society for the Study of Economic Inequality (ECINEQ).

Autor D., Katz L., Kearney M. (2006), The Polarization of the US Labour Market, American Economic Review, Vol. 96, No. 2, pp. 189-194.

Bachmann R., Bechara P., Schaner S. (2012) Wage Inequality and Mobility in Europe.

Barro R. (2000), Inequality and Growth in a Panel of Countries, Journal of Economic Growth, 5, issue 1, pp. 5-32.

Baulch, B., Vu H. (2011) Poverty dynamics in Vietnam, 2002 to 2006 in B. Baulch (Ed.), Why Poverty Persists: Poverty Dynamics in Asia and Africa, Northampton: Edward Elgar Publishing.

Bénabou R. (1996), Inequality and Growth, NBER Macroeconomics Annual 1996, Volume 11, National Bureau of Economic Research, Inc., pp. 11-92.

Bentolila S., Ichino A. (2000), Unemployment and Consumption: Are Job Losses Less Painful near the Mediterranean?, CEPR Discussion Papers 2539, C.E.P.R. Discussion Papers.

Blau F., Brummund P., Yung-Hsu Liu A. (2012), NBER Working Papers 17993, National Bureau of Economic Research, Inc.

Bukowski M. (2008) (ed.), Employment in Poland 2007 – Security on a flexible labour market, Warsaw 2008.

Bukowski M. (2010) (ed.), Employment in Poland 2008 - work throughout life, Warsaw 2010.

Bukowski M., Koloch G., Lewandowski P. (2013), Shocks and rigidities as determinants of CEE labor markets' performance. A panel SVECM approach, Journal of Economic Transition (in printing).

Castro R. (2011) Getting ahead, falling behind and standing still. Income mobility in Chile, Estudios de Economia, University of Chile, Department of Economics, vol. 38(1 Year 20), pp. 243-258, June.

Corak M. (2006), Do Poor Children Become Poor Adults? Lessons from a Cross Country Comparison of Generational Earnings Mobility, IZA DP No. 1993.

Crettaz, E., Bonoli G. (2010) Why are Some Workers Poor? The Mechanisms that produce Working Poverty in a Comparative Perspective, Working Papers on the Reconciliation of Work and Welfare in Europe, REC-WP 12/2010.

Dahl E., Fløtten T., Lorentzen T. (2005), Poverty dynamics and social exclusion – An analysis of Norwegian panel data, Annual Conference of the International Sociological Association's Research Committee on Poverty, Social Welfare and Social Policy (RC19) Chicago, 8-10 September 2005.

Eurostat, (2010), In-work poverty in the EU, Methodologies and working papers, Eurostat.

Feenstra R., Hanson G. (1996), Foreign Investment: Outsourcing and Relative Wages, NBER Working Paper, No. 5121, National Bureau of Economic Research.

Fields G. (2008) A Brief Review of the Literature on Earnings Mobility in Developing Countries Working Papers, Available at: http://works.bepress.com/gary_fields/35.

Fields G., Cichello P., Freije S., Menéndez M., Newhouse D. (2003a) For Richer or for Poorer? Evidence from Indonesia, South Africa, Spain and Venezuela, Journal of Economic Inequality, 1: 1, pp. 67-99.

Fouarge D., Layte R. (2005) Welfare regimes and poverty dynamics: The duration and recurrence of poverty spells in Europe, Open Access publications from Maastricht University 27-17252, Maastricht University.

Francois P., van Ours J. (2000), Gender Wage Differentials in a Competitive Labor Market: The Household Interaction Effect, IZA Discussion Papers 202, Institute for the Study of Labor (IZA).

Gallie D. (2000), Unemployment, work and welfare, Towards a learning society: innovation and competence building with social cohesion for Europe.

Goos M., Manning A., Salomons A. (2009), The Polarization of the European Labor Market, American Economic Review Papers and Proceedings, Vol. 99, No. 2, pp. 58-63.

Granovetter M. (1995), Getting a Job: A Study of contacts and Careers, Chicago, University of Chicago Press.

Central Statistical Office (1999) Metodyka Badania Budżetów Gospodarstw Domowych, Warsaw.

Central Statistical Office (2011) Metodologia Badania Budżetów Gospodarstw Domowych, Warsaw.

Hanzl-Weiß D., Vidovic H. (2010) Working poor in Europe, Eurofund.

Heckman J. (1981) The incidental parameters problem and the problem of initial conditions in estimating a discrete time–discrete data stochastic process, In Structural Analysis of Discrete Data and Econometric Applications, ed, C, F, Manski and D, L, McFadden, pp. 114–178, Cambridge, MA: MIT Press.

Helpman E., Itskhoki O., Redding S. (2010), Inequality and Unemployment in a Global Economy, Econometrica, Vol. 78, No. 4, pp. 1239-1283.

Hussain, M. (2002) Child Deprivation in the European Union. EPAG Working Paper, 38. Colchester: University of Essex.

Inchauste G. (2012) Background Paper For The World Development Report 2013 - Jobs and Transitions Out of Poverty: A Literature Review.

Ken C., Kanellopoulos N. (2009) Low Pay Persistence in European Countries, IZA Discussion Papers 4183, Institute for the Study of Labor (IZA).

European Commission (2001), Communication on 'Employment and social policies: A framework for investing in quality', COM.

Lokshin M., Ravallion M. (2006), Poverty analysis toolkit, The World Bank, Available at: http://go.worldbank.org/YF9-PVNXJY0.

Loury G. (1981), Intergenerational transfers and the distribution of earnings, Econometrica 49, pp. 843-867.

Lundberg M., Squire L. (2003), The simultaneous evolution of growth and inequality, Economic Journal 113(487), pp. 326-344.

Marcinkowska I., Ruzik A., Strawiński P., Walewski M. (2008), Badanie struktury i zmian rozkładu wynagrodzeń w Polsce w latach 2000-2006,Ministry of Labour and Social Policy, CASE.

Marlier E., Ponthieux S. (2000), Low-wage employees in EU countries, Eurostat, Statistics in focus: Population and social conditions, Luxembourg, Office for Official Publications of the European Communities.

Miranda A. (2007) Dynamic probit models for panel data: A comparison of three methods of estimation, United Kingdom Stata Users' Group Meetings 2007 11, Stata Users Group.

Mosthaf A. (2011), Low-wage jobs –stepping stones or just bad signals?, IAB-Discussion Paper 11/2011.

OECD (2006), Women And Men in OECD Countries.

OECD (2011), Growing Income Inequalities in OECD Countries.

OECD (2012), Going for Growth OECD.

Orme C. (2001) The Initial Conditions Problem and Two-Step Estimation in Discrete Panel Data Models, mimeo, The University of Manchester.

Orme C. D. (1996) The initial conditions problem and two-step estimation in discrete panel data models, Discussion Paper Series No 9633, The University of Manchester.

Pavlopoulos D, Muffels R., Vermunt J. (2010) Wage mobility in Europe. A comparative analysis using restricted multinomial logit regression, Quality & Quantity: International Journal of Methodology, Springer, vol. 44(1), pp. 115-129.

Peña-Casas R., Latta M. (2004), Working Poor in the European Union, European Foundation for the Improvement of Living and Working Conditions.

Perotti R. (1996), Growth, Income Distribution, and Democracy: What the Data Say, Journal of Economic Growth, Springer, vol. 1(2), pp. 149-187.

Persson T., Tabellini G. (1994), Is inequality harmful for growth? American Economic Review 84(3), pp. 600-621.

Shi X., Liu X., Nuetah A., Xin X. (2010) The Determinants of Household Income Mobility in Rural China, Working Papers 1002, China Agricultural University, College of Economics and Management.

Sousounis P. (2008) State dependence in work-related training participation among British employees: A comparison of different random effects probit estimators, MPRA Paper 14261, University Library of Munich, Germany, revised Mar 2009.

Strengmann-Kuhn W. (2002), Working Poor in Europe: A Partial Basis Income for Workers?,
Available at: http://dx.doi.org/10.2139/ssrn.386540.

Whelan Ch., Maitre B., Nolan B. (2011) Analysing intergenerational influences on income poverty and economic vulnerability with EU-SILC, University College Dublin Working Papers, No. 201125.

Woolard I., Klasen S. (2005) Determinants of Income Mobility and Household Poverty Dynamics in South Africa. The Journal of Development Studies, 41(5): pp. 865-897.

Wooldridge J. M. (2005) Simple solutions to the initial conditions problem in dynamic, nonlinear panel data models with unobserved heterogeneity, Journal of Applied Econometrics 20, pp. 39-54.

Wóycicka I. (2010) Poland: In-work poverty and labour market segmentation, Gdansk Institute for Market Economics.

Ying H., Shi L., Quheng D. (2006) Income Mobility in Urban China, Economic Research Journal, 10: pp.30-43.

4. STATE AND INEQUALITIES – PUBLIC POLICY REGARDING THE PROBLEM OF POVERTY AND EXCLUSION

Authors:
Michał Myck
Michał Kundera
Monika Oczkowska

LIST OF TABLES / Part 4

LIST OF BOXES / Part 4

LIST OF FIGURES / Part 4

Introduction

The most substantial trends in the poverty dynamics in Poland with special regard to the changes in poverty among children and working people have been presented In Parts 1-3 of the Report. As could be expected, one of the most important factors that correlate with poverty rate is having some earnings. However this relationship is more complicated in the case of relative poverty, where the poverty threshold depends also on earnings and is thus the function of the level of employment and the amount of remuneration.

Part 4 of the Report describes the role of the public policy in limiting the scope of poverty with special regard to the role of the tax and benefit system in shaping the households' incomes and influence of this system on determination of the scope of poverty in the population.

Public policy has direct influence on the disposable income of households on one hand through the scope of household income taxation, and on the other hand in connection with the generosity of household support system through benefits paid to those households. From the point of view of poverty level development and the role of socio-economic policy in limiting this level, the scale of progressivity of the tax system and the scope of household support through means-tested benefits are the most important factors in this case.

While considering the impact of public policy on the extent of poverty one has to note two essential issues. Firstly, just like in the case of changes in earnings, the increase in state generosity for households does not necessarily have to result in the decline of the extent of relative poverty. This relates to both tax policy and benefit policy and it is illustrated by the examples presented in this part of the Report. This is connected to the fact that changes in household incomes resulting from limiting taxes or increases in the amount of benefits may at the same time translate into higher values of the relative poverty threshold, and this in turn may lead to the expansion of the extent of poverty instead of its reduction.

The other issue that has to be taken into consideration while analysing the effect of the instruments directly influencing household incomes is that they may have an indirect impact on the income level, because the changes in government tax and benefit policy simultaneously apply to the financial incentives to work (e.g. Bargain and Orsini, 2006; Blundell et al., 2000; Brewer et al., 2006). In case of lack of employment what influences those incentives is the amount of benefits, the degree of tax burden on earnings, and also the scope of support in the form of tax credits and benefits for working people. The changes in the level and intensity of employment in reaction to the reforms of tax and benefit policy will result in changes in disposable income, and in consequence, in the scale of risk of poverty. Thus, the manner in which they affect household income both directly and indirectly should be taken into account in the process of development of the solutions aiming at reducing the poverty.

The analyses presented in the first Chapter of this Part of the Report focus on describing the most important elements of the public policy in directly shaping household incomes in Poland and showing their effectiveness in the international context. The Chapter points out low level of support for families with children in Poland in comparison with other European Union countries as well as relatively high tax burden of low income households in Poland.

The second Chapter focuses on the effects of changes in the tax and benefit policy in Poland in the years 2005-2012 with special regard to the policy of financial support of families with children. A number of changes in the tax and benefit system directly influencing incomes of most of the Polish households, were introduced in the studied period. Public policy concerning the support of families with children has distinctively changed through a number of reforms in the family benefits system and by the introduction of the child tax credit in the income tax system, which had significant impact on the actual income growth. By means of the Polish microsimulation model SIMPL the scale of the changes directly resulting from the reforms introduced in the years 2005-2012 and the impact of individual elements of the implemented set of reforms on the changes in the poverty rate have been presented. Direct impact of the changes introduced in the years 2005-2010has only minor effect on total relative poverty (increase by 0.1 percentage point), but at the same time it is shown to significantly reduce relative poverty among children (by 1.4 pp). Simultaneously the quasi-absolute poverty in total has been limited by 1.3 pp and the quasi-absolute poverty among children by 2.6 pp.

In Chapter 3 the potential impact of the number of hypothetical changes in the tax and benefit system on the poverty rate has been presented. Special attention has been paid to the effectiveness of family benefits and the tax system in reducing poverty among children and to the impact of the generosity of the system of unemployment benefits on the overall poverty rate. In this second case the effect of changes in the system of unemployment benefits has been shown relative to the simulated changes

in the level of employment. Chapter 3 is summed up by the analyses of the changes in the family benefits system focused on increasing the financial attractiveness of employment. The analysed solutions have minor direct impact on the poverty rate. However, taking into consideration the conclusions from international literature on the implications of the tax and benefit system for labour market behaviour (Bargain and Orsini, 2006; Blundell et al., 2000), effective reforms directly supporting the poorest households should go together with the solutions that have beneficial impact on changes in financial incentives to work.

1 EFFECTIVENESS OF POLISH INSTRUMENTS AIMED AT REDUCING POVERTY

1.1 SUPPORT SYSTEM FOR LOW INCOME HOUSEHOLDS IN POLAND

The main instruments of financial support for people at risk of poverty in Poland include the tax treatment of incomes and various financial benefits. As in other countries, these are the main tools through which public policy may directly influence the level of household incomes, as well as affect the financial attractiveness of employment, and thus indirectly influence the extent of poverty. Short descriptions of the most important instruments in Poland are presented below. Financial benefits include the system of family benefits, housing benefits, social assistance benefits and unemployment benefits. The tax burden includes the elements reducing the amount of income tax paid and the scale of tax progressivity. Further details of the system are described in the in Appendix IV.2.

1.1.1 FAMILY BENEFITS

The system of family benefits intended mainly for the families with dependent children, includes: family allowance with supplements, care benefits and child birth benefit.

The families whose income is below a specified income eligibility threshold have the right to receive the family allowance and its supplements. Since November 2012 income eligibility threshold (net value) to qualify for this allowance amounts to PLN 539 per capita or PLN 623 if there is a disabled child in the family. The amount of the family allowance depends on the age of the child for which it was granted (Table IV.B1 in Appendix IV.2.).

Persons entitled to receive the family allowance may also claim one or several types of supplements to the allowance, but additional requirements specific for the respective supplements have to be fulfilled. The supplements are as follows:

- One-time child birth grant;
- Child care supplement granted for the duration of parental leave;
- Lone parent supplement;
- Supplement for large families granted for the third and each subsequent child;
- Supplement for education and rehabilitation of a disabled child;
- Supplement for starting education outside the place of residence;
- One-time supplement for starting the school year.

Regardless of the right to the child birth grant, one may claim a one-time child birth benefit (a newborn allowance; in Poland commonly referred to as *becikowe*) which amounts to PLN 1000 per child, but the income eligibility threshold applying from January 2013 in the amount of PLN 1922 per capita limits the number of families that can receive it. Additional financial means in relation to the above can be granted by local governments with jurisdiction for the place of residence of the child's parents (from its own funds).

Another element of the family benefits system are care benefits in the form of nursing benefit and nursing allowance, which since January 2010 is no longer means-tested. Nursing benefit is granted to a disabled child, an adult with a certificate of disability or a person aged 75 years and older that does not receive the nursing supplement. The nursing allowance may be granted to the parents or legal guardians of the child if they are not employed or resign from work to provide care for the disabled person requiring special care.

Moreover, the person eligible for private maintenance, enforcement of which has been unsuccessful, is entitled to receive state aid in the form of benefits from the maintenance fund, if he/she does not exceed the income eligibility threshold in the amount of PLN 725 per capita and at the same time is under 18 years of age or 25 if he/she continues education, or without the age limit if he/she is disabled.

The amounts of all family benefits for different benefit periods and their changes in the years 2005-2012 are presented in the Table IV.B1 in Appendix IV.2.

The most important changes in the family benefits system in the years 2005-2012

The most important modifications of the family benefits system in the years 2005-2012 consisted in changing the amounts and the system of calculating the family allowance (from number of children to their age), and in increasing the amounts of nursing allowance and some of the supplements to family allowance. Introducing a child birth benefit in 2006 was also a fundamental change. Detailed information on changes in the family benefits system in the years 2005-2012 is presented in Table IV.B2 in Appendix IV.2.

1.1.2 HOUSING BENEFIT

Housing benefit is a cash benefit aimed at people who are not able to cover the dwelling costs, such as: rent, water service and heating, by themselves. This benefit is granted when income per capita does not exceed 125% of the amount of the minimum retirement pension for the given year in a multi-member household and 175% in a single-person household. There are also additional limitations concerning the apartment living area. The amount of the benefit depends among others on the amount of money spent on the apartment, its area and household income per capita. Due largely to the improving household income situation there was a significant decrease in both, the number and the amount of the benefits granted (Table IV.B3. in Appendix IV.2) in the years 2005-2009.

1.1.3 SOCIAL ASSISTANCE

In the *Social Assistance Act* the conditions on the basis of which support is granted include but are not limited to: poverty, unemployment, protection of maternity or large families, orphanhood, homelessness, chronic disease, disability. Social assistance is also granted to the people affected by domestic violence, the victims of human trafficking and people affected by alcohol or drug abuse, and it may constitute a measure to prevent the effects of natural disasters, crisis situations and other unexpected accidents. Social assistance may be divided into cash and non-cash benefits.[1] To receive a cash benefit one cannot exceed the income eligibility threshold but there are exceptions to this rule and they are defined in Appendix IV.2.The threshold is different for persons in single-person households and those living with the family (cf. Table IV.B4 in Appendix IV.2). The basic allowance as part of the social assistance in cash is the permanent allowance granted to adults who are incapable of work because of age or completely incapable of work. Temporary allowance on the other hand may be granted to a person in a single-person household or a family, for individually specified period of time, for example due to disability, long-lasting disease or unemployment. The rules for establishing the amounts of the benefits granted and its minimum and maximum values are presented in Appendix IV.2.

As in the case of family benefits, income eligibility threshold and the amounts of social assistance benefits are verified every 3 years. In the years 2006-2011 the abovementioned thresholds and amounts were kept at a constant nominal level, following which the value of both (except for the maximum amount of the temporary allowance granted to the persons in single-person households) was increased during the verification in 2012 (cf. Table IV.B4 in Appendix IV.2).

A designated benefit is also the form of social assistance in cash and it may be granted to satisfy a specific living need, for example to cover the costs of necessities, the costs of funeral, or health care costs. This benefit in the form of non-refundable support may be granted irrespective of income to persons that incurred losses as a result of unexpected accidents. Financial assistance from the local government may be granted also for the purpose of developing economic self-sufficiency or continuation of education.

1 Non-cash benefits are not included in the set of instruments which are subject to quantitative analysis in this paper, however the nature of this kind of support has been presented in Appendix IV.2.

1.1.4 TAX SYSTEM PROGRESSION AS A TOOL FOR SUPPORTING THE POOREST HOUSEHOLDS

Tax progression

Since 1 January 2009 in Poland there are two tax rates at 18% and 32% (in the previous tax system the thresholds were 19%, 30% and 40%). Individuals with taxable income not exceeding PLN 85 528 per annum are taxed according to a lower rate. The income threshold which determines the level of tax rate was last indexed in 2009. Because of continued increases in the level of wages the consequence of this policy has been the increase of the number of persons with earnings taxed according to the higher rate.

Revenue costs

Taxpayers may deduct from their revenue some of the costs incurred to obtain it. In case of persons with an employment contract the revenue costs have been determined by decree in the Act in the amount of PLN 111.25 per month (max. PLN 1 335 per annum) in case of one employment relationship or PLN 2 002.05 per annum in case of more than one employment relationship.

Tax free allowance (universal tax credit)

Each taxpayer has a possibility to deduct the so called universal tax credit amounting to PLN 556.02 from the annual amount of tax. Thus, annual tax free allowance which does not cause the arising of tax obligation amounts to PLN 3 091. The tax free allowance in the years 2008-2012 was not indexed and its value, calculated as a quotient of PLN 3 091 and the first tax rate, dropped nominally upon the reduction of the lowest tax rate from 19% to 18% in 2009. Due to lack of indexation its nominal value and relative value with respect to the changing wages distribution have dropped. After fulfilling specific conditions is it possible to deduct from the taxable income other spending, e.g. purchase of medications prescribed by a specialist physician, maintenance and rehabilitation of the disabled, donations for public benefit organisations, Internet usage, acquiring new technologies, payments to the individual retirement insurance account.

Child tax credit

The child tax credit was introduced into the tax system in 2007. Persons bringing up their own or adopted children, and

filing taxes according to general rules, obtained the possibility to deduct PLN 92.67 per child for each month of taking care of the child, from the amount of the tax due after deducting the universal credit and insurance contributions for the National Health Fund. Maximum annual child tax credit amount corresponds to twice the amount of the universal tax credit (PLN 1 112.04 annually). Since January 2013 the amount of tax credit for the third child and subsequent children was raised but the introduced income eligibility threshold limited the use of this tax credit by families with only one child. Both parents jointly may use the tax credit – by deducting it from the tax of one of the parents, by sharing it or by deducting it from the joint tax of both of the parents if they are filing taxes together. The changes in its amount since 2007 corresponded to the changes in the amount of the universal tax credit, which is presented in Table IV.B6 in Appendix IV.2.

1.1.5 RELEASE FROM THE OBLIGATION TO PAY THE SOCIAL AND HEALTH INSURANCE CONTRIBUTIONS

Apart from the benefits mentioned above, in the Polish social security system some of the citizens have the possibility to receive financial support in the form of releasing from the obligation to pay some of the social and health insurance contributions or transferring such obligation onto public administration.

Social assistance centre pays the health insurance contributions for persons receiving permanent allowance from social assistance, persons covered by individual program of moving out of homelessness and the unemployed covered by the individual program of social employment or social contract. For the persons that resign from work due to the necessity to take care of a severely ill member of the family, the social assistance centre finances both the health, retirement and disability contributions.

Retirement and disability insurance contributions and health insurance contributions for the unemployed are financed by the district employment agencies and retirement and disability insurance contributions for the persons on the child care leave or receiving the maternity allowance are paid from the state budget.

There is a possibility of remitting the outstanding social insurance contributions by means of administrative decision for the poor, the ill, the persons with an ill family member or affected by the unexpected accidents, which are in arrears in the payment of contributions and in the case of which paying the outstanding amount would result in lack of sufficient means to satisfy basic living needs.

1.1.6 INSURANCE TRANSFERS: FINANCIAL SUPPORT FOR THE UNEMPLOYED

Unemployment benefit as an insurance transfer, granting of which is not directly connected with the material situation of an unemployed person, by definition has other purpose than the forms of support for poor households mentioned above. This is just like in the case of other social insurance system benefits (e.g. disability pension in respect of incapacity for work, anticipated old-age pensions). However, the scope and amount of those benefits influence the scope of poverty, and social insurance benefits system partially unburdens certain elements of the benefits system supporting the poorest people. Due to the subject of the paper, in case of insurance benefits we concentrate exclusively on unemployment benefits and their potential role in limiting the poverty.

Unemployment benefit is granted by the district employment agencies generally for the period of 6 months and in certain circumstances described in Appendix IV.2 – for the period of 12 months. It is paid in the specific part of the basic amount depending on the seniority in service – 80% in case of seniority of up to 5 years, 100% in case of seniority from 5 to 20 years, and 120%, when the seniority exceeds 20 years. In 2012 the basic amount of the benefit paid to an unemployed person for the first 3 months was PLN 794.20 and in subsequent months of being entitled to receive the benefit it was reduced to PLN 623.60. The amount of benefit is indexed annually in accordance to changes of the consumer price index. Moreover, the unemployed referred by the agency for training aimed at improving professional skills or for a job placement, may also receive a scholarship in the amount of 120% of the unemployment benefit and financial support for further training.

Unemployment benefit is not included in the income taken into account when granting social assistance cash benefits, hence the persons eligible for this benefit may simultaneously apply for temporary allowance. Temporary allowance is also the basic form of financial support for the long-term unemployed who are no longer entitled to receive unemployment benefit. In the years 2005-2011 ca. 82.3% of the total amount of the granted temporary allowances were paid precisely with respect to unemployment.

Impact of the unemployment benefit on the poverty rate depends on its amount, but also on the criteria of granting the benefit and the number of the unemployed entitled to receive it. The percentage of the unemployed eligible for the benefit have not exceeded 18% in the past years (changes in the number of the unemployed registered and receiving the benefit in the years 2005-2011 are presented in Table IV.B7 in Appendix IV.2), which is related to the high proportion of the long-term unemployed (for more than 6 months). In Chapter 3 we present the analysis of sensitivity of poverty measures to simulated changes in the amount of unemployment benefit and its eligibility criteria, showing that the scope of unemployment and the percentage of the unemployed eligible for the benefit have a significant influence on the poverty rate.

1.2 EFFECTIVENESS OF TAX AND BENEFIT SYSTEMS IN REDUCING POVERTY IN EUROPE

One of the purposes of tax and benefit systems is the redistribution of income and limiting its differentiation in the population. One of the measures of effectiveness of those systems is the degree of poverty reduction which they induce. The effectiveness of tax and benefit systems in respect of reducing poverty is most often assessed by comparing the actual household income situation with a hypothetical scenario assuming lack of public intervention. Defining the alternative to compare with the actual situation of households is not evident. It can be for example a system with no social benefits – then the comparison of hypothetical and actual poverty rate reveals the effectiveness of this part of the system. The alternative system may then be extended by 'withdrawing" the income tax, or even more - also social insurance contributions and benefits connected with it (retirement and disability pensions, unemployment benefit, maternity allowance, etc.). In the scenario where social benefits, income tax as well as universal tax-benefit and social insurance system together with contributions are withdrawn, the alternative income in relation to the actual disposable income of households comprises of: total gross earnings, income from self-employment, capital gains and other income not connected with the payments received from public institutions. By comparing the actual income distribution with such hypothetical distribution, one can evaluate the joint impact (and the impact of respective elements) of the tax and transfer system on the distribution of income and poverty.

From this point of view the degree of effectiveness of tax and benefit systems in reducing the income inequality and the scope of poverty will depend on both the income distribution before taxation (e.g. on the gross earnings distribution) and on the degree of progressivity of the tax and contribution system, and the scope of support through benefits for the poorest households. It should also be noted that the evaluation of effectiveness defined in such a way is based only on the income definition of poverty, and the indirect tax burden (VAT and excise duty), which constitutes a significant tax burden for households (by influencing the volume of consumption) and potential source of financing of social transfers and tax credits in the tax system, is not taken into consideration.

The manner of defining the relative poverty threshold is also an important issue. On one hand for each alternative and the resulting hypothetical income distribution one may calculate a new relative threshold and the corresponding poverty rate. On the other hand, in order to identify the degree to which individual elements of the system influence income in the base system, the alternative poverty rates may be calculated with respect to the poverty threshold defined for the base system. In international comparisons of effectiveness of the tax and benefit systems, which are described in Chapter 1.2.2, the second approach is usually applied.

The analysis of the effectiveness of tax and benefit systems begins with the review of the potential impact on poverty of two important elements of the system – the income tax and the system of support for families with children – by presenting the differentiation of their influence for European countries the changes in these elements in time (Chapter 1.2.1). The analysis is based on the Eurostat data and results of international research with the use of the EUROMOD model. Those are supplemented by the estimates of the effectiveness of the Polish tax and benefit system using the Polish microsimulation model SIMPL, which is used in further chapters in the detailed analyses of the selected elements of the Polish system.

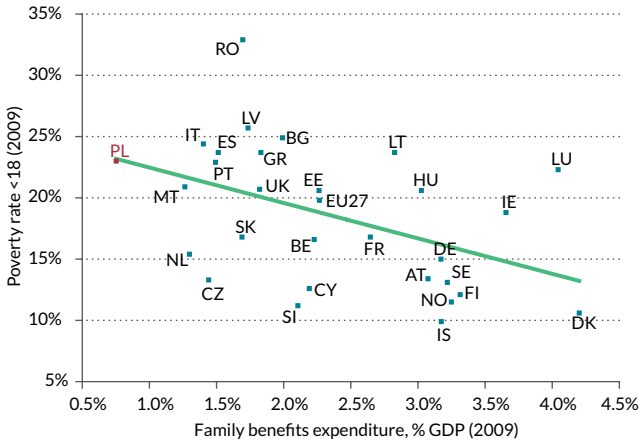
1.2.1 THE RELATION BETWEEN INCOME TAXES, FAMILY BENEFITS AND POVERTY IN INTERNATIONAL CONTEXT

The risk of poverty usually varies in particular subgroups distinguished with respect to age, labour market status, place of residence. Those differences are common in European countries, although as depicted in Parts I-III, in each of the countries slightly different groups of people may be at the highest risk of poverty. Also, from the point of view of European countries one can notice the relation between the scale of the tax burden and benefit transfers that may have a significant impact on income development, and poverty rate in general, and in specific age groups. On Figure IV.1 one can compare the poverty rate among children and the share of public spending spent on family benefits in GDP (Figure IV.1a), and the poverty rate in general and the revenue from PIT as a share of GDP (Figure IV.1b). In both cases one can notice a relatively strong negative correlation between the two elements of the tax and transfer system and the poverty rate.

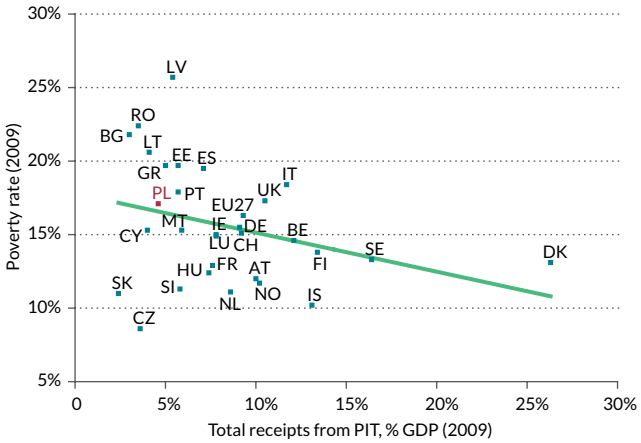
In the case of family benefits, what is noticeable is a very low level of spending of this system in Poland (at the level of 0.75% GDP) accompanied by a high poverty rate among children (23%). This state of affairs sharply contrasts for example with the situation in Denmark, where the high level of support for families with children within the framework of family benefits (4.2% GDP) is observed concurrently with a very low poverty rate among children (10.6%). On the other hand there are countries that sharply contrast with Poland and Denmark, such as for example the Czech Republic, where low public spending on support for the families with children (1.4% GDP) is associated with low poverty rate among children (13.3%), or Romania where more than twice as high a share of spending on family benefits in GDP than in Poland (1.7% GDP) may be observed at the same time as the highest poverty rate among children in Europe (33%), or Luxembourg where the risk of poverty among children comparable with the one observed in Poland (22.3%) occurs with the level of spending close to the one present in Denmark (4.0% GDP). Low (high) spending on family benefits may be the cause of high (low) poverty rate among children, but may also be the consequence of low (high) poverty rate among

Figure IV. 1 | Family benefits, income taxes and poverty in 2009.

a) Poverty rate in population under the age of 18 and the share of public spending on family benefits in GDP



b) Poverty rate and share of revenues from PIT in GDP



Note: family benefits include all benefits in cash and in kind granted on account of pregnancy, child birth or adoption, upbringing of children or care of the other members of the family, except for health care spending. Revenue from PIT includes revenues from income tax from natural persons/households together with capital gains tax. Poverty threshold: 60% of the median of equivalised disposable income.

Source: own elaboration on Eurostat data.

children or of the differentiation of the effectiveness of the policy directed at reducing the poverty among children – correlation is not sufficient to answer the question which of the relations dominates.

Income tax share in GDP in Poland is at the level of 4.6%, which constitutes almost twice as low a percentage as the average value for the European Union countries (9.3%). Just like in the case of relations between poverty among children and the level of spending on family benefits, even though there is a correlation between revenues from PIT (as a fraction of GDP) and poverty rate, there are countries like Czech Republic and Slovakia, where the low share from income tax (3.6% and 2.4% GDP) is associated with low poverty rate (9% and 11%). However, as opposed to the relations between poverty among children and spending on family benefits, there are no countries in the European Union, in which high share of the PIT revenues in GDP (so high taxation of earnings) co-exists with a high poverty rate.

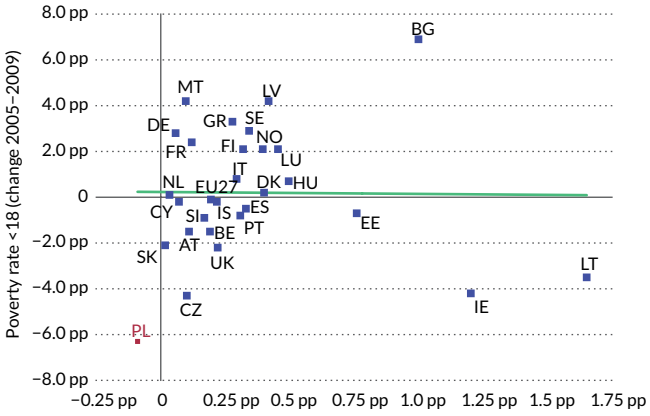
Cross-sectional approach to the relation between the elements of the system and poverty may blur the actual role of the system elements also connected with the fact that the countries with a higher poverty rate are to some extent forced to spend more on transfers. Figures IV.2a and IV.2b provide further explanations concerning the relations between analysed variables. They present the relations between changes of poverty among children in time and changes in the relative level of spending on family benefits, and between changes in the risk of poverty in general and in the share of the revenue from PIT in GDP. It appears that in the case of changes in time in respective countries, there is no evident exchangeability observed between the scale of public intervention and the risk of poverty.

In the case of family benefits in all the European Union countries except for Poland the spending rose in the years 2005-2009. However, the fall in poverty among children was associated with the increase in spending only in the following countries: Austria, Czech Republic, Estonia, Spain, Ireland, Lithuania, Portugal, Slovenia and Great Britain. In Bulgaria, Finland, France, Greece, Germany, Norway, Luxembourg, Latvia, Sweden, Italy and Hungary the increase in spending on family benefits have proved to be insufficient to stop the increase in poverty among children. Particular difference can be observed between the changes in Bulgaria and in Poland. In the case of the first of the two countries a significant increase in the share of family benefits in GDP in the years 2005-2009 (by 1 pp) was associated with the increase in the poverty rate among children by more than 7 pp. On the other hand in Poland, a great decrease in poverty among children (by 6.3 pp) occurred even though there was a drop in the share of family benefits in GDP by 0.1 pp.

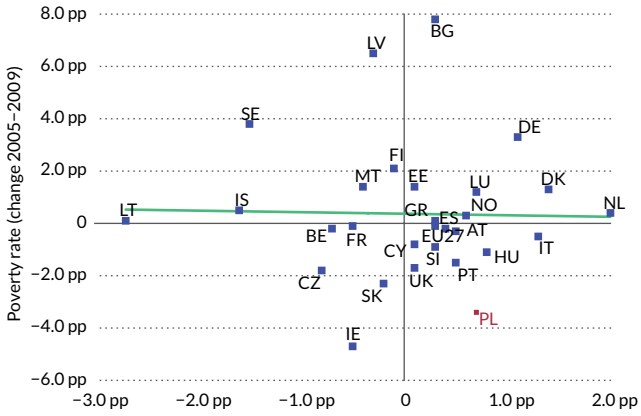
In the case of changes in the general poverty rate and PIT revenues (Figure IV.2b), direct correlation between the functioning of this element and reduction of the extent of poverty is also hard to identify, and differentiation of development is even bigger than in the case of spending on benefits and on counteracting poverty among children. In the years 2005-2009 in Poland the share of revenue from PIT in GDP increased by 0.7 pp which was accompanied by the decrease in poverty by 3.4 pp. Similar changes were present also in Portugal, Slovenia, Italy and Hungary. However at the same time in number of countries (e.g. Bulgaria, Denmark, Luxembourg and Germany) the poverty rate has increased with simultaneous increase in the share of PIT revenue in GDP.

Figure IV. 2 | Changes in the share in GDP of revenues from PIT and spending on family benefits vs. the dynamics of poverty in European countries between 2005 and 2009.

a) Changes of poverty rate in a population under aged 18 vs. changes in the share of spending on family benefits in GDP



b) Changes of poverty rate vs. changes in the share of revenue from PIT in GDP.



Note: See Figure IV.1.

Source: own elaboration on Eurostat data.

Presented data demonstrate that the links between the scale of public intervention and the risk of poverty are complex and that there is no direct correlation between the elements of the tax and benefit system and the poverty rate. On the one hand this is due to the diversification of processes which contribute to the changes in household income, beginning with demographic changes, through changes in employment, level of wages, retirement pensions and other gross income. On the other hand, this may be the result of diverse allotment of particular benefits and varied tax burden of different types of households. From the inter-temporal point of view, in the case of relative poverty the changes of poverty threshold, which is calculated on the basis of income distribution in a given moment, may also be significant, in the same way as an effect of the changes in the amounts of tax and benefits. Finally, lack of direct correlation may result from the dynamic nature of the links between tax and benefit system and the socio-economic situation. For example the increase in spending on family benefits may be the reaction to deteriorating situation of families with children resulting from economic slowdown. In such situation we can observe the increase in the poverty rate simultaneously with the increase in spending on family benefits.

1.2.2 BROADER VIEW OF TAX AND BENEFIT SYSTEMS EFFECTIVENESS IN REDUCING POVERTY

Below we present a more complex approach to international analysis of the effectiveness of tax and benefit systems based on Eurostat data and using the microsimulation model EUROMOD[2] which computes both the direct tax burden of households and social transfers they obtain. We supplement this analysis with calculations of the effectiveness of the Polish system using the microsimulation model SIMPL.

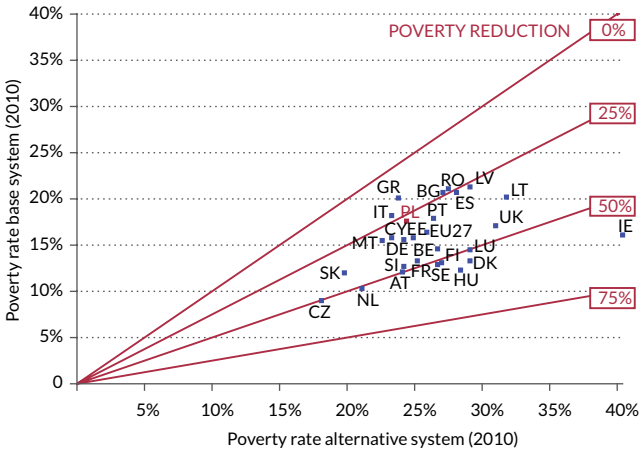
The relation between the extent of poverty calculated (on the basis of EU-SILC data) before and after granting social benefits in the EU countries[3] is presented on the Figure IV.3. Social benefits include all benefits the receipt of which is not associated with paying contributions, so those are such transfers as family benefits (both universal and means-tested benefits), housing benefits and social assistance. Figure IV.3a presents the scale of poverty rate reduction resulting from the payments of social benefits, and Figure IV.3b – the relation between the change of poverty rate before and after the payment of benefits, and the final poverty rate after the payment. The distance from the 45 degrees line on Figure IV.5a shows the effectiveness of these benefits in the reduction of poverty. In the case of such countries as Ireland, Denmark and Hungary, the extent of poverty is reduced by more than 50% as compared to the situation before the payment of social benefits. In this respect Poland is one of the countries where social benefits have minor influence on poverty rate – in 2010 as a result of payment of those benefits the poverty rate falls from 23.6% to 17.1%. In 2010, social benefits affected the reduction of poverty to the smallest extent in Greece, where the poverty rate decreased due to such

2 Methodology of calculations based on EUROMOD model is presented in Avram and Sutherland (2012). The results for the year 2010 used in this Report are taken from Avram and Sutherland (2012) and from unpublished EUROMOD reports based on F6.0 version of the model. We want to thank Xavier Jara for providing these results.

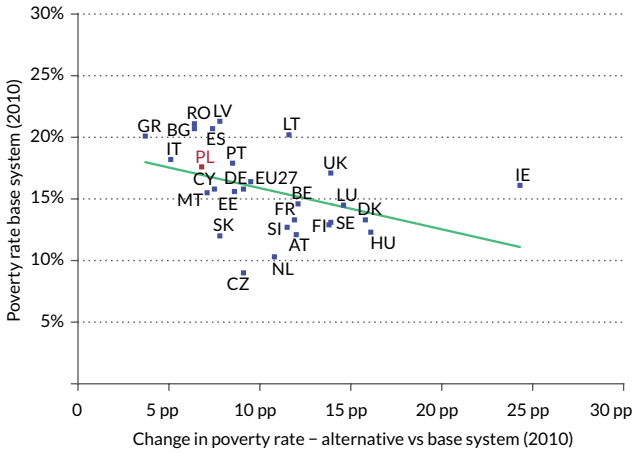
3 In both cases the poverty rate is calculated on the basis of the relative poverty threshold (60% of the median of equivalised disposable income) in the base system, that is the income distribution after granting of benefits.

Figure IV. 3 | Impact of social benefits system on the poverty rate in 2010: SILC data.

a) Poverty rate before and after granting of social benefits.



b) Poverty rate and changes in its level as a result of impact of the social benefits system.



Note: poverty threshold set at the level of 60% of the median of equivalised disposable income. Definitions of base and alternative system – see text.

Source: own elaboration on Eurostat data.

benefits by ca. 20%. Diverse effectiveness of the social benefits system in reducing the extent of poverty significantly influenced the differences in the poverty rate observed in the EU. Figure IV.3 shows that in countries where the benefits system significantly contributes to the reduction of poverty, such as Denmark, Ireland and Hungary, the poverty rate is significantly lower than in the countries like Greece, Italy or Bulgaria, where the low impact of social benefits is associated with a large scale of poverty. In Poland, social benefits system reduces the poverty rate by ca. 6.4 pp, so by 2.5 pp less than in EU27 countries on average, and the poverty rate is almost equal to the European average.

In order to distinguish between the impact of social benefits and the tax system, one may use the calculations on the basis of the European microsimulation level EUROMOD. Poverty rates calculated on the basis of the (simulated) income including taxes and benefits (applicable in a given country in 2010) have been compared on Figures IV.4a and IV.4b using EUROMOD model („base system" on Figures), with rates calculated on the basis of simulated gross income („alternative system"), so before deducting insurance contributions, income taxes and before obtaining social benefits (similar to those presented on Figure IV.3).

The results obtained suggest that the joint impact of the tax system and social benefits on the extent of poverty is minor in the case of most of the countries, and in the case of Bulgaria, Greece, Latvia, Poland, Romania and Italy – even positive. In Poland, if households did not pay social insurance contributions and income taxes, and at the same time did not receive social benefits (so other than retirement pensions, disability pensions, employment benefits), the poverty rate according to EUROMOD would fall by 3.6 pp ('PL EM'). Because the very withdrawing of social benefits (Figure IV.3) increases the scope of poverty, this suggests relatively large tax burdens of the people at risk of poverty. In other words, in the countries where the poverty rate is lower in this alternative system than in the base system (just like in Poland), the value of social benefits directed at the households at risk of poverty does not compensate for the contributions and taxes paid by them. The situation seems completely different in such countries as France, Ireland or Great Britain, where by the joint effect of withdrawal of social benefits and 'returning' income taxes to households noticeably increases the scale of poverty. Thus, in those countries the operating tax and benefit system reduces the number of people at risk of poverty.

To better illustrate the nature of the impact of both elements of the system in Poland, the results based on EUROMOD model have been supplemented by calculations using SIMPL model run on HBS 2010 data ('PL SL').[4] Table IV.1 presents the results of the simulation of poverty indicators for the year 2010 on the basis of SIMPL model for the base system (2010) and systems without benefits and insurance and tax burden (similarly to EUROMOD model, poverty threshold calculated for the base system have been used in all simulations). Apart from total poverty, the results concerning poverty among children and among working people ('*working poor*') have also been presented.

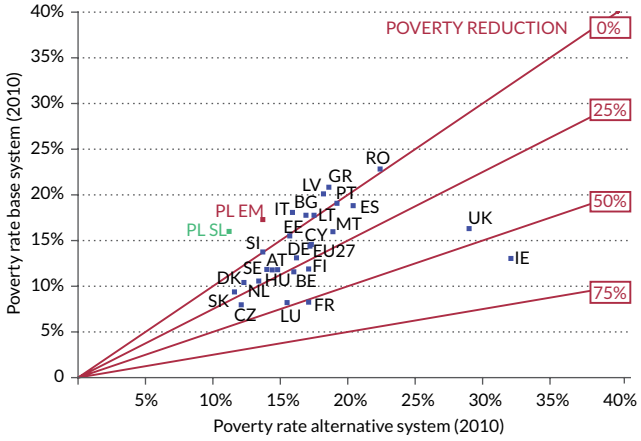
The difference in the poverty rate between the system with no tax burden an no social benefits and the base system according to SIMPL model amounts to 4.8 pp, so it is slightly larger than in the case of EUROMOD model,[5] but it leads to the same conclusions. Moreover, SIMPL model indicates that withdrawal

4 Detailed description of the microsimulation approach is presented in Chapter 2.

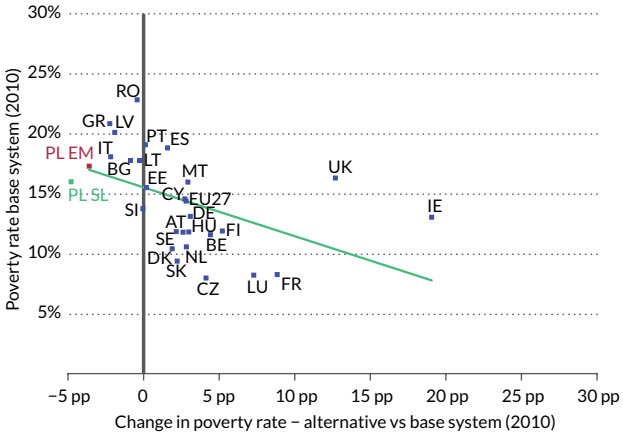
5 Differences between EUROMOD and SIMPL result in the first place from the fact that they rely on different databases. In the case of EUROMOD it is an indexed EU-SILC database from 2007, and in the case of SIMPL – HBS 2010.

Figure IV. 4 | Impact of the tax and benefit system on the poverty rate in 2010: microsimulation.

a) Poverty rate before and after the effect of the tax and benefit system.



b) Poverty rate and changes in its amount before and after the effect of the tax and benefit system.



Note: poverty threshold set at the level of 60% of the median of equivalised disposable income. Definitions of base and alternative system – see text.

Source: EUROMOD model on the basis of SILC 2007 data (Avram and Sutherland, 2012 and unpublished data) and authors' calculations using SIMPL model for Poland based on HBS 2010 data; 'PL SL' – calculations for Poland based on SIMPL model, „PL EM" – result of EUROMOD model for Poland.

Table IV. 1 | Effect of the group of elements of the tax and benefit system on the extent of relative poverty in Poland.

	Base system	No social benefits	No tax burden, social insurance and social benefits
60% of the median of equivalised disposable income– constant value of the poverty threshold			
- poverty threshold (PLN)	931.77	931.77	931.77
- poverty rate	16.0%	20.3%	11.2%
- poverty rate – children	20.2%	27.7%	15.6%
- poverty rate – working poor	10.9%	13.3%	6.1%

Note: Children are defined as people under the age of 18.

Source: own calculations based on SIMPL model on the basis of HBS 2010 data.

of social benefits would significantly increase the poverty rate among children (from 20.2% to 27.7%). However, just like in the case of total poverty rate, withdrawal of the contribution and tax system has a definitely stronger opposite effect – poverty rate among children would amount to 15.6% (by 4.6 pp less than in base system), if households did not pay the income tax and insurance contributions, and at the same time did not receive social benefits. In the case of working poor, the impact of abolition of taxation is even bigger, since it would lower the poverty rate by almost 50%, which is connected with the fact that social benefits are granted to the working population in a moderate degree (without benefits the poverty rate among working people would increase by 2.4 pp), whereas the tax and contribution burden is more relevant for this group than the group of non-working people.

1.3 REDUCTION OF POVERTY AND FINANCIAL STIMULI ON THE LABOUR MARKET

One of the main problems faced by social and economic policy reacting to poverty by supporting the poorest households is the impact of such support on the behaviour on the labour market. Higher benefits may discourage non-working people to search for work, and at the same time increase the financial attractiveness of the out-of-work options for working people. The problem of counterbalancing the policy of reducing income inequalities and efficiency policy on the labour market (so called *'equity-efficiency trade-off'*) have been described in detail in the literature (see e.g. Blundell 2001; Immervoll et al. 2007). The problem not only relates to the tax and benefit elements of the system, but also to the policy of labour market regulation.

Potential solutions for the '*equity-efficiency trade-off*' are based on different manners of improving the financial attractiveness of work, particularly by:

a. increasing the minimum wage;
b. reducing the tax burdens;
c. introducing specific elements of the tax and benefit system directed at households with low earnings (*in-work benefits*).

From the point of view of increasing the employment and fight against poverty, the attractiveness of the minimum wage is limited by its potential negative impact on the demand for labour. Excessive values of the minimum wage may lead to unprofitability of employing people with a productivity below the value corresponding to the minimum wage and thus, to dismissals, limitation of working time and switching to the forms of cooperation enabling to avoid the minimum wage requirement, such as civil law agreements or informal employment. Higher minimum wage may, however, encourage potential employees to intensify their job searches which may revive the labour market in terms of labour supply. Poverty may be reduced with minimum wage, provided that its amount is properly determined, and if it is linked adequately with the elements of the tax and benefit system which are connected with employment (OECD, 1998). Empirical research indicates that the latter are definitely more efficient in meeting the objective (Burkhauser et al., 1997; Sutherland, 2001).

However, the possibilities of using the tax system to raise the attractiveness of work are often very limited, especially in the case of people with low earning potential. This is caused by progressivity present in most of the tax systems. Moreover, such solutions as tax rate reduction, increasing the value of the tax-free allowance or tax thresholds, are often expensive from the point of view of public finances. Improving the attractiveness of employment through changes in the tax system often leads to the increase in income for people with both low and high earnings, and also for people with taxed out-of-work income. Thus, in practice this is often a relatively inefficient tool to fight poverty.

Thus, for several years the solutions directed towards poor households and conditioned by employment are suggested as the tools of effective policy in the sphere of poverty alleviation. They are focused to a great degree on families with children, where fixed costs connected with starting work are significantly higher than in families without children.

According to many experts the solution to the „*equity-efficiency trade-off*" is a careful combination of benefits connected with employment and out-of-work benefits (Blundell, 2001). The American *Earned Income Tax Credit* and the British solutions in the form of *Working Families Tax Credit* and *Child Tax Credit* are examples of such instruments. Their effects are on the one hand financial support for the poorest households, and on the other hand, the increase in employment by connecting the benefits or the so called refundable tax credits with the employment requirement. It has been repeatedly proved that introducing such solutions, or increasing the values of those elements of the tax system, has caused significant changes in the incomes of households with low earnings, with simultaneous positive effects of the supply of labour (Blundell et al., 2000; Brewer et al., 2006; Haan and Myck, 2007; Bargain and Orsini, 2006). It should be noted that positive effects of employment in the case of most of the solutions concentrate on lowering the percentage of families in which no one is employed. As a result of improving the generosity of the tax credits system, as well as other reforms increasing earnings, the income effect in the case of families where both partners are working, may weaken the motivation to work of one of them (e.g. Haan and Myck, 2010; Bargain and Orsini, 2006).

In the Polish tax and benefit system there are no elements supporting the households with low incomes conditional on having employment income. Even though the existing opportunities to deduct the revenue costs and current tax credits are of proportionally biggest importance for low income families, they are still available for all working people who pay income tax. Moreover, these are non-refundable elements, i.e. elements with the features of a negative tax, raising net incomes above the value of gross earnings.

At the same time, the point withdrawal of the family benefits is an important element of the Polish system of benefits, negative from the point of view of labour market incentives. In combination with the lack of clarity concerning the potential changes of the threshold levels, it introduces a high degree of uncertainty related to the future receipt of these benefits. Increasing the family income insignificantly may lead to complete withdrawal of the benefit in the following year. An easy solution to this problem would be to introduce the method of gradual withdrawal of benefits (see Myck et al., 2013b), portrayed on the Figure IV.5, which presents the examples of family benefits values in the present system and in the systems in which the family benefits are withdrawn in the 1:1 relation to the increase of net income (100% taper rate) and in ½:1 relation (50% taper rate). In the first case the increase of earnings (net value) in the family by PLN 1 causes the decrease of benefits by PLN 1, thus the disposable income remains unchanged. In the second option if earnings increase by PLN 1, the amount of benefit decreases by 50% of this value, which means that the disposable income increases by PLN 0.50. Figure IV.5b demonstrates that this would exclude the possibility of decrease of the disposable income of a family in the case of an increase in the net value of earnings, which can occur in the current system. In the example of the family with two children, the increase in the gross income from PLN 2 530 to PLN 2 535 leads to a reduction in disposable income by PLN 176.50. In Subchapter 3.2 we present the simulations of such solutions together with the proposal to extend the family benefits system to include the elements supporting families, in which both spouses work and additionally motivating non-working spouses to take-up work.

BOX IV.1 Effects of minimum wage

In scientific analyses, both theoretical and empirical, it is pointless to search for consensus concerning effects of the minimum wage, especially in the context of its relatively low level relative to the average wage.

Impact of minimum wage on employment

In the basic theoretical model based on perfect competition on the homogenous labour market, minimum wage established at the level exceeding the equilibrium wage leads to the decrease in employment (Brown, 1999). On the other hand the monopsonistic employer model is the simplest model specifying the conditions in which the minimum wage has positive influence on employment. It assumes the power of of enterprises in establishing the level of wages, thus shaping it below the level of the marginal product of labour. Then the minimum wage may lead to the increase in employment, but the maximisation of this effect will occur with the minimum wage established at the level corresponding to the equilibrium wage on the perfectly competitive market.

Most of the models unanimously anticipate that the probability of negative impact of the minimum wage increases together with the raise of the level of minimum wage relative to the employees' productivity. The reaction of the labour market to the introduction or increase of the minimum wage depends on the level of the minimum wage, features of the specific labor market, the possibility of getting round the provisions concerning minimum wage, regional differentiation, sectors of the economy or the groups of population covered by the regulations. Neumark and Wachser (2007) state that empirical works documenting the negative impact of the minimum wage on employment among workers with the lowest qualifications definitely prevail in literature, and number of studies which provide convincing evidence for the positive effects of minimum wage is minimal.

Impact of minimum wage on the income of the population

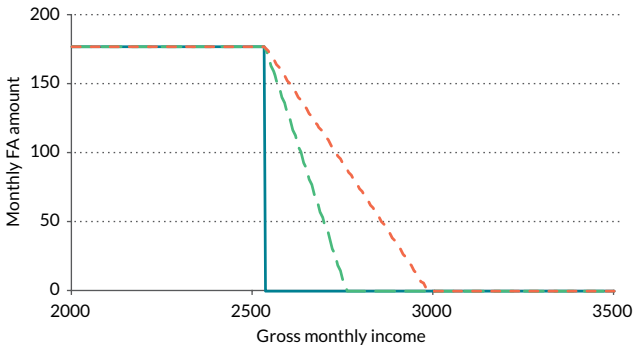
Second significant aspect of the minimum wage is its impact on the income of the population and poverty. According to theoretical models the minimum wage reduces the inequality of gross wages in the population (Stigler, 1946). Furthermore, it causes the substitution of relatively less qualified workers with those who are comparatively better qualified, earnings of which exceed the minimum wage, by increasing the employment and wages for the latter group (Teulings, 1996). Both the concentration of the wage distribution at the level of the minimum wage and gradually fading spreading effect on wages in the higher parts of the distribution have been confirmed in the empirical literature (Card and Krueger, 1995; DiNardo et al., 1996; Machin and Manning, 1994).

However, the relation between the minimum wage and the wage distribution does not clearly correspond to the distribution of the population income. The minimum wage increases the income of the employees from low-paid sectors/professions and may influence the decision on entering the labour market among inactive individuals. However, at the same time the employers may lower the demand for labour through dismissals or by limiting the working hours among the employees the work of which is valued below the wage minimum. Then, such employees might require more government support in the form of means-tested benefits or granted to the unemployed, but they may lose the benefits conditioned by employment. The impact of the minimum wage on reducing income inequalities depends on two factors. Firstly, the higher concentration of employees from low-paid sectors/professions in the lower parts of the income distribution gives opportunity of higher incomes by poor families from the increase of the minimum wage. Secondly, the percentage of non-working low income families is also very important, because the families without earnings will not benefit from the raise of wages. Thus, the relation between the level of the minimum wage and household income differentiation is ambiguous.

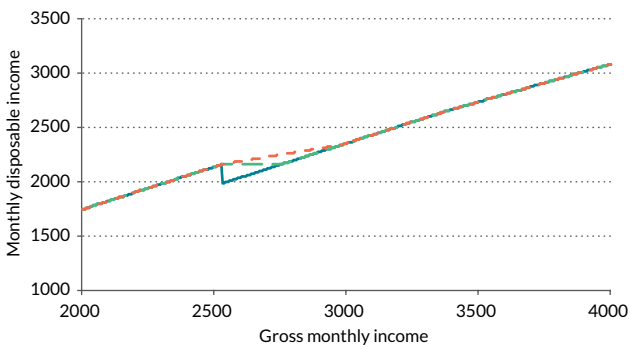
Source: own elaboration.

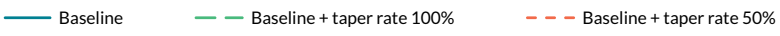
Figure IV. 5 | Reforming the point withdrawal of family benefits: family with two children.

a) Gross income and the level of family benefits



b) Gross income and disposable income





Note: „taper rate" – benefit withdrawal taper.

Source: own calculations, SIMPL model.

2 FINANCIAL SUPPORT OF FAMILIES WITH CHILDREN IN POLAND IN THE CONTEXT OF CHANGES IN THE TAX AND BENEFIT SYSTEM IN THE YEARS 2005-2012

Chapters 2 and 3 of this part are based on analyses using the method of tax and benefit system microsimulation. In this approach the parameters describing the tax and benefit system in detail is integrated with representative database of households containing information on demographics and income. The results presented below are based on the Polish microsimulation model SIMPL, in which the Polish tax and benefit system is simulated on the database from the HBS from 2010.

Microsimulation models have been used for many years to analyse the tax and benefit reforms in such countries as: Great Britain, Germany, the United States or France (examples of the use of such models are presented in Box IV.2). They are used both to evaluate the direct influence of the undertaken reforms and to analyse the processed and proposed changes in the tax and benefit system (e.g. Bargain and Callan, 2010; Brewer et al., 2001; Brewer et al. 2011; Clark et al., 2002; Dilnot and Webb, 1988; Duncan, 2001; Levy et al., 2009; Morawski et al., 2008; Morawski and Myck, 2011).

The advantage of the microsimulation approach is a possibility to carry out the simulation of household income on the basis of the parameters of both existing and hypothetical systems. Thus, firstly household income may be analised against a number of alternative scenarios, and secondly the impact of the respective elements of the tax and benefit system on the income distribution and on the extent of poverty may be isolated. This is related to the fact that in the simulations of such alternative systems the only elements subject to change are tax and benefit parameters, i.e. such elements as for example the structure of the population, the level of employment or the level of wages remain unchanged.

One of the main limitations in using microsimulation is the accuracy of the information contained in data sets on which the microsimulations are based. Even though in the case of HBS data the scope of information of this data enables the simulation

BOX IV.2 Examples of the worldwide use of the microsimulation models

The possibility to use microsimulation in economics was first suggested almost 50 years ago by Guy Orcutt (Orcutt, 1957). Microsimulation is used in analyses of effectiveness of the socio-economic policy by means of models created at the level of individual countries, e.g. in Great Britain, France, Spain, the United States. Moreover, there are some microsimulation models developed in a coordinated manner in the countries which belong to international organisations – i.e. in this case the EUROMOD model developed in the European Union countries and the microsimulation model developed for OECD countries.

In Great Britain the Treasury uses the microsimulation model IGOTM. This model is based on UK Family Expenditure Survey and it is used for static analysis of the impact of different scenarios of the tax and benefit policy on income of the population and the work incentives (Duncan, 2001). The Treasury uses also another microsimulation model based on the data from Living Costs and Food Survey (HM Treasury 2010, 2011), which helps in verifying the assumptions of budget execution. It is also used to evaluate the impact of the tax burden and benefits on household income, and to calculate the poverty rate and income inequality indicators. In Great Britain the microsimulation models are also owned by: the Department for Work and Pensions, the Bank of England and such research institutions as the Institute for Fiscal Studies (IFS) (Brewer et al., 2001; Clark et al., 2002) or the Institute of Socio-Economic Research (ISER). IFS regularly uses its microsimulation model TAXBEN to analyse the government policy and based on this model publishes pre-election analyses, which are used as models for the analyses at CenEA in Poland. ISER is an institute coordinating the works on the European microsimulation model EUROMOD. The Polish part of the EUROMOD model is developed in cooperation of ISER and CenEA. Currently in the microsimulation model EUROMOD there is a possibility to simulate the changes in tax and benefit system in all 27 countries of the European Union.

The French microsimulation model is SYSIFF model used in the Paris School of Economics. SYSIFF is based on the Family Budgets data and, similarly to the British models, serves mainly as a tool to carry out a comparative analysis of different tax systems, international comparisons and to study the effects of the reforms for household budgets.

In the United States, on a federal level in Congressional Budget Office (CBO), the microsimulation model CBOLT is used. The data from tax returns from the Internal Revenue Service are used for calculations in this model, and they are additionally supplemented by the information from sources related to demography and income of the population (CBO, 2007).

The detailed list of microsimulation models used in European countries has been prepared in the report published by a group of scientists working on the development of the Belgian model MIMOSIS (Decoster et al., 2008). There are some microsimulation models mentioned in this report, and those are the models operated among others in: Spain (Gladhispania), Germany (e.g. FiFoSiM, STSM), Italy (AWARETAX, ITAXMOD) and Sweden (MICROHUS, SESIM).

Source: Myck et al. (2011).

of most of the elements of the Polish system, the simulation of some important instruments is impossible due to lack of information. This relates for example to appropriated benefits under social assistance or different non-cash benefits, such as training or non-cash material support that cannot be covered by the simulation due to significant diversification of the forms of support, individual rules of granting such support, and also their value which is hard to assess.

Chapter 2 presents the analyses of the impact of tax and benefit reforms introduced in the years 2005-2012 on the poverty rate in Poland with the use of the microsimulation approach. Chapter3 studies the potential effect of the examples of hypothetical changes in the tax and benefit system and their role in reducing poverty.

2.1 CHANGES IN THE TAX AND BENEFIT SYSTEM IN THE YEARS 2005-2010

Every reform directly influencing the level of households income, for example changes in the level of income tax or Social Insurance contributions, changes in the amounts and principles of granting family benefits or the decisions concerning the method of indexation of disability and retirement pensions, has two basic effects. On the one hand, it generates additional cost or revenue for public finances, and on the other hand, it influences the change in the household income distribution, because it affects the households in different ways depending on their demographic structure, the sources and levels of income. Microsimulation analysis allows to indicate which households, depending on their structure and income, benefit and which households lose in the case of considered or introduced tax and benefit solutions. In the years 2005-2010 there was a number of significant changes implemented in the tax and benefit system, and those had a significant impact on the level of income of Polish households. The most important changes introduced at that time were as follows:

I Reforms of the social insurance system:

- 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 of contributions, making their amount dependant on the value of the farm, increase of contribution for farmers conducting also some non-agricultural activity (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 NFZ [National Health Fund] health insurance contribution (2006, 2007),
- Increase in the tax threshold (2009); reduction in the number of tax rates from three (19%, 30%, 40%) to two (18%, 32%).

At the same time for the analysed period subsequent governments pursued the policy of freezing of nominal values of the system parameters, such as revenue costs (2009, 2010), tax free allowance and child tax credit (2006, 2010), tax thresholds (2006, 2008, 2010) and Internet tax deduction (2009-2010). In view of inflation, this caused the decrease in the real value of these amounts, and in view of growing gross wages it modified the scope of impact of the tax system in relation to the changing wages distribution.

III Family benefits reforms:

- Change of the system of calculating the family allowance from the number of children to their age, change of the family allowance amounts (2006),
- Increase in the amounts of some of the supplements to family allowance (2006),
- Increase in the family allowance amount granted in all the 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).

At the same time since 2005 income eligibility thresholds deciding on granting of family benefits, and in most of the years also on the amounts of supplements to family allowance (see Appendix IV.2) and nursing allowance and benefit, were kept at the nominally constant level. Due to the fact that family benefits system is indexed every three years, the actual values of all benefits decreased in the years 2007, 2008 and 2010.

IV Social assistance:

- Increase in the income eligibility threshold for a 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).

In the case of social assistance, just as in the case of family benefits, in most of the years of the analysed period of time, the amounts of the permanent and temporary allowances, and the amount of income eligibility threshold for granting of permanent and temporary allowances, were frozen. This limited the number of people eligible to receive the support from the social assistance (see Appendix IV.2).

2.2 SYSTEM REFORMS AND THE POVERTY RATE 2005-2010

The simulations of the impact of reforms introduced in the years 2005-2010 presented in this part of the Report include both, „the withdrawal" of the whole set of changes implemented

BOX IV.3 Disposable income for households in the base system and alternative systems

Reference system for analyses conducted in this part of the Report is a tax and benefit system that was in force in 2010, so in the year from which the data used in simulation were taken. In 2010 system (the base system – S0) the disposable income for households is simulated from the HBS 2010 database (Y_{2010}^{S0}). To maintain consistency with the calculations of income distribution and the extent of poverty presented in Parts I-III and carefully isolate the effect of system changes on the basis of actual disposable income registered for a given household in the data (Y_{2010}) and simulated income in the base system, we compute a residual – η , defined as $\eta = Y_{2010} - Y_{2010}^{S0}$. It is treated as a fixed value at the level of a household and it is added to the simulated income in each of the alternative scenarios (e.g. Brewer et al., 2011). In this approach, all the changes in disposable income and the distribution resulting from it, and the measures of poverty, result exclusively from the simulated changes of the tax and benefit parameters. For the base system the simulated disposable income adjusted by the residual – Y_{2010}^{S0*} , equals to the income registered in the data:

$$Y_{2010}^{S0*} = Y_{2010}^{S0} - \eta = Y_{2010}$$

On the other hand the disposable income for the representative alternative system – S1, is calculated for each of the households as:

$$Y_{2010}^{S1*} = Y_{2010}^{S1} - \eta$$

Source: own elaboration.

in the period, and the simulation of the additional element taking into account CPI indexation of income thresholds in the family benefits system.[6] Thus, the following options are modelled:

S1) Implementation of the indexed system from 2005:
In this simulation the base system is compared to the system valid in the first half of 2005. This system was properly indexed to reflect the changes in the level of prices and actual changes of the level of wages.7 Thus, S1 system „withdraws" the whole set of tax and benefit reforms implemented in the years 2005-2010 (see Subchapter 2.1).

S2) Increase in the values of income eligibility thresholds for family benefits
In this simulation the system from 2010 is compared to the system, in which the whole set of reforms 2005-2010 is implemented, excluding the freezing of income eligibility thresholds in the family benefits system. Comparison of S2 with the base system will allow the identification of the effect that would be triggered by the regular price indexing of the income eligibility thresholds in family benefits.

S3) S3) Withdrawal of reforms of the family benefits system to its actual values from 2005
This simulation covers both, the change of the real values of the income eligibility thresholds, and all of the changes concerning real amounts and methods of calculating the family allowance with supplements in the family benefits system. Thus, it presents the isolated impact of the whole set of reforms implemented in this system.

The detailed presentation of changes in the parameters of the respective elements of the system is contained in Table IV.A1 in Appendix IV.1. The table presents the values of the parameters of the family benefits system in S1, S2 and S3 systems (together with the parameters of alternative scenarios S-Z1 and S-Z2).

Table IV.2 presents the results of the simulation with the distinction of relative, quasi-absolute and absolute poverty. For each of the measures of poverty the total poverty rate and the median poverty gap, as well as the poverty rate among children (persons below the age of 18) and among working poor have been calculated. The total aggregate value of the changes of annual disposable income for households, resulting from the simulated solutions, is also presented.

The result of the simulation of a 2005 indexed system (S1) indicates that as a result of whole set of changes introduced in tax and benefit system in the years 2005-2010, the households gained PLN 25.2 billion. This is the sum by which the disposable income would decrease, if the system from 2005 was in force also five years later. As a result of these changes the extent of the quasi-absolute and absolute poverty have decreased significantly (respectively from 7.7% to 6.4% and from 2.8 to 2.4%), and the relative poverty statistics in the case of children have improved (decrease from 21.6% to 20.2%). The general measure of relative poverty in the current system remains at practically the same level (16.0%) that would be observed if the indexed system from 2005 was in force in 2010 (15.9%). This is connected among others with the increase in the relative poverty threshold by ca. 5% as a result of the implemented changes, from PLN 887.60 to PLN 931.77.

The transfer of actual threshold values in the family benefit system from 2005 to the 2010 system (while other elements of the 2010 system remain unchanged), i.e. the S2 simulation, lowers the total poverty rate by ca. 0.3 pp (to 15.7%) and the poverty among children by 0.6 pp (to 19.6%) at the annual cost of ca. PLN 1 billion. It is worth noting that transferring the whole family benefits system from 2005 to 2010 (S3 simulation) would lead to an increase in poverty according to all three definitions. It results mainly from the fact that in the years 2005-2010 there was a real terms increase in the

6 Additionally, in the appendix there are the results of simulations, in which the following options are modelled: liquidation of the child tax credit (S-Z1 system), increase in the values of the income eligibility thresholds in the family benefits system in connection with the liquidation of the child tax credit (S-Z2 system).

7 The details of the approach to systems indexation are presented in Myck et al., (2011) and Domitrz et al. (2013); the role of the indexation method on income distribution was described e.g. in Sutherland et al. (2008).

Table IV. 2 | 2005-2010 reforms: the measures of poverty and benefits of households.

	Simulated scenarios			
	Base system S0 scenario	S1 scenario	S2 scenario	S3 scenario
I. Relative poverty:				
- poverty threshold (PLN)	931.77	887.58	934.78	930.91
- poverty rate	16.0%	15.9%	15.7%	16.4%
- median poverty gap (PLN)	469.13	468.73	482.3	494.42
- poverty rate – children	20.2%	21.6%	19.6%	21.2%
- poverty rate – *working poor*	10.9%	11.1%	10.7%	11.1%
II. Quasi-absolute poverty:				
- poverty threshold (PLN)	675.27	675.27	675.27	675.27
- poverty rate	6.4%	7.7%	6.4%	7.0%
- median poverty gap (PLN)	332.45	352.09	334.41	345.71
- poverty rate – children	8.3%	10.9%	8.2%	9.6%
- poverty rate – *working poor*	4.6%	5.4%	4.5%	4.9%
III. Absolute poverty:				
- poverty threshold (PLN)	472.72	472.72	472.72	472.72
- poverty rate	2.4%	2.8%	2.4%	2.6%
- median poverty gap (PLN)	366.72	400.25	371.64	369.35
- poverty rate – children	2.8%	3.9%	2.8%	3.4%
- poverty rate – *working poor*	2.0%	2.2%	2.0%	2.1%
IV. Benefit for households resulting from the introduction of the system (billion PLN annually)		-25.169	1.037	-1.033

Note: Children are defined as people under the age of 18.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

value of family benefits, which – as compared to maintaining the 2005 solutions – has led to the decrease in the quasi-absolute and absolute poverty measure both for the total population and among children. The households have gained in fact ca. PLN 1 billion annually on all of the changes in the family benefit system, which means that those households that were still eligible to receive benefits (i.e. which satisfied the requirements of the lower income eligibility threshold), have gained annually more than 2 billion PLN in total.

2.3 CHILD POVERTY AND PUBLIC POLICY – EFFECT OF CHANGES IN THE SYSTEM IN 2011-2012

In the years 2011-2012 several important changes were introduced in the tax and benefit system in Poland. The changes related mainly to the social benefits system (family benefits and social assistance) that was implemented in November 2012. At the same time health insurance contributions for farmers has been introduced, and the values of the tax free allowance and the child tax credit connected with it, and amounts of tax thresholds, revenue costs and other tax credits in the tax system remained at the nominally constant level.

In November 2012 the government introduced a series of changes in the family benefits system. The values of the income eligibility thresholds increased nominally to the level of PLN 539 and PLN 623 monthly per capita (from PLN 504 and PLN 583 respectively), which however in real terms meant their small decrease in relation to the value from 2010. The amount of the family allowance depending on the child's age increased nominally from 13.2% to 17.3% (cf. Table IV.B.1 in Appendix IV.2) and in any case it indicated the actual increase in the value of the allowance. The amounts of supplements to the family allowance were kept at nominally constant level, which meant the continuation of real decrease in their value. Thus, among the parameters of the family benefits system only the amounts of the family allowance have increased in real terms in relation to the amount from 2010. At the same time income eligibility thresholds in the case of social assistance system and the amounts of permanent allowances in the social assistance system have been increased (see Table IV.B4).

Table IV.3 presents the results of two simulations of changes introduced in the years 2011-2012. In the S4 scenario – the simulation consisting in the introduction of changes in the real values appropriate for the family benefits system from November 2012 in 2010 system. In the S5 scenario – the simulation

Table IV. 3 | The simulations of reforms of support for families with children: poverty and the 2012 reforms.

	Simulated scenarios		
	Base system	S4 scenario	S5 scenario
I. Relative poverty:			
- poverty threshold (PLN)	931.77	931.19	927.28
- poverty rate	16.0%	16.0%	15.8%
- median poverty gap (PLN)	469.13	470.86	456.84
- poverty rate – children	20.2%	20.2%	19.8%
- poverty rate – *working poor*	10.9%	10.9%	10.9%
II. Quasi-absolute poverty:			
- poverty threshold (PLN)	675.27	675.27	675.27
- poverty rate	6.4%	6.5%	6.3%
- median poverty gap (PLN)	332.45	330.77	318.07
- poverty rate – children	8.3%	8.4%	7.9%
- poverty rate – *working poor*	4.6%	4.6%	4.5%
III. Absolute poverty:			
- poverty threshold (PLN)	472.72	472.72	472.72
- poverty rate	2.4%	2.4%	2.2%
- median poverty gap (PLN)	366.72	371.97	396.48
- poverty rate – children	2.8%	2.8%	2.5%
- poverty rate – *working poor*	2.0%	2.0%	2.0%
IV. Benefit for households resulting from the introduction of the system (billion PLN annually)	-	-0.063	-1.783

Note: Children are defined as people under the age of 18.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

consisting in transferring to the 2010 system the whole of changes in the tax and benefit system that occurred up to 2012 (just like in Chapter 2.2 where the 2005 system was transferred to the year 2010). All the benefit elements of the system have been indexed by inflation, and the tax system elements – according to wage growth (the simulation does not include the changes in Social Insurance contributions from the employer introduced in February 2011 due to lack of identification of direct payers of these contributions).

In real terms the total net effect of changes implemented in the family benefits system in 2012 did not bring any financial gains to the households in relation to the 2010 system. On the contrary, total aggregate household income decreased (by ca. PLN 60 million) as a result of the introduced solutions. At the same time the quasi-absolute poverty rates grow slightly both for the whole population (from 6.4% to 6.5%) and among children (from 8.3% to 8.4%). The changes in the family benefits system do not have any effect on the relative poverty which is determined by the considerably higher poverty threshold and relates to ca. 2.5 times bigger group of people.

A simulation leading to different conclusions is the simulation presenting what would happen if the tax and benefits system from the end of the year 2012 was in force as early as in 2010, so in other words what is the estimated impact of the changes introduced during those two years. In the case of disposable income of households, the effect of those changes was a decrease in income by ca. PLN 1.8 billion. It was associated mainly with freezing of nominal values of the tax system parameters (the value of which has dropped relative to the changing wages distribution), and with introducing health insurance for farmers. At the same time the changes introduced in November 2012 in the family benefits system and social assistance have caused the increase in actual values of the benefits paid out, which had a positive impact on the income of the poorest households. This is reflected in the statistics of the quasi-absolute and absolute poverty, which are lower as a result of these changes, both for the whole population and for the poverty among children. Moreover, tax changes (in the form of freezing of the system parameters) and introduction of the health insurance for farmers, have moved down the value of the poverty threshold, which is reflected in a small decrease in the extent of total relative poverty (to 15.8%) and the relative poverty among children (to 19.8%).

3 POTENTIAL IMPACT OF HYPOTHETICAL CHANGES IN THE ELEMENTS OF THE TAX AND BENEFIT SYSTEM ON THE POVERTY RATE IN POLAND

This Chapter presents the simulations of impact of hypothetical changes in the tax and benefit policy. We use the examples of the reforms discusses in the public debate and we present the scale of influence of potential system reforms by analysing the sensitivity of the poverty rate to the changes of the parameters of the tax system and family benefits system.

3.1 HYPOTHETICAL CHANGES OF THE TAX AND BENEFIT SYSTEM AND THEIR IMPACT ON THE POVERTY RATE

The subject of this Subchapter is the evaluation of the sensitivity of poverty rates to hypothetical changes of the system and an attempt to identify those elements of the tax and benefit policy, which may be most effectively used in the course of policy implementation aimed at reducing poverty. While interpreting the results one has to take into account that the presented analyses include only direct impact of the considered reforms on household incomes, and they do not take into consideration the potential consequences of such reforms in relation to household behavior on the labour market. For example, the simulations reveal that PLN 500 million spent on raising the value of the family allowance, causes the same implications in reducing the relative poverty among children, as PLN 1 billion spent on raising income eligibility thresholds. However, it should be noted that insofar as this first policy may lead to limiting the labor market activity of parents, the second policy may lead to higher participation. Full effect of these solutions on the extent of poverty shall be the combination of the direct effects and the indirect impact of policy on households' incomes through decisions concerning employment. Static microsimulation analysis, including the analysis presented here, focuses specifically on short term effects assuming away any labor market reaction.

3.1.1 COST-NEUTRAL TAX SYSTEM REFORMS

The first set of simulated reforms comprises five configurations of tax system reforms, which were parameterised to be neutral for the public finance sector. The sets of reforms were selected so that they included different elements of the tax system and resulted in changes of incomes among different groups of taxpayers. Simulated sets (S6-S10) include the following changes of the tax system parameters:

S6) Withdrawal of the child tax credit with a simultaneous increase in the value of the tax free allowance to the amount of PLN 4 644.
S7) Withdrawal of the child tax credit with a simultaneous increase in the revenue costs to the amount of PLN 4 595.
S8) Increase in the basic PIT rate from 18% to 19% with a simultaneous increase in the maximum value of a child tax credit to PLN 2 124 per child.
S9) Increase in the basic PIT rate from 18% to 19% with a simultaneous increase in the value of the tax free allowance to the amount of PLN 4 100.
S10) Increase in the basic PIT rate from 18% to 19% with a simultaneous increase in the revenue costs to the amount of PLN 3 497.

Potential impact of these changes on the poverty rate is presented in Table IV.4, and it is again divided into three definitions of poverty. Distribution effect of the simulated hypothetical reforms is shown on Figures IV.6 and IV.7. It appears that with such a selection of combinations of reforms and the boundary condition in the form of neutrality for the public finance sector, the potential of the tax system in reducing the poverty is relatively limited. The policy combinations that affect poverty the most are the system S6 (withdrawal of the child tax credit and increase in the tax free allowance) and S9 set (increase in the lower PIT rate to 19% and increase in the tax free allowance), which cause the decrease in the total extent of relative poverty by 0.4 pp and 0.2 pp respectively. The nature of these systems is definitely the most progressive one (see Figures IV.6 and IV.7). In the case of these reforms, the measures of quasi-absolute and absolute poverty decrease, which suggests that they lead to the increase in income of

Table IV. 4 | Simulations of fiscally neutral reforms of the tax system – impact on poverty.

	Simulated scenarios					
	Base system	S6 scenario	S7 scenario	S8 scenario	S9 scenario	S10 scenario
I. Relative poverty:						
- poverty threshold (PLN)	931.77	925.98	926.2	935.67	934.07	933.84
- poverty rate	16.0%	15.6%	15.9%	16.2%	15.8%	15.9%
- median poverty gap (PLN)	469.13	457.87	456.11	469.43	470.82	468.12
- poverty rate – children	20.2%	20.3%	20.4%	20.4%	20.1%	20.2%
- poverty rate – *working poor*	10.9%	10.7%	10.7%	11.1%	10.8%	10.8%
II. Quasi-absolute poverty:						
- poverty threshold (PLN)	675.27	675.27	675.27	675.27	675.27	675.27
- poverty rate	6.4%	6.2%	6.4%	6.5%	6.3%	6.4%
- median poverty gap (PLN)	332.45	332.66	325.27	334.75	329.55	328.57
- poverty rate – children	8.3%	8.2%	8.2%	8.3%	8.1%	8.2%
- poverty rate – *working poor*	4.6%	4.4%	4.5%	4.6%	4.5%	4.5%
III. Absolute poverty:						
- poverty threshold (PLN)	472.72	472.72	472.72	472.72	472.72	472.72
- poverty rate	2.4%	2.3%	2.4%	2.4%	2.3%	2.4%
- median poverty gap (PLN)	366.72	367.72	362.96	362.96	370.67	362.96
- poverty rate – children	2.8%	2.8%	2.9%	2.9%	2.8%	2.9%
- poverty rate – *working poor*	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

Note: Children are defined as people under the age of 18.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

people living in the poorest households, which is related to the strong progressive nature of these combinations. In the case of withdrawal of the child tax credit in S6 and S7 systems, and with the increase in the basic PIT rate to 19% in S8 system, the relative measure of poverty among children, and also among working people slightly increases (relative poverty rate for working people increases to 11.1%). The marginal impact of the changes included in S10 scenario, in which the revenue costs are increased together with the tax rate from 18% to 19%, on the risk of poverty among working people, is somehow surprising. The relative poverty rate among working poor would decrease as a result of implementation of the S10 system only by 0.1 pp.

The simulations also show the lack of effectiveness of increasing the child tax credit in the reduction of poverty. Increase in maximum value of this tax credit to PLN 2 124 annually per child is advantageous mainly to the families of middle income, and balancing this change by increasing the lower tax rate to 19% means losses in the lowest income groups (see Figures IV.6 and IV.7). As a result of introducing S8 system (increase in the lower PIT rate to 19% and increase in the child tax credit value) there is an increase in both the extent of the total relative poverty and poverty among children and working poor.

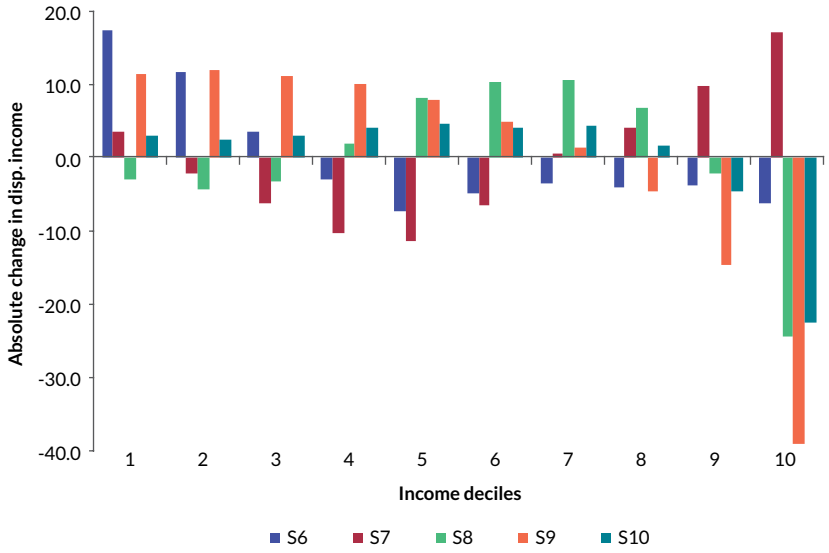
3.1.2 INCREASE IN THE GENEROSITY OF THE FAMILY BENEFITS SYSTEM AND THE TAX SYSTEM IN RELATION TO POVERTY AMONG CHILDREN

Statistics concerning poverty among children place Poland at one of the last positions among European Union countries. In this Subchapter we present the results of simulating the influence of changes in the selected elements of the tax and benefit system, which are focused on decreasing the poverty among children. Main objective of these simulations is an evaluation of sensitivity of child poverty indicators to changes in different elements of the tax system, with a simultaneous possibility to estimate the costs that would have to be incurred, to bring such changes in the poverty rate.

To assess the effectiveness of different elements of the system in reducing poverty among children, six simulations were carried out for each of the following six parameters (or groups of parameters) of the system:

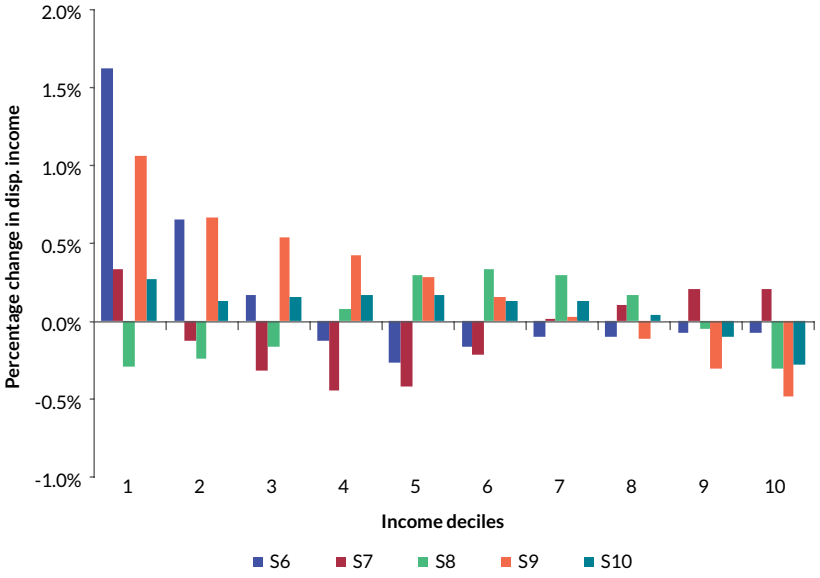
1) Under the family benefits system:
   a) The amounts of family allowances (without supplements) – S11a;
   b) The value of income eligibility thresholds in the family benefits system – S11b;

Figure IV. 6 | Impact of the simulated reforms (S6-S10) by income deciles– changes in absolute values.



Note: change of the disposable income (in PLN monthly) relative to the base system.
Source: own calculations based on the SIMPL model based on the HBS 2010 data.

Figure IV. 7 | Impact of the simulated reforms (S6-S10) by income deciles – proportional changes.



Note: change of the disposable income as compared to the value from the base system.
Source: own calculations based on the SIMPL model according to the HBS 2010 data.

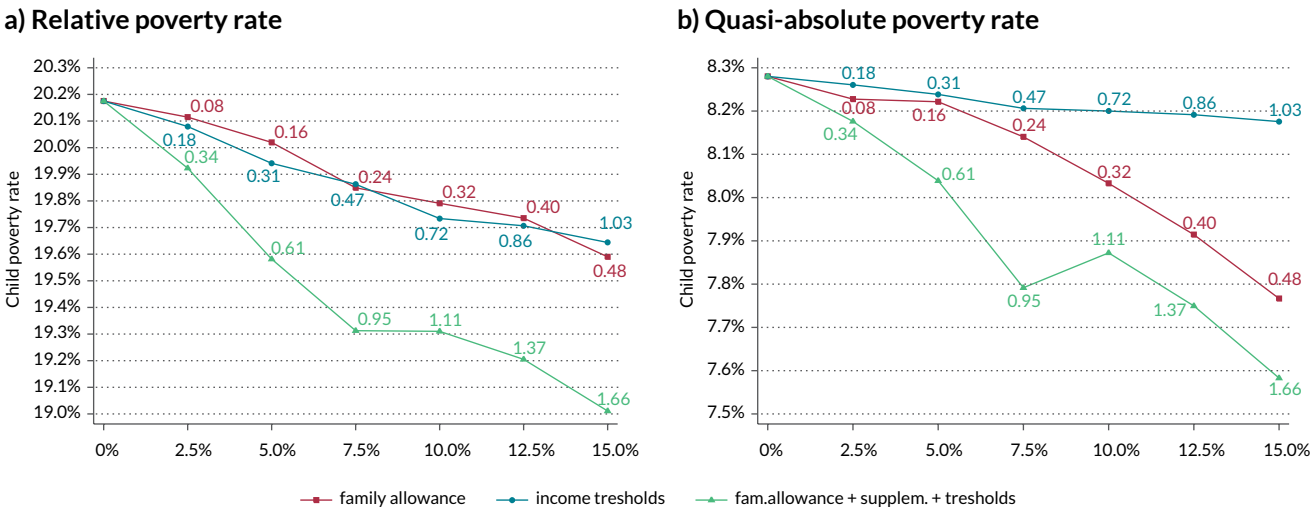
c) The value of income eligibility thresholds in the family benefits system and of the family allowances with supplements – S11c.

2) Under the income tax system:
   a) The amount of revenue costs– S12a;
   b) The amount of the tax free allowance – S12b;
   c) The amount of the tax free allowance and the child tax credit – S12c.

In the case of each of the six parameters (or groups of parameters) mentioned above, the simulations were carried out with an assumption of their increase by: 2.5%, 5%, 7.5%, 10%, 12.5% and 15%. Figures IV.8 and IV.9 present the results of the simulations from the point of view of the extent of relative and quasi-absolute poverty among children. The changes in the poverty rate among children resulting from simulated solutions are marked on the figures, together with the information on total (annual) costs of each of the solutions for the public finance sector (in PLN billion).

In the case of implications of the changes in the values of the family benefits parameters for the relative poverty rate among children (Figure IV.8a), we can see a much higher effectiveness of the changes in the amount of family allowance relative to the changes in the amounts of income eligibility thresholds.

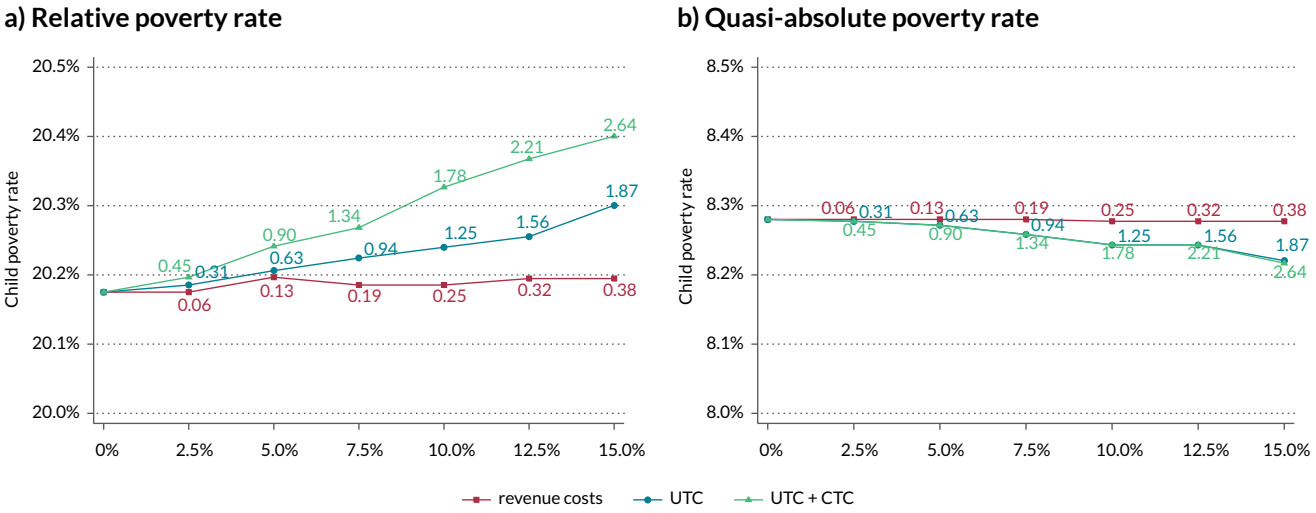
Figure IV. 8 | Impact of changes in the family benefits system on the poverty rate among children.



Note: data labels (series) inform about total costs of the given reform for public finance. Child is defined as person under the age of 18.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

Figure IV. 9 | Impact of changes in the tax system on the poverty rate among children.



Note: data labels (series) inform about total costs of the given reform for public finance. Child is defined as person under the age of 18.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

Even though the increase in the parameters in simulations S11a and S11b reduces the poverty rate in a similar manner - from 20.2% to 19.6% with an increase in parameters by 15%, the cost of of the increase in income eligibility thresholds is ca. two times higher. For example, the increase in the family allowance by 12.5% is connected with the costs equaling to ca. 400 million annually, while the increase of 12,5% in the income eligibility thresholds is a cost of ca. 860 million annually. According to the simulations, both solutions would reduce the poverty among children by ca. 0.4 pp. At the same time increasing the income eligibility threshold has a negligible impact on the quasi-absolute poverty level (Figure IV.8b). This is far from surprising since such modification benefits mainly the slightly more well-off households on average. Increasing the amount of the family allowance by 12.5% reduces the quasi-absolute poverty rate among children by ca. 0.3 pp. On the other hand, if all the parameters of the family benefits system were raised by 15%, then it would be possible to achieve the decrease of the relative poverty rate among children from 20.2% to 19.0% at the cost of PLN 1.7 billion annually. Impact of such changes on the quasi-absolute poverty level would be very similar to the changes brought by the increase in the amount of the family allowance only, while the costs of the latter option are significantly lower.

Figure IV.9 presents the influence of the changes in taxes on the poverty rate among children. It strengthens the conclusions drawn earlier from the historic simulations of the tax changes, presented in Subchapters 2.2 and 3.2. Such changes

have a very low impact on the level of quasi-absolute poverty due to the fact that they relate to the poorest households to a very limited extent (Figure IV.9b). Apart from that, the increase in the generosity of the tax system in the form of increases in the value of the universal tax credit (tax free allowance) or the child tax credit, strongly influences the households incomes, especially around the median income in the distribution. This in turn reflects in the level of the poverty threshold, which may result in the increase, and not a decrease in the relative poverty measure among children (Figure IV.9a). For example, the increase in the universal tax credit and the child tax credit by 15% translates into the increase in relative poverty among children by 0.2 pp, simultaneously generating the costs for the public finance sector in the amount of ca. PLN 2.6 billion annually.

3.1.3 THE UNEMPLOYED AND POVERTY

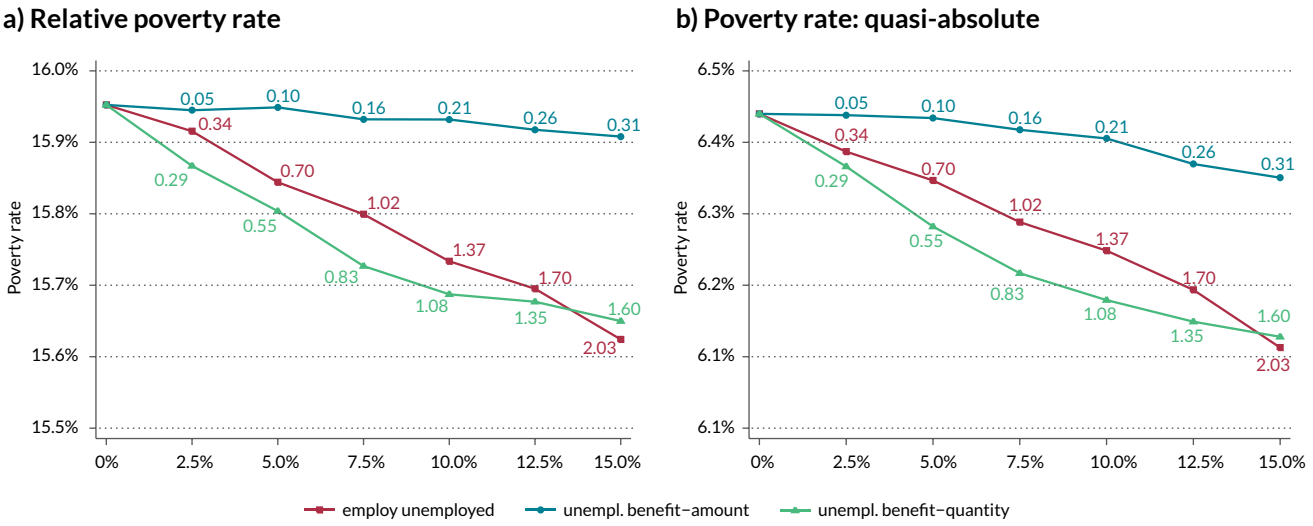
Based on the previous Parts of this Report we can conclude that one of the main factors determining the scope of poverty in Poland and changes in the extent of poverty in the past years is the employment and the financial situation of the unemployed. The subject of this subchapter comprises three simulations of the effects of the hypothetical changes in the situation of the unemployed on poverty rates again based on the HBS 2010 data and SIMPL model. Two of those simulations present the changes in the social-economic policy in relation to the unemployed, and the third one is a simulation of the reduction of the scope of unemployment. In the case of hypothetical changes of policy in relation to the unemployed, we analyse two types of hypothetical reforms:

1. Increase in the amount of the unemployment benefit for the persons already receiving it by 2.5% to 15% – S13a scenario,
2. Increase in the number of the unemployed receiving the benefit among persons that are unemployed and do not receive the benefit (increase also from 2.5% to 15% in relation to the unemployed population not receiving the benefit; the number of which according to HBS 2010 database is 1.36 million people) – S13b scenario.

Simulation of the increase in employment consists in the change of the status of unemployed individuals to employment (earning the minimum wage), in the proportion from 2.5% to 15% in relation to the total number of the unemployed in the data (1.6 million people) (S13c scenario). The procedure of attributing employment to the unemployed (S13c) and of unemployment benefit to the unemployed who do not receive it in the data (S13b), is based on probability models, according to which we attribute the appropriate percentage of employment and receiving of benefit, to persons with highest expected values of the estimated probability. The results of all three simulations are presented on Figure IV.10 for the relative and quasi-absolute poverty measure. The total annual changes in disposable income of households with unemployed members resulting from these simulations have been marked on the Figure. In the case of increase in the amount of employment benefits and increase in the extent of granting of benefits, they are identical to the costs for public finance which would be generated by such changes in benefits. In the case of increase in employment driven changes in disposable income of households these do not stem from a hypothetical increase in the state's generosity, but from the increase in earnings (and thus are not equivalent to a cost to the public finance sector).

Increases in the amount of unemployment benefit have marginal effect on the poverty rate, both relative and quasi-absolute. Even if paid benefits were 15% higher (which would

Figure IV. 10 | Impact of changes in the system of unemployment benefits on the poverty rate.



Note: data labels (series)inform about total gains of households (in billion PLN annually, which in the case of increase in the value of unemployment benefits and increase in the number of people receiving the benefit corresponds to the total costs of such reform.

Source: own calculations based on the SIMPL model according to the HBS 2010 data.

be associated with costs of ca. PLN 300 million annually), relative poverty would basically remain at the same level, and the quasi-absolute poverty rate would decline by merely 0.9 pp. Simulated expansion of availability of employment benefits has a much greater effect on reduction of poverty. If the number of the unemployed receiving the benefit rose by 5%, 10% or15% (increase in the number of people receiving the benefit by 70 thousand, 140 thousand and 210 thousand respectively), the relative poverty rate would drop by 0.15 pp, 0.27 pp, and 0.3 pp respectively, and the quasi-absolute poverty rate by 0.16 pp, 0.26 pp and 0.31 pp. These changes would cost public finance approximately 550 million, 1 080 million and 1 600 million respectively. It should also be noted that the increase in the generosity of the system of support for the unemployed could have an impact on the decrease in the job search intensity and the probability of a person getting employed. Thus, the total long-term impact of such changes on the poverty rate is much more complex.

In the case of the simulation of increasing the employment of the unemployed, the extent of poverty changes is very similar to the case of expansion of availability of unemployment benefits, although the simulated changes do not have to apply to the same individuals. In the case of increases in employment by 5%, 10% and 15%, the simulated numbers of people getting employed are 80 thousand, 160 thousand and 240 thousand respectively. Assuming that all these people would earn the minimum wage after getting employed, the relative poverty rate would drop by 0.11 pp, 0.22 pp and 0.33 pp respectively, and the quasi-absolute poverty rate by 0.10 pp, 0.19 pp and 0.33 pp. The increase in employment of the unemployed would raise households' income by PLN 700 million, 1 370 million and 2 030 million respectively.

3.2 TAX AND BENEFIT SYSTEM AND THE LABOUR MARKET: IS IT POSSIBLE TO 'KILL TWO BIRDS WITH ONE STONE"?

In the work titled *„In-Work Policies in Europe: Killing Two Birds with One Stone"* Bargain and Orsini (2006) compare the solutions connecting financial aid with the requirement concerning employment with a hunting „double" emphasising the possibility to use in-work benefits to simultaneously promote employment and to fight poverty, both directly (by increasing income) and indirectly (by improving incentives to work). The simulations of a simple extension of the Polish family benefits system is presented below. On the one hand it is extended by the element of gradual withdrawal of benefits mentioned in Subchapter 1.3, and on the other hand by the introduction of additional financial incentives for non-working spouses in families, where only one person is working. Myck et al. (2013b) suggest a solution in which if in the case of a married couple with children two persons are working, the work of the other person is promoted by raising the value of the income eligibility threshold in family benefits. The consequences of introducing such a system where the income eligibility threshold is raised by 50% have been presented on the Figure IV.11 for the example of a married couple with two children. As in the case of Figure IV.5 in Subchapter 1.3, this extension was used in the case of the double earner threshold increases and the gradual withdrawal of benefits (benefit withdrawal taper at the level of 100% and 50%). In the latter case monthly level of gross income in the amount of PLN 1 275[8] have been set as the employment requirement to qualify to increase the income eligibility threshold for the family.

Table IV.5 presents the results of the simulation of five hypothetical changes in the family benefits system:

S14) Introduction of gradual withdrawal of family benefits with 100% benefit withdrawal taper;
S15) Introduction of gradual withdrawal of family benefits with 50% benefit withdrawal taper;
S16) Increase of 50% in the income eligibility threshold for families in which both parents work;
S17) Combination of S14 and S16 systems: increase of 50% in the income eligibility threshold for families in which both parents work, together with gradual 100% withdrawal of benefits;
S18) Combination of S15 and S16 systems: increase of 50% in the income eligibility threshold for families in which both parents work, together with gradual 50% withdrawal of benefits.

Introduction of the solutions in the family benefits system, which would eliminate the point withdrawal of benefits would cost from ca. PLN 600 million annually in the case of 100% withdrawal taper (S14) to PLN 1.1 billion annually in the case of 50% taper (S15). Increase in the income eligibility thresholds for families in which both parents work, would also be associated with the costs of ca. PLN 600 million annually, and the combination of this solutions with a gradual withdrawal of the benefits would translate into a cost of ca. PLN 1.2 to 1.8 billion per year.

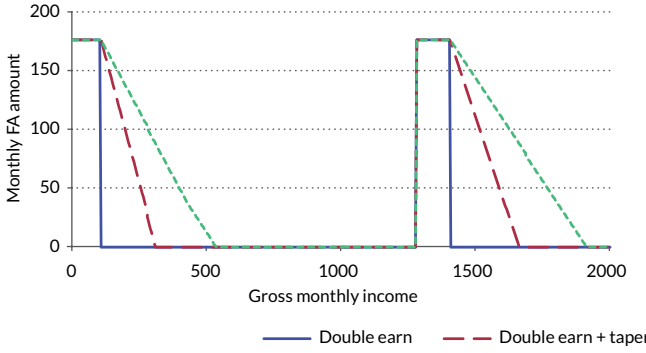
The solutions concerning the changes in benefit withdrawal in static terms, i.e. ignoring the potential effects of employment of second persons in couples, would affect the poverty in the same way as the solutions concerning moving the income eligibility thresholds in the current system. In static terms the poverty rate does not change after the introduction of additional incentives to work for non-working second earners, which relates to the low probability of risk of poverty in the current system in families where both parents work.

Direct effectiveness of the impact of considered solutions on the poverty among children is lower than of the changes analysed in point 3.1.2, because achieving similar effects in decreasing the risk of poverty is associated with higher fiscal cost. For example, increase in all the parameters of the family benefits system by 15% causes the decrease in poverty among children from 20.2% to 19.0%, with the cost of PLN 1.7 billion annually. The most expensive system among the ones presented in Table IV.5, reforming the family benefits, which cost PLN 1.8 billion, reduces the relative poverty among children only to 19.9%.

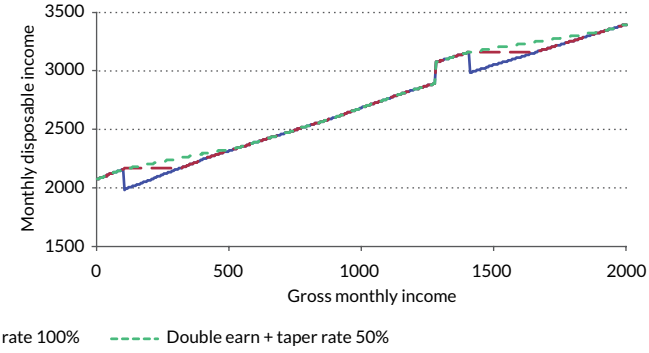
8 This value corresponds to the income with which in the case of both parents being employed, one complete value of the child tax credit is used in full.

Figure IV. 11 | Change of financial incentives to work for the second parent: family with two children

a) Gross income of the second person and the amount of family benefits



b) Gross income of the second person and disposable income



Double earn — Double earn + taper rate 100% — Double earn + taper rate 50%

Note: 'taper rate' – benefit withdrawal taper; see explanations to the Figure IV.5 in the text.

Source: own calculations, SIMPL model; see also: Myck et al. (2013b).

Table IV. 5 | Family benefits and stimuli on the labour market: examples of reforms of the system.

	Simulated scenarios					
	Base system	S14 scenario	S15 scenario	S16 scenario	S17 scenario	S18 scenario
I. Relative poverty						
- poverty threshold (PLN)	931.77	933.60	936.00	935.01	937.38	939.27
- poverty rate	16.0%	15.9%	15.9%	16.0%	15.9%	15.9%
- poverty rate – children	20.2%	19.9%	19.9%	20.2%	20.0%	19.9%
- poverty rate – *working poor*	10.9%	10.8%	10.8%	10.9%	10.9%	10.8%
II. Ubóstwo quasi-absolutne:						
- poverty threshold (PLN)	675.27	675.27	675.27	675.27	675.27	675.27
- poverty rate	6.4%	6.4%	6.4%	6.4%	6.4%	6.4%
- poverty rate – children	8.3%	8.2%	8.2%	8.3%	8.2%	8.2%
- poverty rate – *working poor*	4.6%	4.6%	4.5%	4.6%	4.6%	4.5%
IV. Benefit for households resulting from the introduction of the system (billion PLN annually)	-	0.590	1.128	0.582	1.197	1.766

Note: Children are defined as people under the age of 18.

Source: own calculations based on SIMPL model using HBS 2010 data.

This effect is related to the concentration of additional spending in systems S14-S18 on the group of families, whose incomes exceed the value of the income eligibility threshold in the base system, which often implies the disposable income exceeding also the poverty threshold. For the full evaluation of effectiveness of the proposed reforms and their impact on poverty, one should refer to the scenarios including the potential impact of such solutions on the decisions of parents on the labour market. The reforms proposed in S14-S18 systems should result in greater supply for labour among parents, which in effect may lead to, on one hand greater reduction of poverty among children as compared to static simulations, and on the other hand, to lower net costs of the proposed solutions due to additional tax inflows from the work of the newly employed people.

From the point of view of the complex approach to policy in respect of poverty, the solutions suggested above should be considered as part of parallel changes in the amounts of paid family benefits in such a way as to search for an optimal solution, which on one hand increases the income of the poorest families by increasing the amounts of benefits, and simultaneously improves the attractiveness of employment through gradual benefits withdrawal and additional incentives to work for both parents.

Summary

If the public policy concerning reduction of poverty is to have a long-term, and not only temporary effect, then the financial support for the poorest households should be associated with the policy of promoting employment, both by helping the persons searching for work, and by means of solutions improving the financial attractiveness of employment. On the one hand, as shown in Parts II-III and in the simulations in Chapter 3, increases in employment may significantly affect the reduction of poverty. On the other hand, improvement of financial attractiveness of work may make room for increasing the benefits for the poorest households without negative consequences for the decisions concerning supply of work and thus, may effectively address the so called '*equity-efficiency trade-off*", and thus to balancing the policy of lowering income inequalities and the policy of effectiveness on the labour market (Blundell, 2001; Immervoll et al., 2007).

The social group at highest risk of poverty in Poland, is families with children. According to HBS data, the poverty rate among children in 2010 in Poland amounted to 20.2% (23% in 2009 according to EUROSTAT on the basis of EU-SILC data) and it is one of the highest in the European Union. Even though, as it is shown by the analyses presented in this Part, the government tax and benefit policy in the years 2005-2010 contributed to the decrease in the poverty among children (by 1.4 pp), the level of support for families with children in Poland as part of social benefits is still one of the lowest in Europe. The child tax credit introduced in 2007 significantly increased the income of families and contributed to the reduction of poverty among children (by ca. 0.3 pp).[9] However, the results presented in Chapter 3 revealed the limited capabilities of the tax system in reducing poverty. Considering the effectiveness of different policies in reducing poverty levels among families with children the values of family allowance were identified as most cost efficient. While PLN 500 million spent on the increase in the amount of family allowance reduces the relative poverty rate among children by 0.6 pp, this same amount spent on increasing the values of the income eligibility thresholds in family benefits is reflected in the decrease in poverty by ca. 0.3 pp.

However it should be noted that increases in the amounts of family benefits would have negative effects on the motivation to work (Blundell, 2001). The consequences of such changes are even more pronounced if access to benefits for working parents is being simultaneously limited, by lowering the real values of eligibility thresholds entitling to receive the benefits (e.g. Myck et al., 2013a), which happened in Poland in the years 2005-2011. Nominal increase in the income eligibility thresholds in 2012 do not keep up with inflation from 2010 and even though it will limit the further reduction in the number of children entitled to receive the benefit, the whole set of changes introduced in 2012 shall not contribute to the reduction of poverty among children.

The results presented in Part III and simulations from Chapter 3 simultaneously reveal the great impact of employment on the probability of being at risk of poverty, including child poverty. To effectively reduce it, the policy of supporting the poorest families as part of the family benefits system should combine the elements efficient in direct fight against poverty, i.e. the amount of the benefits, with the instruments improving the attractiveness of employment. Examples of gradual, rather than point withdrawal of benefits and the expansion of accessibility of benefits in the case of families, in which both parents work presented in this Part of the Report, do not directly lead to significant decrease in poverty among children, but they may result in greater labour market activity of parents and in effect lead to systematic and stable improvement of the financial conditions of families with children.

9 See simulation S-Z1 in the Appendix IV.1.

Bibliography

Avram, S. and Sutherland, H. (2012), Baseline Results from EUROMOD: 2006-2009 policies, EUROMOD, EUROMOD Working Paper No. EM 1/2012.

Blundell, R. (2001), Welfare reform for low income workers, Oxford Economic Papers, 53 (2), pp.189–214.

Blundell, R., Duncan, A., McCrae, J., Meghir, C. (2000), The Labour Market Impact of the Working Families Tax Credit, Fiscal Studies, 21 (1), pp. 75–104.

Bargain O., Callan T. (2010), Analysing the effects of tax and benefit reforms on income distribution: a decomposition approach, Journal of Economic Inequality, No. 8, No. 1, pp. 1-21.

Bargain, O., Orsini, K. (2006), In-Work Policies in Europe: Killing Two Birds with One Stone, Labour Economics, 13 (6), pp. 667–693.

Brewer, M., Clark, T., and Myck, M. (2001), Credit Where it's Due? An Assessment of the New Tax Credits, IFS Commentary 86.

Brewer, M., Duncan, A., Shephard, A., Suarez, M.-J. (2006), Did Working Families' Tax Credit Work? The Impact of In-Work Support on Labour Supply in Great Britain, Labour Economics, 13, pp. 699-720.

Brewer, M., Browne, J., Joyce, R. (2011), Child and working-age poverty from 2010 to 2020, IFS Commentary C121, Institute for Fiscal Studies, London.

Brown, Ch. (1995), Minimum Wages, Employment and the Distribution of Income, w: Ashenfelter, O., Card, D., Handbook of Labor Economics, vol. 3, pp. 2101-2163.

Burkhauser, R., Couch, K., Wittenburg, D. (1997), Who minimum wage increases bite: an analysis using monthly data from SIPP and the CPS, Center for Policy Research.

Card, D., Krueger, A. (1994), Myth and Measurement: the new economics of minimum wage.

CBO (2007), The Effect of Tax Changes on Labor Supply in CBO's Microsimulation Tax Model, Congressional Budget Office Background Paper.

Clark, T., Dilnot, A., Goodman, A., Myck, M. (2002), Taxes and Transfers, Oxford Review of Economic Policy, vol.18 no. 2. pp. 187-201.

Decoster, A., De Swerdt, K., Orsini, K., Lefèbvre, M., Marèchal, C., Paszukiewicz, A., Perelman, S., Rombaut, K., Verbist, G., Van Camp, G. (2008), Valorisation of the microsimulation model for social security mimosis, Final report project AG/01/116.

Dilnot A., Webb S. (1998), The 1988 social security reforms, Fiscal Studies, No. 9 No. 3, pp. 26-53.

DiNardo, J., Fortin, N., Lemieux, T. (1996), "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach", Econometrica, pp. 1001-1044.

Domitrz, A., Morawski, L., M., Semeniuk, A. (2013), Dystrybucyjny wpływ reform podatkowo-świadczeniowych wprowadzonych w latach 2006-2011, Bank i Kredyt, in printing

Duncan, A. (2001), Microsimulation and policy setting in the United Kingdom, Research Policy Seminar, Paris, 2001.

Haan, P., Morawski, L., Myck, M. (2008), Taxes, Benefits and Financial Incentives to Work. The United Kingdom, Germany and Poland Compared., Bank i Kredyt, vol. 39, No.1 pp. 5-33.

Haan, P., Myck, M. (2007), Apply with caution: introducing UK-style in-work support in Germany. Fiscal Studies, vol. 28, pp. 43-72.

Haan, P., Myck, M. (2010), Safety net still in transition: labour market incentive effects of social support in Poland and Germany, Bank i Kredyt, vol. 41(3), 2010, pp. 5–34.

HM Treasury (2010), Impact of tax and welfare changes on households, Budget 2010, HM Treasury.

HM Treasury (2011), Budget 2011 data source, HM Treasury.
Immervoll, H., Kleven, H., Kreiner, H., Saez, E. (2007), Welfare Reform in European Countries: A Microsimulation Analysis, Economic Journal, 117 (516), pp.1–44.

Levy, H., Morawski, L., Myck, M. (2009), Alternatywne rozwiązania podatkowo-zasiłkowe wspierające rodziny z dziećmi, Bank i Kredyt, 40 (4), pp. 89–112.

Machin, S., Manning, A. (1996), "Employment and the Introduction of a Minimum Wage in Britain", The Economic Journal, May, pp. 667-676.

Morawski, L., Bargain, O., Myck, M., Socha, M. (2008), Model podatkowo-świadczeniowy dla Polski – SIMPL2003, Wiadomości Statystyczne, No. 4/2008.

Morawski, L., Myck, M. (2011), Distributional Effects of the Child Tax Credit in Poland and Its Potential Reforms, Ekonomista 6, pp. 815-831.

Myck M., Domitrz A., Morawski L., Semeniuk A. (2013a), Financial incentives to work in the context of a complex reform package and growing wages: the Polish experience 2005-2011, CenEA WP01/13, Centrum Analiz Ekonomicznych.

Myck, M., Kurowska, A., Kundera, M. (2013b), Simple options to make work more attractive for parents in Poland, CenEA WP02/13, Centrum Analiz Ekonomicznych, in preparation

Myck, M., Morawski, L., Domitrz, A., Semeniuk, A. (2011), Raport Przedwyborczy CenEA 2011, Część.1: kto zyskał, a kto stracił, CenEA MR01/11, Centrum Analiz Ekonomicznych.

Neumark, D., Wascher, W. (2007), Minimum Wages and Employment, IZA Discussion Paper Series.

OECD (1998), Making the most of minimum: statutory minimum wages, employment and poverty, Employment Outlook.

Stigler, G. (1946), The Economics of Minimum Wage Legislation", American Economic Review, Vol. 36, pp. 358-365

Sutherland, H. (2001), The national minimum wage and in-work poverty, DAE Working Papers.

Sutherland, H., Hancock, R., Hills, J., Zantomio, F. (2008), Keeping up or falling behind? The impact of benefit and tax uprating on incomes and poverty, Fiscal Studies, Vol. 29, No. 4, pp. 467-498.

Teulings, C. (1996), A Generalized Assignment Model of Workers to Jobs for the US Economy", University of Amsterdam.

Recommendations for public policy

RECOMMENDATIONS FOR PUBLIC POLICY

In 2011 in Poland the number of people at risk of poverty varied, depending on the definition and measurement, between 900 thousand and 8 million, so 2.8% and 19.3% of the population. It was definitely less than in the years 2002-2004 (from 6% to 40% respectively), however despite a significant improvement, we cannot say that poverty in modern Poland is an isolated or marginal phenomenon. Moreover, the way the society and government deal with poverty constitutes an important marker of the level of civilisational development – as a political community we feel responsible for those who are in worse situation; we would also like to mitigate the potential effects of poverty, also in case we become poor one day. Investing in economic growth is one of the important instruments contributing to the reduction of poverty, however provided that this growth is of inclusive nature, which requires a proper incorporation of the social policy into wider framework of public policy and state intervention.

Data on the extent of poverty are very diverse. There are numerous measures of poverty, and all of them should be treated similarly to the situation where income in a household does not allow to satisfy the most basic scope of needs. The diversity of poverty measures in a sense results from the fact that different spectrum of needs (social minimum versus absolute minimum) can be embraced and various methods of their measurement (cut-off point of relative poverty) can be used. In Part I we draw attention to the fact that poverty is not a phenomenon separated from material deprivation or social exclusion. However, insofar as the first phenomenon occurs with different severity and in the long term is in a way a natural consequence of insufficient income, the relations with social exclusion are more complicated. They depend in a large extent on the environment of an individual – including the cumulation of risks and the functioning of safety net. These relations, however, are still very individualised, and thus difficult to measure. The research on social cohesion does not confirm though, that the scale of social exclusion caused by poverty is significant.

The high economic growth of past few years was crucial for shift in Poles' perception of their own financial situation. Currently, the average income of the non-poor enables acquiring a social minimum basket of goods and services and therefore not only satisfying the basic biological neets, but also a relatively active participation in social life. Nevertheless, many Polish people with average and above-average incomes still do think they are poor, which to some extent presumably is a derivative of a reference group being formed by the citizens of Western European countries. Rapid economic growth over the next two, three decades is thus not only a sin equa non condition of the objective levelling of the standard of life between Poland and Western Europe, but it is also a necessary factor for convergence of Poles' attitudes and strategies to their counterparts in more wealthy countries. Ambitious reforms, necessary to uphold the upward trend, must also be directed more on transforming Poland into an innovative economy, institutionally competitive, resistant to the effects of ageing of the population and fast technological changes worldwide. It will surely have an impact on the construction of social policy in the future. Due to these challenges, the following steps will be essential: improvement of policy aimed at increasing participation and employment rates, counteracting the rising risk of structural unemployment, as well as supporting the social and economic inclusion of immigrants.

The stake is high. Poles, despite the continuous development of their country, still feel like an impoverished nation, especially when the aspirations are set by the leaders of Europe. In the subjective perception poverty is far worse than the actual state, which to some extent is attributed to the scale of the phenomenon in the past, partly to the external groups of reference, and partly to the current limitations of households' budgets. Their possession of durable goods, even though improving, is achieved at the expense of every day consumption which naturally requires the ability to manage household budgets. It seems that the poorest households exhibit certain lack of such abilities, especially when taking into consideration their disproportionately high expectations and irrational financing of the consumption with debt, instead of searching for additional work to finance the growing needs. Thus, promoting the knowledge of methods of income management seems to be a desirable direction.

In the I Part of the Report the different aspects of poverty are presented. In view of the conducted analyses, the persons who are at risk of absolute poverty distinguish themselves rather by a standard of their housing than its floor area per capita. Moreover, they are often affected by a lack of certain amenities considered in our times a minimum comfort, e.g. lack of hot running water or a toilet. The poor are much more likely to suffer from shortfall of some durable goods or their relative obsolescence. There is however a significant set of goods that is present in almost all household, which was not the case even a few years ago. What is more, due to increasing affluence of the society and increasing availability of the technologically modern appliances, even relatively poor persons may afford a fast advancement in the comfort of life, which would not occur only recently. It is one of certain successes of the transition period of 1990-2010.

As compared to other European countries, Poland is one of the last countries in terms of the characteristics of poverty. Thus, not only it is behind most of the EU-15 countries, but also behind Czech Republic or Hungary, so the countries at similar development level. The statistics concerning the extent of poverty, its depth or the diversification of the poor, are not very promising. It is an evidence for shortfalls of our social policy, especially for the method of addressing social transfers. The leader countries with lowest poverty rates are characterised by low inflows, and low or average outflows from poverty. In Poland inflows to poverty are high, similarly to the relative duration of the state of being poor. Thus, there is a huge potential to reduce the extent and depth of poverty in our country, so to follow the steps of e.g. Czech Republic, in increasing the effectiveness of tax and benefit system impact on poverty.

Despite the unfavourable view of poor households on commencing additional work, all conducted analyses lead to the ascertainment that work constitutes a basic way to reduce the risk of poverty, especially in the case of relative poverty. Incomes from sources (except for retirement pensions) influence the reduction of absolute poverty, which shows in e.g. frozen statutory poverty threshold and low levels of transfers. Their countercyclical nature enables them to temporarily defuse the symptoms of poverty, but in their current form they will not become the remedy for poverty. It should be noted that there is also an opposite relation: poor households are those with an average low intensive labour supply, which results in low income and living standards.

However, sometimes it happens that despite receiving earnings, a household is still classified as poor (working poor) – as a result of low income as well as unfavourable household structure. Admittedly this phenomenon in Poland is not marginal, but poverty occurs definitely less often among workers than in total population on average, and when it occurs it is relatively less severe. Part III provides arguments for the statement that in-work poverty is related to microeconomic factors, such as employee's characteristics, the work performed or attributes of a household. The following elements are also disadvantageous: young age, low level of education, employment in simple jobs or in agriculture. Employment for a definite period exerts a limited impact on the reduction of risk of poverty, which is characteristic of low-paid jobs. This is another time when the hypothesis of high importance of intensity of labour supply is confirmed – women (usually providing second highest income in the household), even considering a wage gap, may significantly raise the standard of living in a household if they work. However, in many cases one working person is enough for the household to avoid or exit poverty.

Relatively high incidence of working poor in Poland results mainly from the high risk of poverty among agricultural households. Reallocation of workers from agriculture to other sectors of economy is the most important structural change in the population that has been impacting on the decrease in the risk of poverty in Poland now and may have exert similar influence in the future. Thus, public policy should support swift reallocation from agriculture to other sectors of economy, also because it leads to higher standards of living of particular households taking part in this reallocation. Despite the transfers carried out within Common Agricultural Policy, the rate of relative poverty in agriculture has increased in recent years, so the income gap between those working in agriculture and outside of it is getting bigger. The inflows of young people to agriculture have also increased recently, which is a disturbing phenomenon. Dispersed structure of agriculture and low productivity imply that many agricultural households earn incomes enabling merely a basic existence or even subsistence, and transfers constituting the part of Common Agricultural Policy help in supplementing their income, somehow substituting social policy. Lack of modernisation of economic structure of rural areas and stifled growth of rural households' incomes constitute lost opportunity costs. 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.

Analyses carried out in the III Part indicate that temporary poverty, though uncomfortable, is basically not dangerous. Despite the significance of the poverty spell, the situations when poverty lasts a decade are relatively rare. However, considerably higher probability of permanence occurs in case of the relative poverty than the absolute one. There are two policy responses to mitigate the consequences of poverty. In case of individuals with minor social capital, public policy should focus more on incomes than on transfers. In groups in which transfers may create a risk of discouragement or stigmatisation, temporary transfers may be valuable. However, the observation that income mobility is rather low and low (or high incomes) tend to persist, works to the disadvantage of intervention. Young age, high education, work (especially on permanent contracts) and relatively high initial income, all favour the income mobility.

The poverty concentrates in selected social groups, mostly in the group of unemployed and families with children. As opposed to what is commonly believed, the pensioners are significantly less exposed to poverty in Poland. The persons in post-working age (pensioners) are characterised by low risk of poverty, similar to the one among working people. Despite that, in Polish social policy the emphasis is put on the support of the elderly population. The highest risk of poverty affects households in which the head of this household is between 45 and 54 years old, and it is also high among people in working age living on social benefits. Considering the following: (i) large differentiation of risk of poverty between working people (especially outside of agriculture) and the unemployed in a working age, and (ii) low professional activity in Poland, linking of social policy with employment support program is crucial.

The presence of children and other dependent persons decreases the probability of exiting poverty, which indicates a severe shortfall of the Polish system of support for families with children, especially in its tax dimension. Multi-children households are at much higher risk of poverty than those with number of dependent children is up to two. In 2011 the percentage of people at risk of relative poverty in households with three or more children amounted to 36%, but it was much higher in rural areas than in the cities (39% compared to 32%). If the income of multi-children households was used only by adults and two children, the poverty rate among members of these household would by 15 percentage points and would amount to 21% (25% in rural areas and 17% in the cities). In this group of households the head of a household usually works, and often both parents do. As a consequence, such households would benefit largely from changes in the tax system which would allow them to reduce their income tax liabilities on account of having many children. It is worth noting that the child tax credit introduced in 2007 raised the income of families and contributed to reduction of poverty among children (by ca. 0.3 pp), however, as it is proved in Part IV, the tax system is still rather not successful in reducing poverty.

The fact that in noticeable part of households with 3 children and more, the poverty appears only after the third or subsequent child is born indicates that the support for economic activity of mothers of three children or more is desirable (pre-schools, nurseries, maybe financial preference for part-time work as compared to staying at home). Linking of these solutions with smart tax-benefit policy which takes into account the costs of having the third (or subsequent) child would be particularly helpful in fighting against poverty among children. It should be emphasised that in practice only the families with earnings closer rather to the national average than to minimum wage, may take advantage of the recently modified tax credit for families with three children or more. Meanwhile the tax credit should be constructed in such a way that the poorest households could also effectively benefit from such preference. It should be noted that more than half of the poor households with three children or more would be poor even if they had only two children (assuming that their economic activity did not change). Thus, in ca. 20% of households with at least two children, the second child is already born poor. Therefore possessing many children in part of the population is rather the function of poverty, and not the opposite - the policy directed at improving the awareness of the advantages of planning the family in this group of poor households, would be particularly justified.

Also the extent of support for families with children via social benefits in Poland is still one of the lowest in Europe. The solution particularly effective cost-wise concerning the fight against poverty among children would be the increase in the value of family allowance. While PLN 500 million spent on the increase in family allowance would decrease the relative poverty rate among children by 0.6 pp, the same amount spent on increasing the eligibility thresholds would correspond to the reduction of poverty rate only by half of the above impact. At the same time, increasing the amounts of family benefits would discourage market labour supply, so using this instrument should be conditioned by appropriate improvements of institutional nature.

The results and simulations unambiguously show an enormous role of working for the probability of being at risk of poverty. This relates also to the poverty among children. To effectively reduce it, the policy of support for the poorest families should merge the elements efficient in direct fight against poverty, i.e. the amount of paid benefits (and family allowances), with instruments improving the attractiveness of employment. The examples of gradual (not threshold based) withdrawal of benefits and expansion of availability of benefits in the case of families in which both parents work, do not directly cause the significant drop in poverty among children, though they may result in higher economic activity of parents and finally lead to improvement of financial condition of families with children.

To sum up, we may say that, if the public policy aimed at reduction of poverty is to have a long-term, and not only temporary effect, then the financial support of the poorest households should be associated with the policy of promoting employment, both through support to the people searching for work, and through solutions improving financial attractiveness of economic activity. The increase in employment may significantly contribute to the reduction of poverty, especially in absolute terms. The improvement of financial attractiveness of employment should create a space for increasing the benefits addressed to the poorest households without negative consequences for the decisions concerning employment, contributing to fulfilling of two important objectives in the context of reducing poverty in Poland: balancing the policy of lowering income inequalities with the policy of effectiveness on the labour market.

Methodological annex

ANNEX TO PART III

Appendix III. 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. private)		
	public	0.04***	0.44***
	sector		
	services	0.02*	0.25*

Appendix III. 1 | Estimations of the probit model parameters for the risk of in-work poverty in Poland.

	explanatory variables	parameter estimations	average marginal effect (pp)
household characteristics	main source of income (ref. labour)		
	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***	

*Note: The dependent variable assumes the value 1 when the working is poor, i.e. earns below 60% 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%.*

Source: Own calculations based on HBS, 2005-2011.

Appendix III. 2 | Estimations of logit model parameters for the risk of inflow to and outflow from poverty in Poland.

	explanatory variables	estimations of parameters in the model of probability of inflow to poverty	estimations of parameters in the model of probability of outflow from poverty
head of household characteristics	sex (ref. man)	0.24***	-0.03
	woman	0.00	0.00
	age group (ref. 35-44)		
	below 24	0.12	0.24**
	25-34	-0.08*	0.35***
	35-44	0.04	-0.08*
	55-64	-0.46***	-0.02
	55 and more	-0.87***	-0.03
	education (ref. secondary)		
	tertiary	-1.25***	0.42***
	basic vocational	0.62***	-0.29***
	lower secondary and lower	0.94***	-0.61***
	place of residence (ref. village)	0.00	0.00
	city	-0.46***	0.22***
household characteristics	number of children	0.33***	-0.14***
	square of the number of children	-0.03***	0.00
	number of agricultural workers	0.43***	0.30***
	square of the number of agricultural workers	-0.08***	-0.04***
	number of non-agricultural workers employed for an indefinite period	-0.57***	0.74***
	square of the number of non-agricultural workers employed for an indefinite period	0.00	-0.12***
	number of non-agricultural workers employed for a definite period	0.67***	0.29**
	square of the number of non-agricultural workers employed for a definite period	-0.25**	-0.05
	number of self-employed	-0.59***	0.67***
	square of the number of self-employed	0.07	-0.14
	number of the unemployed	0.75***	0.06
	square of the number of the unemployed	-0.16***	-0.05**
	number of old-age pensioners	-0.26***	0.41***
	square of the number of old-age pensioners	-0.17***	-0.04
	number of disability pensioners	-0.18***	0.12*
	square of the number of disability pensioners	0.04	0.04
control variables	year (ref. 2002)	0.00	0.00
	2003	0.15**	-0.18**
	2004	0.07	-0.08
	2005	0.23***	-0.11
	2006	0.28***	-0.03
	2007	0.48***	-0.23***
	2008	0.37***	-0.24***
	2009	0.40***	-0.26***
	2010	0.33***	-0.41***
Constant		-2.63***	-0.28***
Number of observations		106066	19132
Likelihood ratio test		6751.79***	995.67***

*Note: inflows and outflows are based on the relative poverty threshold in a given year. The dependent variable in the model of probability of inflow to poverty is 1 when the household was non-poor in the first period and is poor in the next one, and 0 when the household was remained non-poor (analagous values for the model of probability of outflow from poverty). Asterisks ***, ** and * indicate significance at a level of 1%, 5% and 10%.*

Source: Own calculations based on HBS, 2002-2011.

Appendix III. 3 | Estimations of logit model parameters describing persistent and total poverty based on Social Diagnosis data.

	explanatory variables	estimations of parameters in the model of probability of persistent poverty	estimations of parameters in the model of probability of total poverty
head of household characteristics	sex (ref. woman)		
	man	-0.12	-0.71***
	age group (ref. 35-44)		
	below 24	-1.17	-0.31
	25-34	-0.66*	0.14
	45-54	0.02	-0.79***
	55-64	-0.61**	-1.60***
	65 and more	-0.85***	-0.71***
	main source of income (ref. unearned sources)		
	hired labour	-0.64*	-0.92***
	self-employment	-1.96***	-1.44***
	agricultural labour	0.82**	0.68*
	old-age or disability pension	-0.46	-0.57*
	population of place of residence (ref. 100-200 thousand inhabitants)		
	village	1.08***	0.90***
	below 20 thousand inhabitants	1.05**	0.48*
	20-100 thousand inhabitants	0.71	0.37
	200-500 thousand inhabitants	0.43	0.28
	more than 500 thousand inhabitants	0.34	0.22
	number of friends	-0.05**	-0.01
	involvement in the life of the local community	-1.08***	-1.09***
household characteristics	number of people with tertiary and post-secondary education	-0.53**	-0.79***
	number of people with secondary education	-0.25	-0.35**
	number of people with vocational and lower secondary education	0.27	0.00
	number of people with primary and incomplete education	0.30*	0.14
	number of children	0.53***	0.47***
	number of adults	0.71***	1.04***
	number of workers	-1.86***	-1.49***
	number of ill and disabled persons	0.00	0.02
Constant		-1.59	0.98
Number of observations		2011	2011
Likelihood ratio test		550.45***	861.67***

*Note: poverty refers to the situation where a given household has equivalised income below the relative poverty threshold for one or more periods of study. In persistent poverty, the number of poverty spells must be at least three. In both models the samples were limited to households that in the period 2000-2011 participated in the study at least four times. Involvement in the life of local community was mesaured based on the share of studies in which the head of household declared activity for the local community, in all surveys in the household participated. Asterisks ***, ** and * indicate significance at a level of 1%, 5% and 10% .*

Source: Own calculations based on Social Diagnosis data, 2000-2011.

Appendix III. 4 | Estimations of poverty persistence based on Social Diagnosis.

Nonparametric Kaplan-Meier estimator determines the chance of duration of a given state to a certain point, without the occurrence of an analyzed event. In the context of poverty, this event is defined as an entry to or exit from poverty. For example, in the case of exit from poverty, the Kaplan-Meier estimator shows the probability of remaining in poverty in relation to the duration of poverty spell.

The estimation is based on micro-data from the Social Diagnosis Survey from years 2000 and 2011, and hence time periods used here reflect the time between the successive waves of the study. For all examined cases, except for one three-year long period between studies in 2000 and 2003, all periods were two years long. In the context of estimation, time is defined as the number of periods since the emergence of the observation in the panel sample.

Appendix III. 5 | Estimations of random effect probit models of poverty for selected European countries.

explanatory variables	AT	BE	BG	CY	CZ	DK	EE	ES	FI	FR	GR
lagged poverty state: poor	0.89***	0.32*	0.74***	1.86***	1.31***	0.93***	0.58***	0.7***	0.63***	0.62***	1.03***
poverty-initial state: poor	1.28***	1.91***	0.89***	0.53***	0.9***	2.52***	1.5***	1.48***	2.18***	1.86	1.5***
number of persons aged less than 15 years	0.23	0.24	-0.34	0.14	0.41	0.87*	0.59**	0.64***	0.21	0.17	0.1
number of persons aged 15-24	-0.51*	0.39	0.28	-0.05	0.4	1.24***	0.38*	0.37*	0.22	0.48***	0.6**
number of persons aged 25-54	-0.2	0.07	-0.2	-0.3***	-0.14	-0.44	-0.06	0.01	-0.06	-0.12	-0.03
number of persons aged 65+	-0.09	-0.03	0.04	0.06	-0.2	-0.73	-0.74*	-0.79***	-0.46	-0.49**	-0.17
education: elementary and lower	1.07	0.49***	0.72**	0.73***	0.68	.	0.29	1.06***	.	0.85***	1.36***
education: lower secondary	0.44**	0.23	0.38*	0.64***	0.79***	0.55**	0.67***	0.84***	1***	0.71***	1.01***
education: upper secondary	0.32**	0.18	0.08	0.14	0.48***	0.57**	0.36**	0.45***	0.98***	0.49***	0.68***
education: postgraduate	-0.18	0.27	-4.73	-4.89	0.12	.	0.38	0.21	-3.68	-4.13	0.52
woman	0.07	-0.04	0.4**	-0.03	0.29***	0.66***	0.28*	-0.12	0.39**	0.02	-0.08
unemployed	0.49*	0.82***	0.64*	0.54	1.05***	0.26	0.21	0.66***	0.86***	0.85***	0.48
inactive	0.25	-0.29	1.01**	0.78***	0.87***	-0.4	0.67**	-0.38	0.45*	-0.04	0.01
age of household head: 15-24	0.08	0.32	-0.06	-6.34	-0.34	-0.16	-0.62	-1.95***	0.09	-0.23	0.35
age of household head: 25-34	0.19	0.07	0.19	-0.34	-0.14	-0.41	-0.71**	-0.42**	-0.07	0.12	0.21
age of household head: 45-54	0.06	-0.22	-0.25	0.11	-0.09	0.04	0.1	-0.22*	0.22	0.06	0
age of household head: 55-64	-0.11	-0.71**	-0.53	-0.89***	-0.25	-0.15	-0.2	-0.36*	0.47	-0.18	-0.29
age of household head: 65-79	-0.03	-0.71*	0.22	-0.69**	0.58**	0.97	0.77*	-0.03	0.7	0.21	-0.26
age of household head: 80+	-0.43	-0.7	0.38	-0.63*	0.67**	0.66	0.4	-0.12	1.02*	0.26	-0.07
health status: very good	-0.17	0.27	-0.4	-0.61***	0.05	-0.47	-0.05	-0.14	-0.19	-0.13	-0.53**
health status: good	-0.14	0.05	-0.2	-0.25**	-0.05	-0.52*	-0.05	-0.12	-0.01	-0.19***	-0.28*
health status: bad	-0.31*	0.06	-0.03	-0.07	-0.16	-0.76	0.26	0.17	0.22	-0.04	0.02
health status: very bad	-0.64**	0.46	-0.21	0.16	-0.35*	0.4	-0.14	-0.4*	0.58	0.31	-0.03
marital status: single	-0.38	-0.33	0.78	-	0.28	-0.22	-0.31	0.35	-0.24	0.27	-1.49**
marital status: separation	-0.45	0.37	0.21	-	.	.	-0.76*	0.39	.	.	-1.19
marital status: widow/widower	-0.53	-0.62**	0.35	-	-0.44*	-0.5	-0.65**	0.18	-0.88**	-0.18	-1.14
marital status: divorced	-0.43	-0.05	0.55	-	0.26	-1.33***	-0.02	-0.18	-0.26	0.11	-0.76
average number of persons aged 25-54	0.29	-0.36	0.06	-	0.29	0.18	0.21	-0.2	0.26	0.08	0.05
average number of persons aged 65+	0.01	-0.01	-0.47	-	-0.57**	0.54	-0.45	0.51**	0.28	0.09	-0.09
average number of persons aged <15	-0.02	-0.24	0.48	-	-0.23	-0.58	-0.48*	-0.11	0.04	0.03	0.02
average number of persons aged 15-24	0.46	-0.12	-0.06	-	-0.21	-1.1**	-0.3	-0.16	-0.14	-0.26**	-0.52*
average labour market status	0.19	0.37**	-0.06	-	0.03	0.35*	0.47***	0.31***	0.24**	0.15**	0.05
average health status	0.22**	0.35***	0.11	-	0.19**	-0.3	0.12	0.11	0.08	0.06	-0.04
constant	-3.9***	-3.61***	-1.52***	-1.45***	-4.21***	-3.63***	-4.13***	-2.97***	-5.41***	-3.33	-3.1***
rho	0.32***	0.41***	0.2*	0	0.21**	0.35*	0.39***	0.46***	0.44***	0.32***	0.39***
number of observations	2583	2835	1149	1764	7101	1977	2302	4929	2775	12345	2850
LR (chi2)	408***	333***	229***	439***	925***	134***	339***	730***	278***	1391***	490***

*Note: references – non-poor in the previous period, non-poor in the first period, tertiary education, man, worker, household head aged 35-44, average health status, married. Asterisks ***, ** and * indicate the significance at a level of 1%, 5% and 10%. Dots denote deficiencies in the levels of variables for some countries. For Cyprus and Lithuania, the estimations do not take into account all variables (marked as -) due to problems with numerical convergence. No models for Iceland, Malta, Slovakia and Hungary is due to small sample sizes and the problems with convergence. The rho significance was calculated using the likelihood ratio test. The sample was balanced by removing observations for which data were available for all periods.*

Source: Own calculations based on EU-SILC 2009, for the period 2005-2008.

Appendix III. 5 | Estimations of random effect probit models of poverty for selected European countries.

zmienne objaśniające	IT	LT	LU	LV	NL	NO	PL	PT	SE	SI	UK
lagged poverty state: poor	0.62***	0.68***	0.77***	0.79***	0.84***	0.57***	1.06***	0.94***	0.99***	0.99***	0.73***
poverty-initial state: poor	2.89***	0.84***	2.12***	1.05***	2.26***	2.37***	1.35***	1.37***	2.77***	2.32***	1.06***
number of persons aged less than 15 years	0.54***	-0.09	0.21*	0.31***	1.3***	0.08	0.13	0.23*	1.1**	0.14	0.46**
number of persons aged 15-24	0.6***	0.16	0.27**	-0.04	1.34***	0.64***	0.38***	0.33**	1.17***	0.32	0.25
number of persons aged 25-54	0.19	-0.3**	0.29**	-0.41***	0.49	0.51**	0.02	-0.13	0.08	0.18	0.25
number of persons aged 65+	-0.28	-0.64***	-0.02	-0.33**	-0.13	0.06	0.28	-0.26	-0.05	-0.38	-0.9***
education: elementary and lower	1.25***	1.01***	0.61***	1.04***	1.05***	1.89	1.24***	1.44***	1.51***	1.59***	.
education: lower secondary	0.74***	0.96***	0.26*	0.6***	1.03***	0.45***	1.19	0.87***	1.42***	1.53***	0.53***
education: upper secondary	0.18	0.95***	0.28***	0.57***	0.61**	0.29**	0.76***	0.38	0.84***	1.21***	0.28**
education: postgraduate	0.36	0.7***	0.02	0.43*	0.25	-1.57	0.18	-3.23	1.01*	.	0.33**
woman	0.11	0.21**	0.19*	0.16	-0.19	0.18	0.11	0.14	0.83***	0.21	0.01
unemployed	0.37*	0.34*	0.67***	0.78***	1.6***	0.24	0.37	0.6**	1.26***	1.12***	2.91***
inactive	0.45**	0.22	0	1.39***	0.3	0.69***	0.01	0.03	1.03**	0.46	0.67***
age of household head: 15-24	0.47	-0.53	0.06	0.23	-0.88	0.29	-0.16	0.32	-0.2	0.39	-0.22
age of household head: 25-34	0.21	-0.09	0.03	-0.18	0.14	0	-0.09	-0.13	0.27	-0.23	-0.21
age of household head: 45-54	-0.11	-0.23*	-0.14	0	-0.05	0.08	0.02	-0.11	-0.01	0.27	0.07
age of household head: 55-64	-0.73***	-0.45**	-0.38*	-0.78***	-0.26	-0.58*	-0.34*	0.03	-0.4	-0.2	-0.14
age of household head: 65-79	-0.25	-0.11	-0.76***	-0.12	-0.98	-0.57	0	0.44	-0.85	0.14	0
age of household head: 80+	-0.54*	-0.27	-1.3***	0.22	-0.58	0.04	-0.32	0.42	-0.08	0.12	-0.24
health status: very good	-0.04	-0.11	0.37***	-1.17**	0.19	0.25	0.08	0.03	-0.21	-0.36	0.14
health status: good	0.02	-0.07	0.14	-0.31**	-0.09	0.09	-0.07	-0.17	0.14	-0.24	0.04
health status: bad	0	0.09	0	0.2	0.21	0.19	0	0.02	0.52	0.24	-0.24
health status: very bad	0.08	-0.46***	-0.14	0.42	0.46	-0.52	-0.07	0.03	0.56	0.33	0.17
marital status: single	-0.15	0.08	-0.43	-	-0.48	0.08	0.35	0.54*	0.26	-0.14	-0.65
marital status: separation	-0.1	-0.28	-0.73*	-	.	0.27	0.38	0.68	0.23	.	-0.63
marital status: widow/widower	-0.29	-0.14	-1.13***	-	-1.34**	0.66	0.24	-0.03	-0.3	-0.62*	-0.79*
marital status: divorced	-0.1	0.15	-0.74**	-	-0.46	-0.1	0.25	0.36	0.69	-0.36	-0.52
average number of persons aged 25-54	-0.31*	0.27*	-0.3**	-	-1.05**	-0.6**	-0.03	0.03	-0.04	-0.14	-0.48*
average number of persons aged 65+	-0.19	-0.05	-0.02	-	0	-0.76*	-0.9***	-0.19	0.1	0.11	0.77***
average number of persons aged <15	-0.17	0.28*	-0.04	-	-0.7*	0.15	0.09	0.07	-0.78	0.05	-0.26
average number of persons aged 15-24	-0.21	0.05	-0.15	-	-1.13**	-0.77***	-0.24	-0.21	-1.04**	-0.3	-0.2
average labour market status	0.17*	0.34***	0.14	-	0.3	0.35***	0.18*	-0.01	0.43*	0.22	0
average health status	-0.1	0.19**	0.34***	-	0.19	-0.13	0.12	0.14	0.05	-0.15	0.07
constant	-3.62***	-3.65***	-4.05***	-1.58***	-5.02***	-3.75***	-3.24***	-3.47***	-6.45***	-4.63***	-2.8***
rho	0.67***	0.23***	0.33***	0.26**	0.54***	0.35***	0.4***	0.3***	0.69***	0.43***	0.25***
number of observations	9372	3439	7584	1648	3470	6877	5831	3092	2623	3108	3258
LR (chi2)	877***	637***	1016***	381***	176***	376***	857***	534***	143***	293***	525***

*Note: references – non-poor in the previous period, non-poor in the first period, tertiary education, man, worker, household head aged 35-44, average health status, married. Asterisks ***, ** and * indicate the significance at a level of 1%, 5% and 10%. Dots denote deficiencies in the levels of variables for some countries. For Cyprus and Lithuania, the estimations do not take into account all variables (marked as -) due to problems with numerical convergence. No models for Iceland, Malta, Slovakia and Hungary is due to small sample sizes and the problems with convergence. The rho significance was calculated using the likelihood ratio test. The sample was balanced by removing observations for which data were available for all periods.*

Source: Own calculations based on EU-SILC 2009, for the period 2005-2008.

ANNEX TO PART IV

Appendix IV. 1 | Modelled elements of tax and benefit reforms in the years 2005-2010.

S-Z1) Withdrawal of the child tax credit

In this simulation the introduction of the child tax credit have been excluded from the 2005-2010 set of reforms – thus, the simulated reforms show an isolated impact of the tax credit on household incomes.

S-Z2) Increase in the value of the income eligibility thresholds in the family benefits system in connection with the withdrawal of the child tax credit

This simulation presents a cumulated effect of the S2 and S-Z1 simulations, so the effect of increase in the value of the income eligibility threshold in the family benefits system together with the withdrawal of the child tax credit.

Table IV.A.1 | Elements of the family support system in S1, S2, S3, S-Z1, S-Z2 scenarios (PLN per month).

	Simulated scenario				
	2005-10 set of reforms (S1)	S2 scenario	S3 scenario	S-Z1 scenario	S-Z2 scenario
Family allowance with supplements					
Income eligibility threshold	580.84	580.84	580.84	504.00	580.84
Income eligibility threshold, if there is a disabled child in a family	671.88	671.88	671.88	583.00	671.88
Amounts of allowance per child:					
- first and second child / child aged 0-4 years	49.56[1)]	68.00	49.56[1)]	68.00	68.00
- third child / child aged 5-17 years	61.08[1)]	91.00	61.08[1)]	91.00	91.00
- fourth and subsequent child child aged 18 years and more	76.06[1)]	98.00	76.06[1)]	98.00	98.00
Supplements:					
- lone parent supplement					
a) amount per child	195.92	170.00	195.92	170.00	170.00
b) amount per child, if the child is disabled	92.20	80.00	92.20	80.00	80.00
- child care supplement granted for the duration of the parental leave	460.98	400.00	460.98	400.00	400.00
- for large families	57.62	80.00	57.62	80.00	80.00
- for starting the school year	103.72	100.00	103.72	100.00	100.00
- for education and rehabilitation of a disabled child					
a) child aged 0-4 years	57.62	60.00	57.62	60.00	60.00
b) child aged 5 years or more	80.67	80.00	80.67	80.00	80.00
- child birth grant	576.23	1000.00	576.23	1000.00	1000.00
Nursing benefits					
Nursing allowance					
a) income eligibility threshold	671.88	-	671.88	-	-
b) the amount of benefit	484.03	520.00	484.03	520.00	520.00
Nursing benefit	165.95	153.00	165.95	153.00	153.00
Child birth benefit					
"Becikowe"	-	1 000.00	0.00	1 000.00	1 000.00
Child tax credit					
Maximum deductible amount per child	-	92.67	92.67	0.00	0.00

Note: in S1 and S3 scenarios the amount of the family allowance dependant on the number of children in the family, in other scenarios – dependant on the age of a child.

Source: own calculations on the basis of the SIMPL model.

The parameters of the family benefits system assumed in the simulations (together with S0, S1, S2 and S3 systems) are presented in Table IV.A1. Impact of the simulated solutions on the poverty rate is shown in Table IV.A2, and their effect on the number of family benefits paid and the costs of the family benefits system are shown in Table IV.A3. S-Z1 and S-Z2 scenarios show the impact of the child tax credit on household incomes and the poverty rate. Simulated gain from introducing the child tax credit amounts to ca. PLN 7 billion annually. [1] As could be expected the effect of the tax credit on the measures of quasi-absolute and absolute poverty is relatively low (the tax credit reduces the poverty by ca. 0.1 pp). In the case of relative poverty due to the impact of the child tax credit on the level of the poverty threshold, which as a result of introduction of the tax credit increases from PLN 910.20 to PLN 931.77, despite the increase in household income, the total extent of poverty increases from 15.8% to 16.0%. However, the child tax credit improves the income situation of households with children by reducing the relative poverty among children from 20.5% to 20.2%. Curiously enough, if the withdrawal of the child tax credit was linked with increase in the income eligibility thresholds in the family benefits system (S-Z2 system), relative poverty would decrease even further (to 15.5%), and relative poverty among children would be at the lower level than in 2010 system. Such effect is a result of redirecting some of the funds from the tax credit for households of middle income with children. However, as opposed to the increase in the values of family benefits, it has no significant impact on quasi-absolute and absolute poverty values.

Table IV.A.2 | 2005-2010 reforms: measures of poverty and households' gains.

	Simulated scenarios					
	Base system (S0)	2005-10 set of reforms (S1)	S2 scenario	S-3 scenario	S-Z1 scenario	S-Z2 scenario
I. Relative poverty:						
- poverty threshold (PLN)	931.77	887.58	934.78	930.91	910.20	913.33
- poverty rate	16.0%	15.9%	15.7%	16.4%	15.8%	15.5%
- poverty gap median (PLN)	469.13	468.73	482.3	494.42	451.1	468.21
- poverty rate – children	20.2%	21.6%	19.6%	21.2%	20.5%	19.8%
- poverty rate – working poor	10.9%	11.1%	10.7%	11.1%	10.9%	10.6%
I. Quasi-absolute poverty:						
- poverty threshold (PLN)	675.27	675.27	675.27	675.27	675.27	675.27
- poverty rate	6.4%	7.7%	6.4%	7.0%	6.8%	6.7%
- poverty gap median (PLN)	332.45	352.09	334.41	345.71	322.52	325.77
- poverty rate – children	8.3%	10.9%	8.2%	9.6%	8.8%	8.7%
- poverty rate – working poor	4.6%	5.4%	4.5%	4.9%	4.8%	4.7%
I. Absolute poverty:						
- poverty threshold (PLN)	472.72	472.72	472.72	472.72	472.72	472.72
- poverty rate	2.4%	2.8%	2.4%	2.6%	2.4%	2.4%
- poverty gap median (PLN)	366.72	400.25	371.64	369.35	362.96	364.08
- poverty rate – children	2.8%	3.9%	2.8%	3.4%	2.9%	2.9%
- poverty rate – working poor	2.0%	2.2%	2.0%	2.1%	2.0%	2.0%
I. Benefit for households resulting from the introduction of the system (billion PLN annually))		-25.169	1.037	-1.033	-7.044	-5.921

Note: Children are defined as people under the age of 18.

Source: own calculations on the basis of SIMPL model based on HBS 2010 data.

Table IV.A.3 | Total cost and number of persons eligible for family allowance in S0, S1, S2, S3, S-Z1 and S-Z2 scenarios.

	Simulated scenarios					
	Base system (S0)	2005-10 set of reforms (S1)	S2 scenario	S-3 scenario	S-Z1 scenario	S-Z2 scenario
Family allowance:						
- number of recipients (families) in thousands	1 544	2 096	1 881	1 914	1 623	1 988
- number of recipients (children) in thousands	3 305	4 428	3 934	4 046	3 480	4 157
- aggregate amount (PLN million)	3 420.4	2 832.4	4 072.7	2 592.4	3 604.4	4 305.3

Source: own calculations on the basis of SIMPL model based on HBS 2010 data.

1 Simulated value of the child tax credit exceeds the administrative data concerning the use of this tax credit (see Table IV.B6), which is connected with overrepresentation of households with children in HBS data and with the necessity to consider all earnings to be legal taxable income.

Appendix IV. 2 | Supplement to the description of the tax and benefit system (Chapter 1.1 of Part IV).

Family benefits

Income of the family used for the income eligibility threshold for the family allowance is defined in the Family Benefits Act as a sum of average monthly income of all family members, gained in a calendar year preceding the allowance period. It refers to net income, i.e. income after deducting the income tax and health and social insurance contributions.

Table IV.B.1 | Family benefits in the years 2005-2012 (PLN per month).

Benefits system	Eligibility period during the year for which the benefit is granted									
From:	09.05	01.06	09.06	09.07	09.08	11.09	01.10	11.10	11.11	11.12
To:	12.05	08.06	08.07	08.08	10.09	12.09	10.10	10.11	10.12	10.13
Family allowance with supplements										
Income eligibility threshold	504	504	504	504	504	504	504	504	504	539
Income eligibility threshold for a family with a disabled child	583	583	583	583	583	583	583	583	583	623
Amounts of allowance per child:										
- first and second child / child aged 0-4 years	43	43	48[1)]	48	48	68	68	68	68	77
- third child /child aged 5-17 years	53	53	64[1)]	64	64	91	91	91	91	106
- fourth and subsequent child / child aged 18 years or more	66	66	68[1)]	68	68	98	98	98	98	115
Supplements:										
- lone parent supplement										
a) amount per child	170	170	170	170	170	170	170	170	170	170
b) amount per child, if the child is disabled	250	250	250	250	250	250	250	250	250	250
- child care supplement granted for the duration of the parental leave	400	400	400	400	400	400	400	400	400	400
- for large families	50	50	80	80	80	80	80	80	80	80
- for starting the school year	90	90	100	100	100	100	100	100	100	100
- for education and rehabilitation of a disabled child										
a) child aged 0-4 years	50	50	60	60	60	60	60	60	60	60
b) child aged 5 years or more	70	70	80	80	80	80	80	80	80	80
- for starting education outside the place of residence										
a) for dormitory/lodgings	80	80	90	90	90	90	90	90	90	90
b) for transport to school	40	40	50	50	50	50	50	50	50	50
- child birth grant	500	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000
Nursing benefits[2)]										
Nursing allowance										
a) income eligibility threshold	583	583	583	583	583	583	-	-	-	-
b) amount of the benefit	420	420	420	420	420	520	520	520	520	520
Nursing benefit	144	144	153	153	153	153	153	153	153	153
Child birth benefit[3)]										
"Becikowe"	-	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000	1 000

Note:

[1)] family allowance dependant on the age of a child instead of the number of children since 01.09.2006.

[2)] as at 12.2012 – there are works conducted on the government draft amendment to the Social Benefits Act, which assumes the introduction of changes in the scope of amounts, form and persons eligible for nursing benefits from 01.07.2013.

[3)] there is an income eligibility threshold for this grant from 01.2013

Source: own elaboration based on the Ministry of Labour and Social Policy data.

Persons eligible for family allowance are parents or legal guardians (or actual guardians) of the child, until the child reaches the age of 18 years or 21 years provided that the child continues its education or 24 years provided that the child continues its education and holds a moderate or severe degree of disability certificate.

Nursing benefit is granted to a disabled child, an adult holding a severe degree of disability certificate (or moderate if the disability appeared before reaching the age of 21) or to a person aged 75 years and older that is not eligible for nursing supplement paid together with retirement or disability pension. This benefit is granted for the validity period of a disability certificate.

Nursing allowance may be granted to parents or other persons obligated to pay maintenance, or the actual guardian of the child, if they are not employed or resign from work to provide care for the disabled person requiring special care. Retirement and disability pension contributions as well as health insurance contributions are paid for the persons eligible for nursing allowance.

According to the principle of subsidiarity, the lone parent supplement is granted only in the situation of objective lack of possibility to award maintenance from the other parent (due to their death or if father of the child is unknown, or if the child maintenance application have been dismissed by the court).

Table IV.B.2 | Family benefits in the years 2005-2011: number of recipients and total spending.

	2005	2006	2007	2008	2009	2010	2011
Total family benefits:							
- number of recipients (families in thousands)	No data	2 531	2 674	2 590	2 304	2 219	2 175
- total amount of benefits (PLN billion)	7.797	7.478	7.916	7.394	7.161	7.938	7.952
Family allowance							
- number of recipients (children in thousands)	5 192.8	4 595.4	4 266.4	3 768.3	3 314.9	3 003.3	2 767.7
- total amount of benefits (PLN billion)	2.853	2.807	3.112	2.746	2.553	3.091	2.843
Supplements to the family allowance:							
- aggregate amount (PLN billion)	3.229	2.627	2.656	2.420	2.246	2.057	1.876
Number of recipients of the selected supplements to the family allowance (children in thousands):							
- lone parent supplement	714.9	179.4	173.3	161.6	149.3	139.4	130.2
- for large families	767.4	775.3	706.8	629.7	558.9	504.7	462.1
Nursing allowance							
- number of recipients (children in thousands)	71.2	71.5	70.4	69.9	67.9	108.4	168.4
- total amount of benefits (PLN billion)	0.354	0.357	0.349	0.336	0.349	0.667	1.031
Nursing benefit							
- number of recipients (children in thousands)	642.9	676.1	727.8	771.3	836.0	873.0	898.0
- total amount of benefits (PLN billion)	1.112	1.209	1.336	1.416	1.535	1.603	1.649

Note: number of recipients is given as a monthly average. Aggregate amounts are the annual spending in PLN.

Source: Information on providing family benefits in the period from 1 May 2004 to 31 March 2006. Information on providing family benefits in 2006 (2007, 2008, 2009, 2010, 2011), Ministry of Labour and Social Policy.

The most important changes in the family benefits system in the years 2005-2012

The Family Benefits Act governs the principles of verification at three years intervals of both the amount of income eligibility thresholds for the family allowance and its supplements, and the amounts of each of the benefits. After 2005 such verification was made three times – in September 2006, in November 2009 and in November 2012. As a result of verifications from 2006 and 2009 the income eligibility threshold entitling to receive the family allowance remained at the same nominal level, which caused a significant reduction in the number of people with real disposable income which used to qualify a person to the group of persons eligible for allowance. According to estimates in Myck et al. (2011), the nominal freezing of income eligibility threshold values in the years 2005-2011 reduced the number of children receiving the family allowance by ca. 820 thousand.

From September 2006 the rules for calculating the family allowance have changed. Its value has been made dependant on the age of children instead of their number. The actual value of the family allowance amounts have increased as a result of changes introduced in 2006 as well as during the verification of the family benefits system in 2009 and 2012, but during the first verification in 2006 the amounts of most of the supplements to this allowance, and the nursing benefit, were increased, whereas during two subsequent verifications the amounts of supplements remained at unchanged levels. The consequence of these verifications was directing the benefits of greater value (in real terms) to a smaller number of families.

In the years 2005-2011 the main reforms covered also other elements of the benefit system. Implementation of the principle of subsidiarity in September 2009, which disabled the possibility to receive the lone parent allowance irrespective of the awarded maintenance from the other parent and effectiveness of its execution, have caused a drastic reduction in the number of persons receiving this allowance (by ca. 75%). Although additional means for the single parent supplement in the amount of PLN 50 per child (maximum PLN 100 per family), were introduced simultaneously with the implementation of the above principle, only lone parents with particularly low income – below 50% of the income eligibility threshold – were entitled to receive the additional money and is was withdrawn on 1 September 2006. In 2005 the supplement for lone parents of children aged 7 years and less, who were no longer entitled to receive the unemployment benefit (amounting to PLN 400 per family), was withdrawn, and the supplement for large families was added to the group of available supplements.

From January 2009 the group of people entitled to receive the nursing allowance has been expanded, and from 2010 the income eligibility threshold was no longer taken into consideration when granting this allowance (which lead to a 40% increase in the number of people entitled to receive it), and from 2011 the limitation in the form of a possibility to grant only one benefit to a person or a family has been introduced.

The changes in the values of individual elements of the family benefits system may be examined in Table IV.B1 and the number of people receiving the selected benefits and the amount of spending from the state budget assigned for these benefits is presented in Table IV.B2.

There is no doubt that the family benefits system during past years has been modified significantly. On the one hand the amounts of family allowances have increased in real terms, on the other hand due to keeping the values at nominally unchanged level, the real value of most of the supplements has decreased. Freezing the value of the income eligibility threshold at a nominal level and the actual increase in the income of families with children have led to a significant decrease in the number of children entitled to receive the allowance, even though the access to nursing benefits has been made more widespread and the universal child birth benefit has been introduced. As shown in Chapter 2, these changes had a significant impact on the income level of families with children and contributed to the reduction of the absolute poverty level among children. At the same time however, their impact on the relative poverty level was minimal. Chapter 3 presents the results of the simulations of 2012 verification effects. Even though due to these changes the real values of family benefits increased, their impact on the extent of poverty appears to be minor.

Housing benefit

Table IV.B.3 | Housing benefit 2005-2010: total cost and number of paid benefits.

	2005	2006	2007	2008	2009	2010
Number of paid benefits (in thousands)	9 174,6	8 472.7	7 113.2	5 568.3	4 979.6	5 058.7
Total amount of benefits (in PLN billion)	1.240	1.168	1.047	0.818	0.807	0.866

Source: Housing in 2005. (2006, 2007, 2008, 2009, 2010), Central Statistical Office.

Social assistance

Full list of reasons to provide social assistance is included in Article 7 of the Social Assistance Act.

Full list of cash and non-cash benefits from social assistance can be found in Article 36 of this Act.

The amount of the granted permanent allowance is established as a difference between the amount of the appropriate income eligibility threshold and income of a person or income per capita in a family, but it cannot be lower than PLN 30 monthly and simultaneously it cannot exceed PLN 529 in the case of a person in a single-person household and PLN 456 per capita in the case of larger households.

The amount of the granted temporary allowance is established with reference to the amount of the difference between the relevant income eligibility threshold and income of the person in a single-person household or income per capita in a family, but it cannot be lower than half of the value of the above differences.[2] At the same time the paid amount has to be within a range of PLN 20 per month to the maximum of PLN 418 in the case of persons in single-person households, and PLN 456 in the case of families.

2 Guaranteed part of temporary allowances paid by communes is subsidised from the central budget.

Table IV.B.4 | Social assistance benefits in the years 2005-2012 (PLN per month).

	Examined period during the year for which the benefit is granted							
From:	10.05	10.06	10.07	10.08	10.09	10.10	10.11	10.12
To:	09.06	09.07	09.08	09.09	09.10	09.11	09.12	09.13
Income eligibility threshold for a permanent and temporary allowance (PLN monthly):								
- person in a single-person household	461	477	477	477	477	477	477	542
- person in a family household	316	351	351	351	351	351	351	456
Amount of allowance (PLN monthly per capita):								
Permanent allowance (min.-max.):								
- person in a single-person household	30-418	30-444	30-444	30-444	30-444	30-444	30-444	30-529
- person in a family household	30-316	30-351	30-351	30-351	30-351	30-351	30-351	30-456
Temporary allowance (min.-max.)								
- person in a single-person household	20-418	20-418	20-418	20-418	20-418	20-418	20-418	20-418
- person in a family household	20-316	20-351	20-351	20-351	20-351	20-351	20-351	20-456

Source: own elaboration on the basis of www.premier.gov.pl.

Table IV.B.5 | Total social assistance benefits provided by central and local government administration in the years 2005-2011: number of recipients and total spending.

	2005	2006	2007	2008	2009	2010	2011
Financial assistance [1]:							
Number of recipients (thousands)	2 201.05	2 623.63	1 941.41	1 685.73	1 732.29	1 760.32	1 700.70
Total amount of benefits (PLN million)	2 176.73	2 953.49	2 493.34	2 647.14	2 686.85	2 714.88	2 694.68
including:							
- permanent allowance							
Number of recipients (thousands)	*171.34*	*182.16*	*184.30*	*182.62*	*184.25*	*189.11*	*192.64*
Total amount of benefits (PLN million)	*516.71*	*561.46*	*602.83*	*605.13*	*622.21*	*648.30*	*663.21*
- temporary allowance							
Number of recipients (thousands)	*669.47*	*645.01*	*552.60*	*444.68*	*459.55*	*464.40*	*455.61*
Total amount of benefits (PLN million)	*543.02*	*611.71*	*541.10*	*647.87*	*645.40*	*636.86*	*643.47*
- designated benefit [2]							
Number of recipients (thousands)	*1 272.42*	*1 702.82*	*1 108.89*	*962.72*	*991.55*	*1010.84*	*956.53*
Total amount of benefits (PLN million)	*562.79*	*1 196.73*	*736.69*	*768.09*	*775.72*	*789.76*	*745.35*
Non-financial assistance [3]:							
Number of recipients (thousands)	1 289.70	1 327.82	1 243.72	1 122.01	1 053.74	1 015.92	992.88
Total amount of benefits (PLN million)	708.88	784.03	832.67	871.73	902.01	932.75	950.25

Note: the benefits included the ones provided as part of the tasks commissioned to communes, commune's own tasks, own task of district family support centres, tasks in the scope of government administration performed by district family support centres.

[1] Includes permanent and temporary allowances, designated benefits, financial aid for emancipation and continuation of education, for foster families, and for foreigners.

[2] Includes „other designated benefits and benefits in kind"

[3] Includes non-cash aid in the form of shelter, meal, clothing, organising a funeral, care-related benefits in kind, assistance in obtaining appropriate housing conditions, settlement, obtaining work and social work.

Source: Annual report on the granted social assistance benefits – financial, in kind and services for January – December 2005 (2006, 2007, 2008, 2009, 2010, 2011), Ministry of Labour and Social Policy-03.

Financial social assistance may be granted to persons with income exceeding the income eligibility threshold in specifically justified cases in the form of special designated benefit or in the form of one of the remaining benefits, provided that the whole or part of the support granted will be later reimbursed by the recipient.

As part of the non-cash support the following elements may be distinguished: social work, specialist counselling and crisis intervention, These are provided irrespective of the income of a person or a family, and their main premise is support in non-financial aspects of existence, e.g. in the case of psycho-social problems. In-kind assistance is granted to the persons and families in need according to the type of need, in the form of providing the shelter, accommodation for the night, a meal or necessary clothing.

Persons who due to age, disease or disability require partial care and assistance in satisfying basic living needs receive care-related benefits in kind or specialist care-related benefits in kind provided in the place of residence or in the support centre. Using the services of support centres may be paid or gratuitous, depending mainly on the type of services.

Child tax credit

A person is entitled to receive the tax credit if a child is less than 18 years old or less than 25 years old and continues education and did not obtain the income exceeding the tax free allowance in the respective fiscal year, or irrespective of the child's age, if the child received the nursing allowance or social pension.

Table IV.B.6 | Child tax credit: 2007-2013.

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Maximum deductible amount per child (PLN per month)	-	-	95.42	97.81	92.67	92.67	92.67	92.67	92.67[1]
Total amount of deducted child tax credit (PLN billion per annum):	-	-	5.432	6.044	5.633	5.684	5.740	No data	No data
Number of taxpayers eligible for the tax credit (in millions)	-	-	3.974	4.206	4.337	4.303	4.364	No data	No data
Average value of the tax credit per taxpayer (PLN per annum)	-	-	1 367	1 437	1 299	1 321	1 315	No data	No data

Note: [1] While settling the tax for the year 2013, the tax credits will amount to: PLN 92.67 for the first and second child; PLN 139 for the third child; PLN 185.34 for the fourth child and subsequent children.

Source: Information concerning settling the personal income tax for the year 2007 (2008, 2009, 2010, 2011), Ministry of Finance.

Unemployment benefit

Unemployment benefit is granted for the period of 12 months to the unemployed residing in districts, in which the unemployment rate exceeds 150% of the average unemployment rate for the whole country, or to the persons aged 50 years or older who have at least 20 years of social security contributions history, or to the persons taking care of the child aged 15 years or younger, and whose unemployed spouse is no longer entitled to receive the unemployment benefit.

Table IV.B.7 | Unemployment and unemployment benefit: 2005-2011.

	2005	2006	2007	2008	2009	2010	2011
Number of registered unemployed persons (as at 31.12; in thousands)	2 773.0	2 309.4	1 746.6	1 473.8	1 892.7	1 954.7	1 982.7
Number of unemployed persons receiving the unemployment benefit (in thousands)	371.1	331.2	264.3	224.9	334.1	345.7	309.0
Percentage of unemployed persons receiving the benefit:	13.4%	14.3%	15.1%	15.3%	17.7%	17.7%	15.6%
Gross value of the paid benefits (PLN million per annum):	2 258.5	2080.4	1 688.6	1 465.2	2 280.6	2 622.9	2 435.8

Source: Statistical Yearbook of the Republic of Poland (2006-2011), Central Statistical Office; Statistical Bulletin 2006-2011, Central Statistical Office.

Published by:

Human Resources Development Centre
Aleje Jerozolimskie 65/79, 00-697 Warsaw
Tel. +48 22 237 00 00, fax +48 22 237 00 99
www.crzl.gov.pl

This publication is distributed free of charge

ISBN 978-83-61638-81-0

HUMAN CAPITAL
NATIONAL COHESION STRATEGY

Human Resources Development Center

MINISTRY OF LABOUR AND SOCIAL POLICY

EUROPEAN UNION
EUROPEAN SOCIAL FUND