

**Changing patterns of entry into
employment and motherhood in Poland**

- a cross cohort comparison.

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ABSTRACT

The research on the employment and family entry has so far focused on the societies in Western Europe, whereas very little has been known about the tendencies in Central and Eastern European countries. A case study of Poland is particularly interesting because of rapid institutional and economic changes that followed transition from centrally planned to market economy. These developments brought about important consequences for the range of opportunities and risks that young people meet after completion of schooling.

The aim of this study is to provide descriptive evidence on the changes in patterns of women's entry into employment and motherhood with use of Sequence Analysis, which allows to examine motherhood and employment career trajectories jointly. The results show that before transition to market economy, more than half of young women used to make a direct entry into both domains: work and motherhood directly after graduation or even before. However, the share of women experiencing careers of this type decreased dramatically. New types of careers emerged, which were almost non-existent before the transition: "flexible careers", with long episodes of temporary employment and careers including long spells of unemployment, both combined with postponed entry into motherhood. However, none of these patterns gained dominance. In this sense, one can speak about destandardisation of patterns of entry into employment and motherhood.

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INTRODUCTION

In the research on transition to adulthood, the entry into employment and becoming a parent have been recognised as important social markers. Special attention in life course research has been paid to the variability of these markers: their dispersion, sequencing and the degree of co-occurrence (Shanahan 2000). However, the existing studies describe mainly the experience of Western European countries, whereas the evidence concerning developments in the transition societies in Central and Eastern Europe remains scattered and based mostly on the description of aggregate statistics in selected life course domains¹. One can argue that the mechanisms underlying dynamics of social processes are most evocatively revealed at points of discontinuity and change. Gaining insight into the way that entry into employment and family careers were shaped in the country, where institutional and economic conditions used to be completely different than in Western part of Europe, but changed very rapidly within last two decades, may provide interesting background for discussion of the evolution of pathways to adult roles in modern societies.

A case study of Poland can be considered as a valuable contribution in this respect. The transformation of the Polish economy after 1989 has brought about important changes for the range of opportunities and risks that young people meet at the beginning of their employment and family careers. On one hand, the shift from the centrally planned economy to the market economy meant that the graduates could strive for career goals, which were beyond the reach of previous generations. On the other hand, those who were not able or willing to invest in education before their labour market entry had to struggle with much greater difficulties in finding stable jobs, than it was the case before the transformation.

¹ Notable exceptions include articles by: Bukodi and Roberts (2006), Helemae and Saar (2006), Hamplova (2006), Kantorová (2006), Klasen and Launov (2006), Kreyenfeld (2005, 2006).

Another important development was the spread of flexible forms of employment, which gained momentum after deregulation of the labour law at the end of the nineties. Coinciding with adverse situation on the labour market, legislative changes were followed by increasing flexibility of employment.

In parallel to the changes of situation on the labour market, changes in family formation were observed. The fertility rate in the youngest age groups dropped considerably between 1989 and 2004: from over 160 live births per 1,000 women aged 20-24 to about 60, and from over 120 births per 1,000 women aged 25-29 down to about 89. Within the period following socialism collapse, Poland moved from the group of the high fertility countries to the group with the lowest-low fertility regime.

Obviously, one could argue that the co-occurrence of the demographic developments with institutional and structural changes, which affected the labour market, was a matter of coincidence and not true interrelatedness. However, there are very well established theoretical models, which explain the mechanism beyond the interrelatedness of employment and family careers. First of all, models based on the Becker's (1981) work underline the role of the alternative costs of childbearing, which determine the optimal timing of motherhood with respect to the labour market career (Gustafsson 2001). These arguments are particularly relevant for societies where institutional conditions make simultaneous investment in both employment and family career particularly incompatible (Corijn and Liefbroer 1999, Mills and Blossfeld 2003).

The more recent strand of literature also focuses on the career strategies of young people, but it puts more emphasis on the role of increasing uncertainty in modern societies. The uncertainty about future income or its sources leads young people to postpone investments, from which they cannot easily withdraw, such as becoming a parent. As suggested by Ranjan (1999), this approach could be especially relevant for countries in Central and Eastern Europe, undergoing deep restructuring causing an increase in both income and employment insecurity.²

Both above mentioned theories motivate examining employment and parenthood jointly. For both of them, the institutional context, in which family formation and employment entry occurs, plays a crucial role. For the models of optimal timing of childbearing, institutional setting is of importance since it affects the degree of incompatibility of employment and parenthood, contributing to the alternative costs of childbearing. Obviously, institutions can also determine the rate of return to individual resources and effort, thus contributing to the level of heterogeneity of the transition into employment and motherhood. From the point of view of theories focusing on the role of uncertainty, institutional arrangements play an important role since they

² The broader analytical framework for the youth rational responses to growing uncertainty in terms of scheduling employment and family career has been developed in Mills and Blossfeld (2003).

determine the degree to which people are affected by emerging risks and they also channel these risks towards specific social groups (DiPrete et al 1997).

At this point, no attempt is taken to discriminate analytically between the two above mentioned approaches. Instead, the aim of this study is to measure the heterogeneity of the transition into employment and motherhood of young women across two decades, to identify its main patterns and compare their prevalence for cohorts of women whose life courses were shaped under “greenhouse” conditions of socialism (Sobotka 2001) and cohorts which had to plan their family and employment career in the conditions of market economy. Tracing variation in patterns observed for successive cohorts of women, i.e. comparing entry into labour market and family careers during the socialist period and after the transition to market economy, can provide further insights into the mechanisms by which early life course trajectories are being shaped. In order to examine and compare quantitatively the structuring of employment and family career entries trajectories, Sequence Analysis with Optimal Matching Algorithm is applied. This relatively new method in social science data analysis allows to examine the entry into the labour market and into motherhood jointly, to view them as a process rather than as a transition between single states and thus, to take a holistic approach (Brzinsky-Fay et al 2006).

To follow the objective of identifying the main patterns of early labour market and family careers and assessing their prevalence across cohorts, the outcome variables from Sequence Analysis are further processed with clustering techniques. This allows to answer the question about the outcomes of young women in terms of their family and employment career entry under the change of institutional and economic conditions. It allows to examine whether before the fall of socialism, there was any dominant pattern of family and employment career entry, and if so, then whether it evolved into a different prevalent one, or it was replaced by a number of other, previously non-existent types, contributing to the rise of diversity in transition into motherhood and work.

The interesting empirical question is related to the way that postponement of childbearing is combined with developments in individual employment career. According to the models of optimal childbearing, women who have better labour market opportunities, face higher alternative costs of childbearing and thus delay parenthood to a larger extent (Gustafsson 2001). A contrasting prediction can be derived from theories which state that especially labour market positions with high degrees of economic and temporal uncertainty may prevent young women from taking long-term binding commitments related to setting up family (Oppenheimer 1988, Oppenheimer et al 1997, Mills and Blossfeld 2003). Testing which of these hypothesis has proved to be relevant for the Polish society requires more sophisticated tools than the one applied in this study. Still, the results presented here can be viewed as the first step towards a better understanding of this issue.

The structure of this paper is as follows. The next section provides a brief description of the Polish course of transition from a centrally planned to a market

economy with focus on institutional changes that might have affected school to work and family transitions in particular. Next, an overview of theories concerning the way that in which early life courses are structured under different institutional and economic conditions is given. Section 3 presents the data and methods used in the study and in section 4 empirical results are described. Section 5 summarises the conclusions derived from the analysis.

INSTITUTIONAL AND ECONOMIC CHANGES FOLLOWING TRANSITION TO MARKET ECONOMY

Labour market changes and youth career opportunities

Till the late eighties, Poland belonged to the group of socialist countries. The state took responsibility for providing individuals with income, services and goods. Everyone had a guaranteed job and some basic standard of living. Phenomena such as poverty or unemployment were non-existent – at least according to official statistics. Wages were settled centrally and quite compressed, meaning that irrespective of individual resources or effort, everyone would receive rather similar earnings. State control was far-reaching, not only in terms of allocation of workers to jobs and setting the level of their compensation, but also in terms of regulation of employment relationships, which was very rigid at those times.

Poland's transition to a market economy started in 1989 with rapid, radical and comprehensive reforms. It imposed economic modernisation and institutional reforms, leading to a reassignment of economic functions between the state and the social actors, such as individuals, households and organisations. One of the aims of the programme of deep institutional restructuring was to eliminate detailed state intervention in both labour and product markets so as to increase the flexibility of supply and prices. It involved removal of the restrictions with respect to private economic activity, privatization of the bulk of the state sector, breaking up domestic monopolies and price liberalization (Balcerowicz 1994). The state withdrew from its former role of employer and provider of services and of social benefits (Kotowska et al. 2008). The reforms' strategy dealt not only with the type of measures to take, but also with their phasing and speed – they were launched almost simultaneously and proceeded at high rate, hence being referred to as a „shock therapy“.

Emerging and intensifying competition, restructuring and privatization necessitated massive lay offs, mainly in the over-staffed public sector. Since the state no longer automatically allocated labour market entrants to vacancies, young people had to search for jobs on their own, which often meant the necessity to compete with older workers dismissed from bankrupt state-owned companies. However, Poland recovered from the transitional recession in 1993 and in the period 1994–1998, employment rates increased again. Still, further

growth was brought to a halt by the Russian crisis in 1999, which contributed to further cuts in employment. The global slowdown in 2001 protracted the recession and kept employment figures at a very low level till 2003. The improvement of the labour market situation started only recently, with employment rates increasing since 2004.

Obviously, unemployment emerged mostly among workers who lost their jobs in state-owned companies which were privatised or liquidated. The evolving sector of private-owned enterprises couldn't absorb their labour resources due to the frequent mismatch between the skills of dismissed workers and the needs of emerging businesses (Sztanderska and Socha 2000). Still, for young people, the changes in institutional arrangements of the labour market meant that they could no longer take it for granted that after graduation, they would automatically enter employment. New institutional and economic arrangements created risk and opportunity structures, where different individual resources and decisions related to individual career investment would affect subsequent labour market outcomes.

The institutional reforms related to decentralisation of wage setting were introduced to allow for free adjustment of their level to the labour productivity (Cazes and Nesporova 2004). It resulted in increasing variation in labour income, with growing wage premium for highly-skilled workers and a remarkable fall in the relative wage level of workers with primary education (Keane and Prasad 2002). While in 1989 the variation in earnings as measured by the Gini coefficient amounted to 0.20 and belonged to the lowest levels in Europe, it increased up to 0.35 just within 15 years (TransMonee 2008).

It was not only employment level, but also the nature of employment conditions that changed considerably. After the onset of transition, job security was no longer guaranteed by the state. Furthermore, at the beginning of this decade labour law was reformed to allow for broader use of flexible employment forms. The deregulation of the labour law, coinciding with adverse economic conditions, was followed by a rapid increase in temporary employment rate, particularly at labour market entry (Baranowska and Lewandowski 2008).

Family care provisions and combining work with parenthood

The state's intervention can shape opportunities and constraints regarding family and employment career by offering work and family reconciliation measures and direct and indirect monetary transfers supporting households with children. The policies oriented at decreasing incompatibility of work and parenthood are related most of all to the availability of institutional childcare and flexibility in working time arrangements. Among monetary family policy measures one can distinguish instruments within tax and benefit system. A detailed description of changes in family policy area throughout the last two decades goes far beyond the scope of this article. In the following, it therefore is summarised only briefly with reference to other studies.

The socialist regime in Poland supported the system of institutional childcare to enable mothers of young children stay on the labour market. Obviously, this policy rather was driven by concerns of labour shortages rather than by the idea of gender equality (Płomien 2004, Kotowska et al 2008, Heinen and Wator 2006). Access to crèches and kindergartens remained at a level which could be considered as moderately high by Western standards (Saxonberg and Szelewa 2007). The state financed the childcare facilities directly, and furthermore, state-owned enterprises were also engaged in their provision (Balcerzak-Paradowska et al. 2003). Still, despite the state's efforts, the supply was insufficient as compared with families' needs.

Following the transition from a centrally planned to a market economy, the responsibility for providing children with early education and care was shifted from the state to parents. The tasks related to provision of childcare were delegated from the central government to local authorities, but it was not always accompanied by a shift of financial means that would allow to accomplish these tasks. Hence, local authorities either imposed additional fees on parents or they closed down the facilities, with the latter being more frequent. As a result, within two decades, the number of places in kindergartens declined by 76 percent and in crèches by 25 percent (Balcerzak-Paradowska et al. 2003). A deterioration of the conditions for family-work reconciliation is also reflected in the ratio of children in the age group 3-6 to 100 available places in kindergartens, which increased from 124 up to about 286 between 1980 and 1990. In the next years, this ratio declined, but this was related to decreasing fertility and to a public policy oriented at improving the availability of childcare services.

Another relevant dimension of institutional arrangements concerns family benefits. Generous benefits can cushion economic uncertainty, since they provide an alternative source of income for young parents (Byrgen et al 2005). Furthermore, depending on the scheme they can either encourage or provide disincentives for female employment. According to empirical studies summarising family policies adopted in Poland throughout last two decades, the state's involvement in the provision of social protection was reduced, imposing greater reliance on the family and promoting individual responsibility for the provision of well-being (Balcerzak-Paradowska et al. 2003, Heinen and Wator 2006, Kotowska et al 2008). The major changes in family and childcare benefits implemented after the onset of the transition to market economy were oriented at targeting financial support for families at risk of poverty. The reforms included extending support for families with more than three children, introducing income-testing for most of the family benefits and implementing more restrictive eligibility conditions. The majority of benefits decreased in real terms, which is reflected in the drop of benefit-to-social minimum ratio from 8.3 percent in 1990 down to 3.8 percent in 2002 (Heinen and Wator 2006). Generally, the system of family benefits is argued to have been transformed from a universal model to one that constitutes more of a "safety net" rather than an instrument of family policy (Heinen and Wator 2006, Kotowska et al 2008).

THEORETICAL BACKGROUND AND HYPOTHESES

The institutional setting of a centrally planned economy, as in the case of Poland before 1989, can be viewed as extreme example of state intervention in terms of organising the rules which define the organization of both the public and the private sphere of life, especially in the employment and family domain. On the contrary, as argued in some empirical studies attempting to classify the regime towards which the welfare state is evolving in Poland, the policy adopted after transition could be considered as rather liberal (Saxonber and Szelewa 2006, Heine and Wator 2006). Thus, in a way Poland has turned from one extreme to another in terms of welfare state arrangements. As the state withdrew from provision, protection and strict regulation of employment conditions, as well as from supporting family, the options of women regarding their family and labour market career changed substantially. The question remains how these upheavals actually affected the heterogeneity of their transitions into work and parenthood.

Some theoretical approaches, which allow to derive hypotheses on this issue have been formulated within life course research. They describe how the events marking the process of becoming an adult, such as the transition from school to work and the transition to motherhood are organised within life course trajectories. Most literature focuses on the heterogeneity of the event sequences, the level of compression of these events and the variability of their timing. It has been emphasized that the level of the heterogeneity in early life courses depends on institutional and economic context. The crucial concepts formulated within this strand of literature are institutionalisation and standardisation of the life course (Shanahan 2000).

Institutionalisation refers to the process by which normative, legal or organizational rules define the social and temporal organization of human lives (Brückner and Mayer 2005). It can refer to stages in lives, such as education, marriage and retirement, but also refer to specific events like leaving school, entering employment, leaving parental home or becoming a parent. The concept of *standardisation* refers to the extent to which some states or events and their sequences become more universal and to the degree to which their timing becomes more uniform. In the literature it is also maintained that standardisation is reflected in the relative “compactness” of social markers of adulthood, such as the completion of schooling, the start of a working career or parenthood. Institutionalisation can be seen as a factor that promotes the standardisation of early labour market or family careers. The more the state is responsible for the provision of services and transfer payments and the organisation of employment, and the more it restricts the freedom of choice of social actors with regulations, the more the events structuring life courses become orderly and predictable (Buchmann 1989, Mayer and Müller 1986).

According to theories of the life course, one could hypothesise that due to the high level of institutionalisation in socialist Poland, there was one dominant pattern of early labour market and family career development (Hypothesis 1a). If

it indeed existed, after transition, it might have been replaced by a new single pattern, common to all women in younger cohorts. However, life course theories suggest the opposite: it can be hypothesised that in Poland, a number of distinct patterns emerged after the onset of the transition to market economy, resulting in an increased heterogeneity of early employment and family careers of young women (Hypothesis 1b).

Life course theories do not provide detailed explanation of the micro-mechanisms that drive the diversification of career trajectories after withdrawal of institutions regulating careers in public or private area. Even if social actors are free to choose, it remains an open question why they should choose differently. Indeed, the missing link between the macro and the micro perspective has been identified as a major weakness of this strand of literature (George 1993). In this study the prediction of destandardisation is based on well-established theoretical approaches, which propose specific explanations for the emergence of systematic differences in the structure of individual employment and family career trajectories in post-socialist Poland.

One of the most influential propositions is offered in the models of the optimal timing of childbearing stemming from Becker's theory (1981), which posit that a differentiation of labour market opportunities increases the heterogeneity of choices regarding investment in family and employment career (Corijn and Liefbroer 1999, Gustaffson 2001). The basic assumption taken at this point is that investing private resources into simultaneously maintaining one's position in both career domains is not optimal. For women who have accumulated higher levels of human capital and therefore can expect higher wages, the opportunity costs of family formation are higher and in their case, it is rational to postpone entry into motherhood and instead focus on the working career, especially in the early stage of their life course (Corijn and Liefbroer 1999, Gustaffson 2001). On the other hand, women who are less endowed with human capital and cannot expect high returns to their knowledge, skills and experience, are not confronted with high opportunity costs of motherhood, so they can be expected to bear children relatively early.

If human capital theory is right in predicting the micro-mechanism behind the processes of destandardisation, the divergence of early career patterns should be explained by the fact that women with different individual resources display a diverging behaviour in the early stage of their adult life. According to the models of optimal timing of motherhood, better endowed women should enter employment sooner, but simultaneously postpone their entry into parenthood. However, these models assume an economy where individuals with better resources are rewarded for their skills, abilities and effort. It is necessary to additionally take into account relevant constraints and opportunities for individual action (Blossfeld 1996). In order to apply these hypotheses to the experience of a post-socialist society, one should consider that the returns to human capital endowment emerged only after the transition from a centrally planned to a market economy. Since the strategy of motherhood postponement

and investment into one's own employment career is followed by better endowed women particularly in institutional contexts, impeding work–parenthood reconciliation (Corijn and Liefbroer 1999, Mills and Blossfeld 2003), one can state that a decline in availability of childcare must have triggered a rising importance of the opportunity cost mechanism, especially for younger cohorts. Thus, one could expect that an increase in the heterogeneity of career trajectories for women, whose opportunity costs related to favourable employment chances were greatest (Hypothesis 2).

However, in order to link the destandardisation hypothesis with the underlying micro-mechanisms of individual behaviour, one can take a different perspective and focus on the role of uncertainty. A formal model, drawing from Dixit and Pindyck's (1994) concept of the impact of uncertainty on irreversible investment decisions, has been proposed by Ranjan (1999). From a broader analytical perspective, Mills and Blossfeld (2003) argue that growing uncertainty about employment and income stability prevents from making decisions on long-lasting commitments and especially on those related to parenthood. Furthermore, less protected forms of employment, which require more individual effort, increase work–family incompatibilities and hence affect family-related decisions (Kotowska et al. 2008).

While before transition the institutional setting provided stability and predictability of the outcomes of individual decisions, thus keeping the level of uncertainty low, the process of transformation should have contributed to an abrupt increase of socio-economic uncertainty. Thus, the heterogeneity of young women's early employment and family careers should have increased after the onset of the transition to market economy, as high degrees of economic uncertainty may cause young women to delay family formation (Oppenheimer et al 1997, Oppenheimer 1988, Mills and Blossfeld 2003). Following this line of reasoning, the increasing heterogeneity of early career patterns can be explained by the fact that an increasing number of women enters insecure labour market positions such as unemployment or temporary contracts and therefore postpones motherhood (Hypothesis 3).

The two above mentioned hypotheses about the mechanism generating diversity in early employment and family careers are not mutually exclusive. Actually, some empirical studies use a concept of the “socialist greenhouse environment” which jointly considers the limited employment career opportunities, as well as substantial security, when explaining the changtransition to adulthood in countries with a socialist legacy (Sobotka 2001, Klasen and Launov 2006). Discriminating between them or comparing their relevance would require rigorous analytical scrutiny, which takes into account possible sources of selection on unobservables, as well as simultaneity and endogeneity problems. This task is left for future research, though.

DATA AND METHODS

Data

The data used in his study were collected in a retrospective Employment, Family and Education Survey conducted in 2006 by TNS OBOP within a project called “Cultural and structural determinants of economic activity of women” of the Institute of Statistics and Demography at Warsaw School of Economics and financed through a grant of the State Committee for Scientific Research. The database contains complete family, education and work histories of N=3005 women aged 25-40. Following the approach proposed by Freedman et al. (1988), a life-events calendar approach to interviewing respondents was taken. For the purposes of the subsequent sequence analysis, the sample was reduced by excluding the youngest women (aged 25) and those who were still in full time education, because their employment and family histories were too short or non-existent. Furthermore, sequences which included missing values for graduation, childbearing or labour market career history were excluded. The following analysis thus is based on a subsample of 2423 women.

The central variables used in the study are related to the events taking place within the two life course domains of childbearing and employment. The following dates were distinguished: the date of graduation, the date of entry into motherhood, defined as the year and month of the first child, and dates of entries into the labour market states: employment, unemployment and inactivity, defined according to the methodology proposed by the International Labour Organisation. Additionally, a distinction was made between two types of employment relationships: temporary and permanent employment contracts. This differentiation allows to disentangle whether unemployment spells resulted from the termination of a fixed term contract or from dismissals and voluntary job quits. The definition of temporary employment in the survey classifies all employees as ‘temporary workers’, whose main job was performed within a fixed-term contract, occasional, casual or seasonal workers as well as workers with a contract for a specific task. The employment and family careers were compared across five different birth cohorts: 1966-1969; 1969-1971; 1972-1974; 1975-1977; 1978-1980.

Methods

In order to describe the changes driving the increase of heterogeneity in employment and motherhood entry patterns, a relatively new technique in social science – Sequence Analysis with Optimal Matching Algorithm is used. Originally, this method used to be applied for the analysis of protein and DNA sequences in biomolecular studies. It was first introduced to social sciences by Abbott (1983). Unlike event history analysis, which focuses mostly on single events, sequence analysis allows to analyse entire trajectories of different types of events, to compare them and to identify prevalent patterns. In this study, a

serial succession of different states after graduation is looked at, and the trajectories of entry into employment and motherhood are compared across cohorts.

Within the following Sequence Analysis framework, trajectories of entry into employment and motherhood are examined for a period of 24 months following the completion of full time education. The adoption of such a „time window“ is an arbitrary but necessary choice, because the cross-cohort comparison of sequence heterogeneity with sequence analysis requires trajectories to be of equal length. The chosen length of the sequence is driven by the concern that choosing a longer observation period would imply the a necessity of excluding the youngest cohorts from analysis. The patterns of school to work transition are analysed as they unfold across a state space of labour market and family domain. The family career domain includes two possible spells: having no children and maternity. The employment career includes four states: temporary employment, permanent employment, unemployment and inactivity. In sum, a multiple domain design with eight possible states is adopted.

To assess whether career patters became more heterogeneous for cohorts making the transition to adulthood after transition, the entropy indicator can be used, which measures the dispersion of individuals across different states in each month of their careers (Brüderl and Scherer 2006). The entropy amounts to zero if all individuals are in the same state and takes its maximum value if the individuals are equally spread over all different states. It can be calculated using the following a formula:

$$E_t = - \sum_{j=1}^q p_{jt} \ln(p_{jt})$$

A quantitative analysis and comparison of trajectories requires an interval-level measure of dissimilarity between the sequences. For this purpose, Optimal Matching Algorithm was applied, which calculates the dissimilarity measure by identifying a minimum number of modifications needed to make two given sequences identical and assigning costs to them. In order to transform one sequence into another, two types of alterations are possible: substitution or insertion and deletion. The costs assigned to any of these modifications are summed up and reflect the dissimilarity of trajectories. The more transformations have to be taken to make sequences equal, the more costs are added and consequently, the greater is the dissimilarity. The calculation procedure of the dissimilarity measure might include different “costs” for specific transformations. For example, substitution can be more or less “costly” than insertion and deletion, also substitution of different states can be linked to different level of costs. In particular, some authors have specified substitution costs matrices based on the probability of transitions: the more frequent a transition between two given states, the lower costs were assigned to a substitution of one of the states with another (e.g. Pollock 2007). This represents some kind of “weighting” of data – it can be argued however, that unless there is

theoretical background for setting such weights a priori, these costs are in a way a function of what the sequence already looks for (Scherer, 2001). Therefore, in this study the cost of substitution are two times higher than the value specified as cost attached to insertion or deletion – which means that no weighting is applied.

In a further step, the dissimilarity measure calculated with OMA is used to identify the main patterns of labour market and motherhood entry with cluster analysis. Cluster analysis tends to have a certain subjective component in so far as its results can differ according to the applied algorithm of cluster formation. In this study, hierarchical agglomerative Ward's linkage cluster was chosen³.

EMPIRICAL RESULTS

The first of the research questions posed in this study deals with the heterogeneity level of the early labour market and motherhood entry patterns before the onset of the transition to market economy and afterwards. The results presented in Figure 1 show that the careers of the cohort of women, who started adult life after the onset of transition, were much more heterogeneous than the patterns of labour market and family entry of women, who entered adulthood before the socialism collapse. This confirms the hypothesis stating that along with transition to market economy, the patterns of early labour market and family careers became less standardised. A surge in diversity is also „discrete“ in the sense that all cohorts of women, who started their careers after the onset of institutional and economic changes display more diversified behaviour than the cohort of women whose careers started during socialism. However, within „post-socialist“ cohorts, the heterogeneity level does not increase further to much extent. It seems that although the transition from centrally planned to market economy brought about substantial increase in the variation at the labour market entry, further diversification throughout early career was not very pronounced across cohorts that entered the labour market after the socialism collapse.

³ Ward's linkage algorithm is well suited for the interval-scale data (Ward 1963, Bacher 1996, Rószkiewicz 2002). It produces homogenous clusters since it proceeds by merging single objects or groups of objects in a way that result in the least increase in the within-groups sum of squares, thus minimising within-cluster homogeneity at each stage of grouping. The accuracy of the method falls short in the presence of statistical outliers, so it is advisable to screen the data before applying this clustering technique (in this application it has been done with sequence plots).

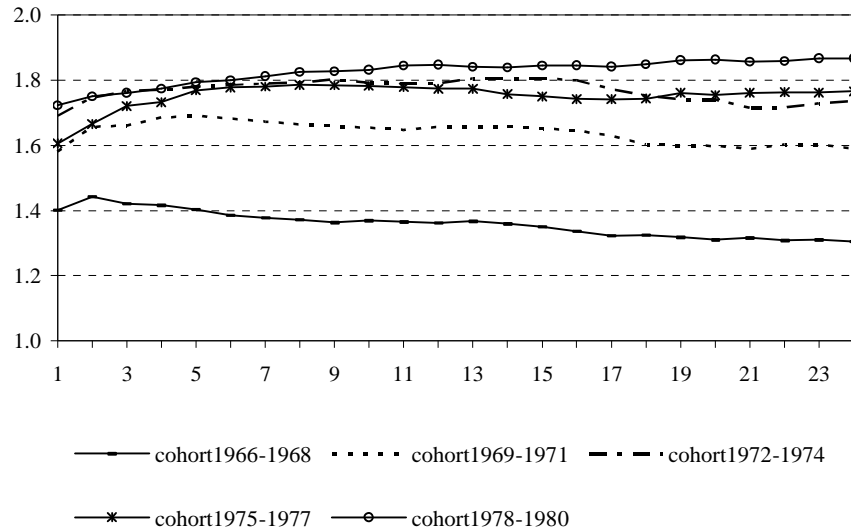


Figure 1 Entropy measure for female cohorts of graduates

Source: Own calculations based on the Employment, Family and Education Survey 2006 data.

The diversity of early labour market careers might have increased as a result of the prevalent pattern losing its dominance to the benefit of other trajectory types, or due to the fact that new patterns were emerging. For an investigation into the underlying processes that resulted in the decrease of standardisation of entry into the labour market, the optimal matching algorithm is applied. The calculated matrix of distances is used for hierarchical agglomerative Ward's linkage cluster analysis. The results are presented in Table 1, which provides a description of the emerging patterns in terms of frequency of particular episodes in family and employment career. The focus thereby was on the types of sequences that are unique to the given cluster and constitute a substantial share of all trajectories within it.

The first group is composed of patterns dominated by permanent work not connected with motherhood. Sequences involving work within permanent contract and having no children constitute 42 percent of this cluster; and sequences beginning with a short (up to 6 month) episode of unemployment or temporary employment followed by permanent employment and childlessness represent 30 percent of this cluster. Generally the first cluster seems to include trajectories of entry into the labour market of women, who gave priority to paid work and postponed (or, which is less likely, resigned from) motherhood. However, as the observations presented here are based on data truncated to a short observation period, it is not possible to establish if this postponement was

significant as compared with the timing of motherhood entry of women, whose careers are grouped in other clusters.

In the second cluster, there are “flexible” career entries encompassing long period of working within fixed term contracts. The sequences consisting of temporary work amounted to 60 percent of this cluster. Again, in this type of careers entry into motherhood seems to be somewhat shifted towards later age. Women in this cluster often work within temporary contracts but without repeated multiple spells between work and unemployment.

The third cluster is composed of trajectories, which include long-term unemployment spells (lasting at least 12 months) connected with having no children. Sequences including long term unemployment, in some cases preceded by short (up to 6 month) temporary employment episode, combined with childlessness through whole period constitute 32 percent of this cluster. The careers beginning with 1-3 months of permanent employment, followed with unemployment, and combined with childlessness through whole period account for 25 percent of this cluster.

The fourth cluster consists of trajectories of women, who were loosely attached to the labour market, but entered motherhood relatively early. The sequences of early motherhood combined with unemployment, inactivity or temporary jobs account for 36 percent of this cluster. Similar sequences, but preceded by 1-2 month unemployment combined with childlessness make up for further 12 percent of this cluster. Generally this cluster is the most heterogeneous one, because of the discontinuity of work experience – early motherhood is associated here with “patchy” career on the labour market.

In the last, fifth cluster there are sequences, in which early entry into parenthood combined with permanent employment prevails - 52 percent of sequences in this group have such a structure. In some cases, this kind of episode is preceded by one or two months of fixed term contract or unemployment. Generally this cluster groups together careers where graduation, entry into the stable job and entry into motherhood are located near each other in the individual trajectories.

Table 1. Clusters of patterns of employment and family entries.

| Cluster | Descriptions of typical sequences and their shares within clusters |
|---------|---|
| 1 | <p>permanent employment & no children</p> <ul style="list-style-type: none"> - sequences with permanent employment and childlessness through whole period constitute 42 percent of this cluster - sequences beginning with a short (up to 6 month) episode of unemployment or temporary employment followed by permanent employment and childlessness: 30 percent of this cluster |
| 2 | <p>“flexible career entries” - temporary employment & no children</p> <ul style="list-style-type: none"> - the whole period consists of working on temporary basis and having no children - careers of temporary employment & childlessness lasting through whole period account for 60 percent of this cluster |
| 3 | <p>entries with long spell of unemployment</p> <ul style="list-style-type: none"> - most heterogeneous cluster, an element which prevails is a long episode of unemployment and having no children - sequences including long episodes (at least 1 year) of unemployment, in some cases preceded by short (up to 6 month) temporary employment episode, childlessness through whole period: 32 percent of this cluster - 1-3 months of permanent employment, then unemployment, childlessness through whole period: 25 percent of this cluster |
| 4 | <p>unstable attachment to the labour market & motherhood</p> <ul style="list-style-type: none"> - prevailing episodes are: motherhood and no stable job - sequences of motherhood combined with: unemployment, inactivity or temporary jobs: 36 percent of this cluster - the same as above, but preceded by 1-2 month unemployment & childlessness make up for further 12 percent of this cluster |
| 5 | <p>direct entries to work and motherhood</p> <ul style="list-style-type: none"> - double role straight from the moment of leaving school (or entry taking place even before graduation) - 1-2 months of permanent or temporary employment & childlessness , followed by permanent employment and motherhood: 52 percent of this cluster |

Source: Own calculations based on the Employment, Family and Education Survey 2006 data.

Figure 2 provides a detailed inspection of employment and family trajectories and the way in which the prevalence of particular career types within subsequent cohorts changed, is. In each graph, the lines represent trajectories of states in which women find themselves in subsequent months. The eight states within the two domains of employment and family are reflected by different colours. The trajectories are grouped according to their similarity and thus mirror the clustering described in Table 2.

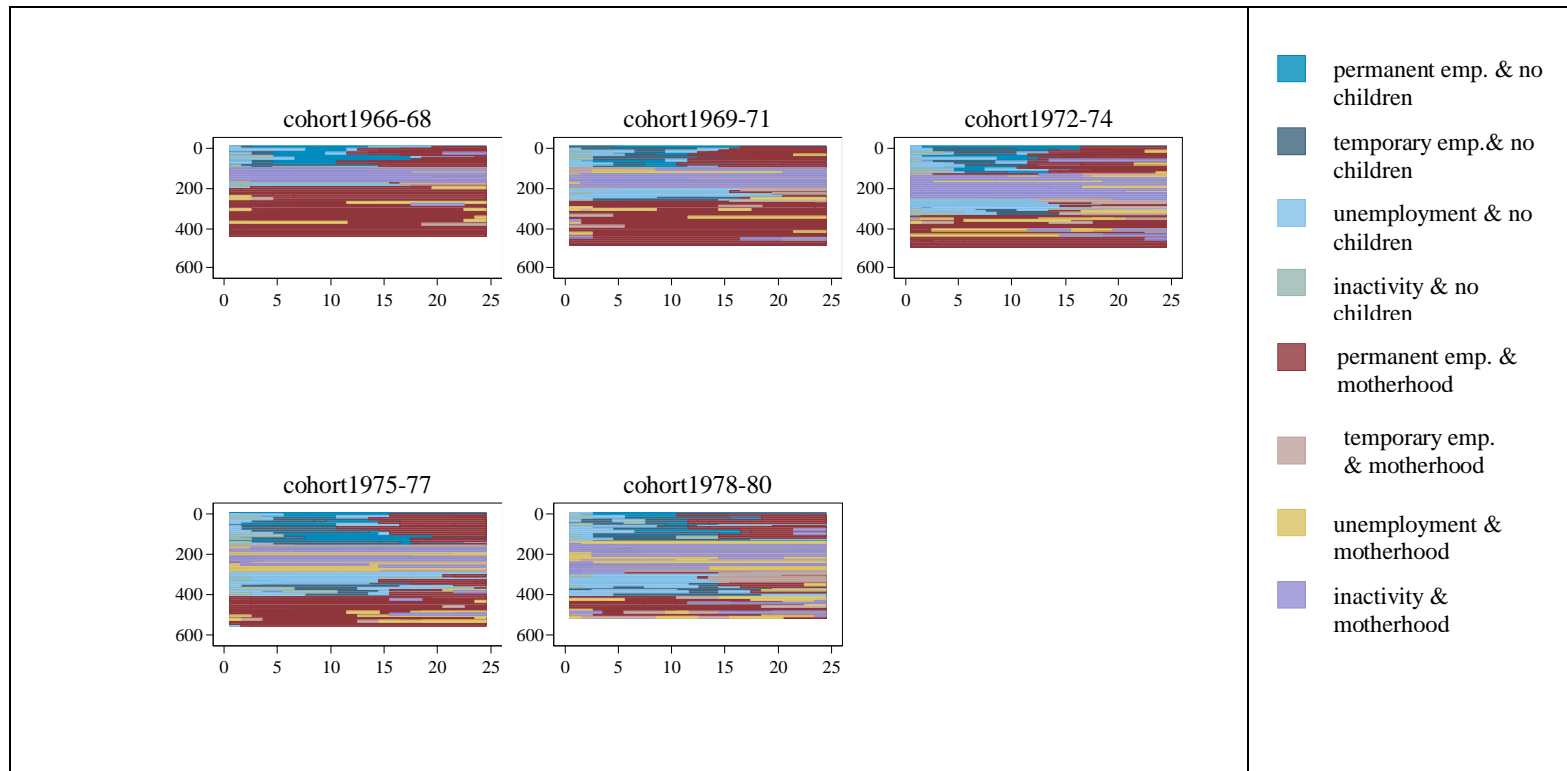


Figure 2 Sequence plots of employment and career trajectories according to the cohorts.

Source: Own calculations based on the Employment, Family and Education Survey 2006 data.

It is clear that the trajectories following the pattern described in the fifth cluster dominate among women of the earliest cohorts. Before transition, more than half of young women used to make a direct entry into both domains: work and motherhood just after graduation. However, the share of women experiencing careers of this type decreased dramatically - from 54,5 percent in cohort born in 1966-1968 to 23,5 percent in the earliest cohort born in 1978-1980. This is largely due to the increasing role of other employment and family entry patterns, which used to be almost non-existent before transition. These new employment and motherhood entry types were “flexible trajectories”, summarised in the second cluster, and the trajectories including episodes of long-term unemployment. Their share increased from about 3,6 percent in the “oldest” cohort to nearly 17,7 percent in the cohort born in 1978-1980. The share of employment and family entries including long spells of unemployment rose from about 3,6 percent in the “oldest” to 11,1 percent in the youngest cohort. As the pattern of direct entry into both employment and motherhood lost its dominance, the share of other patterns, summarised in cluster 1 and 4, increased as well, though to a lesser extent.

Table 2. Shares of career entry types according to cohort (in percent).

| Number of cluster and cluster description | cohort 1966-1968 | cohort 1969-1971 | cohort 1972-1974 | cohort 1975-1977 | cohort 1978-1980 |
|---|------------------|------------------|------------------|------------------|------------------|
| 1 permanent employment & no children | 25.3 | 21.6 | 28.6 | 31.1 | 28.1 |
| 2 temporary employment & no children | 3.6 | 9 | 11.9 | 18.4 | 17.7 |
| 3 long spell of unemployment & no children | 3.6 | 8.3 | 9.5 | 7.8 | 11.1 |
| 4 unstable attachment to the labour market & motherhood | 12.9 | 16.8 | 19.6 | 16.3 | 19.6 |
| 5 direct entries to work & motherhood | 54.5 | 44.3 | 30.3 | 26.4 | 23.5 |
| Total | 100 | 100 | 100 | 100 | 100 |

Source: Own calculations based on the Employment, Family and Education Survey 2006 data.

The evidence presented in this section goes in line with the outlined predictions based on life course research as they state that after the transition from a centrally planned to a market economy, the trajectories of entry into employment and entry into parenthood became more diverse. This confirms the hypotheses assuming an increased heterogeneity of trajectories due to the state neither providing and regulating employment nor supporting the family.

As expected in hypothesis 1a, a great majority of women, who started adult life before the onset of transition to market economy, followed one distinct pattern of early employment and family career. However, after introduction of

market economy rules with its intensifying competition, openness for international influences and the spread of knowledge and technology, it wasn't replaced by any new single pattern, common to all women in younger cohorts. Instead, in line with hypothesis 1b, previously almost non-existent patterns emerged, resulting in increased heterogeneity of early employment and family careers of young women. In this sense, one can speak about destandardisation of patterns of entry into employment and motherhood in post-socialist Poland.

The diminishing role of a pattern, which used to dominate before transition was linked to the polarisation of female career entries. Substantial share of women entered motherhood soon after graduation, and simultaneously met difficulties in the integration into the labour market. Some women still entered stable employment quite early, but starting a job was no longer associated with early entry into motherhood, which remains consistent with hypothesis 2. This kind of behaviour could be interpreted within the framework of models of optimal timing of childbearing, which predict postponement of motherhood in groups of women, whose opportunity costs related to favourable employment chances are greater (Gustafsson 2001). The opportunity structures on the Polish labour market changed in a way that might have triggered a change in the family formation behaviour of women better endowed with human capital, who under conditions of market economy could expect higher returns to their knowledge, skills and labour market experience.

On the other hand, it emerges that the patterns of early career, which recorded highest dynamics of increase, encompassed postponed motherhood combined with temporary employment or long-term unemployment. Thus, the spread of the labour market positions with high degrees of economic uncertainty, which may have caused delay in setting up family, contributed to much extent to the increase of heterogeneity of early employment and family careers of young women, as predicted in hypothesis 3.

SUMMARY AND DISCUSSION

The aim of this paper was to measure the heterogeneity of the transition into employment and motherhood of young women across two decades, to identify its main patterns and compare their prevalence for cohorts of women, whose life courses were shaped under totally different conditions: before the collapse of socialism and after the emergence of a market economy. The hypotheses derived from the theories on the life course predict that the profound change of institutional arrangements related to the withdrawal of the state from provision of services, financial transfers and organisation of employment, should make the timing of events shaping life courses or its specific stages less orderly, predictable and "compact". The results of this study largely confirm this expectation.

The increase in heterogeneity of the transition into employment and motherhood was driven by a remarkable decrease in the dominance of career entry pattern, which used to be prevalent under socialism. Before the onset of reforms, which introduced competition, technological change and opened Polish economy for international influences, young women used to enter into both stable jobs and motherhood directly after completing schooling or even before. After the transition to market economy, this type of employment and motherhood career entry became much less frequent. However, after introduction of market economy rules, it wasn't replaced by any new pattern, common to most women in more recent cohorts. Increasing heterogeneity of early labour market and family careers was rather related to the spread of several other, previously almost non-existent patterns. Two of them were encompassing long period of work within fixed term contracts and trajectories including long spells of unemployment, both combined with postponed entry into motherhood.

In this study the prediction of destandardisation is interpreted within the framework of well-established theoretical approaches, which relate the structuring of individual careers with the behavioural response to the opportunities and risks created by emerging market economy. Diversity of early career trajectories might occur either due to increase in the level of alternative costs of childbearing (Gustafsson 2001) or because of growing economic uncertainty (Mills and Blossfeld 2003). Both of these mechanisms are related to specific institutional conditions and are affecting particular groups of young women to a different extent.

Obviously, examination of causal relationships between family and employment career decisions requires complex analytical tools, which can serve as basis for statistical interference and handle endogeneity problems. The analysis presented in this article should be regarded as exploratory in so far as it focuses on the linkages between macro changes and the changes in in the early occupational and family career trajectories of successive female cohorts, rather than on modelling the interdependencies between parallel careers of individuals. Still, it provides insights into the way that early stages of life course are shaped under conditions of increasing competition, labour market flexibility and uncertainty.

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REFERENCES

Abbott A. (1983) 'Sequences of Social Events'. *Historical Methods*, 16: 129-147.

Bacher, J. (1996) *Clusteranalyse*. München: Opladen.

Balcerowicz, L. (1994) 'Transition to the market economy: Poland, 1989-93 in comparative perspective'. *Economic Policy*, 9: 73-97.

Balcerzak-Paradowska, B., Chłoń-Domińczak A., Kotowska I.E., Olejniczuk-Merta A., Topińska I., and Wóycicka I. (2003) 'The gender dimensions of social security reform in Poland' in E. Fultz, M. Ruck and S. Steinhilber (ed.), *The Gender Dimensions of Social Security Reform in Central and Eastern Europe: Case Studies of the Czech Republic, Hungary and Poland*. Budapest: International Labour Office, Subregional Office for Central and Eastern Europe.

Baranowska A. and Lewandowski P. (2008) 'Adaptability to economic changes' in: Bukowski M. (ed.) *Employment in Poland 2007*, Ministry of Social Policy and Labour & Institute for Structural Research

Becker Gary S. (1981). *A Treatise on the Family*, Cambridge: Harvard University Press.

Blossfeld H.-P. (1996) *Macro-sociology, Rational Choice Theory, and Time. A Theoretical Perspective on the Empirical Analysis of Social Processes*. *European Sociological Review* 12:181-206

Brüderl J., and Scherer S. (2006) 'Methoden zur Analyse von Sequenzdaten' in: Diekmann A.(ed.) *Methoden der Sozialforschung*. Wiesbaden:VS-Verlag.

Brückner, H. and Mayer K.U. (2005) 'The De-Standardization of the Life Course: What It Might Mean And If It Means Anything, Whether It Took Place?' in R. Macmillan *The Structure of the Life Course: Standardized?*

Individualized? Differentiated? *Advances in Life Course Research*, Amsterdam: Elsevier.

Buchmann M. (1989) *The script of life in modern society: entry into adulthood in a changing world.*, Chicago: University of Chicago Press.

Bukodi E. and Roberts P. (2006) Women's career mobility in Hungary in Blossfeld H-P., Hofmeister A. (ed.) *Globalization, Uncertainty And Women's Careers*

Brzinsky-Fay Ch., Kohler U., and Luniak M. (2006) 'Sequence analysis with Stata'. *Stata Journal*, 6: 435-460.

Bygren M., Duvander A.Z., Hultin M., (2005) Elements of uncertainty in life courses, in: Blossfeld H-P., Klijzing K., Mills M., Kurz K., *Globalization, Uncertainty And Youth In Society*, Routledge

Cazes, S. and Nesporova, A. (2004) *Labour Markets in Transition: Balancing Flexibility and Security in Central and Eastern Europe*, Geneva: International Labour Organisation.

Corijn M. and Liefbroer A.C., (1999), Who, What, Where, and When? Specifying the Impact of Educational Attainment and Labour Force Participation on Family Formation. *European Journal of Population*, 15: 45-75.

DiPrete T., Paul de Graaf, Luijckx R., Tählin M., and Blossfeld H-P. (1997) 'Collectivist vs. Individualist Mobility Regimes? How Welfare State and Labor Market Structure Condition the Mobility Effects of Structural Change in Four Countries'. *American Journal of Sociology*, 103: 318-358.

Freedman D., Thornton A., Camburn D., Alwin D. and Young-DeMarco L. (1988), 'The life history calendar: A technique for collecting retrospective data', *Sociological Methodology*, 18:37-68.

George L. K. (1993) 'Sociological Perspectives on Life Transitions'. *Annual Review of Sociology*, 19: 353-373.

Gustafsson S. (2001) 'Optimal Age At Motherhood. Theoretical And Empirical Considerations On Postponement Of Maternity In Europe'. *Journal of Population Economics* 14: 225-247

Helemae E. and Saar E. (2006) Women's career mobility in Hungary in Blossfeld H-P., Hofmeister A. (ed.) *Globalization, Uncertainty And Women's Careers*

Hamplova D. (2006) Women and the the Labor Market in Czech Republic: transition from a socialist to social-democratic regime? in Blossfeld H-P., Hofmeister A. (ed.) *Globalization, Uncertainty And Women's Careers*

- Keane M. P., Prasad E. S. (2006) 'Changes In The Structure Of Earnings During The Polish Transition'. *Journal of Development Economics*, 80: 389-427.
- Klasen S. and Launov A. (2006) 'Analysis of the determinants of fertility decline in the Czech Republic'. *Journal of Population Economics*, 19: 25-54.
- Kotowska I., Matysiak A., and Jozwiak J. (2008) 'Poland: Fertility decline - a response to profound societal change and transformations in the labour market?' in: Frejka T., Hoem J., (ed.) *Childbearing trends and policies (forthcoming)*.
- Kantorová V. (2006) 'Education and Entry into Motherhood in the Czech Republic During State-Socialism and the Transition Period 1970–1997' in S. Gustafsson and A.Kalwij (ed.) *Education and Postponement of Maternity*. Dordrecht: Kluwer Academic Publishers
- Kreyenfeld M. (2006) 'Family Formation In East And West Germany Before And After Unification' in S. Gustafsson and A.Kalwij (ed.) *Education and Postponement of Maternity*. Dordrecht: Kluwer Academic Publishers
- Kreyenfeld M. (2005) 'Economic Uncertainty and Fertility Postponement Evidence from German Panel Data'. Max-Planck-Institut für demografische Forschung Working Paper No 2005-034
- Mayer, K.U. (1997) 'Notes On A Comparative Political Economy Of Life Courses'. *Comparative Social Research*, 16: 203-226.
- Mayer, K. U. Müller, W. (1986) 'The State and the Structure of the Life Course' in A. B. Sorensen, F. E. Weinert, and L. R. Sherrod (ed.), *Human Development and the Life Course: Multidisciplinary Perspectives*. Hillsdale, NJ: Lawrence Erlbaum Associates Publishers.
- Mills M., Blossfeld H-P., (2003), 'Globalization, Uncertainty And Changes In Early Life Courses', *Journal Zeitschrift für Erziehungswissenschaft*, 6: 188-218
- Oppenheimer V., Kalmijn M. and Lim N. (1997) 'Men's Career Development and Marriage Timing During a Period of Rising Inequality'. *Demography*, 34: 311-330
- Plomien A. (2006) *From Socialism to Capitalism: Women and their Changed Relationship with the Labor Market in Poland* in Blossfeld H-P., Hofmeister A. (ed.) *Globalization, Uncertainty And Women's Careers*
- Pollock G. (2007) 'Holistic Trajectories: A Study Of Combined Employment, Housing And Family Careers By Using Multiple-Sequence Analysis' *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 170: 167–183.
- Ranjan, P. (1999) 'Fertility Behavior under Income Uncertainty'. *European Journal of Population*, 15: 25-43.

- Rószkiewicz M. (2002) *Metody ilościowe w badaniach marketingowych*. Warszawa: Wydawnictwo Naukowe PWN
- Scherer S. (2001) *Early Career Patterns: A Comparison of Great Britain and West Germany*, *European Sociological Review*, 17: 119-144.
- Shanahan M. J. (2000) 'Pathways to Adulthood in Changing Societies: Variability and Mechanisms in Life Course Perspective'. *Annual Review of Sociology*, 26: 667-692.
- Sobotka T. (2001) 'Ten years of rapid fertility changes in the European post-communist countries. Evidence and interpretation'. *Population Research Centre Working Paper Series 02-1*, July 2002
- Socha M. and Sztanderska U. (2002) *Strukturalne podstawy bezrobocia w Polsce*, Warsaw: Wydawnictwo Naukowe PWN.
- TransMONEE 2008 database, UNICEF Innocenti Research Centre, Florence. Online. Available HTTP: <http://www.unicef-irc.org/databases/transmonee/>
- Ward, J. H. (1963) 'Hierarchical grouping to optimize an objective function'. *Journal of the American Statistical Association*, 58: 236-244.