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The Transition to Insecurity

Employment Dynamics and Its Sociodemographic Differentiation

Abstract: *This study is the first to verify with longitudinal data on individual work histories some of the statements concerning changes in the Polish labor market during and after the postcommunist transition. Specifically, it describes the dynamics of interrupting employment and resuming paid work after an interruption in Poland in the period 1988–2008. I focus on three main issues: the sharp drop in employment stability following 1989, gender differences, and differences between age and educational groups in employment stability and in returning to the labor market after job interruption. I use the unique data on individual employment histories collected in the Polish Panel Survey, POLPAN 1988–2003, and the statistical method of survival analysis. My results show that the postcommunist transformation brought unprecedented instability to employment: the risk of interrupting paid work grew about tenfold after the systemic change. Yet the chances of returning to employment after an interruption remained stable throughout the years. Regarding possible gender differences, I find that women in Poland do not suffer from a higher risk of interrupting work than men, however—once they do interrupt their work—it is more difficult for them to resume employment.*

In Poland, as well as in other countries of Central and Eastern Europe, 1989 was a breakthrough year. Although the political and economic transformation led to the introduction of democratic governance and widening personal freedom, the period also brought about dramatic change that was unwanted. Unemployment, officially nonexistent in

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the communist state, skyrocketed to 16 percent in the early 1990s and reached almost 20 percent after 2000. For the employed, their previous work security ceased.

Longitudinal analyses of changes in employment security are present in the Western sociological literature (Blossfeld and Drobnic 2001; Blossfeld and Hofmeister 2006; Drobnic, Blossfeld, and Rohwer 1999) but rather weakly represented in the scholarship originating in Eastern Europe. Here studies are mostly descriptive and rest mainly on cross-sectional surveys and official statistics (Kotowska and Sztanderska 2007; Orazem and Vodopivec 2000; Pollert 2003; Sztanderska and Grotkowska 2007), due to scarcity of panel data. This leads to a serious knowledge gap, since analyses for Western countries do not readily apply to the changes experienced by Central and Eastern Europe, in general, and Poland, in particular, during the social and political transformation following the breakdown of state socialism.

The goal of this article is to supplement existing knowledge by verifying with longitudinal data on individual work histories some of the statements concerning changes in the Polish labor market during and after the postcommunist transition. I use the Polish Panel Survey, POLPAN 1988–2003, conducted in Poland between 1988 and 2008, which is a unique source of data, as it tracks individuals from the communist period, through the transformation, to the capitalist economy. The twenty-year time span makes it possible to investigate in detail the dynamics of employment in Poland, its patterns and changes. I focus on two separate, yet related, aspects of job histories: (a) the risk that employed people will experience a work interruption, and (b) the chances of returning to paid work among people with a break in employment. With regard to both, I describe changes in time and differences between sexes and between age and educational groups.

Transformations of Employment Conditions in Poland

The Communist State

For the communist authorities, full employment was an independent political goal. Hence, state companies, which were not constrained by cost effectiveness, maximized rather than optimized the number of employees. Employment levels were high and unemployment basically did not exist (Kotowska and Sztanderska 2007). Working for pay was not only easy, it was compulsory. According to a 1982 law (Dziennik Ustaw 1982), men ages eighteen to forty-five who remained out of the labor market and schooling system for more than three months were suspected of avoiding work and were obliged to explain their status to the local administration unit (Rada Narodowa). Work contracts were long term, and the risk of losing one's job was low (Kotowska and Sztanderska 2007).

Among women the level of paid employment was also high (ibid.), although in Poland it was lower than in other communist countries. In 1988, 64 percent of women in Poland participated in the labor market, whereas in East Germany it was 89 percent (Matysiak and Steinmetz 2008). The main reason that women undertook paid work were the low real wages: It took two earners to support the family (Kotowska and Sztanderska 2007).

Earnings inequality was low. Wages depended more on the branch of industry in which a person worked than on personal qualifications (Domański 2002). Because Marxist doctrine prioritized the manufacturing of means of production, the highest wages were reserved for workers in heavy industry. Less important and lower-paid jobs were in the manufacturing of consumption goods (light industry), and the least important, in the service sector, including education and health care (Grajek 2001). Women worked predominantly in light industry and services and, as a consequence, earned systematically less than men. Similar regularities occurred in other communist countries (Orazem and Vodopivec 2000).

For women, who were practically excluded from careers in heavy industry, higher education was the way to improve their employment prospects (Pollert 2003). It was made easier by the policy of promoting girls' education (Kotowska and Sztanderska 2007). Consequently, women's share in specialist occupations (e.g., medicine, law, accountancy, and education) was higher than in the West (Pollert 2003), and the education of women was on average higher than that of men.

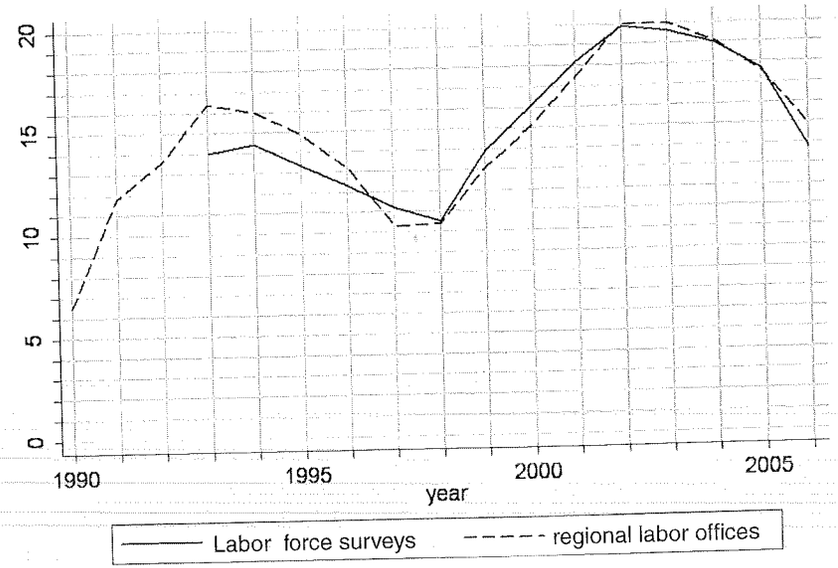
The high level of women's labor force participation was possible only due to state support for families. This included nurseries (although in 1973 only between 4 percent and 12 percent of children up to age three attended; see Frątczak et al. 2007; Łobodzińska 1977), kindergartens offering full-time care (in 1973 about 40 percent of children ages three to six attended; see Frątczak et al. 2007; Łobodzińska 1977), and after-school care. Employers organized child care and holidays for their employees' children (Kotowska and Sztanderska 2007). Still, state-provided child-care services for the youngest were rather scarce (and low quality), so three-year-long child-care leaves were introduced.[1]

Despite state support for families and the proclaimed goal of universal women's employment, the division of household tasks under communism remained highly traditional (Łobodzińska 1977). Housework was a burden because the necessary equipment and services (such as laundry and household maintenance)—the lowest priority of the communist economy—were hardly available. The problems with procuring everyday necessities combined with the high security of employment often caused women to manage their households during working hours (Kotowska and Sztanderska 2007), prompting literature on the "dual earner–female double burden" employment model (Matysiak and Steinmetz 2008).

The Post-1989 Economic Landscape

For the Polish labor market, two major consequences of the restructuring following the breakdown of state socialism were decreased employment rates and increased unemployment for both sexes (Kotowska and Sztanderska 2007; see also Figure 1). In the early stage of the transition to capitalism, privatization of state enterprises and the collapse of production brought about mass layoffs. Initially, unemployment

Figure 1. **Unemployment in Poland, 1990–2006**



Source: UN electronic database, http://data.un.org.

and the fall in levels of earnings affected predominantly men, since the first sectors to be hit, such as heavy industry, agriculture, construction, and transport, were male-dominated (Orazem and Vodopivec 2000). In 1998–2002 a subsequent period of increase in unemployment occurred, when at a time of economic recession, new entrants from the generation of "echo boomers" (i.e., the numerous cohorts born in the 1970s and early 1980s, children of the postwar baby-boom generation) flooded the labor market, while the less numerous generations retired (Kotowska and Sztanderska 2007). The rapid increase in unemployment triggered mass transitions to inactivity, as people decided to take early retirement, preretirement allowances, and disability pensions, which were frequently granted (ibid.). The information above, which stems from cross-sectional surveys and official statistics, leads to the following hypotheses that should be examined using longitudinal data:

> *Hypothesis 1a: Compared to earlier periods, in 1989 the risk of interrupting employment increased and the chance of resuming employment decreased. In the 1988–2008 period, the highest risk of interrupting work and the lowest chance of resuming work after an interruption was in 1998–2002.*

> *Hypothesis 1b: During the economic crisis of 1989 (layoffs in heavy industry), the risk of interrupting employment was higher for men than for women.*

With the implementation of capitalist rules of the game, the increased competition in industry and services triggered a striving for economic efficiency. Employment

thus started depending more strongly on individuals' qualifications (Kotowska and Sztanderska 2007). As a result, employees with the lowest qualifications left the labor market (Orazem and Vodopivec 2000). The same applied to older people, as they were not prepared for functioning in the market economy (Kotowska and Sztanderska 2007). Indeed, by about 2005, higher education was related to a lower risk of unemployment (ibid.).

> *Hypothesis 2: After 1989, the importance of educational level as a factor shaping the risk of interrupting and chances of resuming work gradually increased over time.*

Beginning with 1992, women were disproportionately more often laid off than men, due to cuts in public services (Pollert 2003). With registered unemployment often exceeding 10 percent, women also had more difficulties than men in returning to employment, mainly due to their household duties (Kotowska and Sztanderska 2007; Orazem and Vodopivec 2000). After the systemic change, the drop in real wages and the loss of social benefits associated with employment in the communist economy forced many women, especially those with less education, to leave the labor market. In other words, the employment gender gap grew mainly at lower educational levels. Currently in Poland, women with tertiary education have the highest employment opportunities compared to other groups of women, and the market activities of this group are not lower than those of men (Kotowska and Sztanderska 2007).

> *Hypothesis 3a: After 1992, women's risk of interrupting employment was higher, and their probability of resuming employment was lower than that of men.*

> *Hypothesis 3b: Men's advantage over women in chances of interrupting and resuming employment is greater at lower educational levels.*

The level of economic development differs across the regions of Poland and between urban and rural areas, which may affect the chances of interrupting and resuming employment. Hence, in the analysis I also account for regional differences. However, as the issue is not well explored in the literature, I do not formulate any hypotheses and treat this part of the analysis as exploratory.

Data and Measurement

Data

I use data from the Polish Panel survey, POLPAN, which gives a twenty-year history of Polish societal transformation (Domański and Slomczynski 1993, 2003; Slomczynski 1998a, 1998b, 2000, 2002; Slomczynski et al. 1988a, 1988b, 2003a, 2003b). This survey covers a random (probability) sample of the adult population in Poland interviewed in 1988, 1993, 1998, 2003, and 2008. Of special interest for the current analysis is the record of respondents' occupational histories beginning

with 1988. In each wave from 1993 to 2008, the respondents provided information on each of the jobs performed during the previous five years (or from the beginning of their employment, if this occurred more recently than five years). We know the beginning and ending date (month) of each job, and the job's short description. While such data may suffer from errors of memory, they are superior to official records in that they may also account for unofficial (gray zone) employment.

Dependent Variables

I analyze the dynamics of employment using two sets of variables: (1) duration of employment and the chance of interrupting work; and (2) duration of nonemployment and the chance of resuming employment.

A single employment period is defined as the time when the respondent uninterruptedly worked for pay, at least fifteen hours per week, even if during this period he or she changed jobs, undertook additional jobs, or switched between employment and self-employment. The beginning date of the employment period is the date when the respondent started his/her first employment (i.e., month *x* in year *y*); the ending date—the date of ending the employment period after which no further job was undertaken. This date is also the beginning of the nonemployment period, while its ending date is the beginning of the next employment period.

It should be emphasized that employment breaks do not include periods between completing education and starting the first job. Because information on the date of finishing schooling is unavailable for the majority of respondents, I limit the analysis to periods of nonemployment that occurred in the case of people already on the labor market. If the employment or nonemployment period was not completed before the last survey (2008), the observation is treated as right-censored.

Overall, the sample includes 3,903 episodes of employment (of which 1,681 are right-censored) and 1,777 episodes of nonemployment (of which 543 are right-censored). Data for employment episodes refer to 2,482, and for employment interruptions—to 996 respondents. The longest employment episode lasted almost twenty-seven years, with a median of about 5.5 years. The longest interruption lasted almost twenty years, with a median of eleven months. Basic characteristics of both dependent variables are shown in Table 1. Table 2 briefly describes the sample.

Independent Variables Used in the Multivariate Analysis

In the regression model, I account for a set of independent variables: year, region and place of residence (rural/urban area), education and age of the respondent (together with age squared, to account for nonlinear relationships), the age of undertaking/interrupting employment, and a dummy variable signifying the respondent's first job. These variables are characterized in Table 3. In addition, Table A1 in the appendix lists the voivodships included in each region.

Table 1

Characteristics of Episodes

	Employment episodes	Interruptions
No. of episodes	3,903	1,777
Censored episodes	1,681	543
Longest episode (months)	321	236
Average duration (months)	88	30
Median duration (months)	65	11
Earliest beginning of an episode	March 1937	August 1986
Latest beginning of an episode	May 2008	August 2008
Earliest ending of an episode	August 1986	September 1986
Latest ending of an episode	September 2008	September 2008

Table 2

Basic Characteristics of Independent Variables for Employment Periods and Interruptions

	Mean	SD	Minimum	Maximum
Employment periods: $n = 3,903$				
First job	0.09	0.28	0	1
Age of beginning employment	30.2	11.2	5	72
Year of beginning employment	1988.9	13.6	1937	2008
Sex (1 = women)	0.46	0.50	0	1
Respondents employed at least once: $n = 2,482$				
Sex (1 = women)	0.48	0.50	0	1
Employment interruptions: $n = 1,777$				
Age of interrupting employment	36.06	13.09	16	74
Year of interrupting employment	1997.5	5.8	1986	2008
Sex (1 = women)	0.5	0.5	0	1
Respondents who had at least one interruption: $n = 996$				
Sex (1 = women)	0.50	0.50	0	1

Table 3

Characteristics of the Independent Variables for Episodes

Nominal variables

Variable	Categories
Year	1986–1988, 1989, 1990–1997, 1998–2002, 2003–2008
Education	Elementary, vocational, secondary, tertiary
Region	Central, Wielkopolska, Silesia, Western Pomerania, Northeast, Eastern, Malopolska

Quantitative and dummy variables in analysis of employment interruptions (n = 24,044 episodes)

Variable	Mean	SD	Minimum	Maximum
Woman	0.5	0.5	0.0	1.0
First job	0.0	0.2	0.0	1.0
Age of starting employment	29.1	10.3	5.0	72.0
Age of starting employment^2	953.6	697.0	25.0	5,184.0
Age	40.8	11.3	15.0	79.0
Age^2	1,790.7	942.3	225.0	6,241.0
Age 55 or older	0.1	0.3	0.0	1.0
Village	0.4	0.5	0.0	1.0

Quantitative and dummy variables in analysis of returning to employment (n = 5,476 episodes)

Woman	0.5	0.5	0.0	1.0
Age of interrupting employment	40.5	14.2	16.0	74.0
Age of interrupting employment^2	1,844.7	1,185.8	256.0	5,476.0
Age	44.0	16.0	16.0	85.0
Age^2	2,191.2	1,468.9	256.0	7,225.0
Age 55 or older	0.3	0.5	0.0	1.0
Village	0.3	0.5	0.0	1.0

Statistical Model

I use the statistical method of survival analysis (also called duration analysis or time-event analysis) (Blossfeld and Rohwer 2002; Cleves et al. 2004). In this group of models, the dependent variable is "survival time," that is, the time that passes until a certain event happens. Typical examples of survival analysis in the social sciences are: transitioning between employment and unemployment; changing occupations or hours worked; marrying and divorcing; entering parenthood; achieving educational credentials and interrupting schooling; and committing crimes after release from prison.

Survival analysis takes into account right-censored cases—that is, cases under risk for which the event of interest has not occurred before the observation (i.e., the study) ended (e.g., marriages that did not end with divorce, or criminals who did not commit crimes after their release from prison).[2] It is important to note that survival models do not make an assumption concerning the distribution of the dependent variable. Contrary to the assumption of normal distribution of events in logistic regression, the frequency of events may be higher—for example, at the shortest and the longest survival times.[3]

Two functions are crucial in survival analysis: the hazard rate (also called failure rate or transition rate) and the survival function. The hazard rate may be interpreted as the propensity for the event to occur in the moment t, conditional on the fact that the event has not occurred in the past. Formally, the hazard rate is defined in equation (1).

$$r(t) = \lim_{t' \to t} \frac{P(t \leq T < t' | \leq t)}{t' - t}, \tag{1}$$

where T is the real duration to the event, and t—the moment for which the hazard rate is estimated (Blossfeld and Rohwer 2002; Cleves et al. 2004). According to the equation, the hazard rate $r(t)$ is defined as the probability that the event will occur between moment t and moment t', on the condition that it did not occur before, in relation to the length of the $t - t'$ period. In practice, for small units of time the hazard risk is equivalent to the conditional probability of the occurrence of the event.

The survival function (also called survivor function) is defined as the probability that the survival time will be longer or equal t. In other words: For each point in time the survival function shows the percentage of the population for whom the event did not yet occur. Formally, the survival function is defined in equation (2) (Blossfeld and Rohwer 2002; Cleves et al. 2004).

$$G(t) = P(T > t). \tag{2}$$

For the descriptive analysis of differences between groups, I use the Kaplan–Meier method (Kaplan and Meier 1958): the product-limit estimator. This is a nonparametric estimation method, especially useful at the first stage of analysis because (contrary to the Cox proportional risk model or the exponential hazard rate model) it does not make assumptions concerning the dynamics of the process (i.e., the shape of the survival function or hazard rate). The Kaplan–Meier method allows us to compare survival functions and hazard rates for individuals belonging to various groups, but—as a nonparametric method—does not allow us to assess the effect of quantitative variables or to account for multiple variables at once. Due to these limitations, I supplement the Kaplan–Meier method with an exponential

transition rate model (for a comprehensive discussion of the two approaches, see Blossfeld, Golsch, and Rohwer 2007).

The exponential transition rate model is a regression method that—in its simpler version—assumes that the hazard rate is constant, which implies that the dynamics of the process does not change over time (e.g., the divorce risk is the same in the first as in the tenth year of marriage). In this model (see equation [3]), the hazard rate is described as an exponential function of a linear sum of explanatory variables (Blossfeld and Rohwer 2002).

$$r(t) = r = \exp(\alpha_0 + \alpha_1 A_1 + \alpha_2 A_2 + \ldots + \alpha_n A_n). \quad (3)$$

In equation (3), elements $A_1 \ldots A_n$ indicate the set of explanatory variables, and $\alpha_0 \ldots \alpha_n$—the respective regression coefficients. Equation (4) defines the survival function (see Blossfeld, Golsch, and Roher 2007: 88).

$$G(t) = \exp(-rt). \quad (4)$$

As a rule, the exponential transition rate model assumes that values of independent variables are measured at the beginning of each episode and that during the episode they do not change. This poses a limitation because, in reality, the values of independent variables often change; however, an efficient solution is the episode-splitting method (Blossfeld and Rohwer 2002), which also helps in evading the assumption of a constant hazard rate.

In the following analysis I focus on a single-episode model, but I account for all employment (and nonemployment) episodes of each respondent. The beginning of each (non)employment episode is taken as a starting point, regardless of whether or not that particular person had any prior (non)employment period. For this reason, the choice of episodes is not fully random: Episodes of one respondent may be more similar to one another than across respondents. To control for this factor I correct the standard errors of estimation by using the clustering option. The time unit used is a month. The analysis is performed using STATA statistical software.

Results

Description of Employment Dynamics

Figure 2 shows the survival function and hazard rate of interrupting employment in the past twenty years in Poland. About 50 percent of employment periods were interrupted before seventy-two months (i.e., six years) of employment, 25 percent of employment episodes ended before the first year, and 25 percent took longer than twenty-three years (276 months). The curve of the hazard rate reveals that the risk of employment interruption is highest during the first years of employment, later it drops—if the work is not interrupted—and finally, after twenty-five years of work, it starts growing again (which most likely indicates retirement-related work interruptions).

Figure 3 shows the different dynamics of the nonemployment periods. First,

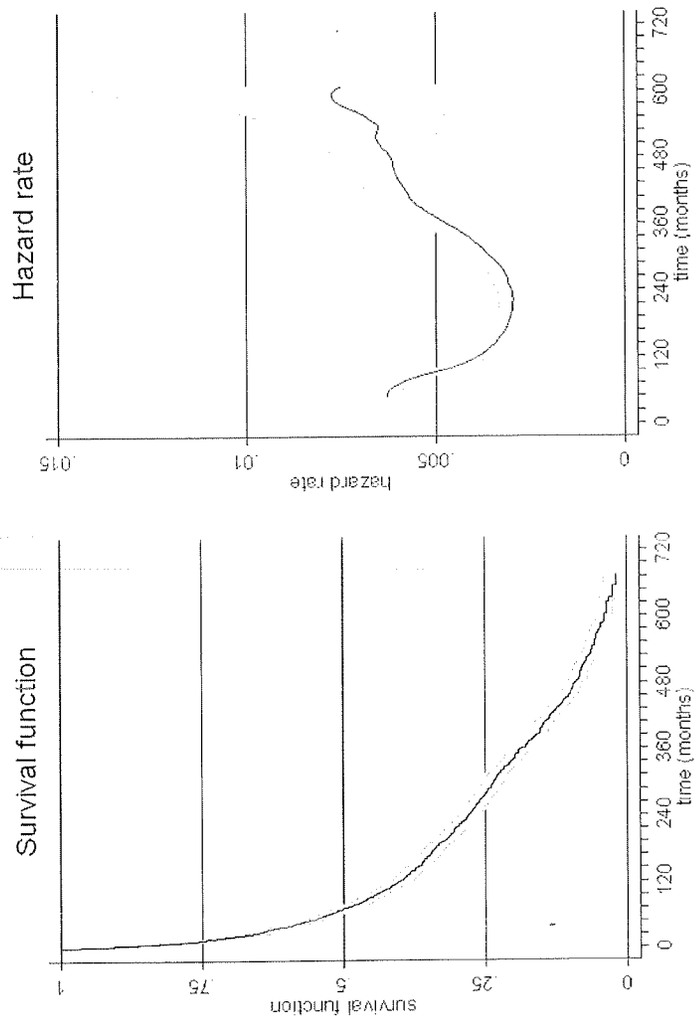


Figure 2. **Survival Function and Smoothed Hazard Rate for Employment Episodes**

Notes: Survival function is based on the Kaplan–Meier method; smoothed hazard rate is based on the Nelson–Aalen method. POLPAN data, sample: $n = 3{,}903$ episodes for 2,482 respondents.

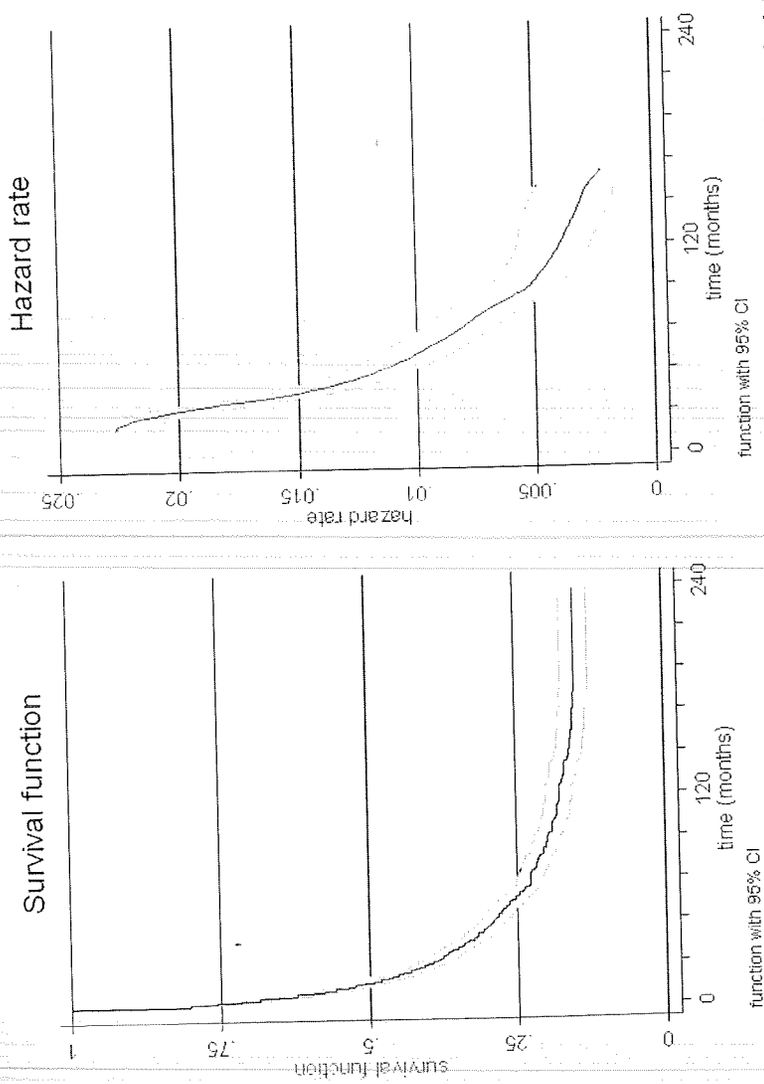


Figure 3. **Survival Function and Smoothed Hazard Rate for Work Interruptions**

Notes: Survival function is based on the Kaplan–Meier method; smoothed hazard rate is based on the Nelson–Aalen method. POLPAN data, sample: $n = 1{,}777$ episodes for 996 respondents.

they are rarer and shorter than episodes of employment. Only 50 percent of work interruptions exceed one year, and only 25 percent are longer than five years (sixty months). After five years the probability of returning to work drops sharply, and about 15 percent of nonemployment periods do not end with employment. The hazard rate of resuming work is relatively high in the first years of nonemployment, later it decreases with time. In other words, each additional year spent out of employment is associated with lower chances of return. This probably shows a selection effect: The longest work interruptions are most likely experienced by retired or disabled people, who do not return to employment.

The exponential transition rate model used in the following part of the analysis assumes a time-constant hazard rate. This assumption is obviously false: chances of both interrupting and returning to work depend on the duration of employment or nonemployment, respectively. For this reason, I turn to the piecewise-constant exponential model (Blossfeld and Rohwer 2002), which changes the exponential transition rate model into a very flexible tool, by assuming that the hazard rate is constant but only within certain stretches of time.

To determine the points in time when the (otherwise constant) hazard rate changes, I estimate exponential models including time dummies as independent variables. I start with the "full model" in which the hazard rate is allowed to vary every twelve months and later move to the "simple model," which distinguishes three or four periods with a slightly changing hazard rate (according to the full model).[4] The time points determined in the simple model will be used in further analysis. Predicted hazard rates for both models are shown in Figure 4, separately for the employment and work interruption periods.

Table 4 (for employment periods) and Table 5 (for work interruptions) present coefficients of the simple model. Because regression models did not include the constant term, the values of exp(b) should be interpreted as the predicted hazard rates for a given period. The hazard rate of work interruption is initially highest and equals 0.018 (which means that the probability of interrupting employment during the first twenty-four months is 43 percent: $0.018 \times 24 = 0.432$; this concerns the hypothetical situation when one job can be interrupted several times). Between two and five years of employment, the hazard rate of work interruption falls to 0.007 (unconditional probability of work interruption: 14 percent). In the period of five to twenty-five years of employment—the hazard rate is lowest and equals 0.004 (unconditional probability of work interruption: 41 percent), and it grows to 0.006 after twenty-five years of uninterrupted employment (unconditional probability of work interruption: 4 percent).

Similarly, returning to employment was most probable during the first year of nonemployment: the hazard rate for this period is 0.06 (which corresponds to the probability of 74 percent). For a period of one to five years of unemployment, the hazard rate drops to 0.016 (unconditional probability of 20 percent), and for the period of five to twenty-five years it drops even lower, to 0.005 (unconditional probability of 5 percent). Coefficients for the full models are presented in Appendix Tables 2A and 3A.

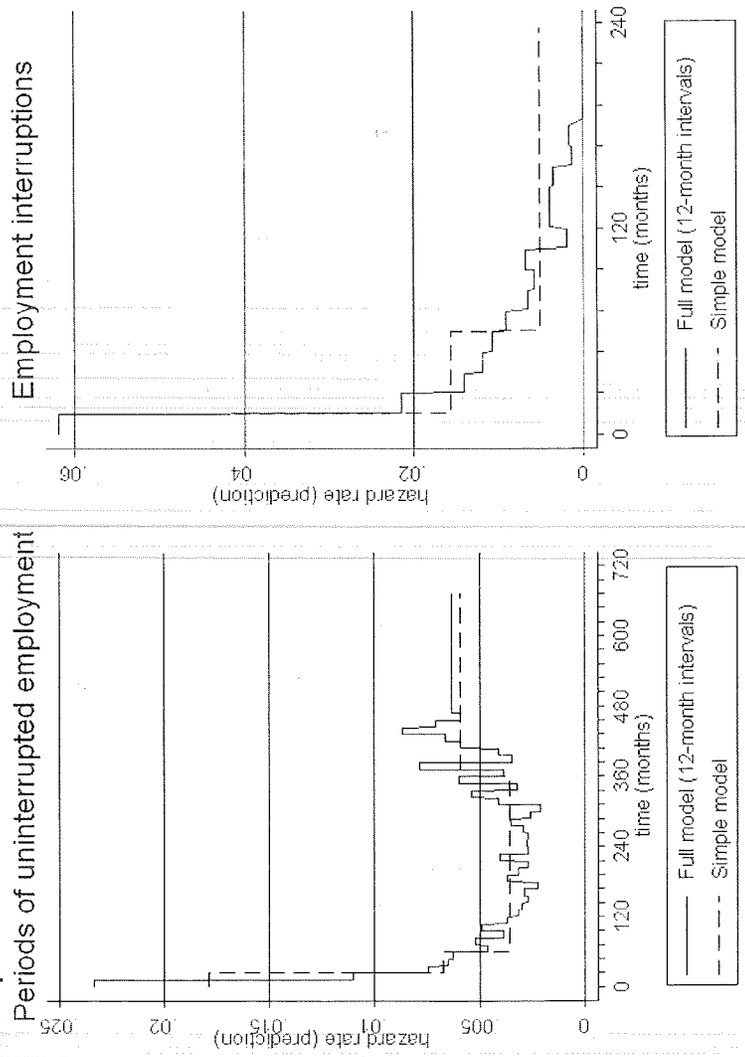


Figure 4. **Hazard Rate of Work Interruption and Work Undertaking, Estimated with a Piecewise-Constant Exponential Model: Full and Simple Model**

Notes: POLPAN data, sample for employment periods: $n = 3{,}903$ episodes for 2,482 respondents; sample for work interruption periods: $n = 1{,}777$ episodes for 996 respondents.

Table 4

Chances of Work Interruption: Simple Piecewise-Constant Exponential Model

	Hazard rate exp(b)	Coefficient b	t
0–24 months	0.018	–4.025	(–123.59)***
24–60 months	0.007	–4.997	(–97.92)***
60–300 months	0.004	–5.634	(–152.54)***
300–720 months	0.006	–5.135	(–65.36)***
N (no. of episodes)	30,258		
AIC	10,350.2		
BIC	10,383.4		

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 5

Chances of Returning to Employment: Simple Piecewise-Constant Exponential Model

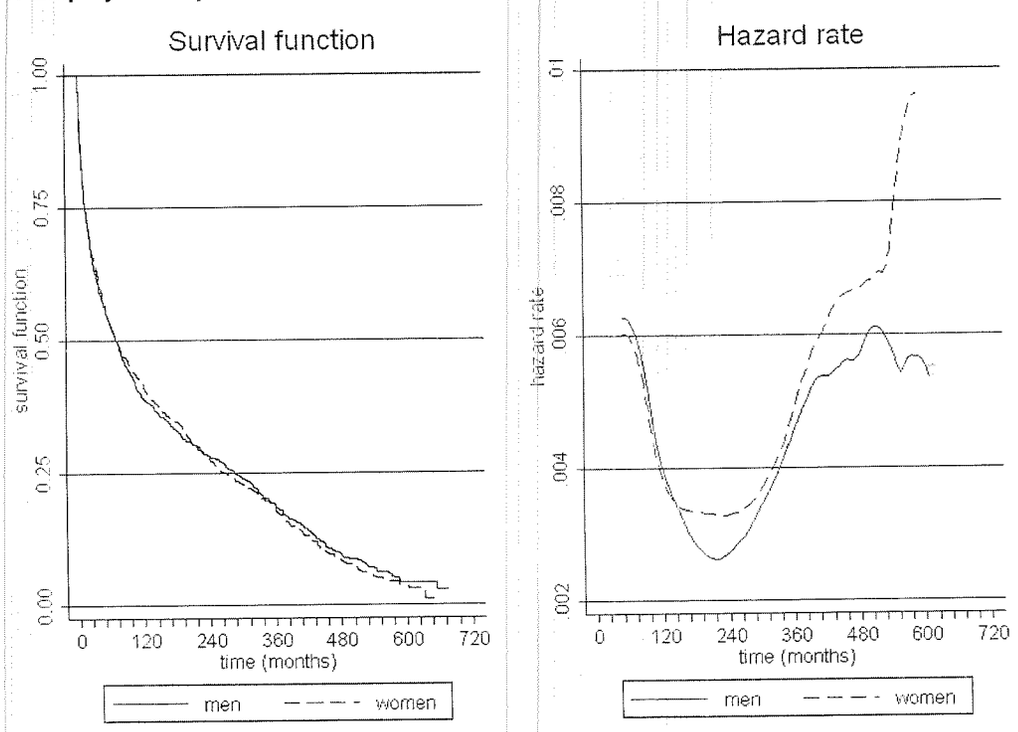
	Hazard rate exp(b)	Coefficient b	t
0–12 months	0.062	–2.782	(–78.34)***
12–60 months	0.016	–4.160	(–78.27)***
60–240 months	0.005	–5.287	(–49.32)***
N (no. of episodes)	5,391		
AIC	6,171.2		
BIC	6,191.0		

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Gender Differences of Employment Dynamics

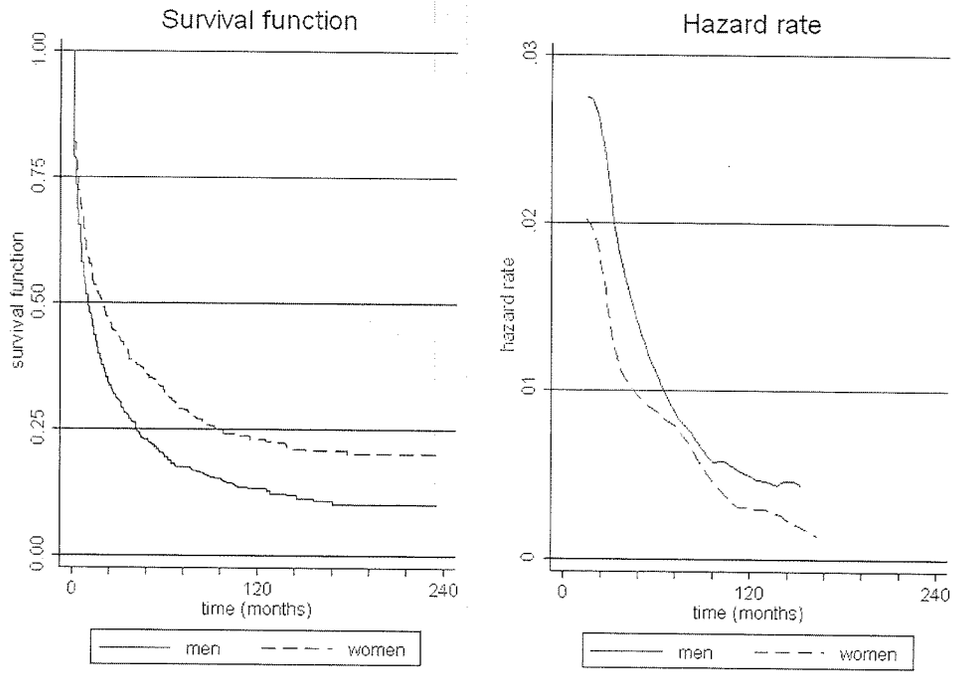
According to H3a, women are less tied to the labor market: We expect that they would interrupt employment more often (more rapidly) and return to paid work later (more rarely) return to paid work. I test this hypothesis by comparing the survival functions and hazard rates for men and women separately (Figures 5 and 6). Figure 5 shows the results for employment periods. The curves for men and women are similar, and the statistical tests (both Wilcoxon and log-rank tests) indicate a lack of statistically significant differences.[5] This means that—not accounting for other

Figure 5. **Comparison of Duration of Employment Episodes for Men and Women. Survival Function and Smoothed Hazard Rate for Employment Episodes**



Notes: Survival function is based on the Kaplan–Meier method; smoothed hazard rate is based on the Nelson–Aalen method. POLPAN data, sample: $n = 3{,}903$ episodes for 2,482 respondents.

Figure 6. **Comparison of Duration of Work Interruptions for Men and Women. Survival Function and Smoothed Hazard Rate for Work Interruptions**



Notes: Survival function is based on the Kaplan–Meier method; smoothed hazard rate is based on the Nelson–Aalen method. POLPAN data, sample: $n = 1{,}777$ episodes for 996 respondents.

variables—in Poland in 1987–2008, men and women had the same chance and dynamics of interrupting employment.

Figure 6 presents the results for the nonemployment episodes and resuming work. Here the gender gap is large: The survival functions indicate that women's nonemployment periods are longer, especially in the initial period. About 20 percent of women's nonemployment episodes do not end with a resumption of work; among men the respective share is 10 percent. Wilcoxon and log-rank tests confirm that the differences are statistically significant.[6] This leads to the initial conclusion that although women's careers are just as stable as men's, women have less favorable dynamics for returning to employment. They face a higher risk of short nonemployment periods, and, on average, reentering paid employment takes longer for women than for men.

Multivariate Analysis

The results presented above are based on bivariate analysis. In order to account for the impact of other intervening variables, I estimate subsequent piecewise-constant exponential models. This time, besides the variables accounting for the dynamics of the process ("simple model"; see Tables 4–5), I also include a set of explanatory variables (in Table 3). The results shown in Table 6 include two sets of models—with and without interactions—because their strong correlation with other explanatory variables impedes the estimation of significant coefficients. Table 6 shows the results of exponential regression; therefore, the value exp(b)—that is, the exponent of the b coefficient—reveals how many times the base hazard rate increases when the explanatory variable increases by one unit. The base hazard rate can be read from the models' constant.[7] For quantitative variables, the hazard rate for a particular value can be assessed by elevating the coefficient to the power corresponding to the value of the explanatory variable.[8]

Changes in Time (H1a and H1b)

According to H1a, in 1989 there should have been an increased risk of losing work and a decreased chance of resuming employment. This is partly confirmed: Other things being equal, the risk of interrupting employment compared to 1987–88 increased almost sevenfold; in the following years, this increase was even higher (Model 1a). However, contrary to expectations, the chances of resuming employment did not change over the period.

Consistently with the hypothesis, 1998–2002 were indeed associated with the highest risk of moving to nonemployment: the chances were about eight times higher than in 1987–88 (the reference category). However, the hazard rate of returning to employment did not change over time.

I also expected that the nature of layoffs changed over time, in particular, that the crisis of 1989 concerned mainly men (H1b). This finds no support in the data: The respective coefficient ("woman × year 1989") in Model 1b is statistically insignificant. This may indicate a lack of differences between sexes in layoffs in the initial year of transformation, but may also mean that men now more easily found jobs and, consequently, did not interrupt employment more often than women.

Education (H2)

As expected, for both sexes, higher education decreases the risk of interrupting employment: other things equal, people with secondary education have an 18 percent lower risk of interruption, compared to people who have only elementary education. The effect is much more striking for tertiary education, where the risk decreases by 42 percent, compared to elementary education (see Model 1a in Table 6). At the same time, education improves the chances of returning to paid work: those with tertiary education are almost twice as likely to resume employment than are people with elementary education (exp(b) = 1.84, Model 2a in Table 6). Statistically insignificant coefficients of interactions of sex and educational level (Models 1b and 2b) show that the differences between educational groups are the same for men and women.

Interactions of year and educational level are included in Models 1b and 2b to test H2 that the advantage from higher education grew over time. This hypothesis finds no support in the data. However, inspecting the interactions adds a new dimension to the story. In the period 1989–97 the risk of interrupting employment for people with vocational education was almost 50 percent lower than expected. In other words, after 1989 people with vocational education (mainly qualified blue-collar workers) were protected from losing their jobs, compared to people with elementary education. Their risk of interrupting employment in 1989–97 increased five- to sixfold over 1987–88, whereas for elementary, secondary, and tertiary education it increased about ten- to elevenfold (the difference between secondary and tertiary, and elementary education are not statistically significant).[9] These differences concerned interrupting, but not returning to work.

Gender Differences (H3a and H3b)

The results of the Kaplan–Meier method analysis are confirmed in the multivariate model. Employed women do not face a higher chance of interrupting employment than employed men (insignificant coefficient in Models 1a and 1b). However (Model 2a), their chances of returning to paid work are approximately 35 percent lower than those of men, which partly supports H3a. Moreover (Model 2b), this concerns mainly women over the age of fifty-five (the hazard rate of returning to work is 65 percent lower).

I also expected that the gender gap in interrupting and undertaking employment should be larger at low educational levels (H3b). The results do not support this prediction: the respective coefficients in Models 1b and 2b are statistically insignificant.

Table 6

Regression of Razard Rate of Interruption Employment (Models 1a and 1b) **and Returning to Employment** (Models 2a and 2b)

	Model 1a			Model 1b			Model 2a			Model 2b		
	Employment periods with interactions			Employment periods with interactions			Nonemployment periods without interactions			Nonemployment periods without interactions		
	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*
1986–1988	reference category			reference category			reference category			reference category		
1989	6.75	1.91	(14.21)***	9.93	2.30	(8.79)***	1.05	0.05	(0.17)	1.11	0.11	(0.15)
1990–1997	7.48	2.01	(18.53)***	11.36	2.43	(10.62)***	0.89	–0.12	(–0.47)	0.83	–0.18	(–0.25)
1998–2002	8.17	2.10	(18.13)***	10.84	2.38	(9.66)***	0.84	–0.18	(–0.68)	0.75	–0.29	(–0.38)
2003–2008	7.16	1.97	(16.47)***	9.49	2.25	(8.96)***	1.54	0.43	(1.68)	1.37	0.32	(0.42)
Woman	1.08	0.08	(1.47)	1.05	0.05	(0.37)	0.63	–0.46	(–6.61)***	0.65	–0.43	(–1.74)
First job	3.18	1.16	(12.88)***	3.21	1.17	(12.97)***		—			—	
Age of undertaking employment	1.08	0.08	(5.44)***	1.08	0.08	(5.41)***		—			—	
Age of undertaking employment (squared)	1.00	0.00	(–4.44)***	1.00	0.00	(–4.44)***		—			—	
Age of interrupting employment		—			—		1.03	0.03	(0.44)	1.05	0.05	(0.66)
Age of interrupting employment (squared)		—			—		1.00	0.00	(1.61)	1.00	0.00	(1.34)
Age	0.90	–0.11	(–5.69)***	0.90	–0.11	(–5.68)***	1.14	0.13	(1.89)	1.13	0.12	(1.69)
Age (squared)	1.00	0.00	(4.54)***	1.00	0.00	(4.58)***	1.00	0.00	(–4.84)***	1.00	0.00	(–4.58)***
Age 55 or older	2.09	0.74	(5.83)***	1.95	0.67	(4.87)***	0.79	–0.23	(–1.05)	1.16	0.15	(0.64)
Education												
Elementary	reference category			reference category			reference category			reference category		
Vocational	0.89	–0.12	(–1.39)	1.52	0.42	(1.44)	1.19	0.18	(1.46)	1.09	0.08	(0.10)
Secondary	0.82	–0.19	(–2.26)*	1.20	0.18	(0.59)	1.29	0.26	(2.09)*	0.74	–0.30	(–0.32)
Tertiary	0.58	–0.55	(–5.61)***	0.98	–0.02	(–0.07)	1.84	0.61	(4.03)***	1.85	0.61	(0.68)
Region												
Central	reference category			reference category			reference category			reference category		
Wielkopolska	0.99	–0.01	(–0.09)	0.99	–0.01	(–0.09)	0.95	–0.05	(–0.43)	0.94	–0.07	(–0.52)
Silesia	0.85	–0.16	(–1.92)	0.85	–0.16	(–1.95)	0.93	–0.07	(–0.61)	0.94	–0.06	(–0.53)
West	1.36	0.31	(3.30)***	1.37	0.32	(3.38)***	0.71	–0.34	(–2.81)**	0.70	–0.36	(–2.95)**
Pomerania	1.01	0.01	(0.09)	1.01	0.01	(0.06)	1.12	0.11	(0.90)	1.12	0.12	(0.97)
Northeast	1.05	0.05	(0.47)	1.04	0.04	(0.41)	1.02	0.02	(0.19)	1.03	0.03	(0.25)
East	1.07	0.07	(0.57)	1.07	0.06	(0.53)	1.11	0.11	(0.64)	1.10	0.09	(0.56)
Malopolska	0.97	–0.03	(–0.29)	0.97	–0.03	(–0.31)	0.85	–0.16	(–1.38)	0.85	–0.16	(–1.35)
Village	0.66	–0.42	(–6.60)***	0.66	–0.42	(–6.66)***	0.76	–0.28	(–3.64)***	0.75	–0.29	(–3.76)***
Interactions												
Sex × year												
Woman x year 1989		—		1.05	0.05	(0.29)		—		0.73	–0.31	(–0.68)
Sex × age												
Woman × age 55 or older		—		1.16	0.15	(1.11)		—		0.35	–1.06	(–3.21)**
Year × education												
1989–1997 × vocational		—		0.55	–0.60	(–2.10)*		—		1.13	0.12	(0.15)
1989–1997 × secondary		—		0.63	–0.46	(–1.54)		—		1.56	0.44	(0.48)
1989–1997 × tertiary		—		0.53	–0.63	(–1.68)		—		0.87	–0.14	(–0.15)
1998–2008 × vocational		—		0.62	–0.49	(–1.59)		—		1.20	0.18	(0.21)
1998–2008 × secondary		—		0.76	–0.28	(–0.88)		—		1.70	0.53	(0.56)
1998–2008 × tertiary		—		0.66	–0.42	(–1.10)		—		0.84	–0.17	(–0.19)

(*continued*)

Table 6 (*continued*)

	Model 1a			Model 1b			Model 2a			Model 2b		
	Employment periods with interactions			Employment periods with interactions			Nonemployment periods without interactions			Nonemployment periods without interactions		
	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*	exp(*b*)	*b*	*t*
Sex × education												
Woman × vocational		—		1.00	0.00	(0.01)		—		0.83	–0.19	(–0.69)
Woman × secondary		—		1.00	0.00	(0.00)		—		1.14	0.13	(0.48)
Woman × tertiary		—		0.99	–0.01	(–0.05)		—		1.31	0.27	(0.83)
Dynamics of the process												
0–24 months	2.94	1.08	(11.85)***	2.96	1.08	(11.85)***		—			—	
24–60 months	1.36	0.31	(3.51)***	1.37	0.31	(3.54)***		—			—	
60–300 months	reference category			reference category								
300–720 months	1.64	0.50	(3.14)**	1.63	0.49	(3.12)**		—			—	
0–12 months		—			—		2.30	0.83	(3.01)**	2.28	0.82	(2.96)**
12–60 months		—			—		0.94	–0.06	(–0.27)	0.93	–0.07	(–0.32)
60–240 months							reference category			reference category		
Constant	0.00	–6.08	(–16.46)***	0.00	–6.44	(–15.09)***	0.00	–5.89	(–9.49)***	0.00	–5.84	(–6.42)***
Number of episodes		2,3796			2,3796			5,419			5,419	
AIC		8,347.7			8,361.1			5,479.1			5,478.9	
BIC		8,557.8			8,660.0			5,637.4			5,709.8	

$*p < 0.05$; $**p < 0.01$; $***p < 0.001$.

In addition to testing the above-mentioned hypotheses, my results show the lower stability of both early and late careers. Being employed in the "first job," compared to subsequent jobs, increases the hazard rate of interrupting employment more than threefold. This may signify the temporary character of first jobs, but it may also indicate the difficulties that young people have in entering the labor market. Similarly, for those older than fifty-five, the chances of interrupting employment grow about twofold (Models 1a and 1b). In terms of undertaking employment, older people are also disadvantaged, but this concerns only women (65 percent lower chances).

The results also provide insights on geographic variation in regard to interruptions and undertaking of employment, which is a largely unexplored area. Independently of other factors, living in a village increases the stability of both employment and nonemployment: The risk of interrupting employment is 35 percent lower there than in towns and cities. At the same time, the periods of remaining out of work are longer than in towns and cities. Both these characteristics may reflect the large percentage of more stable agriculture jobs in rural areas and the overall smaller pool of jobs and employees.

Among the regions, only western Poland stands out as especially vulnerable. In this region, the risk of interrupting employment was 35 percent higher and the chance of undertaking employment was 30 percent lower than in the reference (central) region. This may reflect the region's particularly high (compared to other regions of Poland) share of small enterprises and the high unemployment rate.

Robustness Check

Table 6 concerns the entire sample. To check the robustness of the results, I repeated the analysis for people under age fifty-five, in order to exclude the interruptions and undertaking employment by people eligible for retirement. The results (not shown, but available upon request) do not change significantly.

Summary and Discussion of Results

The goal of the study was to describe the dynamics of employment in Poland in 1988–2008, verifying hypotheses emerging from the literature on the topic. Using data covering twenty years of work histories as recorded by the POLPAN panel survey, I presented the changes that took place after 1989, differences in work interruptions and resuming employment after an interruption between men and women, between educational groups, and between regions.

The basic and surprising conclusion from this analysis is that women in Poland—contrary to expectations and in contrast to West European countries—experience stable employment periods comparable to those of men. However, it should be stressed that the wording of the questions in POLPAN does not allow us to account for work interruptions related to childbearing, such as maternity and parental leaves. The results presented do not preclude that these kinds of interruptions are more frequent among women than among men.

Even though there is no statistically significant gender difference in career interruptions, the nonemployment periods of women are on average longer than those of men, and their chances of returning to paid work are lower. Women less often than men resume employment after a long (fifteen- to twenty-year) break, which may partly result from their longer life expectancy and their higher prevalence in the oldest age groups and among retired persons. However, the evidence concerning shorter nonemployment periods also suggests that women have more problems than men with reentering employment after a break.

The next important conclusion concerns the dramatic decrease in the stability of paid employment after 1989. The large increase in the chance of losing a job suggests that the restructuring of the labor market was dramatic, and no group managed to protect against this loss of stability: Among people with vocational education the risk of interrupting work increased more than fivefold; among people with elementary, secondary, and tertiary education—more than tenfold. In the same period, the chances of returning to work did not grow.

Besides the aforementioned, the analysis adds new points to the description of the Polish labor market during and after the transformation. First, although the chances of interrupting or resuming work depend on educational level, the discriminating power of education with regard to access to the labor market did not grow after the transformation.

Second, the results indicate that people with vocational education, who formed the relatively privileged segment of the working class in large state enterprises in the communist economy, remained relatively protected from interrupting employment after the transformation as well. Both of these results suggest that in some respects the labor market underwent changes smaller than what is sometimes declared.

Notes

1. They were introduced in 1968 as twelve-month unpaid leaves and were then used by about 40 percent of blue-collar and 20 percent of white-collar workers; the remaining women returned to work after a four-month fully paid maternity leave (Łobodzińska 1978). Paid child-care leaves (with an eighteen-month child-care allowance) were introduced in 1981 (Frątczak et al. 2007).

2. This also includes cases where further observation was not possible because of some other event, such as the death of the individual under observation. Left-censoring is not much of an issue for this analysis as during communism unemployment was officially nonexistent, and jobs were stable.

3. This is typical for events such as patients' deaths after surgery. It also applies, for example, to the dynamics of employment: interrupting employment is more frequent in the first months and years (due to lack of fit between the person and the job) and a long time after starting employment (due to retirement).

4. I code the twelve-month periods as dummy variables and put them into the exponential transition rate regression model as independent variables. Coefficients reveal what the hazard rate was in a given period.

5. The difference between the two tests is that Wilcoxon values observations with shorter durations more, and it is the preferred test when differences between hazard rate functions are nonproportional (Cleves et al. 2004: 125). Wilcoxon test: $\chi^2(1) = 0.0$; $p = 0.957$, log-rank test: $\chi^2(1) = 0.1$; $p = 0.753$.

6. Wilcoxon: $\chi^2(1) = 21.86$; $p = 0.000$, log-rank: $\chi^2(1) = 31.75$; $p = 0.000$.

7. For example, in Model 1a, the base risk is 0.0023 per month. The exponent of the coefficient related to the first job is 3.18, which means that, other things equal, the hazard rate of work interruption is more than three times higher for people doing their first job than for those doing their second, or later, job: the hazard rate grows from 0.0023 to 0.007 ($0.0023 \times 3.18 = 0.0073$).

8. For example, in Model 1a (interrupting employment, no interactions), if the episode of employment occurred at the age of twenty, the risk coefficient is 1.083^{20}, that is, 4.953, and after accounting for the quadratic term (0.999^{400}), it is about 3.5 ($1.083^{20} \times 0.999^{400} = 4.953 \times 0.70 = 3.488$.

9. From Model 1b: overall in 1990–97 (compared to 1987–88), the risk of work interruption increased by a factor of 11.36. The coefficient for the interaction with vocational education (.55) reveals that the risk increased by only a factor of 6.2 for people with vocational education. The respective increases for 1989 are factors of 9.9 and 5.4 ($.55 \times 9.9$).

References

Blossfeld, H.-P., and S. Drobnic, ed. 2001. *Careers of Couples in Contemporary Societies: From Male Breadwinner to Dual Earner Families*. Oxford: Oxford University Press.

Blossfeld, H.-P., and H. Hofmeister, ed. 2006. *Globalization, Uncertainty and Women's Careers: An International Comparison*. Cheltenham, UK: Edward Elgar.

Blossfeld, H.-P., and G. Rohwer. 2002. *Techniques of Event History Modeling: New Approaches to Causal Analysis*. Hillsdale, NJ: Erlbaum.

Blossfeld, H-P.; K. Golsch; and G. Rohwer. 2007. *Event History Analysis with Stata*. Mahwah, NJ: Erlbaum.

Cleves, M.; W. Gould; R. Gutierrez; and Y. Marchenko. 2004. *An Introduction to Survival Analysis Using Stata*. 2d ed. College Station, TX: Stata Press.

Domański, H. 2002. "Główne kierunki zmian w strukturze społecznej" [Main Directions of Changes in the Social Structure]. In *Wymiary zycia społecznego. Polska na przełomie XX i XXI wieku* [Dimensions of Social Life at the Turn of the Twentieth and Twenty-First Centuries], ed. M. Marody, 69–92. Warsaw: Wydawnictwo Naukowe Scholar.

Domański, H., and K.M. Slomczynski. 1993. "Struktura społeczna w Polsce. POLPAN 1993: Komputerowy zbiór danych" [Social Structure in Poland. POLPAN 1993: Computer Data File]. Warsaw: IFiS PAN.

Domański, H., and K.M. Slomczynski. 2003. "Dokumentacja badania struktura społeczna w Polsce. POLPAN 1993. Przygotowanie do archiwizacji: Marcin Zieliński" [Documentation of the Study Social Structure in Poland. POLPAN 1993. Preparation for Archiving Marcin Zieliński]. Warsaw: IFiS PAN.

Drobnic, S.; H.-P. Blossfeld; and G. Rohwer. 1999. "Dynamics of Women's Employment Patterns over the Family Life Course: A Comparison of the United States and Germany." *Journal of Marriage and Family* 61, no. 1: 133–46.

Dziennik Ustaw. 1982. "Ustawa z dnia 26 października 1982r o postępowaniu wobec osób uchylających się od pracy" [Law of October 26, 1982, on Proceedings Against Persons Avoiding Work]. Official gazette 229 no. 35. Available at http://g.ekspert.infor.pl/p/_dane/akty_pdf/DZU/1982/35/229.pdf#zoom=90/.

Frątczak, E.; M. Kulik; M. Malinowski; and E. Słotwińska-Rosłanowska. 2007. "Regulacje prawne w odniesieniu do zjawisk i procesów demograficznych. Wybrane akty prawne regulujące świadczenia na rzecz dzieci i rodziny—polityka społeczna.

Polska, wybrane lata 1945–2006" [Legal Regulations Related to Demographic Phenomena and Processes. Selected Laws Regulating Benefits for Children and Families—Social Policy. Poland. Selected Years 1945–2006]. Section of Demographic Analyzes, Demographic Science Committee PAN, no. 17A.

Grajek, M. 2001. "Gender Pay Gap in Poland." CIG Working Papers FS IV, Wissenschaftszentrum Berlin (WZB), Research Unit: Competition and Innovation (CIG), 01–13.

Kaplan, E. L., and P. Meier. 1958. "Nonparametric Estimation from Incomplete Observations." *Journal of the American Statistical Association* 53: 457–81.

Kotowska, I.E., and U. Sztanderska. 2007. "Rozdział 1. Zmiany demograficzne a zmiany na rynku pracy w Polsce" [Population Changes and Labor Market Developments in Poland]. In *Aktywność zawodowa i edukacyjna a obowiązki rodzinne w Polsce w świetle badań empirycznych* [Economic and Educational Activity Versus Family Obligations], ed. I.E. Kotowska, U. Sztanderska, and I. Wóycicka, 13–46. Warsaw: Wydawnictwo Naukowe Scholar.

Matysiak, A., and S. Steinmetz. 2008. "Finding Their Way? Female Employment Patterns in West Germany, East Germany, and Poland." *European Sociological Review* 24: 331–45.

Łobodzińska, B. 1977. "Married Women's Gainful Employment and Housework in Contemporary Poland." *Journal of Marriage and Family* 39, no. 2: 405–15.

———. 1978. "The Education and Employment of Women in Contemporary Poland." *Signs* 3, no. 3: 688–97.

Orazem, P.F., and M. Vodopivec. 2000. "Male–Female Differences in Labor Market Outcomes During the Early Transition to Market: The Cases of Estonia and Slovenia." *Journal of Population Economics* 13, no. 2: 283–303.

Pollert, A. 2003. "Women, Work and Equal Opportunities in Post-Communist Transition." *Work, Employment and Society* 17, no. 2: 331–57.

Slomczynski, K.M. 1998a. "Dokumentacja badania struktura społeczna w Polsce. POLPAN 1998. Przygotowanie do archiwizacji: Marcin Zieliński" [Documentation of the Study Social Structure in Poland. POLPAN 1998. Preparation for Archiving Marcin Zieliński]. Warsaw: IFiS PAN.

———. 1998b. "Struktura społeczna w Polsce. POLPAN 1998" [Social Structure in Poland. POLPAN 1998]. Warsaw: IFiS PAN.

Slomczynski, K.M., ed. 2000. *Social Patterns of Being Political*. Warsaw: Wydawnictwo IFiS PAN.

———. 2002. *Social Structure: Changes and Linkages*. Warsaw: Wydawnictwo IFiS PAN.

Slomczynski, K.M.; I. Białecki; H. Domański; K. Janicka; B.W. Mach; Z. Sawiński; J. Sikorska; and W. Zaborowski. 1988a. "Dokumentacja badania struktura społeczna w Polsce. POLPAN 1988. Przygotowanie do archiwizacji: Marcin Zieliński" [Documentation of the Study Social Structure in Poland. POLPAN 1988. Preparation for Archiving Marcin Zieliński]. Warsaw: IFiS PAN.

———. 1988b. "Struktura społeczna w Polsce. POLPAN 1988" [Social Structure in Poland. POLPAN 1988]. Warsaw: IFiS PAN.

———. 2003a. "Dokumentacja badania struktura społeczna w Polsce. POLPAN 2003. Przygotowanie do archiwizacji: Marcin Zieliński" [Documentation of the Study Social Structure in Poland. POLPAN 2003. Preparation for Archiving Marcin Zieliński]. Warsaw: IFiS PAN.

———. 2003b. "Struktura społeczna w Polsce. POLPAN 2003" [Social Structure in Poland. POLPAN 2003]. Warsaw: IFiS PAN.

Sztanderska, U., and G. Grotkowska. 2007. "Rozdział 5. Zatrudnienie i bezrobocie kobiet i mężczyzn" [Employment and Unemployment of Women and Men]. In *Aktywność zawodowa i edukacyjna a obowiązki rodzinne w Polsce w świetle badań empirycznych* [Economic and Educational Activity Versus Family Obligations], ed. I.E. Kotowska, U. Sztanderska, and I. Wóycicka, 170–218. Warsaw: Wydawnictwo Naukowe Scholar.

Table A1

Regions Included in the Analysis

Region	Voivodships (16)
Central	Łódzkie, Mazowieckie, Małopolskie
Malopolska	Podkarpackie, Świętokrzyskie, Pomorskie
Pomerania	Warmińsko-Mazurskie, Zachodnio-Pomorskie, Podlaskie
Northeast	Warmińsko-Mazurskie, Opolskie
Silesia	Śląskie, Kujawsko-Pomorskie
Wielkopolska	Wielkopolskie, Lubuskie
East	Mazowieckie, Dolnośląskie
West	Lubuskie, Wielkopolskie, Zachodnio-Pomorskie

Table A2

Chances of Resuming Work: Full Piecewise-Constant Exponential Model

	Hazard rate exp(*b*)	Coefficient *b*	*t*	Conditional probability of resuming work (%)
0–12 months	0.062	–2.782	(–78.34)***	74
12–24 months	0.021	–3.840	(–50.22)***	25
24–36 months	0.014	–4.266	(–39.10)***	17
36–48 months	0.012	–4.435	(–33.48)***	14
48–60 months	0.011	–4.540	(–29.43)***	13
60–72 months	0.009	–4.702	(–24.88)***	11
72–84 months	0.006	–5.038	(–20.77)***	7
84–96 months	0.006	–5.143	(–18.54)***	7
96–108 months	0.007	–5.003	(–17.33)***	8
108–120 months	0.002	–6.262	(–10.85)***	2
120–132 months	0.004	–5.545	(–12.40)***	5
132–144 months	0.004	–5.569	(–11.14)***	5
144–156 months	0.004	–5.653	(–9.79)***	5
156–168 months	0.001	–6.645	(–6.65)***	1
168–180 months	0.002	–6.466	(–6.47)***	2
180–240 months	0.000	–20.750	(–0.02)	0
N	5,391			
AIC	6,134.9			
BIC	6,240.4			

Table A3

Chances of Interrupting Employment: Full Piecewise-Constant Exponential Model

	Hazard rate exp(*b*)	Coefficient *b*	*t*	Conditional probability of work interruption (%)
0–12 months	0.023	–3.758	(–98.43)***	28
12–24 months	0.011	–4.510	(–72.30)***	13
24–36 months	0.007	–4.904	(–60.66)***	8
36–48 months	0.006	–5.038	(–55.88)***	7
48–60 months	0.006	–5.072	(–52.71)***	7
60–72 months	0.005	–5.372	(–45.90)***	6
72–84 months	0.005	–5.256	(–45.52)***	6
84–96 months	0.004	–5.560	(–39.71)***	5
96–108 months	0.005	–5.320	(–41.21)***	6
108–120 months	0.004	–5.599	(–36.71)***	5
120–132 months	0.003	–5.756	(–34.05)***	4
132–144 months	0.003	–5.823	(–32.42)***	4
144–156 months	0.003	–5.910	(–30.71)***	4
156–168 months	0.003	–5.862	(–30.46)***	4
168–180 months	0.002	–6.119	(–27.37)***	2
180–192 months	0.004	–5.611	(–31.74)***	5
192–204 months	0.003	–5.757	(–29.35)***	4
204–216 months	0.003	–5.912	(–27.09)***	4
216–228 months	0.004	–5.520	(–29.72)***	5
228–240 months	0.003	–5.923	(–25.13)***	4
240–252 months	0.003	–5.907	(–24.35)***	4
252–264 months	0.003	–5.929	(–23.72)***	4
264–276 months	0.003	–5.828	(–24.03)***	4
276–288 months	0.003	–5.657	(–24.66)***	4
288–300 months	0.003	–5.971	(–21.53)***	4
300–312 months	0.002	–6.173	(–19.52)***	2
312–324 months	0.004	–5.505	(–23.35)***	5
324–336 months	0.005	–5.221	(–24.49)***	6
336–348 months	0.003	–5.741	(–19.89)***	4
348–360 months	0.006	–5.118	(–23.45)***	7
360–372 months	0.004	–5.552	(–19.23)***	5

	Hazard rate exp(*b*)	Coefficient *b*	*t*	Conditional probability of work interruption (%)
372–384 months	0.008	–4.847	(–22.73)***	10
384–396 months	0.003	–5.670	(–17.01)***	4
396–408 months	0.004	–5.500	(–17.39)***	5
408–420 months	0.006	–5.132	(–18.50)***	7
420–432 months	0.007	–5.017	(–18.09)***	8
432–444 months	0.009	–4.749	(–18.39)***	11
444–456 months	0.007	–4.947	(–16.41)***	8
456–468 months	0.006	–5.129	(–14.51)***	7
468–720 months	0.006	–5.066	(–35.46)***	7
N	30,258			
AIC	10,240.0			
BIC	10,572.7			