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# Job Stability, Mobility and Labour Market Restructuring. Evidence from German Microdata**

The paper analyses the change of job stability and its determinants in the course of time by presenting some empirical evidence from Germany. Drawing upon event history data from the German Federal Labour Office insurance accounts and employing Cox Proportional Hazard Rate Models, we test six core hypotheses on labour market restructuring and its impacts on job stability. Our analysis suggests that during the transition to service society between the 1980s and the 1990s some kind of 're-structuring' of the German labour market has taken place that has simultaneously led to an increasing polarisation and to an increasing levelling out of individual employment chances and risks.

Key words: **Job Stability, Flexibility, Germany, Event History Analyses**

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## 1. Introduction

There can be no doubt that fundamental social, economic, technological, and political changes have taken place during the last two decades. Those changes are often summarized, for example, in terms like "globalisation" (c.f. Reich 1992) or "individualisation" (c.f. Beck/Beck-Gernsheim 2002). It can be suggested that these changes have had a significant impact on employers' as well as employees' behaviour. Therefore, the transition from industrial to service economy[1] and its impact on modern societies and individual employment histories has received considerable attention for at least 20 years. What seems to be indisputable is that all these fundamental changes caused an increasing demand for flexibility of both employers as well as employees. However, flexibility is a multi-dimensional phenomenon as we can see, for example, with regard to the flexibility of the allocation of labour within firms: On the one hand we can distinguish internal from external flexibility and on the other hand there are differences between quantitative and qualitative flexibility (c.f. Goudswaard/Nanteuil 2000); further on wage flexibility could be an additional dimension (c.f. OECD 1989).

In addition the flexibility of labour market actors is determined by the institutional framework they are embedded in. As Hall and Soskice (2001) have pointed out we can distinguish "liberal market economies" and "coordinated market economies" as two ideal types of production regimes because of their fundamental differences in the institutional organisation for example in labour market regulation or educational systems. Whereas the United States are often described as the prototype of "liberal market economies" Germany is suggested to be the prototype of "coordinated market economies". However, due to global changes the traditional German system of "regulated flexibility" has become under pressure during the last two decades and there have been some efforts to de-regulate labour market institutions for example by lowering the dismissal protection in the mid-1980s. But not least because of the path dependencies of institutions the German labour market is still highly regulated compared to liberal market economies (Fuchs/Schettkat 2000). Thus, the paper tries to answer the following questions by analysing the evolution of job stability and its determinants: How have employers and employees in Germany adapted to fundamental changes that have occurred since the 1970s? How did the increasing demand for flexibility affect employment histories of men and women and how did job stability and labour market mobility processes as important outcomes of individual employment histories have changed in a coordinated market economy like Germany during the transition to service society?

Based on a detailed theoretical argumentation *Section 2* will develop six hypotheses about the re-structuring of the labour market and the re-distribution of employment

[1] It is a well known empirical fact that the number of people "producing" services rather than goods have strongly increased during the last decades. But even if goods are still produced the share of service activities within the related production processes has increased too ("tertiarisation") (Freeman and Schettkat 2000; Anxo and Storrie 2001). Therefore, the period between the 1970s and the 1990s could be characterised as the period of transition from 'old' industrial to 'new' service economy/society.

chances and risks in service society that should be tested in the course of he following analyses by presenting some empirical evidence from Germany. *Section 3* will introduce the data and methods that will be used in these investigations. Further on *Section 4* will present the empirical findings in detail. In *section 5* the paper will end with some concluding remarks.

## 2. Re-structuring of the labour market

It is important to distinguish job security from job stability (Gottschalk/Moffitt 1999; Valletta 1999). Job security refers to the qualitative dimensions of labour market mobility. In the following analysis job security is described as mobility opportunities and risks employees (have to) face. In contrast the term job stability refers only to the quantitative dimension what means that we measure job stability as the time an employee is keeping any job with the same employer. Based on the absence of an empirically observable general decrease of job stability the following three subsections will present some theoretical reflections that should strengthen the assumption of a heterogeneous re-structuring process rather than a homogeneous de-structuring process of labour market opportunities and risks during the transition to service society. The question is how different groups of labour market participants have been affected by this re-structuring process. For this reason six hypotheses are derived that will be tested in the course of the following analyses.

### *2.1 The various dimensions of flexibility and the allocation of labour*

As the main effect of fundamental social economic or political changes like "globalisation" or "individualisation" some authors especially emphasise that the old division between 'core' and 'peripheral' workforces (Doeringer/Piore 1971; Sengenberger 1987) seems to dissolve into general employment instability (increasing "external flexibility"). Therefore, concentrating on the suggested growing external flexibility theses commentators start from the assumption of a long-established but now strengthening general trend towards a 'high-velocity labour market' that is increasingly shaping the 'future of work'. In such a turbulent labour market, individual employment histories will, over time, become increasingly unpredictable and chaotic compared with those of the past (Rifkin 1995; Castells 1996; Sennett 1998; Bauman 1998).

And indeed there are some good reasons to suggest a general shift from a strongly segmented industrial labour market to an increasingly de-structured service labour market. Economic globalisation has lead to shortened innovation cycles and 'time to market' has become a more and more important parameter of competition. At the same time the production process itself has changed dramatically. New forms of work organisation like 'just-in-time-production', 'lean production' or 'team production' in connection with 'outsourcing' have replaced the old fordistic principles of the past (Smith 1997; Dörre 2001). In addition, firms try to minimize their costs by outsourcing strategies and small firms have gained importance (c. f. Acs/Audretsch 1990; Sengenberger et al. 1990). And if firm size is shrinking the possibilities of internal flexibility should also decrease. In such a situation external flexibility seems to be the most important possibility for firms to adapt labour allocation to various and fast changing needs. Maintaining the number of employees seems to be no preferable so-

lution since this strategy would require an extensive stock-keeping which seems to be very costly compared to a just-in-time production and which has never been a possible solution within service production anyway. Further on it is assumed that information technologies reduces the power of specialised knowledge because needed information is fast and cheaply available at almost every point in time and every place on earth using standardised software products. Therefore, employees seem to be almost as easily exchangeable like in pre-industrial societies although on a higher level of qualification (Castells 1996). The consequence of this process is said to be a levelling out of employment opportunities and risks. Uncertainties that in industrial societies were unevenly distributed along clearly defined socio-economic demarcation lines are expected to become increasingly generalised (Beck 1992). Today this 'de-structuring process' is hypothesised to be at a very advanced stage, as Bauman (1998: 77) has pointed out: "Nowadays we are all on the move".

However, up to now there is just little empirical evidence that employment stability has decreased and labour market mobility has increased during the transition to service economy. Only a minority of analyses claim to have observed increased labour market mobility and job instability in Great Britain (Booth *et al* 1999) or the U.S. (Swinnerton/Wial 1995; Valetta 1999), while other authors refute these findings and suggest that, despite the alleged (and ongoing) increase in flexibility and deregulation, there is little evidence of any (unambiguous) effects on mobility and job duration (cf., for example, on Great Britain, Burgess/Rees 1998; Doogan 2001 and on the U.S., Diebold et al. 1996; Neumark et al. 1999; Gottschalk/Moffitt 1999, on Germany Winkelmann/Zimmermann 1998; Erlinghagen/Knuth 2004, on Japan Chuma 1998, in an international perspective see Auer/Cazes 2000).

But the absence of a general increase in external numerical flexibility does not mean that there have been no changes at all. Firms can use several strategies to improve the flexibility of different segments of their staff as the theory of labour market segmentation has pointed out (c. f. Doeringer/Piore 1971; Sengenberger 1987). In areas where particularly unskilled employees are needed it is likely that employers prefer a "hire and fire strategy" to adapt the allocation of labour to their demands of production. In contrast to this kind of "external numerical flexibility" employers should prefer an internal solution in areas where skilled employees with branch or firm specific qualifications are needed. However, there is obviously a trade off between external and internal flexibility of labour allocation by firms. In firms' perspective an absolute flexible staff would be extensively inefficient. Why should firms, for example, introduce long-term working time accounts if it is intended to dismiss employees in near future. At least within certain staff segments firms have rather to decide to improve flexibility whether through external *or* internal labour allocation strategies (Mayrhofer 1997).

The described changes in labour demand lead us to *hypothesis 1*: The impact of firm size on job stability has decreased in the course of time.

### *2.2 Tertiarisation and the change in labour demand*

Especially in the German coordinated market economy we can find that employers have strengthened their internal labour allocation strategies for example through flexi-

ble working time schemes or increasing the functional flexibility of staff members (Schulze Buschhoff 2000; Bosch 2001b). As a result, job stability has increased rather then decreased (c.f. Erlinghagen/Knuth 2004; Winkelmann/Zimmermann 1999).

The strengthening of internal strategies to improve firms' flexibility of labour allocation is not only a result of employers' efforts to ensure important and expensive resources of human capital. Another reason could be the increasing orientation of the production of goods and services towards a specific kind of 'logic of tertiarisation': "Industrial production is no longer dominant. This is clear in terms of output and employment shares. More important, perhaps, is its transformation and, especially, the degree to which the logic of standarized mass production and mass consumption, based on the mass worker, is giving way to various forms of flexibilization and de-routinization" (Esping-Andersen 1993: 21). It is important to note, that not only the service sector but also the production of goods is more and more dominated by and geared towards this 'logic of tertiarisation'. "There is […] evidence that the traditional industrial hierarchy is undergoing explosive change as taylorist managerialism declines, as technology makes the unskilled worker increasingly redundant, and as flexible working processes demand multi-skilled and more autonomous workers; but the boundaries between the worker, the manager and the technician may be eroding" (Esping-Andersen 1993: 21). Therefore, we can suggest that the more important the immediate and direct relationship between a specific customer and a specific employee gets the more difficult and/or costly it would be for the firm to substitute this specific employee.

In addition, the possibilities of control are changing. In the past it was comparatively simple to measure employees' performance: On the one hand it was possible to measure the performance directly by evaluating the output. On the other hand employees' efforts were measured indirectly through the input based normally on fixed working time schemes. But the monitoring of performance is becoming much more complicated if the production process is organised according to the logic of tertiarisation because input and output are not easily to measure and ascertain anymore. If employees act within flat hierarchies and within an increasingly flexible internal surrounding, they become more independent of employer's instructions and, therefore, the asymmetry of information between employee and employer is shifting at the expense of the latter. Hence, the performance of theses employees can only, if at all, be evaluated in the long run. In such a situation building up trust and mutual commitment is a good and practicable possibility especially for employers to insure against opportunistic behaviour (Wintrobe/Breton 1986; Breen 1997).Therefore, we formulate *hypothesis 2* as followed: Job stability of employees doing service activities has increased in the course of time.

But building up trust and commitment requires durable employment relationships and, therefore, job stability should not generally decrease during the transition to service society. However, this is only true for skilled employees. Since knowledge has become more and more an important resource in production (OECD 1996; Drucker 1998) the employment chances of individuals should shrink dramatically who are provided neither with formal nor with sufficient "soft" skills (c.f. Nickel/Bell 1995), what leads us to *hypothesis 3*: Unskilled employees have faced a sharp decrease in job stability and growing employment risks whereas skilled employees show an increase in job stability and especially growing employment opportunities in the course of time.

Further on and regarding to "signalling theory" (Mincer 1973) we suggest that employers interpret former unemployment experiences of someone who applied for a job as a negative signal for the productivity of this applicant. This should hold true especially if the applicant has been long term unemployed before. Because of increasing information asymmetry between employer and employee caused by the process of tertiarisation unemployment experience as a negative signal for lower productivity should has gained importance in the course of time. Therefore, we formulate *hypothesis 4*: Comparing the 1990s to the 1980s we suggest increasingly lower job stability and higher employment risks for employees who had experienced unemployment periods in the past

In addition there is a connection between the shift towards service production and individual age specific labour market mobility. Since educational expansion has delayed the first entry of young adults into the labour market and since early retirement schemes have gained in significance for older labour market participants (c.f. Knuth and Kalina 2002) we suggest *hypothesis 5*: Job stability has decreased for younger as well as for older employees in the course of time.

### *2.3 Pluralisation of family forms and the change in labour supply*

Beside changing labour demand we can observe a change in labour supply, too. There is no doubt that during the last decades the private household structure has changed remarkably. There has been especially an increase in the number of single person households as well as of non-married couples but nevertheless partnership (with or without children; with or without marriage certificate) is still the leading ideal for the majority of adults at least in Germany (Lauterbach 1999). Therefore, it is not so much the household structure but especially the *organisation of private household production* that has changed fundamentally. According to the organisation of private household production, in industrial society it has been, for example, comparatively easy for men to change their employer and accept potential changing working times or extended travel distances. This was possible because female employment – if at all – was intermittent and/or commonly intended to earn some 'extra money'. Therefore, female employment was largely disposable. In such an arrangement the private household production could relatively easy be adjusted to new employment demands on *men*.

Female emancipation and a changed gender relationship in combination with an increase in the formal qualification of women has led to an enormous growth in female employment and, therefore, to changes in the organisation of the private household production. Thus, today more and more households have not only to coordinate two careers. At the same time there has to be found an elaborated arrangement of informal work and outsourcing of household related services. And if such an arrangement between male and female employment, affordable housing, adequate school location, public transport connection, car use, child care by grandparents or availability of a nanny or kindergarten once is established, the individual labour market mobility of men and women is limited in favour of a principally increased flexibility of the whole private household (Blossfeld/Drobnic 2001). By following such a double earning strategy the private household is able to increase its flexibility because its economic base is strengthened (Oppenheimer 1997; Sweeney 1997). If this is true it be-

comes obvious that nowadays there have to be very strong mobility incentives for men *and* women before they accept a destabilisation of the balanced and fragile arrangement of their private household production. „Thus, at all stages of their lives, these dual-earners will try to be employed as continuously as possible and as much as possible, and they will increasingly share the housework and childcare. In other words, issues of dependency and providership are becoming increasingly blurred" (Blossfeld/Drobnic 2001: 28). With regard to the pluralisation of family forms and the change in labour supply we suggest *hypothesis 6*: Differences in job stability as well as in employment opportunities and risks of men and women have diminished in the course of time.

## 3. Data and method

For Germany the IAB Employment Subsample (IABES) is particularly well suited as a data set for the analysis of job stability and labour market mobility. The IABES contains exact daily data on the employment careers of some 560,000 individuals over the period between 1975 and 1995. The data set is derived from a 1% sample of the insurance accounts that the German Federal Labour Office (*Bundesanstalt für Arbeit*) maintained in respect of employees liable to pay social security contributions between 1975 and 1995.[2] These 'process-produced data' are supplemented by information on periods of unemployment during which a claimant received benefits and on certain characteristics of the establishments that employed individuals in the subsample during the period of observation. This corresponds to about 7.8 million employment or benefit payment notifications, with each individual record containing 35 variables (cf. Bender et al. 2000).

For our estimations we use cox proportional hazard rate models ("cox models"). Compared with parametric methods the semi-parametric cox model has one particular advantage: By using cox models we can calculate the influences of the interesting covariates on the transition rate as a mathematical function, but we need no further assumptions about the time dependency of the transition rate. Therefore, the cox model is a very robust and flexible method to analyse transition processes (Blossfeld/Rohwer 2002).

The cox models are estimated for two sub samples drawn out of the raw data. Sub-sample 1 represents jobs that have existed in the beginning of the 1980s and subsample 2 contains jobs that have existed in the beginning of the 1990s. First, we estimate an unspecified transition model for the general event of leaving a job. The end of an employment spell ('exit') is defined as the termination of an existing insurable job. Second, we estimate a competing risk model in which we distinguish between (1) a smooth transition from one employer to another, (2) a transition into the hidden labour force ("registration gap"), (3a) a transition into unemployment or (3b) a transition into long term unemployment (alternative to 3a). All estimations are done separately for the two sub-samples to compare job stability in the 1980s and the 1990s.

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2 Hence, the analysis is restricted to West-German employees and the self-employed, civil servants and those in marginal part-time employment are not included in the following analysis.

In addition, we have to be aware that the probability of job termination shrinks with increasing tenure. Therefore, separate estimations should be done for three groups of jobs:

*estimation type (a):* newly started jobs ("zero tenure")

*estimation type (b):* jobs with tenure between one and two years

*estimation type (c):* jobs with tenure of minimum five years

There are several explanatory variables included into the models which can be distinguished, on the one hand, as time-constant and time-varying variables. On the other hand the explanatory variables can be divided into "labour supply information", "labour demand information", "intermediate information", "information about the previous employment history", "information about the ongoing employment history", and "macro economic information". Table 1 gives a summary of all explanatory variables included into the estimation model. Both models will include the same set of explanatory socio-economic variables whereas our main interest will concentrate on the influences of gender, age, formal skills, former unemployment experience, firm size and kind of activity. All other explanatory variables will function as control variables.[3]

**Table 1: List of explanatory variables in the Cox-Proportional-Hazard-Rate-Model** (Source: own representation)

| **Time constant Variables** | | | | **Time varying Variables** | |
|---|---|---|---|---|---|
| **Labour supply** | **Intermediate** | **Labour demand** | **Past employment history** | **Ongoing employment history** | **Macro economic information** |
| gender | kind of activity | firm size | number of prev. jobs | number of ongoing occup. changes | monthly unemployment rate |
| age | weekly working time | branch | number of prev. occup. changes | change of weekly working time | |
| formal skills | | firm age | number of prev. unemployment spells | | |
| nationality | | share of staff with occup. degree | number of prev. "registration gaps" | | |
| | | | experience of long-term unemployment | | |

## 4. Results

To test our hypotheses a general model as well as competing risk models are separately estimated for three groups of jobs. As mentioned above theses three groups are (a) newly started jobs, (b) jobs with one to two years of tenure, and (c) jobs with

[3] More details about the construction of our dataset can be found in the Technical Appendix at the end of this paper.

(a) newly started jobs, (b) jobs with one to two years of tenure, and (c) jobs with minimum tenure of five years. The estimated hazard ratios (HR) are reported in table 2 to 4 (for the calculation and interpretation of hazard ratios see Hosmer/Lemshow 1999).

**Table 2: Hazard Ratios for newly started jobs (Cox Model; type a), Sample 1 (S1: 1983/84) and Sample 2 (S 2: 1990/91), general model and competing risk model** (Source: IAB-Employment Subsample, own calculation)

| | all destinations | | firm change | | unemployment | | long-term unempl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **gender** | | | | | | | | | | |
| male | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| female | 0,92*** | 0,90*** | 0,97 | 0,90** | 0,89** | 1,01 | 0,77* | 0,91 | 0,92* | 0,87*** |
| **age** | | | | | | | | | | |
| up to 24 years | 1,26*** | 1,60*** | 1,51*** | 1,78*** | 1,30*** | 1,22*** | 0,89 | 0,76* | 1,16* | 1,71*** |
| 25-34 years | 1,02 | 1,21*** | 1,17* | 1,34*** | 0,97 | 1,03 | 0,93 | 0,90 | 1,01 | 1,27*** |
| 35-44 years | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 45-54 years | 1,00 | 1,07 | 0,69*** | 0,90 | 1,10 | 1,13 | 1,37* | 1,43*** | 1,07 | 1,11 |
| >= 55 years | 1,32*** | 1,30*** | 0,37*** | 0,54*** | 1,15 | 1,29* | 2,00*** | 2,71*** | 2,13*** | 1,81*** |
| **skills** | | | | | | | | | | |
| unskilled | 1,46*** | 1,60*** | 1,18** | 1,28*** | 1,32*** | 1,44*** | 2,01*** | 1,58*** | 1,75*** | 1,89*** |
| vocational degree | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| academic degree | 1,02 | 0,97 | 1,27* | 1,17 | 0,89 | 0,87 | 1,08 | 0,85 | 0,92 | 0,86 |
| **nationality** | | | | | | | | | | |
| German | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| main migrants | 0,91* | 1,08* | 1,02 | 1,03 | 0,78*** | 1,05 | 0,50*** | 1,01 | 1,07 | 1,17*** |
| other migrants | 1,31*** | 1,17*** | 0,97 | 0,84* | 1,06 | 0,90 | 1,27 | 0,90 | 1,66*** | 1,56*** |
| **kind of activity** | | | | | | | | | | |
| primary activity | 1,21* | 1,04 | 0,72 | 0,74 | 1,43*** | 1,64*** | 1,32 | 1,89** | 1,12 | 0,78 |
| manufacturing activity | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| service activity | 0,77*** | 0,78*** | 0,88* | 0,83*** | 0,72*** | 0,69*** | 0,88 | 0,72*** | 0,78*** | 0,79*** |
| **weekly working time** | | | | | | | | | | |
| full-time | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| part-time | 0,98 | 1,06* | 0,78*** | 0,85*** | 0,64*** | 0,73*** | 0,56*** | 0,57*** | 1,27*** | 1,37*** |
| **branch** | | | | | | | | | | |
| primary sector | 1,08 | 1,198 | 1,05 | 0,78 | 1,14 | 0,96 | 1,05 | 0,80 | 1,22 | 1,96*** |
| mining & steel ind. | 1,03 | 0,82* | 0,87 | 0,70* | 0,89 | 0,70* | 1,11 | 0,51 | 1,03 | 0,98 |
| manufacturing ind. | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| construction ind. | 1,42*** | 1,05 | 1,12 | 0,86* | 1,74*** | 1,15* | 1,65*** | 1,09 | 1,10 | 1,09 |
| infrastructure & transport services | 1,23*** | 1,22*** | 1,15 | 1,15* | 0,93 | 0,99 | 0,80 | 1,01 | 1,56*** | 1,41*** |
| production services | 1,51*** | 1,50*** | 1,67*** | 1,81*** | 1,18 | 0,.99 | 1,37 | 1,13 | 1,70*** | 1,55*** |
| econ. transact. serv. | 1,11*** | 1,16*** | 1,14 | 1,16** | 1,05 | 0,99 | 1,13 | 1,03 | 1,16* | 1,27*** |
| polit. transact. serv. | 1,08 | 1,15*** | 1,17 | 0,90 | 1,31*** | 1,36*** | 1,61*** | 2,03*** | 0,84* | 1,16* |
| pers. & househ. serv. | 1,39*** | 1,36*** | 1,36*** | 1,33*** | 1,40*** | 1,16* | 1,29 | 1,09 | 1,34*** | 1,49*** |
| **firm size** | | | | | | | | | | |
| 1-19 employees | 1,12*** | 1,02 | 1,20*** | 1,11* | 1,41*** | 1,17** | 1,30* | 0,98 | 0,83*** | 0,87*** |
| 20-99 employees | 1,06 | 1,07* | 1,20*** | 1,17*** | 1,22*** | 1,09 | 1,18 | 1,03 | 0,85*** | 0,99 |
| 100-499 employees | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| >=500 employees | 0,76*** | 0,90*** | 0,69*** | 0,78*** | 0,68*** | 0,85* | 1,07 | 0,96 | 0,83*** | 1,01 |

**Table 2 (continued)**

| | all destinations | | firm change | | unemployment | | long-term unempl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **firm age** | | | | | | | | | | |
| < 1 year | 1,08 | 1,13*** | 0,83 | 1,11 | 1,02 | 1,16 | 1,34 | 1,40 | 1,35*** | 1,13 |
| 1-5 years | 1,18*** | 1,12*** | 1,12 | 1,18*** | 1,09 | 1,08 | 1,29* | 1,10 | 1,35*** | 1,11* |
| >= 5 years | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| **firm's skill structure** | | | | | | | | | | |
| share of staff with occup. degree (%) | 1,001* | 1,002*** | 1,000 | 1,001 | 1,001 | 1,000 | 1,002 | 0,996 | 1,001 | 1,002*** |
| **prev. unemployment experiences** | | | | | | | | | | |
| never unemployed | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 unemploy. spell | 1,12*** | 1,01 | 1,14* | 1,02 | 2,73*** | 2,62*** | 2,45*** | 1,79*** | 0,58*** | 0,63*** |
| 2 unemploy. spells | 1,19*** | 1,10* | 1,01 | 0,97 | 3,57*** | 3,72*** | 2,99*** | 2,19*** | 0,48*** | 0,56*** |
| >= 3 unemploy. spell | 1,33*** | 1,25*** | 0,89 | 0,85 | 4,27*** | 5,36*** | 3,06*** | 2,34*** | 0,41*** | 0,50*** |
| **prev. jobs** | | | | | | | | | | |
| no prev. jobs | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 prev. job | 0,95 | 1,09*** | 0,90 | 0,96 | 1,01 | 1,33*** | 0,89 | 1,60*** | 0,75*** | 0,99 |
| 2 prev. jobs | 1,02 | 1,06 | 0,89 | 0,88 | 1,03 | 1,10 | 1,00 | 1,06 | 0,77*** | 1,02 |
| >= 3 prev jobs | 1,23*** | 1,18*** | 1,07 | 1,03 | 1,28*** | 1,29*** | 1,21 | 0,92 | 0,78*** | 1,00 |
| **prev. registr. gap** | | | | | | | | | | |
| no gap | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 gap | 1,13*** | 1,09*** | 1,13* | 0,96 | 0,92* | 0,963 | 1,30** | 1,16 | 1,77*** | 1,50*** |
| 2 gaps | 1,45*** | 1,42*** | 1,28** | 1,10 | 1,02 | 0,96 | 1,39* | 0,85 | 3,06*** | 2,54*** |
| >= 3 gaps | 2,01*** | 1,78*** | 1,34* | 1,17 | 0,98 | 1,19 | 1,09 | 2,12*** | 5,48*** | 3,43*** |
| **prev. occup. changes** | | | | | | | | | | |
| no change | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 change | 0,99 | 0,98 | 1,06 | 1,05 | 0,98 | 1,07 | 1,27 | 1,18 | 0,89* | 0,84*** |
| 2 changes | 0,99 | 1,07 | 1,11 | 1,41*** | 0,97 | 1,13 | 1,51** | 1,53*** | 1,01 | 0,84** |
| >= 3 changes | 1,07 | 1,13** | 1,53*** | 1,61*** | 1,06 | 1,20* | 2,21*** | 2,01*** | 1,07 | 0,91 |
| **prev. long-term unemployment** | | | | | | | | | | |
| no | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| yes | 1,09* | 1,03 | 0,95 | 0,89 | 1,21*** | 1,07 | 2,13*** | 1,87*** | 1,03 | 1,05 |
| **change in working time in ongoing job** | | | | | | | | | | |
| no | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| yes | 0,83 | 0,87 | 1,01 | 0,80 | 1,02 | 0,84 | 1,37 | 0,81 | 0,68* | 0,98 |
| **ongoing occupational changes** | | | | | | | | | | |
| no changes | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| min. one change | 0,65*** | 0,79*** | 0,60*** | 0,91 | 0,71* | 0,70* | 0,78 | 0,77 | 0,66*** | 0,72** |
| **macro data** | | | | | | | | | | |
| unemployment rate | 1,25*** | 1,32*** | 1,32*** | 1,57*** | 1,36*** | 1,21*** | 1,04 | 0,83* | 0,95 | 1,13*** |
| *n* | 12.033 | 15.056 | 12.033 | 15.056 | 12.033 | 15.056 | 12.033 | 15.056 | 12.033 | 15.056 |
| *events* | 9.308 | 11.264 | 2.248 | 3.705 | 3.655 | 2.669 | 600 | 622 | 3.263 | 4.768 |
| *Pseudo* $R^2$ | 0,0141 | 0,0131 | 0,0165 | 0,0189 | 0,0445 | 0,0438 | 0,0733 | 0,0679 | 0,0306 | 0,0237 |

**** : p <= 0,005 ** : 0,005 < p <= 0,01 *: 0,01 < p <= 0,05*

*RG = reference group*

**Table 3: Hazard Ratios for jobs with 1-2 years of tenure (Cox Model; type b), Sample 1 (1983/84) and Sample 2 (1990/91), general model and competing risk model**
(Source: IAB-Employment Subsample, own calculation)

| | all destinations | | firm change | | unemployment | | long-term un-empl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **gender** | | | | | | | | | | |
| male | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| female | 0,85*** | 1,03 | 0,69*** | 0,86*** | 1,20*** | 1,03 | 1,45*** | 0,96 | 0,77*** | 1,36*** |
| **age** | | | | | | | | | | |
| up to 24 years | 1,48*** | 1,69*** | 1,48*** | 1,61*** | 1,22** | 1,04 | 0,89 | 0,86 | 1,87*** | 2,72*** |
| 25-34 years | 1,22*** | 1,38*** | 1,24*** | 1,27*** | 1,16* | 1,00 | 1,01 | 1,03 | 1,25** | 2,12*** |
| 35-44 years | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 45-54 years | 0,92 | 0,94 | 0,83* | 0,77*** | 0,86 | 1,07 | 1,09 | 1,82*** | 1,14 | 1,18 |
| >= 55 years | 1,97*** | 1,66*** | 0,56*** | 0,60*** | 1,22 | 2,03*** | 2,59*** | 5,82*** | 5,54*** | 4,01*** |
| **skills** | | | | | | | | | | |
| unskilled | 1,07 | 1,04 | 0,96 | 0,90 | 1,19** | 1,30*** | 1,38* | 1,50*** | 1,05 | 1,05 |
| vocational degree | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| academic degree | 1,14* | 1,22*** | 1,21 | 1,22** | 0,87 | 1,26 | 1,10 | 1,08 | 1,25* | 1,23* |
| **nationality** | | | | | | | | | | |
| German | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| main migrants | 1,11 | 1,13* | 0,83 | 0,90 | 1,18 | 1,15 | 1,19 | 1,29 | 1,40*** | 1,48*** |
| other migrants | 1,34*** | 1,32*** | 0,91 | 1,17 | 1,40* | 1,41* | 1,42 | 1,72* | 1,92*** | 1,55*** |
| **kind of activity** | | | | | | | | | | |
| primary activity | 1,11 | 1,35* | 0,77 | 0,70 | 1,71* | 2,00*** | 1,94 | 1,32 | 1,00 | 1,81*** |
| manufacturing activity | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| service activity | 1,08 | 0,96 | 1,24*** | 1,08 | 0,96 | 0,72*** | 1,07 | 0,82 | 1,02 | 0,96 |
| **weekly working time** | | | | | | | | | | |
| full-time | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| part-time | 0,99 | 0,96 | 0,87 | 0,89 | 0,78*** | 0,86 | 0,65* | 0,97 | 1,32*** | 1,14* |
| **branch** | | | | | | | | | | |
| primary sector | 1,12 | 1,12 | 1,04 | 1,10 | 0,68 | 1,08 | 0,56 | 0,49 | 1,96** | 1,08 |
| mining & steel ind. | 0,78*** | 0,82* | 0,91 | 0,91 | 0,56*** | 0,71 | 0,65 | 0,82 | 0,82 | 0,80 |
| manufacturing ind. | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| construction ind. | 1,49*** | 1,09 | 1,48*** | 1,05 | 1,69*** | 1,08 | 0,69 | 0,77 | 1,28** | 1,09 |
| infrastructure & transport services | 1,21*** | 1,28*** | 1,25* | 1,48*** | 0,72* | 0,87 | 0,58* | 0,58* | 1,72*** | 1,36*** |
| production services | 1,18* | 1,32*** | 1,28* | 1,57*** | 1,06 | 0,95 | 1,11 | 0,74 | 1,22 | 1,25* |
| econ. transact. serv. | 1,08 | 1,25*** | 1,21** | 1,42*** | 1,02 | 0,84* | 0,98 | 0,70* | 1,00 | 1,26*** |
| polit. transact. serv. | 0,77*** | 1,12 | 0,89 | 1,03 | 0,49*** | 1,02 | 0,45*** | 0,76 | 0,98 | 1,32*** |
| pers. & househ. serv. | 1,13* | 1,27*** | 1,11 | 1,21*** | 0,97 | 1,03 | 0,86 | 0,71* | 1,36*** | 1,53*** |
| **firm size** | | | | | | | | | | |
| 1-19 employees | 1,41*** | 1,22*** | 1,15* | 1,16** | 1,88*** | 1,40*** | 1,44* | 1,24 | 1,30*** | 1,21*** |
| 20-99 employees | 1,20*** | 1,08* | 1,13 | 1,12* | 1,41*** | 1,18* | 1,43* | 1,06 | 1,10 | 0,97 |
| 100-499 employees | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| >=500 employees | 0,88*** | 0,84*** | 0,87 | 0,79*** | 0,76*** | 0,71*** | 1,08 | 0,99 | 0,97 | 0,97 |
| **firm age** | | | | | | | | | | |
| < 5 years | 1,05 | 1,06 | 0,99 | 1,09 | 1,07 | 1,11 | 1,25 | 1,18 | 1,09 | 0,99 |
| >= 5 years | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| **firm's skill structure** | | | | | | | | | | |
| share of staff with occup. degree (%) | 0,999 | 0,998*** | 1,000 | 0,998* | 1,000 | 0,998 | 1,001 | 0,998 | 0,998 | 0,997* |

**Table 3 (continued)**

| | all destinations | | firm change | | unemployment | | long-term unempl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **prev. unemployment experiences** | | | | | | | | | | |
| never unemployed | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 unemploy. spell | 1,13*** | 1,04 | 0,83*** | 0,92 | 1,92*** | 1,73*** | 1,84*** | 1,32* | 0,82** | 0,88* |
| >= 2 unemploy. spell | 1,14 | 1,16*** | 0,59*** | 0,90 | 2,19*** | 2,25*** | 1,87*** | 1,57* | 0,89 | 1,01 |
| **Prev. jobs** | | | | | | | | | | |
| no prev. jobs | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 prev. job | 0,87*** | 0,98 | 1,16* | 1,14** | 0,90 | 0,79*** | 1,18 | 0,86 | 0,64*** | 0,95 |
| >= 2 prev jobs | 0,96 | 1,08* | 1,47*** | 1,34*** | 0,91 | 0,76*** | 1,18 | 0,72* | 0,66*** | 1,00 |
| **prev. registr. gap** | | | | | | | | | | |
| no gap | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 gap | 1,03 | 1,12*** | 0,85*** | 0,92 | 1,09 | 1,42*** | 1,16 | 1,74*** | 1,24*** | 1,29*** |
| >= 2 gaps | 1,46*** | 1,36*** | 0,79 | 1,11 | 2,07*** | 1,72*** | 2,04*** | 1,72* | 1,73*** | 1,65*** |
| **prev. occup. changes** | | | | | | | | | | |
| no change | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 change | 1,01 | 0,99 | 1,00 | 1,03 | 0,98 | 1,00 | 1,21 | 1,14 | 1,03 | 0,92 |
| 2 changes | 0,97 | 1,12*** | 0,95 | 1,15* | 1,01 | 1,14 | 1,32 | 1,40* | 0,93 | 1,08 |
| >= 3 changes | 1,12* | 1,19*** | 1,03 | 1,23*** | 1,37*** | 1,46*** | 2,06*** | 1,56* | 0,95 | 0,97 |
| **prev. long-term unemployment** | | | | | | | | | | |
| no | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| yes | 0,98 | 1,17*** | 1,04 | 1,00 | 0,94 | 1,57*** | 0,97 | 2,26*** | 1,03 | 0,99 |
| **change in working time in ongoing job** | | | | | | | | | | |
| no | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| yes | 0,99 | 0,97 | 1,19 | 0,99 | 0,76 | 0,78 | 0,67 | 0,41 | 1,00 | 1,07 |
| **ongoing occupational changes** | | | | | | | | | | |
| no changes | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| min. one change | 0,75*** | 0,85* | 0,73* | 0,80 | 0,76 | 0,88 | 0,81 | 0,88 | 0,75 | 0,91 |
| **macro data** | | | | | | | | | | |
| unemployment rate | 0,03*** | 0,000*** | 0,01*** | 0,00*** | 48,2*** | 0,04*** | 228,2*** | 0,01*** | 0,11*** | 0,00*** |
| *n* | 10.921 | 12.651 | 10.921 | 12.651 | 10.921 | 12.651 | 10.921 | 12.651 | 10.921 | 12.651 |
| *events* | 5.683 | 7.022 | 2.032 | 3.262 | 1.832 | 1.509 | 476 | 472 | 1.786 | 2,227 |
| *Pseudo* $R^2$ | 0,0168 | 0,0211 | 0,0334 | 0,0349 | 0,0278 | 0,0288 | 0,0311 | 0,0480 | 0,0246 | 0,0243 |

**** : p <= 0,005 ** : 0,005 < p <= 0,01 *: 0,01 < p <= 0,05*
*RG = reference group*

### *4.1 Gender*

Overall in both periods of analysis there are significant gender specific differences in job stability. Thus, newly started jobs of women are more stable than those of men. But if we take a look at the jobs with minimum five years of tenure this difference turns the other way round and women show a significantly higher risk to leave their job during our analysis time of three years. Comparing the 1980s to the 1990s for this type of jobs, the female risk of transition is even increasing but this increase is caused

in the main by the distinct growth of the female risk to face a transition into the heterogeneous state of "registration gap".

**Table 4: Hazard Ratios for jobs with minimum 5 years of tenure (Cox Model; type c), Sample 1 (1983/84) and Sample 2 (1990/91), general model and competing risk model** (Source: IAB-Employment Subsample, own calculation)

| | all destinations | | firm change | | unemployment | | long-term unempl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **gender** | | | | | | | | | | |
| male | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| female | 1,19*** | 1,30*** | 0,76*** | 0,84*** | 1,63*** | 1,49*** | 1,82*** | 1,47*** | 1,29*** | 1,68*** |
| **age** | | | | | | | | | | |
| up to 24 years | 1,69*** | 1,71*** | 1,16 | 1,40* | 2,83*** | 0,96 | 2,45*** | 1,27 | 1,35 | 2,99*** |
| 25-34 years | 1,37*** | 1,76*** | 1,27*** | 1,42*** | 1,56*** | 1,30*** | 1,73*** | 0,99 | 1,36*** | 2,84*** |
| 35-44 years | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 45-54 years | 1,05 | 1,03 | 0,77*** | 0,75*** | 1,17*** | 1,55*** | 2,08*** | 2,63*** | 1,38*** | 1,29*** |
| >= 55 years | 4,45*** | 3,54*** | 0,56*** | 0,43*** | 3,24*** | 6.07*** | 8,12*** | 13,02*** | 12,65*** | 8,97*** |
| **skills** | | | | | | | | | | |
| unskilled | 1,11*** | 1,11*** | 1,03 | 0,96 | 1,17*** | 1,27*** | 1,14 | 1,30*** | 1,10*** | 1,09** |
| vocational degree | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| academic degree | 1,04 | 1,11** | 1,80*** | 1,42*** | 0,60*** | 0,69*** | 0,48*** | 0,57*** | 0,82*** | 1,05 |
| **nationality** | | | | | | | | | | |
| German | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| main migrants | 1,43*** | 1,18*** | 0,81** | 0,84** | 1,42*** | 1,29*** | 1,33*** | 1,20* | 1,97*** | 1,38*** |
| other migrants | 1,12 | 1,05 | 0,94 | 1,14 | 0,87 | 0,79 | 0,69 | 0,79 | 1,37*** | 1,10 |
| **kind of activity** | | | | | | | | | | |
| primary activity | 1,40*** | 1,33*** | 1,19 | 1,41*** | 1,52** | 0,74 | 0,63 | 0,56 | 1,54*** | 1,63*** |
| manufacturing activity | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| service activity | 0,91*** | 0,95** | 0,95 | 1,06 | 0,78*** | 0,82*** | 0,86* | 0,84*** | 0,96 | 0,94* |
| **weekly working time** | | | | | | | | | | |
| full-time | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| part-time | 0,95 | 1,00 | 0,95 | 0,99 | 0,80*** | 0,91 | 0,83 | 0,97 | 1,07 | 1,04 |
| **branch** | | | | | | | | | | |
| primary sector | 0,92 | 0,81 | 0,88 | 0,82 | 0,71 | 0,46*** | 0,71 | 0,31* | 1,17 | 1,17 |
| mining & steel ind. | 0,91* | 0,89*** | 0,61*** | 0,86* | 0,63*** | 0,60*** | 0,66*** | 0,61*** | 1,28*** | 1,17*** |
| manufacturing ind. | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| construction ind. | 1,29*** | 0,80*** | 1,09 | 1,00 | 1,35*** | 0,52*** | 0,58*** | 0,36*** | 1,38*** | 0,89 |
| infrastructure & transport services | 1,03 | 1,02 | 1,54*** | 1,37*** | 0,36*** | 0,35*** | 0,28*** | 0,28*** | 1,17** | 1,37*** |
| production services | 1,14* | 1,00 | 1,16 | 1,33*** | 0,84 | 0,48*** | 0,85 | 0,42*** | 1,34*** | 1,13 |
| econ. transact. serv. | 1,02 | 1,01 | 1,13* | 1,26*** | 0,76*** | 0,54*** | 0,75*** | 0,48*** | 1,15*** | 1,19*** |
| polit. transact. serv. | 0,75*** | 0,84*** | 0,79*** | 0,93 | 0,18*** | 0,22*** | 0,16*** | 0,16*** | 1,08 | 1,28*** |
| pers. & househ. serv. | 0,90*** | 0,91*** | 1,11 | 0,94 | 0,55*** | 0,34*** | 0,42*** | 0,23*** | 1,05 | 1,37*** |
| **firm size** | | | | | | | | | | |
| 1-19 employees | 1,26*** | 1,14*** | 1,11 | 1,17*** | 1,99*** | 1,21*** | 1,45*** | 0,93 | 1,04 | 1,08* |
| 20-99 employees | 1,16*** | 1,04 | 1,27*** | 1,14*** | 1,45*** | 0,98 | 1,14 | 0,89 | 0,98 | 0,97 |
| 100-499 employees | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| >=500 employees | 0,92*** | 1,01 | 0,71*** | 0,90*** | 1,15** | 1,27*** | 1,42*** | 1,60*** | 0,95 | 0,98 |
| **firm's skill structure** | | | | | | | | | | |
| share of staff with occup. degree (%) | 1,002*** | 1,000 | 1,004*** | 0,998* | 1,004*** | 1,001 | 1,004* | 1,002 | 1,001 | 1,001 |

**Table 4 (continued)**

| | all destinations | | firm change | | unemployment | | long-term un-empl. | | registration gap | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* | *S 1* | *S 2* |
| **prev. occup. changes** | | | | | | | | | | |
| no change | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| 1 change | 1,05 | 1,02 | 1,01 | 1,09 | 1,08 | 1,05 | 1,23* | 1,11 | 1,07 | 0,95 |
| 2 changes | 1,01 | 1,08 | 0,99 | 1,02 | 1,08 | 0,88 | 0,97 | 0,86 | 0,99 | 1,20* |
| >= 3 changes | 1,06 | 1,067 | 0,90 | 0,99 | 1,08 | 1,09 | 0,98 | 1,53 | 1,18 | 1,08 |
| **change in working time in ongoing job** | | | | | | | | | | |
| no | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| yes | 1,01 | 1,00 | 1,01 | 0,92 | 0,96 | 0,95 | 0,84 | 0,98 | 1,12 | 1,09 |
| **ongoing occupational changes** | | | | | | | | | | |
| no changes | RG | RG | RG | RG | RG | RG | RG | RG | RG | RG |
| min. one change | 1,01 | 0,95 | 0,87 | 0,94 | 1,06 | 0,934 | 1,19 | 0,91 | 1,10 | 0,97 |
| **macro data** | | | | | | | | | | |
| unemployment rate | 0,01*** | 0,00*** | 0,00*** | 0,00*** | 0,03*** | 0,00*** | 0,03*** | 0,00*** | 0,03*** | 0,00*** |
| *n* | 44.698 | 46.441 | 44.698 | 46.441 | 44.698 | 46.441 | 44.698 | 46.441 | 44.698 | 46.441 |
| *events* | 13.304 | 15.654 | 3.608 | 5.166 | 3.357 | 3.476 | 1.486 | 2.373 | 6.311 | 6.990 |
| *Pseudo* $R^2$ | 0,0390 | 0,0428 | 0,0653 | 0,0556 | 0,0342 | 0,0672 | 0,0488 | 0,1070 | 0,0647 | 0,0564 |

**** : p <= 0,005 ** : 0,005 < p <= 0,01 *: 0,01 < p <= 0,05*
*RG = reference group*

However, other gender specific differences that were very prominent in the 1980s have partly diminished noticeably in the course of time. Certainly even in the 1990s there is still a significant smaller chance for women to change a firm directly but the differences between men and women have diminished. Even more obvious is this levelling out process when we take a look on transition to unemployment. In the 1980s women had on the one hand a significant lower unemployment risk comparing newly started jobs and had on the other hand a significant higher unemployment risk comparing jobs with one to two years of tenure. These clear gender specific differences have totally disappeared in the 1990s. Only for jobs with minimum of five years tenure women show in both samples a higher unemployment risk than men but these differences have also declined clearly. Therefore, our sixth hypothesis (see section 2) can largely be confirmed: Gender specific differences in job stability and job security have diminished in the course of time.

### *4.2 Age*

The estimations of the general model confirm the assumption that the age specific hazard function is "u-shaped". This means that with increasing age job stability is initially growing, but shrinks again for older employees.

Beneath the growing chance to face a smooth firm change, the youngest age groups both had a noticeably higher risk to experience the state of "registration gap" within the analysis time of three years. But even if the state of "registration gap" is generally very heterogeneous, it is not very likely for the two youngest age groups that

entering this state meant to face an economically precarious stage. To justify this interpretation we firstly have to remember that periods of "unemployment" are recorded within the IABES data only if the sample member received unemployment benefits. Secondly, it should be noted that in Germany every unemployed is entitled to receive unemployment benefits if he or she was gainful employed at least for minimum of one year. If we now look at the estimation results again it becomes obvious that they indicate no worsening of the economic situation of younger employees. Especially for the younger employees with tenure of more than one year we otherwise could expect an increasing transition into the state of "unemployment" which would guarantee the payment of unemployment benefits. Therefore, it is quite more plausible that the increasing risk to get out of employment and enter the state of "registration gap" is caused by "family reasons" (e.g. to care about a child) or is connected with subsequent episodes of improving formal qualifications (e.g. to start at university). In the end the higher chances to make a smooth transition to a new firm, the higher propensity to get into a "registration gap" and the simultaneously decreasing unemployment risk are arguments for growing mobility chances rather than for growing mobility risks of younger employees between the 1980s and the 1990s.

Since the mid 1980s the possible duration of periods for which older unemployed people could drawn benefits has been prolonged in Germany. As a result, the restructuring of the workforce took place in the form of an increasing number of layoffs of employees who were older than about 55 years. This seemed to be "socially acceptable" since the older unemployed received unemployment benefits for several years until they reach the age of final retirement. However, this policy has led to an enormous growth in long term unemployment of the older workforce. And therefore, it is not really surprising, that this is exactly what we can see with regard to the results of our age specific competing risk model. The unemployment and respectively the long term unemployment risk for the oldest group increased enormously. At the same time the risk to face a change into a "registration gap" in the course of analysis time shrank for the oldest age group. We have to understand that the transition from employment to final retirement appears in our data as a transition into a "registration gap". Hence, the increasing long-term unemployment risk and the decreasing risk to face a transition into a "registration gap" indicate very clearly the change of retirement paradigm in Germany between the 1980s and 1990s with its vast impact on the share of long term unemployed among the older workforce.

Our results strongly confirm hypothesis 5 (see section 2). Job stability of younger and older employees has shrunk between the 1980s and the 1990s. Moreover, we found exactly the kind of mobility patterns that could be expected with regard to delayed first entries into the labour market and a changed retirement paradigm.

### *4.3 Highest formal qualification level*

Compared to the reference group (employees with an occupational degree) and independently of tenure the unemployment risk of unskilled employees increased between the 1980s and the 1990s. At first sight, these findings indicate a growing polarisation of employment chances and risks. To illustrate this we should have a closer look, for instance, on the employees with tenure of one up to two years. In contrast to the ref-

erence group, the unskilled showed a 19 percent higher unemployment risk in the 1980s. But in the 1990s this risk has increased to approximately 30 percent. However, there is also some evidence that does not support this assumed skill specific polarisation process. In opposite to the growing unemployment risk, the unskilled who had found a (new) job showed an increasing chance to make a smooth firm change, and their *long-term* unemployment risk did not increase as well. In addition, looking at both groups of jobs with higher tenure, neither in the 1980s nor in the 1990s any statistically significant differences with regard to the risk of firm change can be found comparing unskilled and employees with an occupational degree. Hence, we can suggest that within the unskilled workforce a certain segment of individuals was still "marketable" even in a more and more service oriented economy. Though, all these findings can be interpreted as an increasing polarisation *within* the group of unskilled labour market participants.

In contrast to the double polarisation of and within the group of unskilled employees we can find a moderate levelling out of employment chances and risks between the employees with an occupational degree (EOD) and with an academic degree. But this levelling out occurs more as a kind of timing effect rather than an approaching effect of overall transition probability: Although academic employees showed significantly higher hazard ratios for changing to another firm in *sample 1* as well as in *sample 2*, the event of leaving the old firm was timely prolonged and occurred later on comparing the 1980s with the 1990s. The same pattern can be found if we take a look on the estimation results for the jobs with minimum five years of tenure. In the 1980s academics had an 80 percent higher risk to face a firm change. Although there was still a higher hazard ratio in the 1990s, this risk has shrunk to about 40 percent compared with the risk of employees with an occupational degree. Further on, jobs of employees with an academic degree showing relatively high tenure have a significantly lower (long-term) unemployment risk than EODs.

In the end these findings – if at all – only partly support hypothesis 3 (see section 2). There is no straightforward connection between formal qualification and the evolution of job stability and labour market mobility in the course of time. Even if we can say that unskilled workers face increasing labour market risks, the double polarisation pattern we found make clear that the used formal qualification variable is a rather rough predictor for individual labour market performance. Further investigations should better use other data sets that would allow a better operationalisation of what can be called "employability" to learn, for example, more about the connection between formal and informal qualification and job stability.

### *4.4 Previous unemployment experience*

According to "signaling theory" (former) unemployed individuals could be expected to have a lower hire probability because employers interpret the unemployment experience as a negative signal for a relatively low productivity of the applicant. However, the findings of our cox estimations are particularly remarkable because it becomes quite obvious that previous unemployment experiences have also a negative impact on job stability even if the (former) unemployed have prevailed throughout the screening process and have got a job. Regardless of the actual tenure there is a clearly

higher (long-term) unemployment risk for former unemployed employees. Thus, the unemployment risk for former unemployed people remains higher even if the usual trial period[4] was finished successfully. Evidence could be found especially within the competing risk estimations for employees with one up to two years of tenure. In fact behind the feature "previous unemployment experience" personal characteristics seems to be hidden that really effect individual job stability.

Beside these timeless and general findings and similar to the results for unskilled employees we can find some indication for a growing polarisation *within* the group of former unemployed employees. On the one hand the unemployment risk of people who had faced just one previous unemployment spell decreased. But on the other hand the unemployment risk of employees with repeated past unemployment spells increased between the 1980s and 1990s for newly started jobs and jobs with one to two years of tenure. It seems as if still existing general negative impacts of previous unemployment experiences would not anymore increase employment risks per se, but that especially former multiple or long-term unemployed employees are the main losers of the transition process into service society.

But how can we explain these findings? There are two different explanations for the negative long term impacts of previous unemployment spells on job stability:

- *Employability*: There is really something that could be called "employability" as an individual, relatively time constant but hardly observable trait. Therefore, employees with a lower employability are likely to cause intra-firm troubles, leave or lose their job and become unemployed again even if the screening process and the probation period has been finished successfully.
- *Path dependency of exclusion*: Who becomes unemployed by accident (for example because of mass dismissals or plant closure) faces a sustainable chance reduction to integrate durably into the working life of one firm again even if a new job will in the end last longer than one year. This explanation fits into the signaling theory because employers maybe select former unemployed for worse and more insecure jobs right from the start. Therefore, the higher unemployment risk of former unemployed employees is a kind of long term effect of employers' selection in the past.

Based on the data of the IAB Employment Subsample it is unfortunately not possible to test whether the first or the second (or both) explanation is true. This must belong to future research efforts. Beside this point, however, our hypothesis 4 (see section 2) is largely supported by our findings: Between the 1980s and the 1990s former unemployed employees show an increasing propensity to leave their job.

### *4.5 Kind of activity and firm size*

There is no doubt about an increasing tertiarisation during the last decades and the growing importance of small and medium sized firms. But what impact have these developments had on job stability and individual mobility processes? First, the results of

[4] In Germany new staff members are normally employed on six months' probation during which lower dismissal provisions exists.

the different cox estimations shown in *table 2* up to *4* make perfectly clear that the belief in generally smaller job stability for service occupations is definitely not true. Compared to manufacturing occupations (reference group), the hazard ratios of service occupations are significantly lower in almost all models of *sample 1* and *sample 2*. In addition service occupations protect employees from unemployment, no matter if they are employed at the beginning of the 1980s or at the beginning of the 1990s. According to the three different groups of tenure, employees in service occupations in *sample 2*, for example, show a by 45 percent to 22 percent lower unemployment risk during the analysis time. Therefore, we have to reject hypothesis 2 (see section 2) that suggested an increasing job stability for service sector employees in the course of time. But what we found instead is that service sector jobs were more stable in all times. This means that service sector jobs themselves do not become more stable in the course of time. But on an overall societal level job stability should increase just because the number of service sector employees has increased since the 1970s.

Second, in the 1980s firm size was a strong and definite determinant of job stability but this clear effect has diminished or even has partly almost disappeared in the 1990s. To illustrate this phenomenon we take a look on the general transition model for employees with minimum five years of tenure. In the 1980s the general transition risk of employees in small firms (1-19 employees) was by 26 percent higher then the risk of the reference group (working in firms with 100-499 employees). Even if there was still a significantly higher transition risk for employees working in very small firms in the 1990s this risk has been obviously reduced (14 percent higher risk than the reference group). For any other firm size the typical effect on job stability that could be still found in the 1980s has disappeared in the course of time. In the 1990s there was no statistical difference between job stability for employees in firms with 20 to 99 employees on the one hand and for employees in large firms with more than 500 employees each compared to the reference group. Therefore, hypothesis 1 (see section 2) can largely be confirmed.

However, as an exception of the general levelling out process we can also find some kind of increasing firm-size specific polarisation. Between the 1980s and the 1990s the (long-term) unemployment risk of employees with minimum five years of tenure and working in large firms with a staff of more than 500 people increased clearly from 15 to 27 respectively from 42 to 60 percent compared to the reference group. Because the cox model controls all other variables in our model these findings indicate a genuine negative effect for job stability in large scale enterprises.

## 5. Conclusion

The main question of this paper was to analyse the change of job stability and its determinants in the course of time by presenting some empirical evidence from Germany. As shown in the beginning of this paper a prominent stream of the international sociological debate about job stability in service society suggests that labour markets will be characterised by a constantly advancing, all-embracing process of 'destructuring'. The consequence of this process is said to be a levelling out of employment opportunities and risks. Uncertainties that were unevenly distributed along clearly defined socio-economic demarcation lines in industrial societies are now ex-

pected to become increasingly generalised. The detailed theoretical discussion in the paper should have made clear that this prominent 'de-structuring-argument' is founded on weak *theoretical* assumptions. First, an undifferentiated understanding of "labour market flexibility" mainly as the opportunities of *employers* to hire and fire employees ignores the different kinds of employers' internal and external flexibility to allocate labour. In addition, labour *market* flexibility depends not only on the intentions of employers but also on the simultaneously existing intentions of employees. Thus, job stability as an important indicator of labour market dynamics can only be understand as an outcome of an interactive market process. Therefore, the paper prefers the theoretically derived heterogeneous re-structuring process rather than the common homogeneous de-structuring process.

This theoretically hypothesised re-structuring process is more or less supported by the presented empirical results. Referring to the hypotheses formulated in *section 2* of this paper we find that most of them are confirmed by our findings. As expected the differences in labour market opportunities and risks of men and women have clearly diminished in the course of time (thesis 6). Since the empirical results have shown shrinking job stability for younger as well as for older employees we also have to accept thesis 5 – even if this shrinking job stability should not easily be interpreted as an evidence for socio-economic downward mobility. Further on we really observe a strengthened polarisation between skilled and unskilled employees as well as an increasing unemployment risk and shrinking job stability for employees with multiple unemployment experiences as thesis 3 and 4 have claimed. And as suggested in thesis 1 there has been a generally decreasing impact of firm size on job stability, too. The only thesis that has to be completely rejected is thesis 2: We do not find any evidence of increasing job stability for employees doing service activities. However, our investigations have shown clearly that working in service jobs leads to generally higher job stability as well as to generally lower unemployment risks in the 1980s *as well as* in the 1990s.

Despite the question if different kind of production regimes will converge and despite the empirical fact that job stability in liberal market economies (like the USA) is usually lower than in coordinated market economies (like Germany) (OECD 1997; ILO 1996) and except normal cyclical fluctuations, we can expect no overall future decrease of job stability in advanced service societies. But: How can this prediction be explained?

Regardless of the comparative advantages both regime types have in certain segments of production, it can be suggested that any industrialised country will face a further increase of tertiarisation, of the importance of knowledge and of the labour market participation of women. In addition, most of industrialised countries have to face a demographic shift that could be described by the term "ageing society" (c.f. Börsch-Supan 2004; National Research Council 2001) that will lead to a shortage of qualified labour force in the future. And the growing global competition caused by newly industrialised countries will at least force the advanced service economies to concentrate even more than in the past on a high quality production of goods and services. Therefore, durable (not infinite!) and reliable relationships between employers and their employees will gain importance for market success. This means that, for example, an in-

telligent dismissal protection in combination with permanent employment contracts could be an advantage not only for employees but also for employers as well as for the whole society. But durable and reliable employment relationships do not only affect firms' internal flexibility opportunities. It can be suggested that especially qualified employees show a greater interfirm mobility if their mobility risks are not too high and if their individual mobility decision promises chances for themselves and their families. Thus, maintained or even moderate increased job stability will be no obstacle to but a guarantee for the flexibility of labour markets in advanced service societies. However, this can only be reached by a further educational expansion as well as by an improvement of the institutional conditions of equality and of the individual possibilities to coordinate employment and private household production.

This leads to a more sophisticated understanding of the term "labour market flexibility". We have to understand that an institution like a market cannot be flexible as such. Only market actors can behave flexibly, and this depends on institutional options and constraints as well as on individual preferences. Therefore, labour *market* flexibility depends not only on the intentions of employers, but also on the simultaneously existing intentions of employees (and vice versa). Thus, job stability as an important indicator of labour market dynamics can only be understood as an outcome of an interactive market process. To get a better understanding of this complex market process and to forecast future labour market developments, further research is needed that analyse the connection between job stability, job security, private household production and economic performance especially in an international comparative perspective.

## Technical Appendix

Comparing job stability and mobility processes for two different historical periods (1980s vs. 1990s) make great demand on the construction of both analysis samples out of the IABES raw data, especially if separate estimations for three groups of jobs (differentiated by tenure) should be done. The construction of the analysis samples have to be some kind of compromise between the following two points: On the one hand the labour market events of two periods with a sufficient time lag in between should be compared but on the other hand the analysis possibilities of the raw data is limited because of left and right censoring problems. For this reason, the two sub-samples (*sample 1* and *sample 2*) were selected as followed:

- *Sample 1* originally contains all individuals in the IABES who were in gainful employment on the reference date of April 1st 1983. But this does only work for jobs with no "zero tenure". Using only the method of selection by reference date, newly started jobs would be covered only insufficiently, because the number of jobs that accidentally began on April 1st 1983 is relatively small. Therefore, newly started jobs were selected by definition of a reference period rather than a reference date. Thus, *sample 1* additionally includes all new job spells that have been started between April 1st 1983 and March 31st 1984.
- *Sample 2* contains originally all individuals with non-zero tenure in the IABES who were in gainful employment on April 1st 1990. Similar to *sample 1*, *sample 2*

additionally includes all new job spells that have been started between April 1st 1990 and March 31st 1991.

To estimate competing risk models using the IABES data we define our four different kinds of events as followed:

1) *new employment spell*: A direct or smooth transition from one employer to another is suggested if the subsequent employment spell follows within a maximum period of 30 days after the previous job spell has ended. All other events are censored.
2) *registration gap*: If there is a gap of more than 30 days between two employment spells without an unemployment spell during the following 90 days[5], we have a transition to a "registration gap". All other events are censored.

3a) *unemployment:* If the employment spell is immediately followed by an unemployment spell, this is a transition into unemployment. In this respect, "immediate" means that the unemployment spell must follow the exit out of employment within a period of 90 days (see footnote 2) without any subsequent (short) job spell in between. All other events are censored.

3b) *long term unemployment (alternative to 3a)*: A transition into a period of long term unemployment is suggested if an unemployment spell starts "immediately" (within a period of 90 days; see footnote 2) after a preceding employment spell and if this unemployment spell lasts for more than 12 month.

In addition, it should be noted that despite the estimations of *type a* (newly started jobs) not all explanatory variables can be included in the estimations of *type b* and *c*. This restriction is primarily related to the variables that contain information about the previous employment history. This procedure becomes necessary because the propensity of previous events shrinks with increasing previous tenure. For example, within the estimation of *type c* (jobs with tenure of minimum five years) it is not possible to include any information about the previous employment history of the sample members, because it is logically impossible, for instance, to have changed the employer during the last five years *and* to show a tenure of more than five years on the sampling date.[6] A similar problem occurs with respect to information about firm age. Therefore, firm age related variables are not (all) included into the estimations of *type b* and *c*.

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5 We define this 90-day waiting period because of the possible maximum period of three month during which in Germany a sample member could be excluded from unemployment benefits legally because, for example, he/she has quit his/her job on his/her own and was not dismissed by the employer.

6 An exception is information about previous occupational changes. But we have to keep in mind that in this case "previous occupational changes" can only cover intra-firm changes.

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