Matthias Knuth
Thorsten Kalina

Unemployment as a transition from employment to retirement in West Germany

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Herausgeber:
Institut Arbeit und Technik
Munscheidstraße 14
45886 Gelsenkirchen
Telefon +49-209-1707-0
Telefax: +49-209-1707-110
E-Mail: name@iatge.de
WWW: http://iat-info.iatge.de

Zusammenfassung

In den letzten 25 Jahren hat in Westdeutschland die Arbeitslosigkeit kontinuierlich zugenommen. In der vorliegenden Studie wird eine Ursache des Anstiegs von Arbeitslosigkeit untersucht: Die Arbeitslosigkeit Älterer beim Übergang vom Erwerbsleben in den Ruhestand. Zunächst werden anhand sozialrechtlicher Rahmenbedingungen verschiedene Möglichkeiten solcher Übergänge aufgezeigt. Die folgende Modellierung vorgezogener Ruhestandsphasen mit der IAB-Beschäftigtenstichprobe basiert auf diesen rechtlichen Rahmenbedingungen. Die Ergebnisse zeigen, dass vorruhestandsförmige Arbeitslosigkeit zu einem beträchtlichen Teil zum Anstieg der gesamten Arbeitslosigkeit beigetragen hat, was vor allem mit langen Leistungsbezugsdauern zusammenhängt. Es werden Vorruhestandsmuster nach den Kriterien Wirtschaftsgruppe, Betriebsgrößenklasse, Geschlecht, Nationalität, Einkommen und Qualifikation untersucht. Diese Art der Arbeitslosigkeit geht vom Produzierenden Gewerbe und von Großbetrieben aus und wird typischerweise von Männern mit geringer Qualifikation genutzt. Diese vorrangige Betroffenheit spiegelt die Beschäftigungsstruktur industrieller Großbetriebe wider; in der multivariaten Analyse treten die Merkmale „Geschlecht“ und „Qualifikation“ gegenüber „Wirtschaftszweig“ und „Betriebsgröße“ weit zurück.

Abstract

Over the past 25 years, unemployment has been growing continuously in West Germany. In this study one of the reasons for growing unemployment is analysed: unemployment of older people in their transition from employment to retirement. First the different possibilities of transitions into retirement are explained within the framework of social security regulations. Taking this legal framework as a starting-point, early retirement passages are then modelled with the IAB unemployment sub-sample. It will be shown that – due to the long duration of these unemployment episodes – early retirement contributed considerably to the rise of total unemployment. Early retirement patterns will be broken down by economic sub-sectors, establishment-size, gender, nationality, income, and skills level. It turns out that this kind of unemployment originates primarily from large-sized establishments in manufacturing and extractive industries, and it typically effects low skilled men. However, the multivariate analysis at the end of the paper will show that this only mirrors the employment structure of the industries from which early retirement originates: gender and skills level have little impact of their own.

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Matthias Knuth and Thorsten Kalina

Introduction

Over the past 25 years, unemployment in West Germany has been growing steadily from one business cycle to the next. Even though the three upswings which the economy went through since 1976 did create additional employment of considerable magnitude[1], the reduction of unemployment which was effected during upswings never offset the respective expansion caused by the preceding downswing. As a consequence, residual unemployment has been growing.

Contrary to the widespread perception of an increasing risk of unemployment, the incidence of unemployment (percentage of the workforce experiencing unemployment in a given year) has not increased much from the early eighties to the mid-nineties. The growth of annual unemployment volumes (average annual numbers or rates of unemployment) is primarily due to increasing proportions of the workforce who experience only unemployment and no employment during the respective year (Erlinghagen/Knuth 2001). This concentration of unemployment can also be expressed as a distribution of unemployment volume over percentiles of unemployment spell duration: In 1996, the 10 per cent of unemployment spells with the highest duration accounted for almost half (46.7 per cent) of the unemployment volume (Karr 1999).

This paper will present an attempt to analyse one substantial cause of the concentration of unemployment on relatively small groups: The use (or "misuse") of unemployment as a means of and a gateway towards early retirement. Powerful interests of employers and workers are associated with the established patterns of early retirement, and there is still a widespread belief that it would help to create vacancies for young people.[2] Until recently, the problem was rarely publicly discussed in Germany, and it is still largely missing in the debates on possible cures for unemployment. The sizeable literature on "early retirement" which originated during the eighties and early nineties (e.g. Friedmann et al. 1980, Kohli/Wolf 1987, Kohli et al. 1991, Naegele 1983 and 1992, Rosenow/Naschold 1994) concentrated on separation strategies of establishments and on early pensions. It did not link early retirement via unemployment to the debate on labour market policy reforms. More recently, the discovery of the low-skilled long-term unemployed as crown witnesses for strategies of deregulation and increased wage dispersion and as target groups for low-wage subsidy or low-wage supplement programmes since the mid-nineties (Scharpf 1993, Falk/Klös 1997, Streeck/Heinze

[1] In 2000, employment subject to social security contributions in West Germany was 2.75 million or 13.7 per cent higher than in 1975 (BMA 2001). In spite of the economic disaster caused by the German unification in the East, the employment rate of unified Germany in 2000 was slightly above the employment rate of West Germany in 1975. Only the full-time-equivalent employment rate declined (European Commission 2000: 88 and 2001: 113).

[2] Contesting this theorem will be beyond the scope of this article. See Knuth 1999a for a critical discussion with further references, most important of these Sackmann 1997.

1999) calls into question who these target persons actually are and whether they are still available for “activation” strategies (for this question cf. also Brixy et al. 2002).

In order to better understand the dynamics of unemployment related to early retirement, empirical answers to questions like the following seem to be wanted:

(1) To what extent does unemployment serve as a premature passage into retirement, and how has this pattern evolved over time?

(2) What share of total unemployment volume can be attributed to patterns of early retirement?

(3) What it the significance of establishment size? Is the shifting of employment from larger to smaller units of employment a promising or a threatening prospect relative to the future burden of early retirement?

(4) What is the relative contribution of economic sub-sectors to the pattern of early retirement via unemployment? Which consequences are to be inferred from the structural change towards a service economy and from the changing composition of the service sector itself?

(5) How can the impact of skills be assessed? Is early retirement via unemployment primarily a mechanism of separating from low-skilled workers whose human capital has become obsolete for the firm? Or has it become a sort of universal “privilege” of older employees, irrespective of their skills level?

Official labour market statistics give but scanty clues with respect to these questions. This evidence will be exploited in chapter 1, framed by the explanation of its background in social security regulations. Chapter 2 briefly characterises the data set which was used for more in-depth analysis. Chapter 3 explains how the data have been modelled in order to adequately mirror the institutional framework whose impact on transitions from employment to retirement is to be captured. As a result of this modelling, the magnitude of unemployment due to early retirement relative to total unemployment can be estimated, and its distribution both in terms of duration and in terms of the age of the persons concerned is described (chapter 4). Chapter 5 is devoted to bivariate descriptions of the impact of some company and worker characteristics on the incidence of early retirement, skills level among these. In chapter 6, the results derived from the description will be tested for significance and relative impact using logistic regression analysis.

With only one exception (Figure 3), the analysis is restricted to West Germany (old *Laender*) in order to make full use of long-term time series.

1 Statistical and institutional background

1.1 Unemployment and age in official statistics

Even official labour market statistics, insufficient as they are, reflect a dramatically growing share of unemployment of the older age groups which is caused primarily by the age group 55 to 60 (cf. Figure 1).

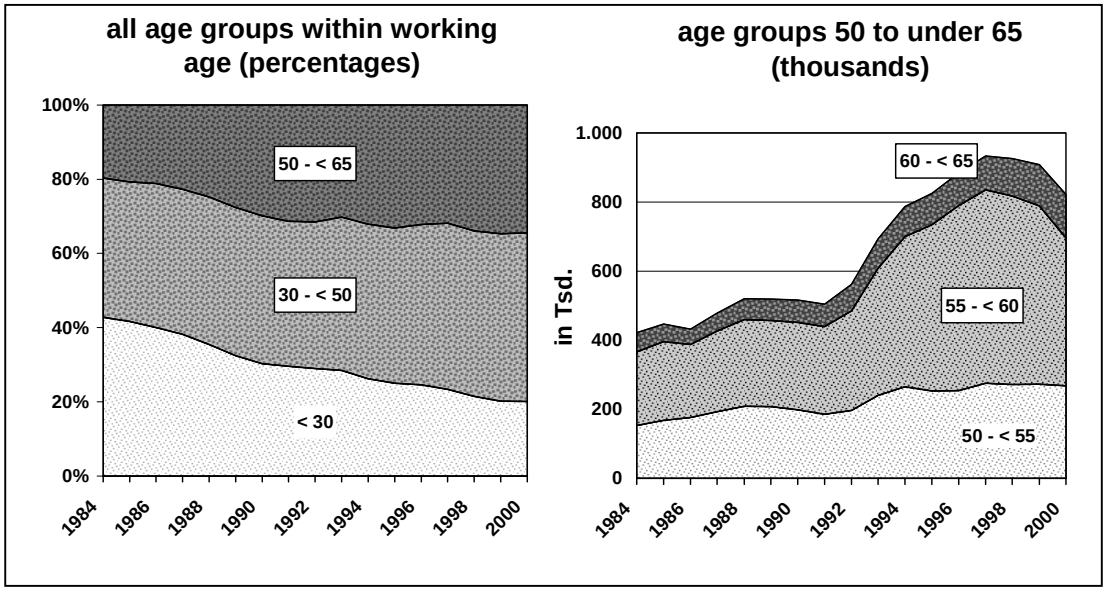

Figure 1: Unemployment by age groups, West Germany, 1984 – 2000. Source: Official Bulletin of the Federal Employment Agency. © Institut Arbeit und Technik 2001

In order to control for demographic changes, shares of the critical age group 55 to under 60 were plotted in Figure 2 regarding the population of working age, the population actually employed, and the unemployed according to official statistics. On top of the dotted line representing the officially unemployed those recipients of wage replacements were added who, since 1986, get dispensed from active job search after their 58th birthday and are consequently excluded from unemployment statistics. As the graph shows very clearly, the trend continued along this upper line from 1987 on.

It can be concluded from Figure 2 that the gap between the shares of the relevant age group in the population of working age and in the active labour force has widened in the course of the 1990s. This partial de-coupling of employment from demographic change has lead to a highly over-proportional growth of unemployment and, even more dramatically, of wage replacements related to joblessness not included in official unemployment figures of the age group 55 to under 60, in comparison to their share in the population.

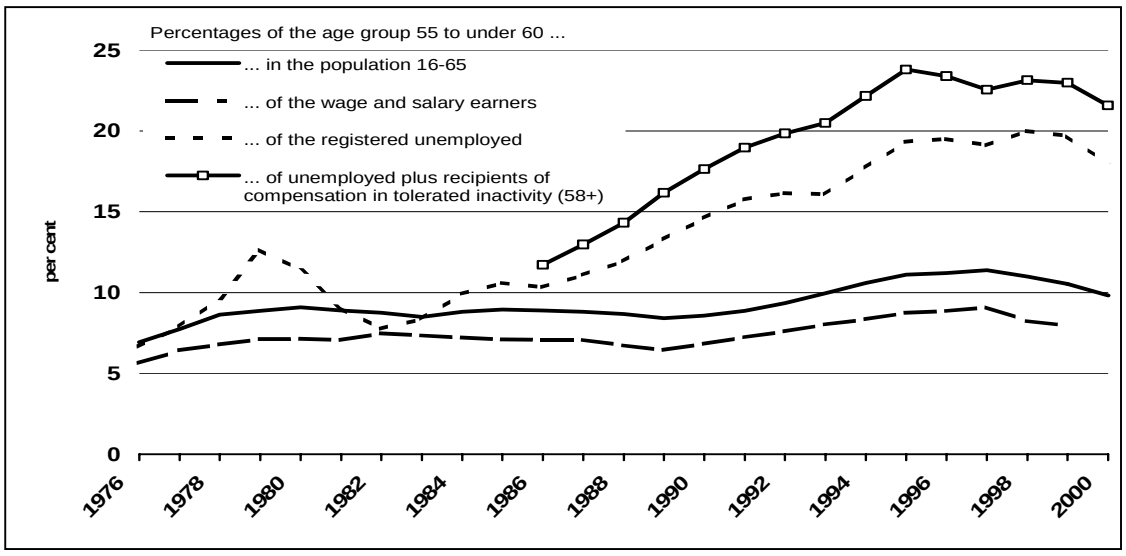

Figure 2: Percentages of the age group 55 to under 60 in different categories of the population (West Germany, 1976 – 2000). Source: Federal Employment Agency; Statistisches Bundesamt. © Institut Arbeit und Technik 2001 (Information on employment by age-categories is not jet available for year 2000)

Some explanation seems to be wanted how this was at all possible. How could unemployment of persons in the fourth quarter of their employable age rise so tremendously in a country where employment protection legislation favours employees of older age and with longer tenure? This can only be explained by the unique German way of early retirement. A basic comprehension of this pattern will also be needed in order to understand the statistical analysis in chapters 4 through 6.

1.2 Unemployment and early retirement in social security regulations

Whereas, in Germany, the statutory age of retirement is 65, only very few people actually work until they reach this age.[3] Many people are no longer in the labour market when they approach pensionable age[4], and there were – and, with some restrictions, there still are[5] – many ways to a pension before statutory retirement age, namely:

[3] The share of employees who actually worked until they were 65 had already dwindled to about 8% before 1990 (Wübbeke 1999: 108) and has gone down even further since then. Cf. also Kruse 2001: 13, 23.

[4] For German women in the age cohorts that are now around retirement age, it was still very common to work only before they had children. Having paid contributions for only a short period of time, they are not eligible for their small pensions before 65. These women enter their pension "at statutory age" from "out of the labour force", not from employment. This explains why the average pension starting at statutory retirement age is lower than the average early pension.

[5] All the provisions for a pension at an earlier than statutory retirement age still continue to exist for a transitional period but the earlier pensions now have to be "paid" for by accepting lower rates.

- Persons who cannot work because of chronic illness or disability receive a special category of pension until they are transferred to an old-age pension – prematurely at 60, if they managed to pay contributions for a sufficient period before the disability stopped them from working, and otherwise at 65.
- All women had the option of retirement at 60 if they had contributed to the social security system for a sufficient number of years during the second half of their working lives.
- Both sexes could receive a pension at 63 if they had paid contributions for at least 35 years.
- For men without recognised disability, unemployment lasting for at least 12 months was, until recently, the only way of entry to a pension at the age of 60.[6]

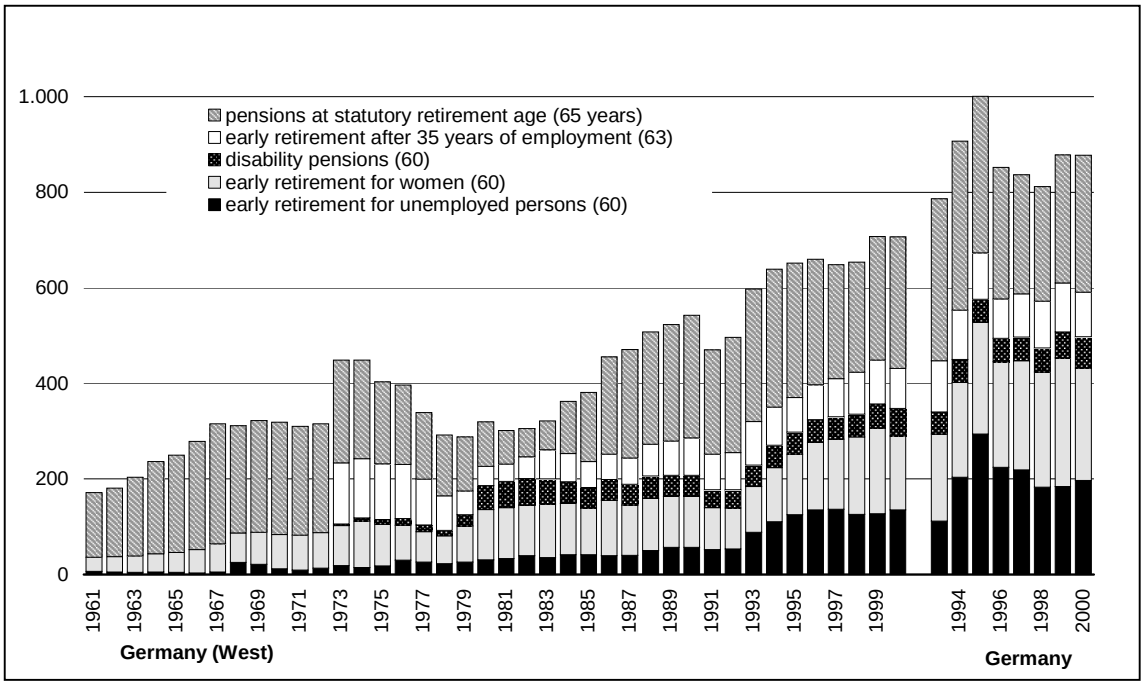

Figure 3: Entries into old-age pensions by category of entitlement, 1961 – 2000, West Germany (1993 – 2000 also for Germany as a whole), in thousands. Source: VDR (Association of Public Pension Insurance Providers) www.vdr.de/Internet/vdr/Statistik

Obviously, this framework of social security regulations made unemployment attractive to older men facing the end of their careers. Severance payments of sometimes considerable magnitude or continuous rents paid by the former employer as

[6] Since 1996, “gradual retirement”, a subsidised form of part-time working at the end of one's career, may serve as an equivalent.

supplements to unemployment compensation payments made "voluntary unemployment" even more acceptable. The premature passage to retirement comprises two stages:

(1) The first stage is technical unemployment that is experienced as "retirement" because financial and – from the age of 58 on – also administrative pressures to seek work are removed.

(2) The second stage consists of an early pension. For the men's pension at 60 the retiree has become eligible only by virtue of his preceding long-term unemployment. If he opted for the exemption from active job search offered by employment services from 58 on, he is obliged to apply for an old-age pension as soon as he becomes eligible for one – otherwise unemployment compensation payments will be withheld.

As Figure 3 suggests, the practice of retirement via unemployment has increased very strongly in the course of the restructuring process of the nineties (bottom sections of the columns).

In fact, unemployment has become a common status immediately before receiving an old-age pension, and even more so in East Germany (Rehfeld 1998: 169f.). This is reflected in the much higher proportion of "unemployment pensions" in the right hand part of Figure 3 for the whole of Germany.

2 Data modelling for the purpose of analysing early retirement

2.1 The IAB employment subsample as a database for event history analysis

Official statistics, fragmented as they are between different institutions and purposes, all give but glimpses of the whole picture of early retirement patterns, and they leave many questions to be answered (cf. introduction).

In order to answer these questions concerning the extent of early retirement related to unemployment as well as regarding its distribution in categories of economic sub-sectors, establishment size and skills level, a data set will be required which allows event history analyses along the employment, unemployment and retirement histories of individuals. For this purpose, we have used the IAB[7] employment subsample (IABES) 1975 – 1995. This is a scientific use file with anonymous data on one percent of all employees registered by the social insurance system within the given period of 21 years. Nearly eight million records provide evidence of the employment history of nearly 560.000 persons. Some information on the establishments[8] by which the social insurance registrations were filed have been supplemented, as well as data on periods during which the individuals in the sample claimed unemployment compensation of some sort or received training allowances from the Federal Employment Service (for details, cf. Bender/Haas/Klose 2000).

Though rich in numbers and in its longitudinal quality, certain restrictions of this data set should be considered. In our context, the following will be relevant:

(1) There is no positive information on persons entering an old-age pension. It can only be inferred that a person who quits either employment or receiving unemployment compensation at a pensionable age and never reappears as being employed or receiving compensation has actually passed on to retirement. In reality, this person may also have died or (in case of migrants) have returned to her or his country of origin.

(2) In order to secure privacy, birth data of individuals are only given by calendar year, not by day and month. Furthermore, the whole time series of each individual has been randomly shifted by a constant (constant for the individual in question, random

[7] IAB – *Institut für Arbeitsmarkt- und Berufsforschung* – is the research institute of the German Federal Employment Service.

[8] Establishments are the organisational and regional units in which the employment relationship is rooted. In the case of single-site companies, they will be identical with the firm. In the case of a multi-site company, however, the IABES may report job-to-job, regional and possibly even sectoral mobility of an employee even though the employer remains legally the same and the employment contract is not renewed.

between individuals). Thus, exact information on the duration of spells is preserved, but information on the true position of this spell in the calendar is randomly blurred. As a consequence, the ages of persons computed to be associated with a certain event like, e.g., retirement, are scattered around the true value, but with means unchanged.

(3) As for the type of employment relationships, the administrative procedure from which the subsample is derived records only employment subject to social security contributions. This includes part-time work of more than 15 hours per week but excludes marginal part-time, Civil Servants[9] and Military as well as self-employed and their unpaid family members. Even with these restrictions, still nearly 80 per cent of gainful employment in Germany was subject to social security contributions (Knuth 1999b: 13)[10] during the period covered by the data set.

(4) As for unemployment, the data set contains only unemployment spells during which some kind of compensation was successfully claimed from the Federal Employment Service. A person without a job and seeking work may be registered as unemployed without being entitled to any compensation – which was the case for more than 20 per cent of unemployment entrants in 1995 (IAB 2000: 61).[11] Since information on unemployment compensation is unreliable in the data set before 1980 (Bender et al. 1996: 27), our analysis is restricted to the period from 1980 to 1995.

As from 1991, the IABES contains also data of employment relationships in East Germany. Being interested in the whole period covered by the sample, we have restricted our analysis to employment and unemployment careers that evolved exclusively in the old *Laender* – individuals with one or more records from the New *Laender* were excluded.[12]

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[9] Pensions of civil servants with the privileged status of *Beamte*, of judges and of military personnel are directly guaranteed by the state. Therefore, no social security contributions are paid for them, and their employment relationships are not recorded in the social security system.

[10] The most numerous category of workers excluded are the marginal part-timers not working at least 15 hours per week and not earning more than a dynamic threshold of presently 325 € per month. In the context of early retirement, however, this shortcoming is irrelevant because these contingent workers are not likely to be included in companies' early retirement schemes. Furthermore, marginal part-time working does not entitle to unemployment compensation, and persons without a job but seeking only part-time work below this threshold are not counted as unemployed.

[11] On the other hand, as explained before (1.1), compensation claimants aged 58 or older may be exempt from seeking work and will, therefore, be excluded from official unemployment statistics. In the data set used, however, they will appear as drawing compensation – which is exactly what is desired in the context of this analysis.

[12] This implies that a person born in West Germany who took a job in East Germany after the unification will be excluded from the analysis – whereas a person born in East Germany who was not employed in the East after unification but moved to work in the West will be included and appear as a new entrant to the labour force.

2.2 Transitions from employment to unemployment

As a first approach towards the problem of "early retirement" via unemployment, transitions from employment to unemployment were modelled using the IABES.[13]

- The four graphs of Figure 4 represent the entire economy (1st quadrant) as well as three sectors selected because of their diversity: engineering (2nd quadrant), financial services (3rd quadrant), and business-related services (4th quadrant).

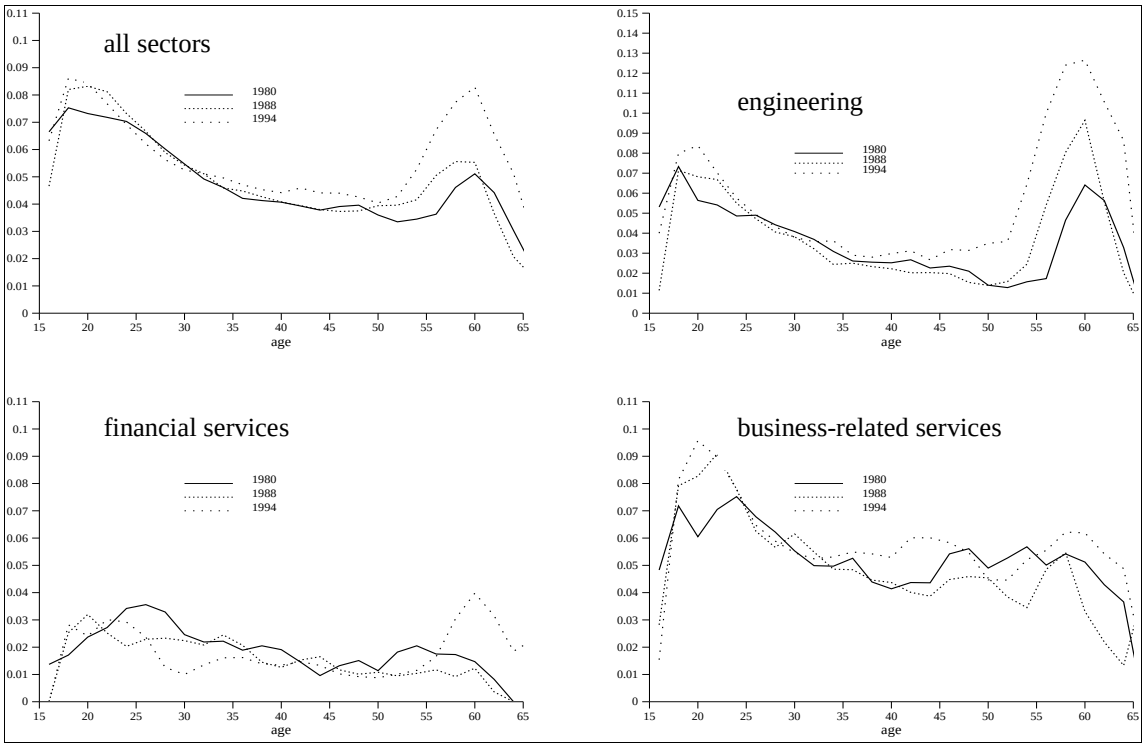

Figure 4: Employment to unemployment transitions in West Germany by age, 1980, 1988, and 1994, expressed as shares of employment of the respective category, total and for three sectors. Source: IAB employment subsample 1975–1995; analysis by Jörg-Peter Schräpler, Ruhr University Bochum. Taken from Schräpler/Schumann 2001.

- The three lines in each graph represent three years which were chosen to represent changes over time: 1980, 1988, and 1994.
- The abscissa represents the age of the individuals who experienced a transition from employment to unemployment.
- The ordinate represents the shares of employees of the respective sectoral and age category to whom such a transition occurred.
- Exemplary reading: "*In 1994, more than 12 per cent of 60-year-olds employed in engineering at some time of the year experienced a transition into unemployment.*"

[13] Official statistics, until very recently, gave only very insufficient structural information on inflows into unemployment.

From this descriptive analysis it may be concluded:

- Generally, unemployment risk of the employed declines, as they grow older. However, this trend is reversed drastically towards the end of people's careers.
- The probability of entering unemployment from employment peaks at an early age (presumably occurring, in many cases, on completion of apprenticeships) and around workers' sixtieth birthdays.[14]
- Over time, there has been almost no change regarding the unemployment risks of employees aged 25 to 40. Unemployment risk has slightly risen for the youngest groups and dramatically for the oldest.
- This pattern applies to the economy as a whole and even more markedly to the engineering sector (as well as to many other manufacturing sectors not presented here). In the financial sector, however, the pattern has just recently begun to evolve, and in the expanding sector of business-related services, the pattern of early exit into unemployment has not yet emerged at all during the period covered by the data.

This first approach was concentrated on a single event: The transition from employment to unemployment. The length of tenure prior to the exit from employment was not considered, and neither was the duration of the unemployment that ensued. In order to model the pattern suggested by the social security regulations explained in paragraph 1.2, unemployment should last until pensionable age, it should be the final status of the persons employment/unemployment history in the IABES, and the attachment to the last employer should have been sufficiently stable as to make an early retirement scheme probable. In the following paragraphs, the modelling of the data along these characteristics will be explained.

2.3 Modelling employment episodes

The relevant group to be identified are older people who experience persistent unemployment as the final stage of their careers after stable attachment to a particular establishment. Consequently, for the purpose of this analysis, an "employment episode" is one during which the employee stays with the same employer. German labour and social security legislation allow for interruptions during which the employment relationship is suspended while the labour contract remains in effect. Practical examples are maternity leave and military service, both irrelevant to the age categories under consideration, as well as periods of sickness beyond the six weeks during which the employer is obliged to continue paying remuneration, which is more relevant here. Such

[14] In order to facilitate reading the curves, they have been smoothed by computing means over sliding intervals five years wide. This causes some shifting of the peaks. Transitions from employment to unemployment should be expected to actually culminate at 59 instead of 60. After properly modelling early retirement, this expectation could actually be reproduced from the data – cf. Figure 6.

interruptions of the employment relationship are regarded here as continued attachment to the firm because return to the original employer is guaranteed.

For administrative reasons, there can also be occasions when an employment relationship is reported to have ended and is shortly afterwards registered to have been renewed. If employment continues in the same establishment[15] after no more than 30 days and if neither unemployment nor employment in another establishment intervenes, these cases are treated as ongoing employment relationships (cf. Figure 5).

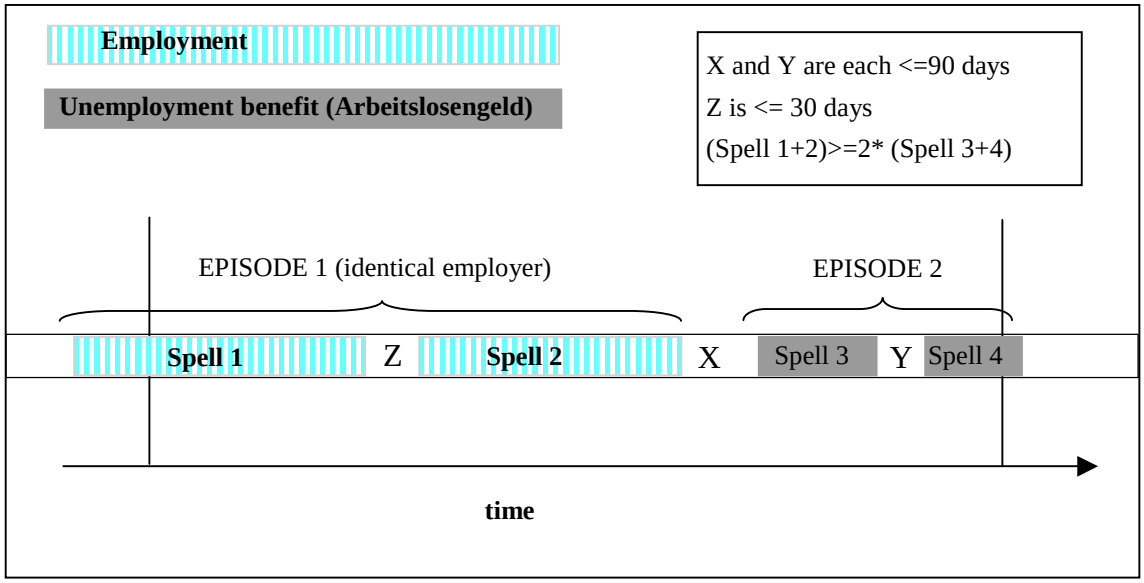

Figure 5: Modelling displacement-related unemployment episodes

In calculating the durations of employment and unemployment episodes, intermittent periods that were “bridged” according to the rules just explained were not counted as unemployment duration or as length of tenure.

2.4 Modelling unemployment episodes

Official unemployment statistics systematically underestimate long-term unemployment because a new period of unemployment begins after each interruption – which may be of a purely administrative or punitive nature like, for example, failure to report to the Employment Service, failure to comply with placement offers, long-lasting sickness etc. In the IABES, such circumstances appear as lacunae during which the person is neither employed nor drawing compensation. For the purpose of this analysis, spells of unemployment are joined together to form a continuous episode if such a lacuna is so short that it can be assumed to be of the technical nature just described. Using the legal

[15] In addition identity of the sectoral characteristic of the establishment was controlled for – in order to exclude at least some cases of spin-off or break-up of the original establishment after which one part, though being a "new" employer, carried on the original establishment identification number.

maximum of punitive suspension from compensation (12 weeks = 84 days) and rounding off for intervening holidays and administrative delays, we arrive at a tolerance of 90 days (cf. Figure 5). So if there are no more than 90 days between two compensation periods and if no employment is reported to intervene in the lacuna, these two periods are interpreted as one uninterrupted episode of unemployment.[16] Applying this rule repeatedly, several spells of drawing compensation can be joined into one unemployment episode. As pointed out before, the duration of this episode will be computed as the sum of spells of which it is made up; any lacunae are not included in the count of duration.

2.5 Modelling displacement-related unemployment episodes

In order to categorise unemployment inflows and the subsequent unemployment episodes, we have to establish rules for linking unemployment to previous employment episodes. Situations for which these rules are relevant include the following (cf. Figure 5):

(1) On separating from an employment relationship, a person may leave the labour market for a certain period of time and subsequently return as a job seeker. If the period elapsed does not exceed the legally defined limits, such a person will still qualify for unemployment benefits. However, it does not seem appropriate to attribute this type of unemployment to the last employer if the lacuna exceeds certain limits.

(2) “Job-hoppers” will earn their benefit entitlement in different subsequent jobs. If they incur a longer period of unemployment, it would again not seem appropriate to link their unemployment to the company that happened to be the last employer.

(3) Some persons might experience a “downward spiral” of increasing job insecurity, where displacement from one job which used to be stable leads to another job which turns out to be less stable, and so on, until they finally end up in long-lasting unemployment. Again, it would be inappropriate to link this type of unemployment to the last employing establishment because the final unemployment appears to be the result of an unstable career rather than the outcome of the last employer's practice.

In order to solve these problems, and in accordance with the rule for joining unemployment spells together, we have refrained from labelling unemployment episodes by the characteristics of the last employer if a lacuna of more than 90 days

[16] It does not seem very likely though not entirely impossible that the person in question was self-employed during the intervening period of no more than 90 days.

occurred between the end of the last employment episode and the beginning of an unemployment episode. This solves problem (1) above. In order to solve problems (2) and (3), we controlled for the relationship between the duration of receiving unemployment benefit[17] and the duration of the preceding employment episode. The latter must be at least twice as long as the former in order to have "earned" the whole benefit with one employer. Any subsequent period of drawing the means-tested and tax-funded unemployment aid[18] that may follow unemployment benefit after no more than 90 days will be linked to the former, thus being attributed to the same employer.

Applying these rules, all the unemployment observed in the sample was split into two categories:

(1) Unemployment succeeding displacement which can be described in terms of the characteristics of the last employing establishment, which will be referred to as "displacement-related unemployment".

(2) Unemployment without attributable company origin (according to the rules spelled out above) that will be referred to from now on as "contingent unemployment".

Applying this very conservative estimate of displacement-related unemployment, percentages between 35 and 46 per cent of total unemployment were derived (see the two lower sections of Figure 8 together). During an economic upswing, displacement-related unemployment declines more markedly than contingent unemployment, thus causing the share of the latter to rise. In other words, in a period when fewer "fresh" unemployed are produced through company downsizing or closures, the origin of unemployment becomes less visible, and a larger proportion of unemployment appears to be of a "contingent" nature.

2.6 Modelling unemployment related to early retirement as a part of displacement-related unemployment

Building on the definitions developed above, the group of early retirees to be identified has been defined as individuals:

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[17] Unemployment benefit *(Arbeitslosengeld)* is granted for periods depending on (1) the preceding duration of paying contributions and (2) age. The standard compensation period of one year after paying contributions for at least two years was expanded according to age and starting from an age of 42 in 1985. This clause contributed to the evolution of the patterns of early retirement analysed in this article. – Since 1997, the age-dependent scale starts only at 45, but this is outside the period covered by the data set used.

[18] *Arbeitslosenhilfe* is translated here as "unemployment aid". Whenever referring to the three types of wage replacement for the unemployed – unemployment benefit, unemployment aid, and training allowance – together, the term "unemployment compensation" is used.

(1) who enter an episode of displacement-related unemployment (see definition in 2.5) at an age reasonably close to retirement – empirically set at 55 or more because before 55 we rarely found unemployment episodes to last until retirement (see paragraph 3.1);
(2) who were never again observed to be in employment subject to social security contributions;
(3) whose unemployment episode extended until they reached a pensionable age and who then disappeared from the sample altogether.

A pensionable age would be 60, since the earliest possible pension starts at this age. Because of the characteristics of the anonymous data set the age variable is blurred, therefore tolerance had to be allowed for cases where the computed age of exit from unemployment was 59 (cf. Table 1 for the characteristics of the age variable in the anonymised data set).

Year of birth	**1920**	**1920**	**1920**	**1920**
Latest birthday	31.12.20	31.12.20	31.12.20	31.12.20
Earliest birthday	01.01.20	01.01.20	01.01.20	01.01.20
Year of exit from sample	**1978**	**1979**	**1980**	**1981**
Latest exit day	31.12.78	31.12.79	31.12.80	31.12.81
Earliest exit day	01.01.78	01.01.79	01.01.80	01.01.81
Age of exit (by year)	**58**	**59**	**60**	**61**
Age of exit (maximum)	58 years and 12 months	59 years and 12 months	60 years and 12 months	61 years and 12 months
Age of exit (minimum)	57 years and 1 day	58 years and 1 day	59 years and 1 day	60 years and 1 day

Table 1: Calculating age

Proposition (3) requires that the unemployment careers of early retirees are observed for some time which entails the problem of right censoring. If some of the time series presented below end before 1995, the last year of the IABES, this is because the values for the last years have been omitted in order to keep the impact of right censoring in tolerable limits.

3 The impact of unemployment related to early retirement

3.1 Ages of entry into and of exit from unemployment

In order to ascertain whether the modelling that was applied to the data satisfactorily mirrors the framework of social security legislation, the age categories of persons entering into and emerging from unemployment episodes related to early retirement were computed and plotted in Figure 6 and Figure 7 respectively. The results are shown separately for both genders.

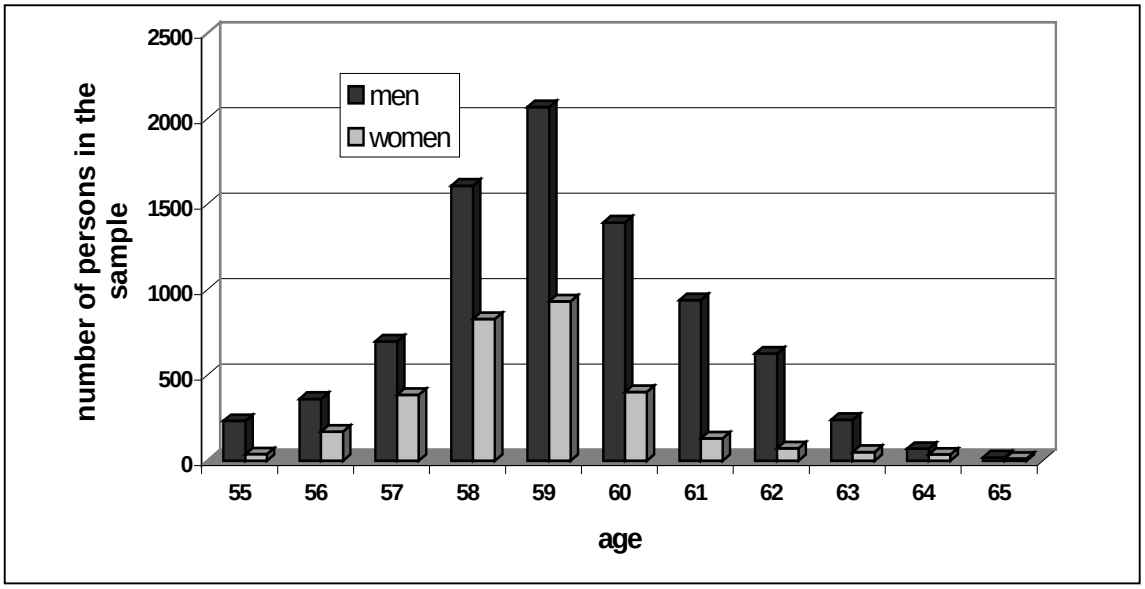


Figure 6: Entrants into early retirement-type-unemployment by age and gender, 1980 – 1995, West Germany. Source: IAB employment subsample 1975–1995; analysis by Thorsten Kalina

As should be expected from the explications in paragraph 1.2, early retirement via unemployment is a predominantly male phenomenon. A good deal of this gender gap, however, is due to lower female participation rates in the birth cohorts and age groups under consideration. Some difference still remains when participation is controlled for. Considering that women employed at the end of their careers are eligible for a pension at 60 anyway, even without preceding unemployment, the gender difference might be expected to be more marked. Obviously women "imitate" – or they are coaxed into – male transition patterns using unemployment as a bridge to retirement.

Entries into early retirement culminate at 59, while exits peak at 60. Exits from unemployment into a non-observed status (presumably a pension) are more clearly concentrated in terms of age than entries. These findings adequately reflect the social security framework: In order to serve as a gateway to an early pension, preceding unemployment must last for at least one year but may in fact last much longer, whereas the gateway opens at 60. Exits as early as 59 should not be expected on the grounds of

the legal framework; they must be attributed to the random blurring of temporal information in the data set (cf. chapter 2).

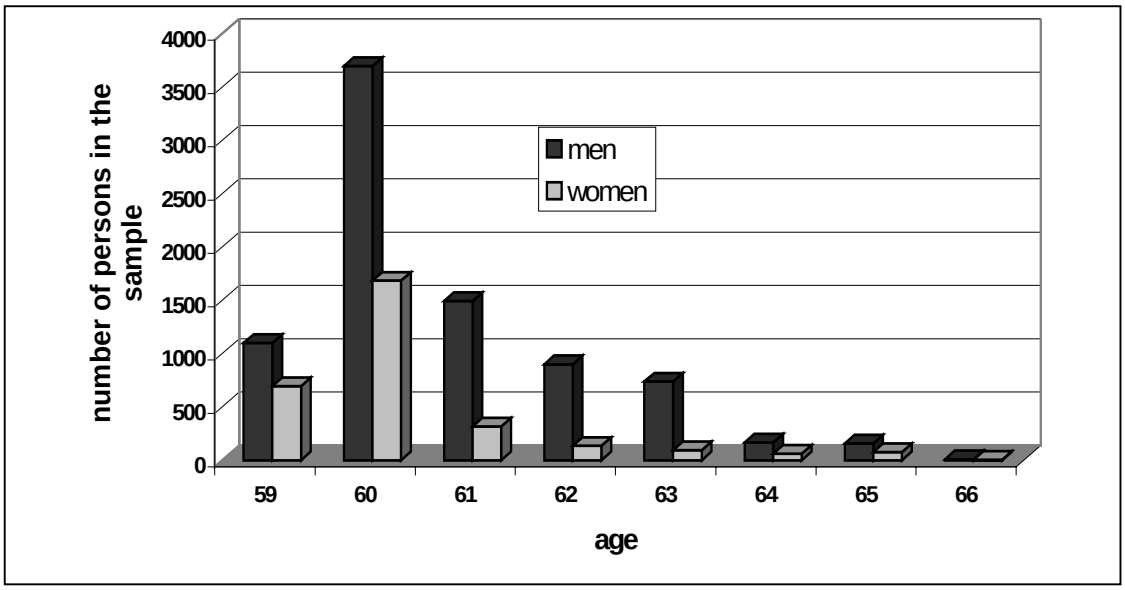


Figure 7: Early-retirement-type unemployment leavers by age and gender, 1980 – 1995, West Germany. Source: IAB employment subsample 1975–1995; analysis by Thorsten Kalina

3.2 The distribution of unemployment types

Using the model criteria defined above, the total unemployment that occurs each year (total days spent drawing unemployment compensation) can be split into three mutually exclusive categories:

(1) Contingent unemployment (i.e. not attributable to a single former employer under the rules established in paragraph 2.5);

(2) displacement-related unemployment (i.e. unemployment attributable to a single former employer), early retirement set apart;

(3) unemployment related to early retirement (which is, by definition, also displacement-related).

The result of this classification is depicted in Figure 8. The years in the abscissa refer to the calendar years within or throughout which unemployment episodes extended. Long-lasting episodes of unemployment that begin some time during one year will only show their full statistical impact in the following year. Whereas the total share of displacement-related unemployment (the two lower sections of the bars in Figure 8 taken together) varies only with the business cycle and shows no secular trend of

change, unemployment of the early retirement type has increased its share in total unemployment from 4 per cent in 1983 to 11 per cent in 1993[19]. Expressed as a share of displacement-related unemployment alone, early retirement reached 27 per cent in that year. This allows to infer that employers have increasingly concentrated their shedding of labour on older employees who then remained in unemployment until they became eligible for a pension. This trend was only temporarily halted but not reversed by the reunification boom around 1990.

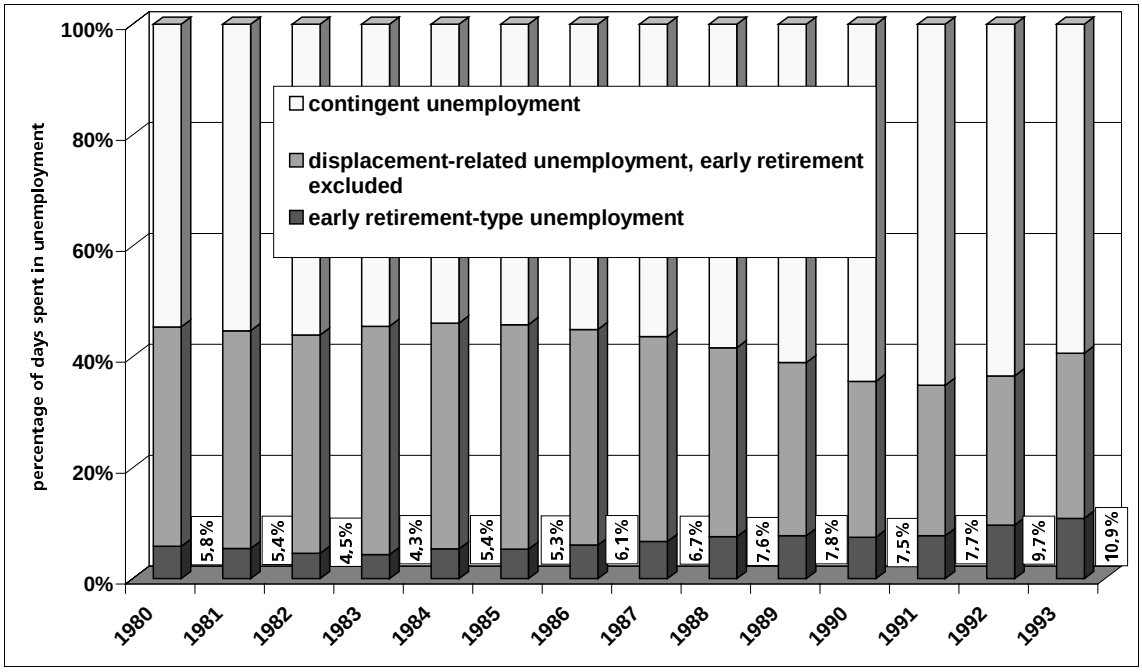


Figure 8: Types of unemployment as shares of total unemployment, 1980 – 1993, West Germany. Source: IAB employment subsample; analysis by Thorsten Kalina

3.3 Early retirement as long-term unemployment

Customarily, the level of unemployment is expressed as the average stock of unemployed persons during a given period, usually a calendar year. In public discourse, this is often misinterpreted as the number of persons affected – which is actually larger. The volume of unemployment (days spent in unemployment during a given period) is the product of incidence – the number of people who experience unemployment – and the duration of their unemployment. As pointed out in the introduction, the distribution of individual unemployment duration is very uneven. Figure 9 shows that the three types of unemployment distinguished in the preceding paragraph display a very distinct hierarchy concerning the average duration of episodes:

[19] In a survey among unemployed persons the IAB got the result, that in spring 2000 about 15% of all unemployed were only unemployed to bridge the time till retirement (cf. Brixy et al. 2002).

- Displacement-related unemployment has the shortest average duration of episodes if it does not belong to the early retirement type.
- The average duration of contingent unemployment episodes is somewhat higher which reflects the greater distance of this group from the labour market.
- Unemployment of the early retirement type displays by far the longest average duration of episodes, which have continuously extended during the eighties. The boom at the end of the eighties only stopped this growth but without reversing the trend.

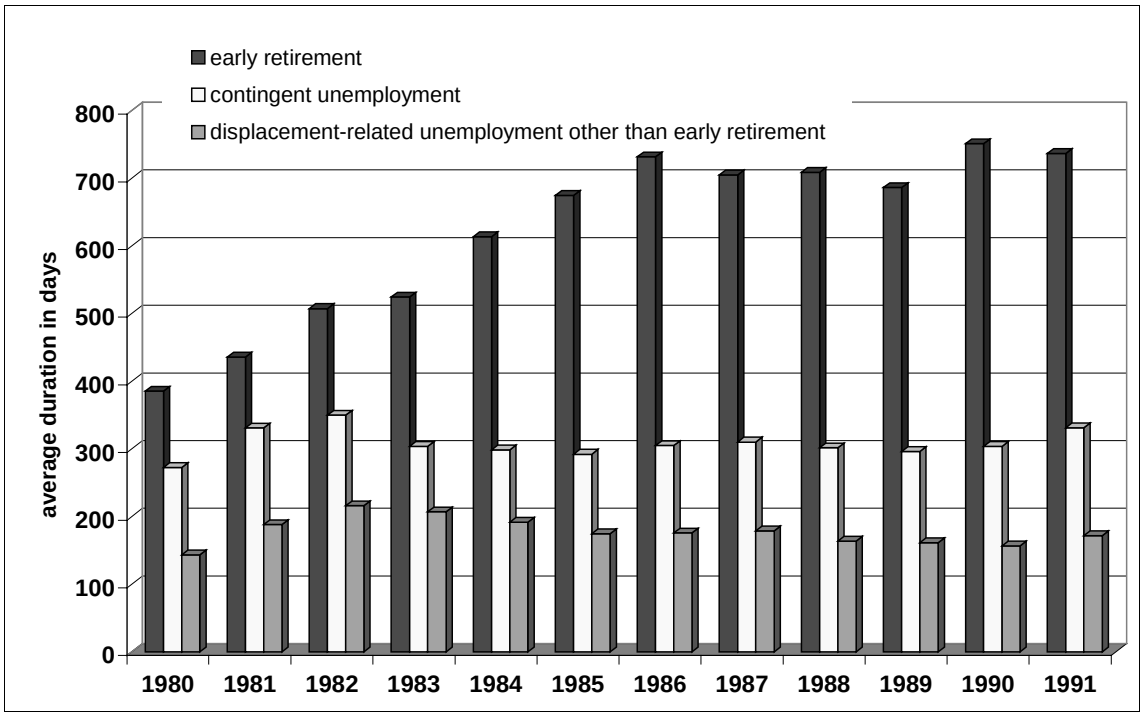


Figure 9: Average duration of unemployment episodes by type of unemployment and calendar year of their beginning, West Germany, 1980 – 1991[20]. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

[20] Years 1992 – 1995 must be excluded from this analysis because of right-censoring.

4 Bivariate descriptions of early retirement

4.1 Unemployment/employment ratios for different types of unemployment

In order to facilitate bivariate descriptions of unemployment related to early retirement, an indicator is needed which is neither affected by changes over time of the composition of the labour force (e.g. in terms of gender, age, or skills level) nor by changes of its distribution over types of establishments (e.g. the growing share of smaller establishments and of the service sector in total employment). As a basic concept for solving this problem, unemployment/employment ratios are suggested. For any given year, the numerator of this ratio is made up of all the days spent in unemployment, while the days spent in employment form the denominator. The unemployment/employment ratio expresses something similar to unemployment rates.[21] However, other than the unemployment rate it can be broken down by characteristics of the employing establishment, not only by personal characteristics.

Furthermore, the unemployment/employment ratio can be split up by the types of unemployment that have been distinguished in paragraph 3.2 above. This will yield a displacement/employment ratio that tells how many days of displacement-related unemployment, during a given year, have been observed per day of employment in a certain category of establishments. Restricting the indicator to unemployment related to early retirement will result in an "early retirement/employment ratio". This indicator tells how many days of unemployment due to early retirement are produced by certain categories of establishments or experienced by certain categories of employees, relative to the numbers of days of employment observed in the same category and the same year.

4.2 Displacement/employment ratio by age

The displacement/employment ratio broken down by age will be unbiased by demographic changes which effect numerator and denominator alike. Contingent unemployment is excluded from this analysis the results of which are shown in Figure 10:

- Unemployment risks of the youngest age category above those of prime age workers can still be observed in the eighties but disappear in the nineties. Thus,

[21] Except for the aforementioned restrictions of the data set concerning the recording of unemployment, and except for the fact that the denominator contains only employment subject to social security contributions (instead of the entire population which is economically active or seeking to be so).

differences in the incidence of displacement are relatively small for all age categories under 50, and the curves tend to converge over time.

- The displacement/employment ratio of the two oldest age groups – 55 to under 60 and 60 and above – has deviated farther and farther from the general pattern. The graph gives us the impression that the overall rise of displacement-related unemployment in West Germany is primarily due to these two age categories.

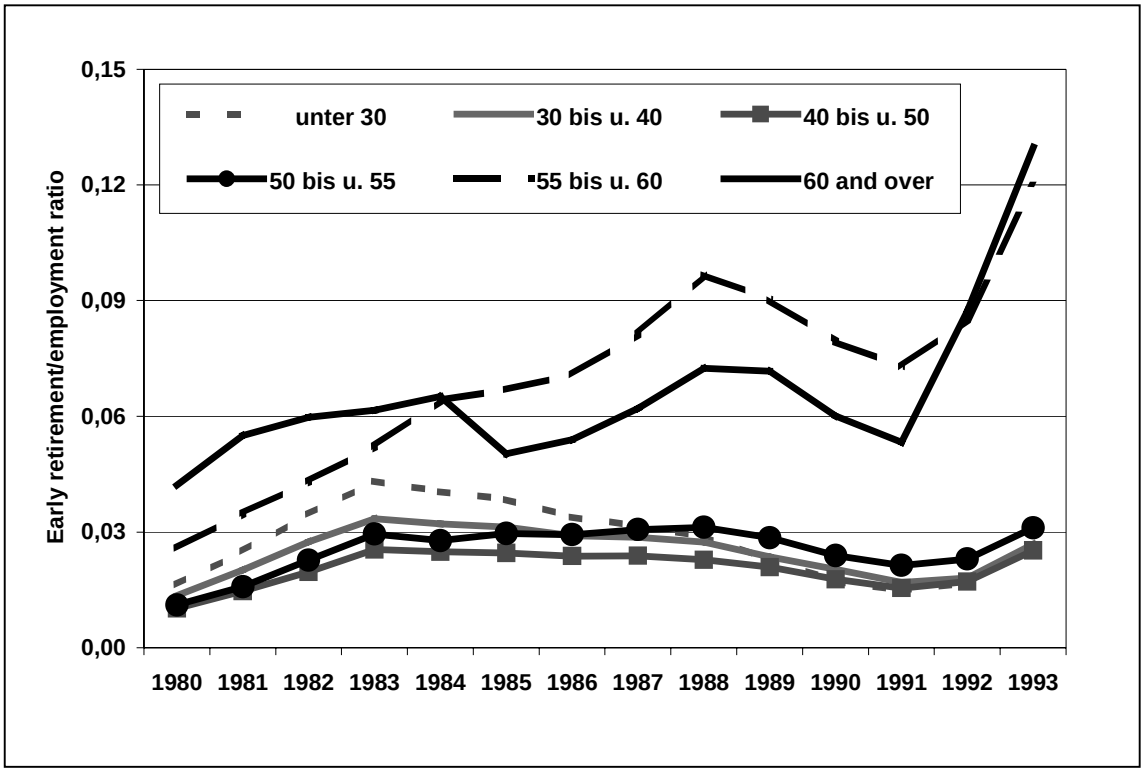


Figure 10: Displacement/employment ratio by age category: Ratio of days spent in displacment-type unemployment to days spent in employment, West Germany, 1980 – 1993. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

4.3 Displacement/employment ratio by establishment size

In order to demonstrate the contribution of different types of establishments to unemployment, the displacement/employment ratio was computed for four categories of establishment sizes. This was done for the earliest and latest year possible in the sample, and displacement-related unemployment was split up into "early retirement" and the rest. The results are shown in Figure 11.

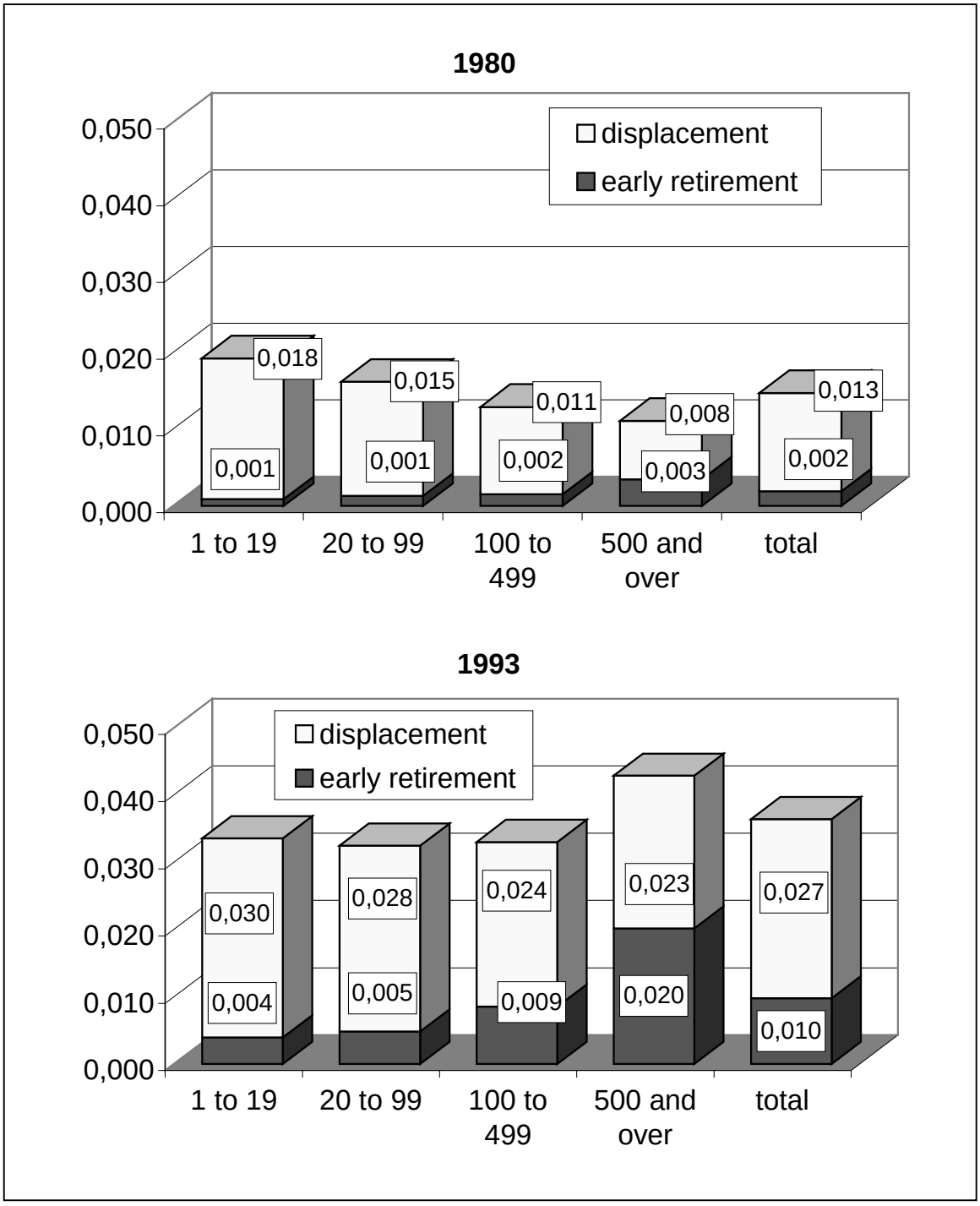


Figure 11: Displacement/employment ratios and early retirement/employment ratios by establishment size, West Germany, 1980 and 1993. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

The following features of Figure 11 should be taken notice of:

- Not surprisingly, displacement-related unemployment was generally much higher in 1993 than it was in 1980.

- Whereas, in 1980, the smallest establishments had the highest displacement/employment ratios, this position has been taken over by the largest establishments in 1993, the rest of the order unchanged.
- In 1993 as compared to 1980, the early retirement/employment ratio has grown by factor four to seven in all size categories, causing the differences between them to widen considerably.

The tendency of large establishments to cut down on their payrolls by the use of mostly consensual exits of older workers into unemployment shows even more markedly in Table 2. Firms with 500 and more employees have much higher shares in displacement-related unemployment (31.6 per cent) and in early retirement (55.4 per cent) than should be expected given their share in the total employment-volume (26.8 per cent). Forty-seven per cent of unemployment in this size-category is due to early retirement patterns.

establishment size category	Shares in employment volume (per cent)	shares in early retirement volume (per cent)	shares in displacement-related unemployment volume (per cent)	shares of early retirement in displacement-related unemployment within the respective size category (per cent)
1 to 19	25.38	10.22	23.40	11.72
20 to 99	22.86	11.29	20.39	14.84
100 to 499	23.90	20.87	21.68	25.81
500 and over	26.83	55.43	31.61	47.03
total	98.97	97.81	97.08	~27%
Difference to 100 per cent is due to missing values				

Table 2: Shares in unemployment types and employment-volume by establishment size, West Germany, 1993. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

4.4 Early retirement/employment ratios by sub-sectors

Plotting the early retirement/employment ratio by sub-sectors[22] shows very divergent patterns between them (cf. Figure 12). The following characteristics should be taken notice of:

[22] The grouping of sub-sectors used for this description as well as for the regression analysis in chapter 6 is a recent development in the Institut Arbeit und Technik aimed at facilitating more differentiated analyses of the service sector. Its explication would be beyond the scope of this paper. See Beyer et al. 2001 for reference.

- Services in general score rather low in terms of early retirement, albeit with differences brought out more clearly in Table 3.
- Construction displays a highly cyclical pattern at a relatively low level.
- It sticks out very clearly – and conforms to the analysis by establishment size in the preceding paragraph – that *manufacturing* (which tends to be organised in larger units) is primarily responsible for the rise of unemployment of the early retirement type. – The extent to which sector and size influence early retirement independently of each other will be analysed in chapter 6.

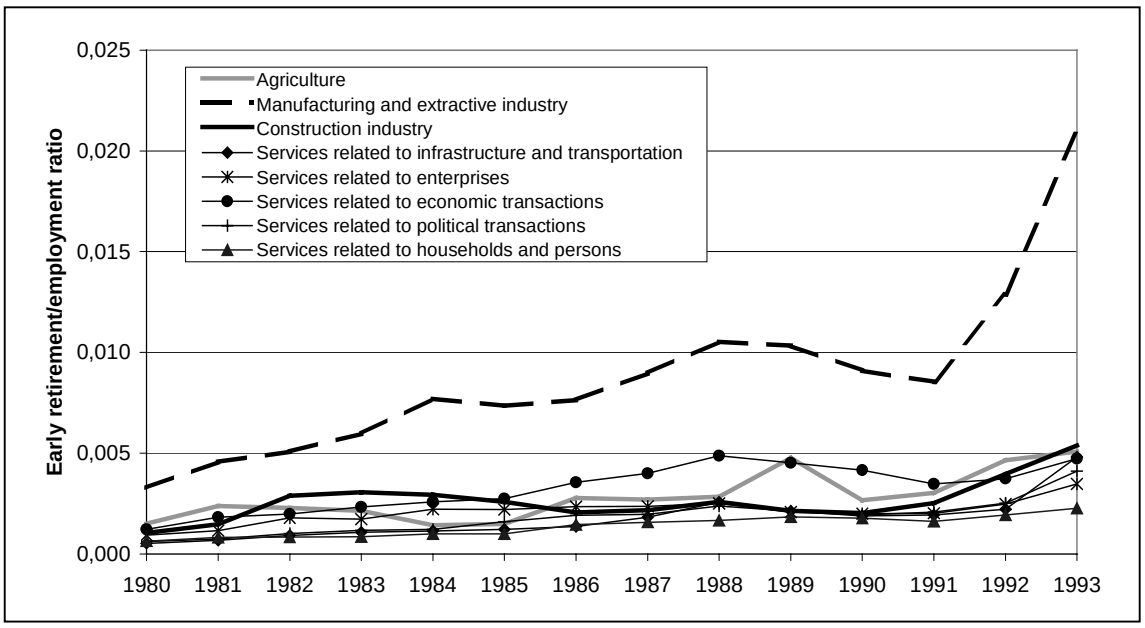


Figure 12: Early retirement/employment ratio by economic sub-sectors, West Germany, 1980-1993 Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina, IAT

So it appears that the far-reaching restructuring which manufacturing and the extractive industries underwent in West Germany after the unification boom[23] lead to a sky-rocketing of early retirement. Because of the relatively important role manufacturing still plays in Germany, this has a large impact on the economy as a whole.

In Table 3 we computed the shares of economic sub-sectors in total employment, in displacement-related unemployment, and in early retirement as well as the shares of early retirement in displacement-related unemployment. It turns out that manufacturing and extractive industries have much higher shares in unemployment and in early retirement than in employment. Thirty-nine per cent of unemployment in this sector is due to early retirement patterns.

[23] In terms of economic and employment growth, the downswing began in 1993 – in terms of labour market flows, however, the tide turned as early as 1991. For an analysis of labour market flows using the same data set cf. Erlinghagen/Knuth 2001.

Sub-sector	shares in the total employment volume	shares in early retirement volume	shares in displacement-related unemployment volume	Shares of early retirement in displacement-related unemployment within the respective sub-sector
	(per cent)	(per cent)	(per cent)	(per cent)
Agriculture	0.86	0.44	1.11	10.75
Manufacturing and extractive industries	35.30	73.84	52.12	38.96
Construction industry	7.52	4.05	6.63	16.78
services related to infrastructure and transportation	6.66	3.20	3.98	22.09
services related to enterprises	6.04	2.10	5.04	11.44
services related to economic transactions	19.79	9.34	13.74	18.70
services related to political transactions	8.91	3.65	7.69	13.05
services related to households and persons	14.92	3.39	9.67	9.64
total per cent	100	100.01	99.98	~27%
Difference to 100% is due to missing values				

Table 3: Shares of sub-sectors in employment, in early retirement, in unemployment with traceable company origin, and share of early retirement in unemployment with traceable company origin; West Germany, 1993. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina, IAT

The service sectors in general contribute less in terms of unemployment or of early retirement than in terms of employment. However, there is considerable variation between them. Services related to infrastructure and transportation (water and energy supply, transports by rail, road, air or vessel, mail and telecommunication services) which experienced some degree of restructuring in the early nineties already (and much more since then) fashioned their dismissals into unemployment as early retirement in more than one fifth (22 per cent) of the unemployment volume – whereas this was still almost unheard in services for households and in personal services (e.g. health services, child care, education, hotels and restaurants, arts and media).

5 Early retirement/employment ratios by personal characteristics

5.1 Does skill matter?

Skill levels might play an important role in shaping the pattern of early retirement. On the one hand, it is well known that participation as well as employment rates tend to be positively related to skills level because people who have invested in their human capital have more incentives and possibilities to exploit it. On the other hand, employers might tend to be skills-selective when cutting down on their payrolls, thus getting rid of employees with low skills no longer needed in modernised production processes.

Computing the early retirement/employment ratio by skills level yields the picture shown in Figure 13.

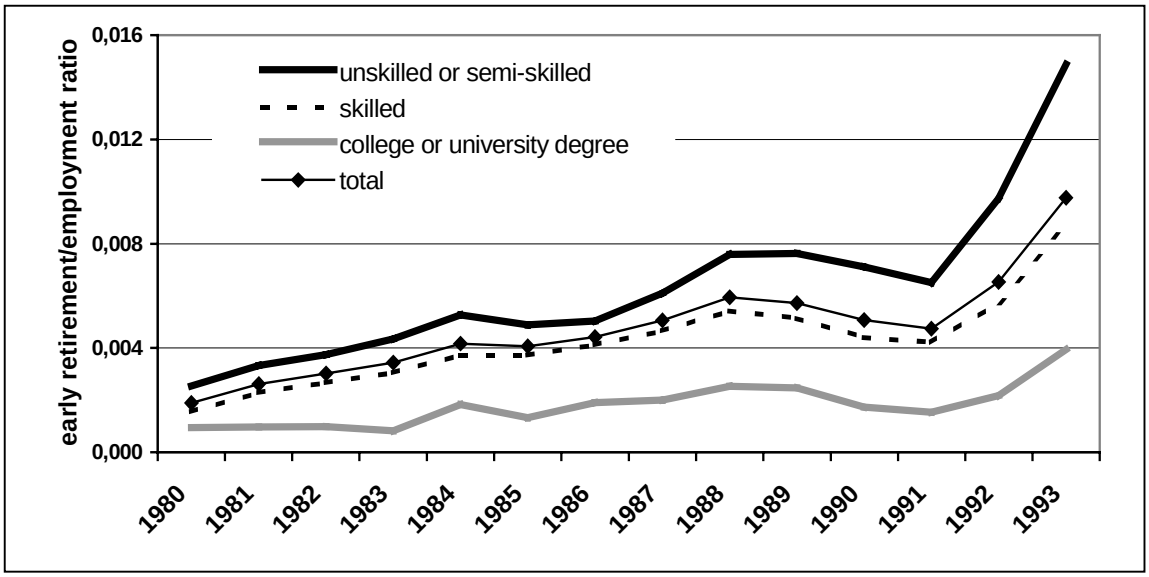


Figure 13: Early retirement/employment ratio by skills level, 1980 – 1993, West Germany. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

At first sight, it appears to be beyond doubt that early retirement via unemployment is a skill-selective phenomenon: The early retirement/employment ratio is higher than average for people without certified vocational qualification (unskilled or semi-skilled), and the gap has widened over time.

At second thought, however, the idea of skill-selectivity appears to want clarification. It is well established that unskilled workers bear a higher risk of unemployment anyway, regardless of the separation of unemployment into the three types underlying our analysis. So the question to be answered concerning skill-selectivity of early retirement would be: Is the share of unskilled workers in early retirement higher than their share in total unemployment?

As Table 4 shows, the share of unskilled or semi-skilled workers in any kind of unemployment was higher than their share in employment, both at the beginning and at the end of the period covered by the data used. Their share in early retirement was higher than their share in the total unemployment in 1980, in 1995 this relation has changed. The opposite is true for the two groups with higher qualifications. But whereas, over time, the share of unskilled in early retirement declined by almost the same factor as their share in employment, the share of skilled workers as well as that of college or university graduates in early retirement grew faster than their share in employment. This might indicate that early retirement has become less skill-selective over time. We will take up this point again in chapter 6 based on logistic regression analysis.

	Unskilled or semi-skilled per cent	**skilled per cent**	**College or university degree per cent**	**Total per cent**
total unemployment volume				
1980	43.54	53.91	2.55	100
1995	37.93	57.73	4.34	100
relative change	*-13*	*7*	*70*	
Displacement-related unemployment				
1980	43.97	53.53	2.50	100
1995	36.78	58.14	5.07	100
relative change	*-16*	*9*	*103*	
early retirement				
1980	47.30	50.63	2.07	100
1995	32.16	62.85	4.99	100
relative change	*-32*	*24*	*141*	
Employment				
1980	34.93	60.96	4.12	100
1995	23.39	69.14	7.47	100
relative change	*-33*	*13*	*81*	

Table 4: Shares of individuals of different skill levels in different types of unemployment and in employment, 1980 and 1995, West Germany. Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina

5.2 Early retirement/employment ratios by gender and age

By our definition of unemployment related to early retirement, this form of unemployment can only occur at the age of 55 and over. In the following analysis we

compare the age groups of 55 to below 60 with the group of 60 and over, each divided by gender.

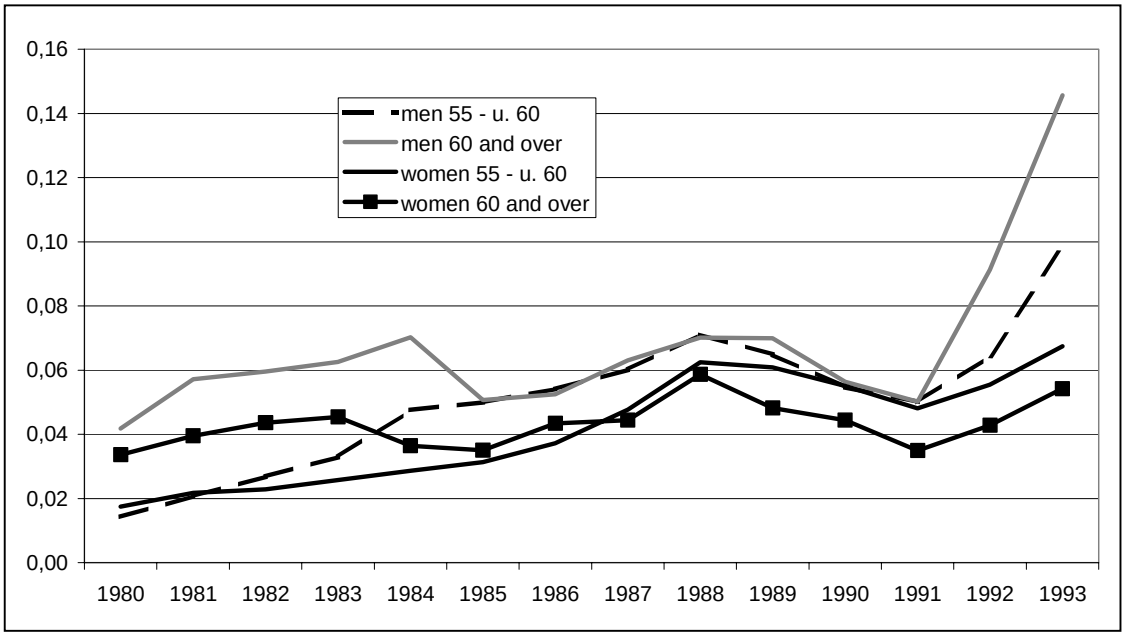


Figure 14: Early retirement/employment ratio by age and gender

It is obvious that unemployment of the early retirement type has been experienced more extensively by men than by women (cf. Figure 14). Only in the beginning of the eighties women of 60 and over had a higher level than men of the age group 55 to under 60. For men the early retirement/employment ratio is higher if they are aged 60 and over. For women the relation of age groups changed in 1987. From this time on the ratio was higher for the age category 55 to under 60.

5.3 Early retirement/employment ratios by nationality

Figure 15 displays the early retirement/employment ratio by nationality. The level of German workers is similar to the total level, because most individuals in our sample are Germans. The level of early retirement type unemployment for "Gastarbeiter"[24] is obviously increasing from the relatively lowest level in 1980 to slightly above the general level in 1993. Since 1991 it is almost identical with that of Germans. The early retirement/employment ratio for other nationalities remains at a low level.

[24] „Gastarbeiter" ("guest workers") was the expression for workers from the primary countries of recruitment: Italy, Spain, Greece, Turkey, and the former Yugoslavia.

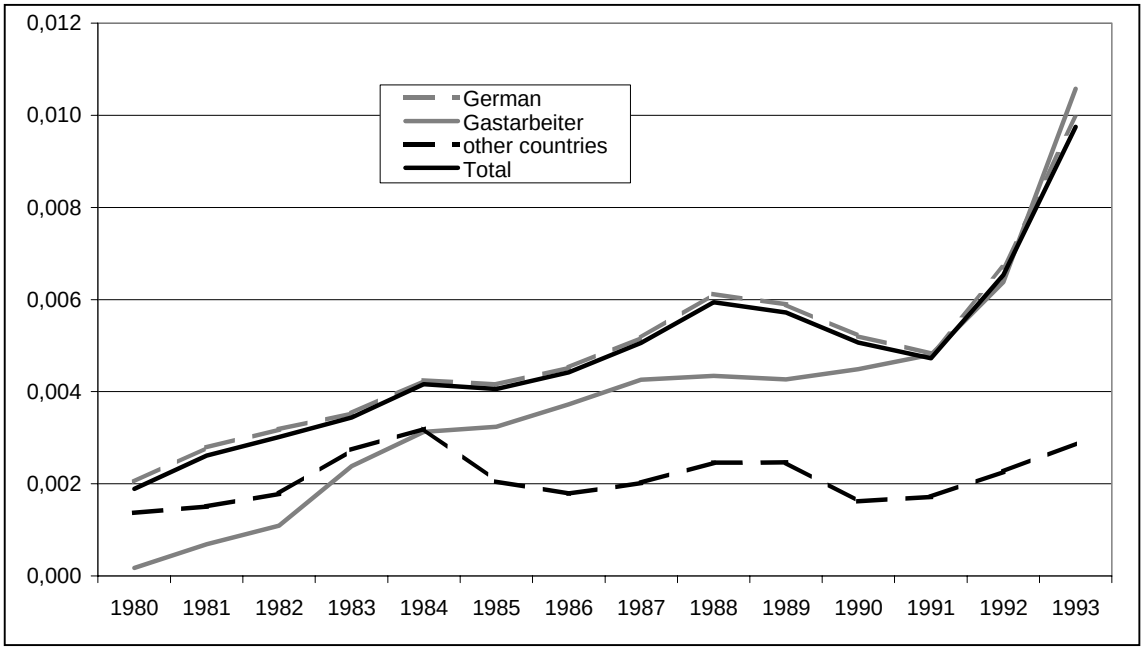


Figure 15: Early retirement/employment ratio by nationality

6 Measuring the relative impact of different factors by logistic regression

6.1 Influence of variable categories

From the descriptive analysis it can be concluded that unemployment due to early retirement has increased to a maximum share of 11 per cent in the total unemployment volume of 1993. Several statistical factors appear to govern the pattern of early retirement. Age, of course, plays a crucial role by definition. Beyond that, early retirement seems to be concentrated in large establishments, in manufacturing and among individuals with low skills, and it appears to be a predominantly male phenomenon. These factors, however, are closely interrelated in reality: Manufacturing tends to be organised in larger units employing larger proportions of unskilled men than services.

The question to be pursued in this chapter is which of these factors play a role of their own, independent of their entanglement with other factors. Logistic regression analysis will allow to establish the significance, the direction, and the strength of influence of each variable. Since the possible shifting of relative impacts over time was beyond the scope and budget of this investigation, the analysis was restricted to a single year of reference. For this purpose, 1990 was selected as the most recent year that still allows a sufficient period of observation in the data set without right-censoring problems interfering too strongly in the analysis.

From the IAB employment subsample, individuals with the following characteristics were selected:

They were employed in West Germany at some point or during the entire year of 1990 at full time level. In that year, they were aged 54[25] or over. If they were to experience early retirement via unemployment this should be observed in the data set extending through 1995.

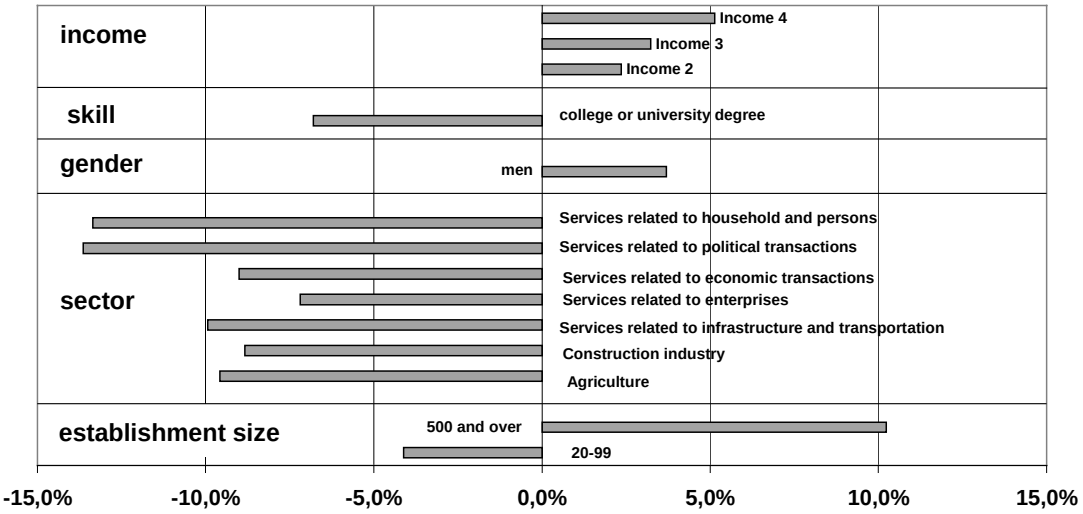
For these persons, the impact of economic sub-sector, establishment size, gender, nationality, income and skills-level on the probability of experiencing unemployment of the early retirement type was calculated. The variable "age" of the risk-group refers to the year 1990, not to the age reached at their possible entry into early retirement. For obvious reasons, a person already aged 64 in 1990 and still employed is destined for retirement at statutory retirement age rather than for early retirement.[26] Therefore, in

[25] Although we defined early retirement as starting at 55, tolerance has to be allowed for the blurring of age information – cf. chapter 2 for details.

[26] Cf. Table 6 in the appendix: Ages beyond 61 of those still employed in 1990 reduce the probability of early retirement more than any other variable in the model.

order to adequately assess the impact of the other variables, age must be included in the model but it will not be interpreted.

The overall results of the logistic regression are presented in detail in the appendix. As the "goodness-of-fit" test shows, the model can explain the propensity of taking up early-retirement related unemployment to a highly significant extent. For the variable categories that turned out to be significant, the so-called marginals are presented in Figure 16. The marginals represent the change of probability for early retirement for single variable categories compared to the reference category[27].



This model is calculated for persons aged 54 and over in the year 1990, who worked full time
Reference categories: Income group 1; unskilled; women; manufacturing; enterprises with 1-19 employees
Source: IAB- employment subsample 1975-1995; Analysis: Thorsten Kalina, IAT
All categories are significant at a 1% level

Figure 16: Change of probability (in per cent) for early retirement type unemployment by variable categories compared to reference categories (only significant categories); West Germany, 1990

Concerning establishment size, the smallest category (1-19 employees) was chosen as a reference. Moving on to the next size category, other factors unchanged, will reduce the probability of early retirement by merely three per cent, whereas the size category of 100–499 is almost at par with the reference category and therefore not shown in the graph. However, working in an establishment with 500 or more employees will increase the probability of early retirement by more than 10 per cent as compared to the reference group. So the basic finding of the descriptive analysis concerning large establishments (Figure 11) is confirmed, but part of the impact of size is absorbed by other variables, presumably sector being the most powerful one.

[27] For details of the analysis cf. Table 6 in the appendix.

Belonging to the sub-sector of manufacturing and extractive industries was taken as the reference category for sub-sectors. In accordance with the descriptive analysis, the probability of entering early retirement is lower in any other sub-sector (cf. Figure 16). Of the four service sub-sectors, notably services for households and persons as well as services to the "polity" (government, social security, political parties, trade unions, employers' organisations, churches and religious associations, other not-for-profit and non-governmental organisations) stand out with low probabilities of effecting unemployment of the early retirement type.

In order to check the influence of income this variable was grouped into ordinal classes. The income information in the sample is on the average daily income, from which five groups, each containing two percentiles of the population, were constructed. Group one is from one to 92 DM, group two from 93 to 115 DM, group three from 116 to 136 DM, group four from 137 to 177 DM and finally group five is 178 DM and over[28]. The analysis shows, that the probability of experiencing early retirement type unemployment is higher for groups with higher income, with the exception of the highest income group that is therefore not represented in Figure 16.

The same applies to nationality. This conforms to the finding in Figure 15 that "Gastarbeiter" reached German early retirement levels during the nineties.

Skill matters only at college or university level which reduces the probability of early retirement by 6.5 per cent as compared to the reference category of the unskilled. The difference between unskilled and skilled observed in the descriptive analysis disappears when the other factors come into play.

The gender difference is smaller than would be expected from analysing the social security framework: Being a man increases the probability of using unemployment for an early retirement transition by only 4 per cent. The remaining gender difference is brought about by other variables, presumably the different gender composition of sub-sectors.

6.2 Influence of variables

In order to assess the relative impact of each of the variables identified as relevant, the logistic-regression model was reduced by one of the variables at a time, and the resulting model-specific quality indicator (Pseudo R^2) of the reduced model was compared to the quality of the total model. The results of these calculations with "Pseudo R^2" as a measure are shown in Table 5.

[28] Income originally coded 0 or 999 was coded as system missing

It turns out that the models without skill, gender, nationality or income category as explaining variables are nearly as "good" as the total model. However, all the models computed have a higher potential of predicting the retirement course of men than of women. It appears, then, that the path of retirement of women depends to a larger extent than that of men on factors not yet elaborated or not to be found in the data set.

Variables	**total**	**women**	**men**
total model	0.1349	0.1079	0.1438
model reduced by single variables ...			
economic sub-sector	0.0918	0.0526	0.1060
age in 1990	0.0996	0.0735	0.1060
Establishment size	0.1134	0.1043	0.1142
Income category	0.1313	0.1036	0.1374
skills level	0.1332	0.1069	0.1415
Gender	0.1335	0.1079	0.1438
Nationality	0.1338	0.1069	0.1423

Table 5: Total Logistic Model and reduced models (Pseudo R^2) Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina[29]

Establishment size has a medium impact on the indicator, whereas the deletion of age in 1990 (for reasons inherent in the definition of early retirement) and of economic sub-sector both reduce the quality of the model to a high extent. So in a national perspective, without variations of the institutional and legal framework, sector is the most important variable – whereas, in an international comparison, the sector mix of national economies did not explain much of the variation of early exit from employment (Jacobs/Kohli/Rein 1987).

[29] For this kind of analysis by reducing the total model cf. Urban 1995, pp. 63f.

7 Summary and discussion

In spite of employment protection legislation that sets privileges according to tenure and age, unemployment as a final and long-lasting stage of previously stable employment careers has become widespread in Germany. In 1993, the most recent year allowing reliable calculations with the data available, this type of unemployment amounted to almost 11 per cent of the total unemployment volume. The variables, which turned out to have the strongest impact on the probability of individuals to experience this type of premature transition into retirement, are economic sub-sector and establishment size.

Reacting to the increasing burden of early pensions on the pensions system, the German legislator – with effect as of 2000 – has introduced reforms that will stepwise phase out early pensions for women and by virtue of unemployment until 2011. During the transition period, early pensions can be "bought" by accepting lower payments. As from 2012, the earliest old-age pension will be available at the age of 62, and it will "cost" a reduction of 10.8 per cent in monthly payments. So these reforms create some disincentives against early pensions, and they abolish the attractiveness of unemployment as an entrance ticket into an earlier pension. The aim of the reform is raising the average age at which people start drawing a pension.

This new framework, however, does not guarantee that people will actually be employed until higher ages. Even if unemployment will be no longer a prerequisite of an early pension it can still be used to bridge time between employment and the pension, as women in our sample demonstrate so clearly. The most recent analysis of employment rates, unemployment and pension entries of older people (Koller 2001) remains indecisive as to whether the pension reforms have already effected a reversal of the trend or whether the observed variations merely reflect a period of economic growth at the end of the nineties.

Tampering with the pension system – namely raising the statutory retirement age beyond 65, as recently proposed by some politicians – will only result in lower pensions or shorter pension periods, not in longer employment. It does not follow from making a longer working life an economic necessity for people that it also becomes an economic reality. The key question retirement and labour market policy has to deal with – and here progress in comparison to the eighties is regrettably small – is how to positively influence companies' employment policies vis-à-vis older employees.

With manufacturing on the lead of early retirement records, the decreasing importance of this sector, the rise of services and the increasing importance of smaller establishments might bring some relief. The open question is, however, to what extent the emerging service sectors will copy employment policy patterns from manufacturing as they mature. There is some indication of this in the finding that services related to enterprises (e.g. advertising, accounting, lawyers, security) and services related to

economic transactions (commerce, finance, insurance, real estate) appear to be less distant from the industrial patterns of early retirement than the other three service sectors (cf. Figure 16).

"Gradual retirement" (*Altersteilzeit*) which might possess some innovative potential with regard to extending employment over the lifetime is presently being perverted to replicate the established patterns of early exit under a different form. In four fifths of the cases, the gradual retirement is implemented in the form of the "block model" which means that the part-time provision of the gradual retirement scheme is only nominal. In practice explicitly allowed by law and encouraged by collective agreements building on it, gradual retirees actually work full-time for the fist half of their part-time period, and then they take time off for the second half. Although, in this way, unemployment and compensation payments related to it are avoided, the subsidies granted to firms if they replace the gradual retirees by unemployed or younger workers still put an additional burden on the unemployment insurance fund. Furthermore, gradual retirement is oriented towards the same premature pension provision as early retirement via unemployment ("old age pension because of unemployment or after gradual retirement") whose phasing-out will reduce present incentives for gradual retirement. Against the backdrop of projected demographic change and the development of the potential workforce, converging in the expectation of a turn-around at about 2010, gradual retirement turns out to be another attempt of suspending surplus labour rather than an endeavour of establishing a sustainable pattern of working in old age and of alternative pathways to retirement.

The first tentative steps in this direction are to be recognised in the reforms of employment policies that took effect as of January 2002: For a period limited until the end of 2005, establishments employing no more than 100 workers can apply for subsidies for the continued vocational training of workers after their 50th birthday. However, within only four years the majority of the target group of establishments and workers is likely to remain ignorant of this provision. Lacking concepts of labour utilisation adequate to the individual phase in the life cycle establishments will have no use for this provision unless it is supported by counselling on matters of work organisation, knowledge transfer between generations, and training management.

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Appendix

	Dependent Variable VR	Logit-Coef.	Std. Err.	Z (=t-ratio)	P>|z|	Marginals
	REF: 1-19					0.00000
Establishment-Size	**20-99**	-0.33	0.07	-5.01	**0.00**	-0.0411
	100-499	-0.05	0.06	-0.86	0.39	-0.00693
	500 and over	0.71	0.06	11.91	**0.00**	0.10231
	Missing	-0.12	0.17	-0.72	0.47	-0.01569
	REF: Manufacturing and extractive industry					0.00000
Economic Sub-sector	**Agriculture**	-1.03	0.22	-4.66	**0.00**	-0.09577
	Construction industry	-0.85	0.08	-11.26	**0.00**	-0.08831
	Services related to infrastructure and transportation	-1.01	0.08	-13.45	**0.00**	-0.0993
	Services related to enterprises	-0.67	0.11	-6.22	**0.00**	-0.07181
	Services related to economic transactions	-0.83	0.06	-13.74	**0.00**	-0.08998
	Services related to political transactions	-1.54	0.08	-19.94	**0.00**	-0.1364
	Services related to households and persons	-1.56	0.09	-17.09	**0.00**	-0.13354
GENDER	**(women=0 (REF); men=1)**	0.29	0.05	5.70	**0.00**	0.03698
	REF: Unskilled					0.00000
Qualification	**Skilled**	-0.03	0.04	-0.69	0.49	-0.00407
	College or university degree	-0.62	0.11	-5.89	**0.00**	-0.06791
	Missing	0.00	0.08	0.00	1.00	0.00002
	REF: 59					0.00000
AGE	**54**	0.00	0.07	-0.05	0.96	-0.00050
	55	0.22	0.07	3.16	**0.00**	0.03105
	56	0.34	0.07	4.72	**0.00**	0.04817
	57	0.39	0.07	5.21	**0.00**	0.05704
	58	0.26	0.08	3.36	**0.00**	0.03657
	60	-0.61	0.09	-6.44	**0.00**	-0.06752
	61	-0.86	0.12	-7.21	**0.00**	-0.08709
	62	-1.59	0.17	-9.36	**0.00**	-0.12618
	63	-2.53	0.29	-8.76	**0.00**	-0.15057
	64	-4.10	1.01	-4.08	**0.00**	-0.16013
	65	-3.59	1.01	-3.57	**0.00**	-0.15528

	REF: German					0.00000
Nationality	**Gastarbeiter**	0.05	0.08	0.62	0.53	0.00652
	Other countries	-0.20	0.16	-1.26	0.21	-0.02438
	Missing	1.85	0.34	5.36	**0.00**	0.38478
	REF: 1-92 DM					0.00000
Income	**93-115 DM**	0.17	0.06	2.70	**0.007**	0.02354
	116-136 DM	0.23	0.07	3.55	**0.00**	0.03231
	137-177 DM	0.36	0.07	5.48	**0.00**	0.0513
	178 and over	0.13	0.07	1.81	0.07	0.01784
Consant		-1.44	0.09	-16.29	**0.00**	-0.28413

Number of obs. = 22482	**Log likelihood** = 9894.8933	**Goodness-of-fit test** Number of observations =22482 Number of covariate patterns = 5804 Pearson chi2(5770) = 7243.92 • Prob > chi2 = 0.0000
Pseudo R^2 = 0.1349	**Likelihood-Ratio-Test** [chi2(33)] = 3086.59 • Prob. > chi2 = 0.0000	We used a level of significance of 1%

Table 6: Logit-Estimates for taking up early retirement type unemployment (individuals of 54 and over in 1990). Source: IAB employment subsample 1975 – 1995; analysis by Thorsten Kalina