

## How "flexicure" are older Danes? The development of social inequality in later life since the 1980s

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The development of social inequality in later life since  
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*Julia Marold and Mona Larsen<sup>1</sup>*

#### **INTRODUCTION**

For decades, Denmark has been among those Western countries with the highest overall employment rates. This is due not only to the comprehensive labor market integration of women, but also to the relatively high employment rates for older people (particularly those in their late fifties). Like most other OECD countries, Denmark has raised the proportion of employed older workers since the mid-1990s (OECD Statistics 2008). Nevertheless, growing international competition and ongoing economic restructuring have increased the pressure on labor markets all over the world, and it is expected that older workers in Denmark are affected by these developments as well.

The flexCAREER project aims to analyze and compare the impact of flexibilization on the late career and, consequently, on social inequality in ten countries (Buchholz et al. 2009). This working paper on the Danish case will describe the country-specific institutional background, give information on the data, and show results for the structure of the late career; i.e. the incidence of unemployment and the chances of re-employment as well as shed light on income mobility in this phase. Further, we analyze the determinants of the timing of retirement and the impact of individual, sectoral and policy-related factors on the development of old age pension levels.

#### **INSTITUTIONAL CONTEXT**

According to Buchholz et al. (2009), the most relevant institutional factors concerning the influence of flexibilization on late careers in a society are labor market characteristics (production regimes and employment protection legislation), educational/occupational systems, and pension-related welfare schemes.

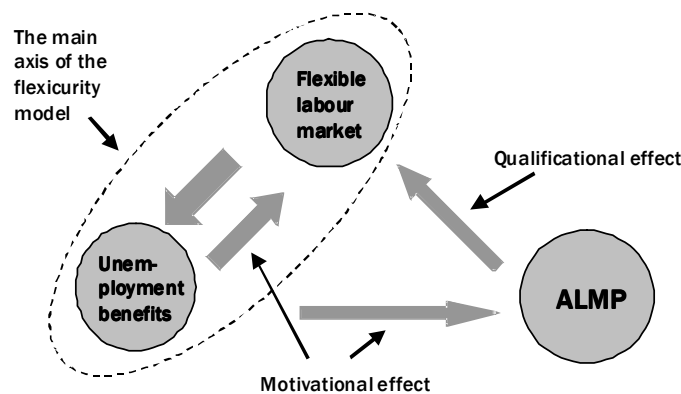
##### **Labor Market Characteristics**

The Danish labor market model is characterized by a unique combination of flexibility and security, often called „the golden triangle of flexicurity“ (see

Figure 1). The main axis of the model shows the interplay of low employment protection and a generous social welfare system supported by an elaborated active labor market policy. As a result, companies can adjust comparatively easily to structural changes on global markets, and job mobility is high in all age groups. When Auer and Cazes (2003) compared 16 OECD countries with regard to the average tenure with the same employer in 1992 and 2000, Denmark ranked right behind the United States and the United Kingdom – both well-known for their “hire-and-fire”-labor markets – and its average tenure even decreased between the two observation points.

If a dismissed worker has difficulties finding new employment, active labor market measures provide assistance with job search, as well as skill upgrading or retraining programs. Put simply, the emphasis lies on employment security rather than job security in the Danish case.

Figure 1: The Danish flexicurity model



Source: Madsen (2006).

Further peculiarities of the Danish labor market are the high female employment rate and the large public sector. More than a third of all employees work in the public sector, with a strong bias towards women: while only every fifth male Dane is employed in the public sector, this applies to about half of the female Danes. Thanks to the expansion of public employment in recent decades, women's employment rate has risen continuously since the 1960s. With employment rates of 81 percent (men) and 73 percent (women), Denmark holds first place among the European Union member countries in this context (Statistics Denmark 2008).

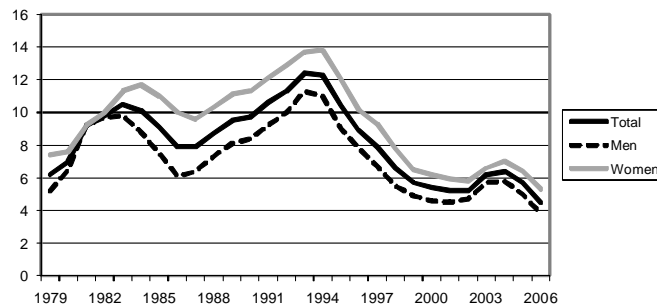
The strong segregation within the Danish labor market contributes to a persisting gender wage gap (Deding and Larsen 2008), but the overall wage dispersion

within the workforce is low. Since the early 1980s, there has been a tendency to decentralize wage bargaining and wage setting in the private sector, and since the mid-1990s, an increasing share is even no longer made at the industry or firm level, but at the individual level (Aagaard, Eriksson and Westergaard-Nielsen 2004). The wage setting in the public sector has also been more decentralized since the late nineties when a new wage system was introduced (OECD 2000). According to the social-democratic welfare state ideology, unions exert major influence on labor conditions and extended benefits, particularly leave schemes or occupational pension funds. The social partners therefore play a particularly decisive role in the Danish case. Most of the regulatory issues are settled between trade unions and the employers' federation, whereas the role of the government is "to pay the bill". The government also takes responsibility for the provision of unemployment benefits and retraining of dismissed workers, which is the core idea of the "Nordic Labor Market Model" also observable in Sweden<sup>2</sup> (Aagaard, Eriksson and Westergaard-Nielsen 2004).

Being a small country with few natural resources, Denmark's economy consists mainly of small and medium-sized enterprises, and it relies strongly on imports and economic relations with other countries. Since the 1950s, the Danish economy experienced a transition from a mainly agriculture-based economy to a strongly service sector-based society. Simultaneously, the industrial sector showed only moderate growth, but the most remarkable development regarding the employment structure was massive job creation in the service sector during the 1980s. By the mid-1990s, more than two thirds of all employment was in the service sector, partly due to the considerable expansion of public services such as education, health and child care (Ganßmann and Haas 2001; Madsen 1999).

When the Danish economy was hit hard by the oil crises in the 1970s, unemployment rose, growing to more than 10 percent in the early 1980s (see Figure 2). After a temporary decline, the rate mounted again to over 12 percent in the early 1990s. In both of these crises, the Danish government introduced measures intended to reduce unemployment and offered, among other things, early retirement options for older workers (see section on welfare institutions). However, in the mid-1990s, the Danish strategy changed to a more activating labor market policy, and in the following years, the economy recovered and experienced an "employment miracle". After a small relapse in the first years of the new millennium, aggregate unemployment has fallen further to reach rates equivalent to full employment. It remains a matter of debate if this development is mainly due to the enhanced activation measures, to their side effect of "hiding" unemployment, or the economic upswing. However, the unemployment rate of people between the ages 55 and 59 has been clearly above population average and the gap has decreased only very recently (Statbank Denmark 2008).

Figure 2: Unemployment rates in Denmark, 1979-2000, in percent



Source: Statbank Denmark (2008).

### Occupational boundaries and lifelong learning

The Danish education system can be characterized by a high level of state control and a high degree of standardization (Hofäcker and Leth-Sørensen 2006). Consequently, a person's qualifications are highly transparent through occupational certificates, and education and training are tailored to labor market demands. Similar to Germany, the vocational training system is organized as a "dual system", combining theoretical training in schools and practical work in firms. Tertiary education shows three levels (short, medium, long) and has become increasingly common in recent decades: currently, more than 50 percent of an age group move on to higher education (CIRIUS 2006). Among older workers, the share of individuals with higher education is comparatively low, because a large proportion of them have a vocational training certificate as their highest qualification level. Moreover, a significant number possess only basic general education, making them a less attractive workforce.

However, the concept of continuous, lifetime education has a long tradition in Danish society. The idea of lifelong learning largely originates from Nikolai Grundtvig (1783-1872), one of the most influential Danish humanists of the 19th century. Today, there is a wide range of publicly sponsored (re-)qualification opportunities, targeted at both the unemployed and employed. Although participation rates correlate with previously achieved qualification levels and decrease with age, they still exceed EU averages by far (European Commission 2006). Through the constant updating of skills, a worker is given the opportunity to overcome the occupational boundaries set by the high importance of certificates on the Danish labor market. In addition, the employability of older workers is improved.

### **Welfare state arrangements**

Denmark is usually assigned to the group of countries with social-democratic welfare ideology whose main goals are decommodification (market independence) and a high welfare standard for everyone through full employment (Esping-Andersen 1990). However, concerning labor market policy, Denmark also shows liberal elements (e.g., the low level of employment protection legislation). It is therefore often called a 'hybrid' in international comparisons (Bredgaard, Larsen and Madsen 2005).

In the context of the labor market situation of older workers, one relevant welfare institutions is unemployment insurance (UI), which is a voluntary scheme in Denmark. Nonetheless, about 80 percent of Danish workers are members of UI funds, and the replacement ratio for unemployment benefits is, at 90 percent (for low-wage earners), one of the highest in the world (Aagaard, Eriksson and Westergaard-Nielsen 2004). In the last half of the nineties, the maximum benefit period was gradually reduced from seven years to four years, but special rules for older workers continued to exist until the beginning of 2007. For the voluntary early retirement program (see below), membership in, and contributions to, an UI fund for at least 25 years within the last 30 years are currently required, but these requirements have been tightened up several times in the period under study.

Unemployed persons who are not members of UI funds can receive social assistance if they have no other income sources or savings. The same goes for individuals who did not manage to find a new job within four years (or the maximum period for their respective age). In other words, social assistance is means-tested and paid for an unlimited period.

Although the regular retirement age in Denmark was 67 in most of the years under study, there were several pathways to withdraw earlier from the labor market (Larsen and Pedersen 2008). The most common scheme is the voluntary early retirement program (VERP), in Danish called "Efterløn"<sup>3</sup>. It was established in 1979 and offers full-time retirement starting at age 60 on condition of a minimum number of years of membership in an UI fund. At the time of its introduction, VERP was supposed to reduce especially youth unemployment after the oil crises in the 1970s. However, over the years, the program gained an increasingly broad popularity. Today, VERP is regarded as a major obstacle to higher economic activity of Danes in their 60s. However, there is still very little political support for abolishing the scheme (OECD 2005). As a compromise, an increase of the minimum entry age to 62 was agreed on in 2006. This, however, will not become effective before 2022. In order to raise incentives to delay early retirement, the government had already launched reforms of VERP in 1992 and 1999. The success of the first reform was relatively weak (Larsen 2005). Although the impact of the second reform has so far been rather weak as well, a recent study suggests that VERP has become less attractive and the number of VERP recipients is expected to decrease in the future (Jørgensen 2009).



During the recession with rapidly rising unemployment in the early 1990s, the government introduced another program targeted at older workers: the so-called “Overgangsydelse” (transitional benefit program, TBP). It was designed as a program to bridge the time until VERP eligibility in case of unemployment in 12 out of 15 months, with a transfer of 82 percent of unemployment benefits. Starting in 1992 with a minimum age of 55, the entry age was lowered further to 50 in 1994. Since extensive usage put pressure on the state budget and the starting economic boom relieved the labor market soon thereafter, the program was closed to new entrants in 1996, implying, however, that the last person left the program in 2006.

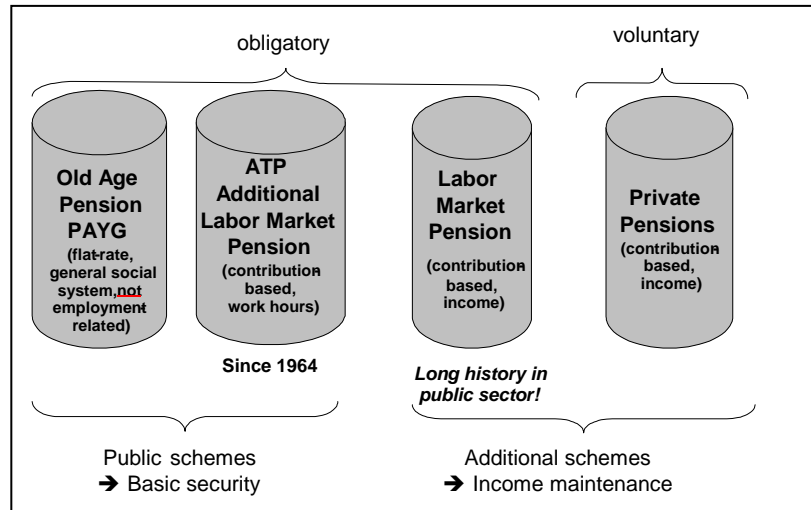
As in many OECD countries, disability pension (DP) can also be used to exit the labor market (Casey et al. 2003), and this kind of public transfer is a widely used means of withdrawing from the labor market for Danes of all age groups.

When Denmark was the second country in the world (after Germany) to introduce an old age social security system in 1891, it deliberately chose a tax-financed scheme instead of “Bismarck’s” social insurance model (Andersen 2008). As a result, all persons reaching the legal retirement age and having lived in Denmark for at least 40 years are eligible for the full public old age pension (OAP) called “Folkepension” in Danish, irrespective of previous income and employment situation. In 2004, the age for access was lowered from 67 to 65<sup>4</sup>, but the plan is to implement a gradual increase back to 67 from 2019 to 2027. The payment consists of a flat-rate basic amount plus an income-tested supplement, and it is indexed annually in line with the overall earnings growth.<sup>5</sup> The flat-rate basic amount is also means tested against income from work.

In addition to the basic old age pension, the Danish government introduced the Labor Market Supplementary Pension (ATP) as a compulsory scheme in 1964. Although the amount of contributions and benefits depends on the number of weekly working hours and years before retirement, it is also not connected to the previous income level.

In recent years, OAP has developed into a minimum protection of pensioners and in that sense it has become more targeted. Since fully funded labor market pensions as well as individual pension savings plans have been added as another layer on top of the state pensions, wealthy pensioners no longer rely on the public pension, but can maintain the living standard gained during the employment career throughout old age. In other words, occupational pensions that are closely earnings-related are gradually replacing OAP as the backbone of the system. Important to note, the Danish pension system as a whole currently comes close to the World Bank recommendations without a comprehensive pension reform within the last half century (Andersen 2008). At the same time, there is a discussion that more reforms of the retirement schemes – with a focus on eligibility ages – are needed in order to finance the welfare state and to avoid labor shortage in the future. Figure 3 gives a broad overview of the four pillars of the Danish pension system.

Figure 3: The four pillars of the Danish old age pension system



Source: Hofäcker and Leth-Sørensen (2004).

## HYPOTHESES

When hypothesizing about the impact of flexibilization on the late career of Danish workers, one has to keep in mind that the Danish labor market has traditionally been quite flexible. As a result, job mobility has always been high even for persons aged 50 and over. Moreover, unions exert a strong influence, and the social partners make agreements on how to apply flexibilization strategies. However, wage setting has been increasingly decentralized during our observation period. There is no specific employment protection for older workers, but re-qualification represents an important means of adapting older workers' qualifications to the changing demands on the labor market. Through comprehensive activation programs, the government makes various efforts to help and motivate dismissed persons to find new employment. However, as soon as people reach age 60, the early exit pathway VERP has been widely used since the early 1980s. Public benefits such as unemployment insurance and public old age pension remain generous especially for people with low earnings and secure everybody a minimum living standard in periods of non-employment. However, for budget reasons and in order to increase labor supply, there have been several reforms lately to make individuals delay retirement or to shift the responsibility to the individual, i.e. to occupational and private pension plans. With these structures and developments in mind, we assume the following tendencies over time:

### *Social change*

Unemployment among older workers is expected to be closely connected to the ups and downs in the overall economic development within our observation period (see Figure 2). Particularly in the early and mid-1990s, the introduction of TBP might have induced a rise in unemployment for the age group 50 to 59 because of reactions on both the supply and demand side in the respective part of the workforce and among employers. Similarly, the chances of reemployment should be affected by these mechanisms; that is, it should have increased visibly since the mid-1990s.

Due to the successive shift of wage bargaining from an industry to an individual level, wage mobility should have increased, particularly in connection with job changes (direct or indirect). However, owing to the generally compressed wage structure, the importance of trade unions, extensive requalification measures, and mostly short unemployment spells, new jobs should not mean a systematic loss in income compared to the previous wage level.

The typical transition to retirement for Danes takes place at or soon after age 60 when reaching VERP eligibility. We do not expect this to change much within our observation period, at best in the very recent years. However, as an overall trend, older workers should increasingly delay their withdrawal from the labor market, because of the interplay of recent pension reforms (TBP termination, VERP reforms), strengthened active labor market policy and the economic upswing.

Finally, the pension income of Danes is expected to grow in line with increasing coverage of occupational and private pension plans, while at the same time, OAP is assumed to lose relevance for the majority of retirees. However, the shift towards more earnings-related components of the three-pillar-pension system is likely to result in increasing translation of labor market inequalities into old age income inequalities.

### *Social inequality*

Overall, social inequality in Denmark is comparatively low. But still the trends described above are supposed to affect certain population groups more than others.

As in most other countries, older workers with no or low qualifications should be disadvantaged to the highest degree in the course of economic restructuring and ongoing flexibilization. Consequently, both their risk of unemployment and their tendency to withdraw early from the labor market should be comparatively high. This also applies for persons with a migration background, because they usually have low qualification levels connected with a lack of language skills, networks, and so forth.

In contrast, workers in the large public sector – containing a large proportion of women – should be comparatively well shielded against economic reorganization and fluctuations. Therefore, in the specific Danish case, economic downturns should have a stronger impact on the employment situation and retirement behavior of men. On the flipside, however, men should also benefit more from

economic upturns. Also a gender issue, the still existing wage gap between men and women should increasingly translate into gender differences in pension income with earnings-related parts of the pension system gaining importance. Similarly, unemployment spells and low income in the late career potentially affect old age income. Overall, social inequalities should therefore have increased in Denmark.

## DATA AND METHODS

The data used is administrative records. These data originally comprise all individuals aged 45 and above and provide a wide range of register-based variables. The data include information from the Integrated Database for Labor Market Research (IDA) that permit, for example, the linkage of individual and company information. In addition, we have access to income information from the Income and Tax Register and to some variables on social transfers from the Social Statistics Database. Therefore, these data represents a highly valuable and reliable source for social and economic research. The observation window for the following analyses is 1980-2006; the samples used originate from a 5 percent sample of 50-70-year-olds in our dataset and contain 850,000 – 910,000 observations of 73,000 – 78,000 persons.<sup>6</sup>

Individuals enter our sample in the year in which they turn 50, under the condition that they have a job or – depending on the process studied – are in the labor force at that time. They leave the sample when they turn 70, or earlier if they die or leave the country for more than one year. To enable trends to be observed over time, individuals are classified into five cohorts according to the labor market situation of the period in which they turn 50, as well as the occurrence of relevant policy reforms. In all the cohorts under study, employment and labor force participation rates for Danish men at age 50 were rather stable at about 85 percent and 90 percent respectively. Women's employment at that age started at almost 70 percent for the oldest cohort (born 1930-1933) and exceeded 80 percent for the youngest (born 1948-1956). At the same time, labor force participation rose from 73 percent to 87 percent. So, in general, defining the beginning of the late career at age 50 is appropriate in the Danish case because it does not lead to a relevant loss of cases; with regard to gender, sample selectivity is negligible compared to typical male breadwinner countries such as Germany or Italy.

For our analyses of the transition to unemployment and re-employment, income mobility in the late career, and the transition to retirement, we employ event history methods using discrete time logistic regression models (Blossfeld and Rohwer 2002). The determinants of the level of pension income are analyzed by conducting OLS regression estimations.

Table 1: Explanatory variables

Core variables	Measures and categories
<i>Cohorts</i>	1930-1933, 1934-1937, 1938-1943, 1944-1948, 1949-1956 (based on the year a person turns 50)
<i>Education and training level</i>	5-point scale, self-constructed combining information on general education and occupational training
<i>Gender</i>	Men versus women
<i>Ethnicity</i>	Danish versus non-Danish (comprising immigrants and descendants)
<i>Unemployment experience</i>	Time in unemployment since age 50
<i>Firm size</i> <sup>7</sup>	4 categories based on the number of employees
<i>Sector</i>	7 sectors, self-constructed

Source: own compilation.

In addition to birth cohorts, we account for individual characteristics such as gender, qualification level, ethnicity, unemployment experience, and self-employment experience in the late career.<sup>8</sup> We also consider the characteristics of the working context, such as industrial sector and firm size. Table 1 summarizes the core explanatory variables and the measures and categories used.

## RESULTS

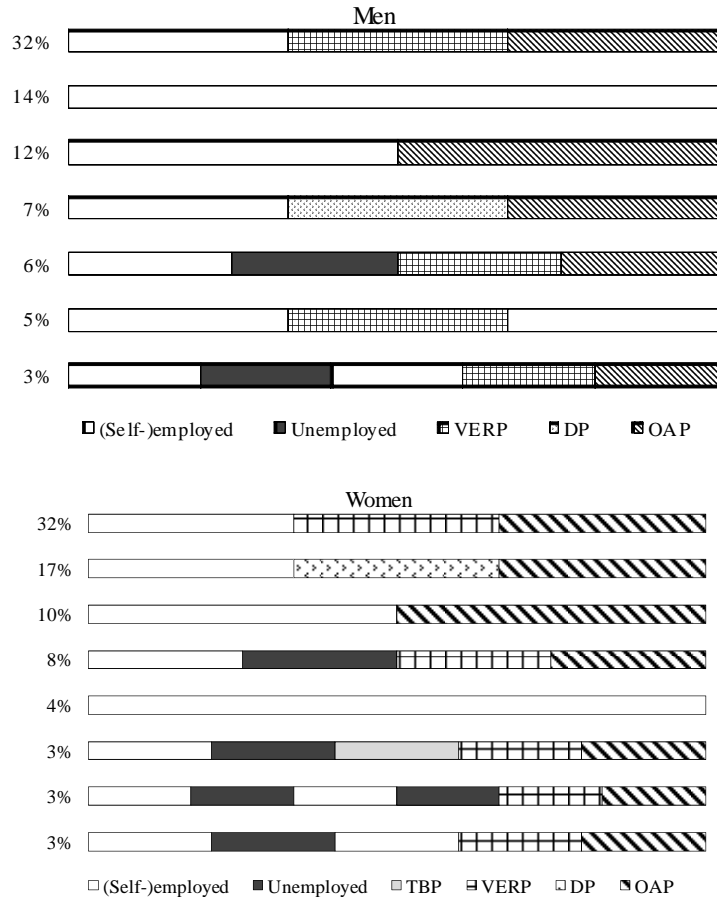
### The late career in Denmark – descriptive overview

For a first and cross-nationally comparative overview, we present some descriptive indicators for the late career and retirement trends in Denmark to match those reported in the other country chapters (Table 2 in appendix).

Also, we show the most frequent sequences of labor market states for Danes who were employed or self-employed at age 50 and reached age 68 within our observation period.<sup>9</sup> Figure 4 depicts the most common late career pathways for men and women and illustrates that, in both groups almost a third of them used the voluntary early retirement scheme as a bridge between employment and the regular old age pension.

Only 12 percent of males and 10 percent of females in our sample actually worked until the official retirement age. Among women, an even higher proportion (17 percent) was on DP between their last employment and OAP receipt. For men, in contrast, DP as part of their retirement pathway is less relevant (7 percent). A relatively high share of them (14 percent) had not even retired at all at age 68, while this was the case for only 4 percent of women.

Figure 4: Late career pathways for Danes employed at age 50 and reaching age 68 in 1998–2006, by gender (sequence analysis)



Source: Own calculation based on administrative data (1980–2006; 8,403 men and 7,705 women).

Note: Other sequences less than 2 percent.

Small groups of 6 and 8 percent respectively entered VERP from unemployment; additional 3 percent of women made use of TBP and further 6 percent experienced unemployment after age 50, but managed to re-enter the labor market. While all those women eventually ended up in VERP, half of the ones with interrupted late careers opted for early retirement out of employment; this applies to 3 percent of men as well. But among males, a remarkable proportion of 5 percent had returned to the labor market from VERP and was still in employment at age 68.

Overall, at least 40 percent of men and 50 percent of women decided to withdraw early from the labor market via VERP, irrespective of their late career

pattern.<sup>10</sup> Obviously, this was the major pathway into retirement among the Danish population, while only small proportions used unemployment benefit or DP for periods between their last labor market activity and VERP or OAP, i.e. exited even before age 60. But for the use of these “bridges”, we can see differences between men and women: among women, receipt of DP, TBP and VERP was more common than among men. In contrast, a considerable share of the latter was still at work in their late sixties.

Hence the sequence analysis indicates gender differences in late career patterns and retirement timing in Denmark. We will analyze these and other differences between social groups more closely in the following sections by using multivariate models.

### **The risk of unemployment in the late career**

The Danish labor market is characterized by high job mobility and short average tenures. Descriptive analyses show that job mobility is common also for Danes in the age group 50 and over. Almost one half have at least two jobs, and about one quarter have at least three jobs between their 50<sup>th</sup> birthday and the point of retirement. However, these job changes are not necessarily connected to (long) unemployment spells. In our data, the share of men and women experiencing unemployment at least once in their late career varies between 22 and 32 percent for cohorts completely reaching their sixties within our observation period (see Table 2). For the multivariate analysis of the factors influencing the risk of unemployment after 50, we focus on first spells only in order to remain comparable with the other country studies.<sup>11</sup>

First of all, our results reveal that people born between 1934 and 1943 had the highest risk of becoming unemployed (see Table 3 in appendix). These individuals entered their late careers between the mid-1980s and the mid-1990s, a period with increasing and/or high unemployment (see Figure 2). Furthermore, these cohorts were the target group of TBP that was launched in the early 1990s to let unemployed people in their fifties leave the labor market. As a result, employers might have been inclined to dismiss workers at these ages rather than younger ones because the employers knew that these workers could bridge the remaining time until VERP eligibility. Consequently, younger cohorts show a lower risk of unemployment, most likely because of the economic boom since the mid-1990s and – related to that – the termination of TBP. The cohort effects also remain significant when accounting for the different composition regarding qualification levels and economy structure (firm size and industries). So overall, our hypothesis regarding the development over time is confirmed. The risk of unemployment for older workers was highly dependent on the economic cycle and related labor market policies, in particular TBP. However, the general risk of unemployment varied not only by cohorts but also by age groups.

At first sight, there seems to be no difference between individuals in their early and those in their late fifties; still, the highly significant positive effect for the age group 54-58 when removing cohorts and only accounting for unemployment

rate (model 4) gives us a hint to what becomes obvious in separate cohort analyses (models not shown): in all cohorts that can be observed throughout a considerable amount of their late career, the unemployment risk is higher for Danes in their late fifties compared to their younger counterparts. This effect is by large connected to the unemployment insurance system that allows for several years of receipt for individuals in the second half of their fifties, often right until VERP eligibility. Only for those born 1938-1943, the risk of unemployment is lower when the respective individuals are older. The explanation is probably that for these individuals, the labor market was very tense when they had just turned 50. In addition, TBP was introduced and allowed them to completely withdraw from the labor market after a year of unemployment. When they switched to the second half of their fifties, in contrast, the economy recovered and those who were still in the labor market enjoyed a comparatively low risk of unemployment. The opposite effects within the different cohorts level out to around zero in the overall analyses and therefore result in a misleading picture there. But we find for all cohorts that, as soon as Danes pass age 60, their risk of unemployment decreases, most likely because these persons tend to opt for VERP rather than becoming unemployed.

Let us now have a look at the evolution of social inequality patterns connected to these trends. Throughout the different models, women experience unemployment in the late career more often than men, with the gender gap actually increasing when accounting for sector and industries – perhaps because of a strong occupational segregation not only between but also within the public and the private sector; moreover, the gender gap is most pronounced in the cohort with the highest overall unemployment risk (1938-1943) (Model 6). Therefore, our hypotheses regarding men and women are not confirmed by the data: women were no more secure, but had a higher risk of becoming unemployed in all cohorts, and even more in the one struck most by the economic recession in the early 1990s. At the same time, however, the significant differences in late career unemployment risk between workers in the public and the private sector respectively remained. This difference might actually be due to the higher involvement of the private sector in economic ups and downs, but it does not translate into the relative job security of women as expected. This suggests that the higher unemployment risk for women was driven by those employed in the private sector.

In contrast to the gender hypothesis, there is support for our assumption that the risk of unemployment varies by level of qualification: compared to people with vocational training (who represent the largest share in our sample), individuals with no or only basic education were exposed to late career unemployment to the highest degree, people with secondary general education (a relatively small group though) had about the same risk and Danes with academic degrees seem to be best protected. The disadvantage of the lowest qualification groups even grew over time; that is, the later these persons were born, the more they were exposed to late career unemployment (Model 5). In part, this might be explained by higher take-up rates of TBP by low qualification groups, but the trend also continued



for the youngest cohort that was no longer eligible for this program. Consequently, the inequality between qualification groups regarding the risk of unemployment in the late career has increased over time, because the low qualified did not benefit from the boom in the late 1990s to the same extent as the high qualified.

Further, we controlled for the size of a firm as an additional structural characteristic, with the well-known result that workers in large firms had a lower risk of unemployment in the late career than workers in small firms that are not able to shift redundant workers within their internal labor markets. Similarly, self-employed workers show a lower risk compared to the dependent employed (model not shown). As hypothesized, belonging to an ethnic minority also represented a drawback in the context of late career unemployment.

### **Chances of re-employment**

After examining the risk of becoming unemployed after 50, we now look at the chance of finding new employment out of these first spells. Overall, slightly more than half of these spells were terminated by new employment, mounting up to 60 percent depending on gender and cohort (see overview in Table 2). In most cases (85 percent), reemployment was found within two years. Compared to the full sample of everyone employed at age 50, the subsample of unemployed persons, which we use here, is characterized by a shift of educational levels to the bottom categories; that is, almost one half of the people “at risk” of reemployment have no or only basic education (first category).

In the preceding section we showed that individuals born between 1934 and 1943 had the highest risk of unemployment. Table 4 shows that they also had the lowest chance of reemployment, confirming our hypotheses based on the influence of the economic cycle and TBP. Thus, the lack of economic pressure to enter paid work has probably contributed to the comparatively lower levels of reemployment for people born before the early 1940s, while Danes born afterwards experienced increased public commitment to active labor market policy and benefited from the economic upswing after the mid-1990s. This periodical dependence is also visible in Model 4, in which we introduced the period in which one became unemployed instead of cohorts; with the early 1990s as reference, we observe reemployment chances being better in all other periods, especially afterwards.

Related to that, we can see that the older people were the lower was their tendency to reenter the labor market from unemployment. There was a significantly lower reemployment probability already for people in their late fifties compared to people in their early fifties. These findings suggest that not only TBP (which was not available for all cohorts), but also VERP in general had a negative effect on reemployment probabilities for workers in their late fifties. Thus, the existence of this scheme combined with several years of UI entitlements might imply less search effort among older workers (supply side). On the other side, employers might express less demand for workers in this age group either because they dispose of few adequate positions due to economic restructuring or because they

consider older workers as less attractive and expect them to retire in a few years time anyway (statistical age discrimination). Consequently, unemployed Danes in their late fifties show a higher tendency to remain unemployed compared to their younger counterparts in all cohorts, a frequently observed phenomenon for individuals in many countries in the years before reaching a certain age that allows for attractive early retirement. After age 60, reemployment was even more unlikely since eligible people presumably preferred to opt for VERP instead of returning to the labor market.

Turning to the development of inequality patterns, our results show that females had a significantly lower probability of reemployment than males. So overall, there was a double gender imbalance in Danish late careers. Women were more likely to become unemployed and less likely to become reemployed after age 50. However, similar to the age variation described above, the gender difference could also be due to more “voluntary” unemployment among older women than older men. Moreover, interaction terms revealed that the women born 1938-1943 had the lowest re-employment probability of all, most probably because more women took advantage of TBP than men (also see Figure 4).

In addition, our hypothesized disadvantage of low qualification groups does not appear so clearly for the chances of reemployment. Compared to persons with vocational training, only those with short academic degrees enjoyed a better chance of reemployment, and this effect is mostly small; interestingly, persons with vocational training do not differ significantly from neither people with no qualification nor people with very high qualifications.<sup>12</sup> Seemingly, the level of qualification did not play a major role in determining a person’s chance of reentering the labor market after being unemployed in the late career. One potential explanation is that these people are already a selective group with specific characteristics, and within this group, factors other than qualification mattered more for the opportunities to regain employment. However, Model 5 shows that once we introduced interactions terms for cohort and qualification level, a significant negative effect for the lowest qualification category appeared which mostly applies to persons born 1938-1943. Hence, low qualification was particularly ‘harmful’ for the chances of reemployment when the overall labor market situation was tight. For members of later cohorts, however, the advantage of a higher qualification level seems to have decreased.

Whereas workers with a high number of co-workers had the lowest risk of becoming unemployed in their late career, those workers who nonetheless lost their job had the worst chances of finding new employment compared to those previously working in small firms. This could indicate that older workers who were laid off by large firms had some particular features that made them less attractive on the labor market. Alternatively, they could have been laid off with the specific purpose to bridge the remaining time until (early) retirement with help of UI benefits (or TBP).

Another structural feature, the distinction between public sector and private industries, does not reveal remarkable differences (model not shown), but the

more detailed view on private industry effects shows a significant positive effect for former construction workers – an occupation in which frequent job changes and unemployment spells are common. Moreover, native Danes had better reemployment chances than immigrants and their descendants, while a high national unemployment rate decreased the chances of reemployment as expected. In general, our hypotheses regarding the development over time are confirmed, while the results for inequality patterns are not as straightforward as anticipated.

### **Late career income mobility**

In the following, we focus on how the financial situation of older people has developed in the late career. Therefore, we present the results from transition rate models on upward income mobility (Table 5) and downward income mobility (Table 6). In this context, an upward or downward move is defined as a 10 percent income increase or decrease respectively compared to the previous year. Our income information is based on yearly gross work income obtained from the Danish Income and Tax Register, adjusted for inflation. Due to different time references, we can use only very little information on employment characteristics here. Consequently, the covariates in our analysis on income mobility are confined to cohort, age group, gender, qualification, ethnicity, the number of job changes so far, the incidence of job change or the situation that someone was unemployed for most of the year (i.e. more than 6 months) in the year before the move. In the last case, the income of the last year in which a person was fully employed is used as the reference year. Another constraint of the data is the lack of reliable information on working hours. We know that women in our target group worked part-time to a clearly higher percentage than men<sup>13</sup>, but we do not know if the observed income mobility simply reflects a change in working hours from one year to another.<sup>14</sup>

As in the previous sections, we begin with the observation of potential developments over time. For upward as well as downward mobility in Danish late careers, however, we cannot detect any development over cohorts for persons born before 1948. But individuals in the youngest cohort tended to move significantly less in both directions, contradicting our assumption of rising overall income mobility. Only Model 6 in both Table 5 and Table 6 shows significant cohort effects, attributed to the introduction of interaction terms involving gender which leads us to the evolution of inequality patterns.

Overall, there are no gender differences for upward mobility. However, women had a significantly lower risk of downward mobility in the late career than men. Separate models (not shown, but represented as interaction terms in Model 6) even reveal opposed developments over time in both directions. Among men, income mobility steadily increased and peaked for individuals born between 1938 and 1948, but then declined for the youngest cohort. Among women, in contrast, upward as well as downward mobility constantly decreased. This could, among other reasons, relate to their large proportion being employed in the pub-

lic sector that is less influenced by economic fluctuations and traditionally more strongly regulated by collective agreements on wages; in this way, our hypotheses stating that women's employment is more stable and secured than men's could finally be confirmed. At the same time, men's growing exposure to income volatility can be traced back to the growing flexibilization of private sector employment in the course of economic globalization. However, men also show decreasing income mobility in the very youngest cohort who benefits most from the economic recovery, contributing to the clear negative cohort effect described above in the overall sample. Men and women have in common that notable income changes diminish with age.

The impact of a person's qualification level on income mobility does not evolve unidirectionally either. Compared to people with vocational training, it was the lower qualification groups as well as the highest one that were more likely to make any income move, whereas people with a short or medium degree have a slightly lower chance. However, first, these effects are not stable over cohorts, second, they are particularly strong for individuals born before 1933 and after 1944 and, third, they indicate a specific tendency of individuals with such lower academic qualification levels to be employed in fields with low wage mobility, for example in the public sector.

Furthermore, income mobility in both directions is higher among workers from ethnic minorities than among the ethnic Danish population. One could argue that these groups suffer from a low labor market attachment in general and therefore frequently switch between various positions, but the effect hardly decreases and remains highly significant when accounting for number of job changes in the late career<sup>15</sup>, or for a job change or unemployment spells longer than 6 months directly before the income move. Another explanation could be that ethnic minorities are employed at specific segments of the labor market with particular high degree of instability in yearly income.

The number of job changes in the late career (models not shown) or a job change directly before the income move exert an overall positive influence and in similar size for both directions, confirming our corresponding hypotheses, whereas the effect of unemployment is remarkably stronger for downward than for upward mobility. In other words, if elderly Danes had been unemployed for more than half a year and then found a new job, they had a higher probability of experiencing a notable income change compared to persons being continuously employed. However, for these reentrants, it was far more likely that their new employment meant an income loss rather than an income gain compared to their previous wage. In fact, more than half of these reentrants (55 percent) had to accept less than 90 percent of their former yearly wage, one quarter earned about the same and only every fifth benefited from a new wage that was at least 10 percent higher than that for the last job. Evidently, unemployment in the late career – even if relatively short and financially secured – had a negative impact on further income development. In comparison, direct job changes led to notable job losses in only about 19 percent of all cases.

So, in general, the analyses on income mobility after age 50 reveal, in accordance with our expectations, that persons with instable late career employment (job changes or unemployment spells) show a higher tendency to experience an upward or downward move in their yearly work income compared to people who have stayed in the same job. However, the negative impact of unemployment on the subsequent income is surprisingly strong.

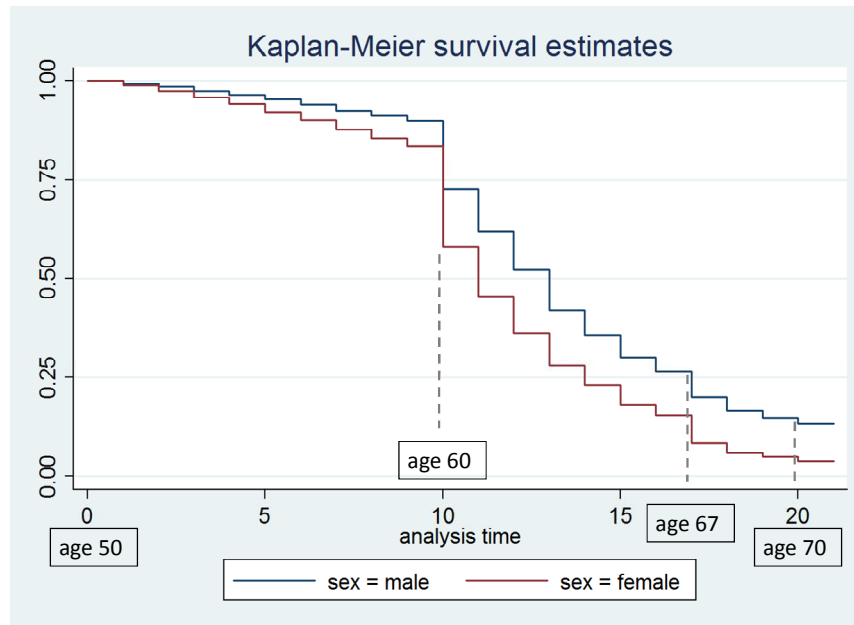
### **Transition to Retirement**

For the analysis of transition to retirement, we used a slightly different sample than before. Now, we included not only employed at age 50 but also those who were unemployed, on activation, on leave or on rehabilitation at that age. In short, we observed everybody in the labor force at age 50 until he or she entered any state of retirement, that is, disability pension (DP), transitional benefit (TBP), voluntary early retirement (VERP), or old age pension (OAP). As mentioned, the most common path to retirement in Denmark was from employment to VERP and then to OAP (see Figure 4). As a consequence, the labor force participation rate of the elderly Danish population drops dramatically after age 60. However, there were some variations in retirement behavior over time and between different social groups.

Our analyses so far revealed that Danes born between 1934 and 1943 had the worst employment situation in their late career and Table 7 shows that these persons also retired earlier than persons born before or afterwards. In particular the two youngest cohorts show a clear development toward delayed withdrawal from the labor market compared to older cohorts, thus confirming our hypothesis. Again, this can be traced back to the interplay between positive economic developments starting in the mid-1990s, political reforms strengthening (re-)activation and (re-)integration of groups with weak labor market attachment, and political incentives to delay entry into VERP in the same period.

Naturally, the tendency to retire increased with age, but coefficients noticeably increase after the critical point of 60. Although not everybody entered VERP as soon as he or she turned 60, survivor curves for the transition to retirement make clear that at 62, half of the Danes in our sample have retired (Figure 5). The more frequent use of “bridging” schemes into early retirement among women (see Figure 4) indicates that there is a clear gender gap in the timing of retirement, i.e. Danish women withdrew earlier from the labor market than men. The difference is particularly pronounced for older cohorts, in particular those born between 1934 and 1943, whereas the gender difference seems to have decreased afterwards.

Figure 5: *Survivor curves for the transition to retirement for Danes reaching age 50 between 1980 and 2006, by gender*



Source: own calculations based on administrative dataset.

Also, a person's highest qualification level considerably had a considerable impact on the timing of withdrawal from the labor market. People with only compulsory education and without vocational qualification were the first to exit, whereas those with upper secondary education or even academic degrees worked longest. Over time, the gap between lowest and highest qualification groups became even larger, supporting our assumption of growing inequality regarding qualification levels (Model 6).

Structural characteristics influenced the retirement behavior of Danes as well. The tendency to retire increased with the number of co-workers, that is, employees of large firms retired significantly earlier than employees of small firms. Moreover, employees of most private industries show a significantly lower propensity compared to public sector workers, i.e. public employees withdrew earlier than most private industry workers. Notably, this effect occurs despite controlling for gender at the same time, suggesting that gender differences are not the explanation for public/private sector differences.

Going back to individual features, immigrants to Denmark and their descendants retired significantly earlier than ethnic Danes, but the effect disappears when years of unemployment experience in the late career or being currently unemployed are taken into account. This may be because migrants more often had instable late careers and entered retirement from unemployment (using TBP

for example) to a greater extent than ethnic Danes. Being unemployed in the late career, however, strongly increased the tendency to withdraw from the labor force for everyone. Both measures of unemployment (i.e. the sum of spells in the late career and the current state) exert the strongest influence for the already disadvantaged individuals born between or closely around 1938-1943 (models with interaction terms not shown).

Further, under the category “employment status”, we examined the influence of self-employment on the timing of retirement, with the intuitive result of delayed retirement for this occupational group. Finally, we found a trend of “coupled retirement” when looking at the partner’s age: with singles as reference category, there is no effect for partners of the same age, but persons with a younger partner delayed retirement, whereas persons with older partners tended to retire significantly earlier than singles.

In sum, the results of the analyses on the timing of retirement in Denmark provide a clear picture, and confirm our expectations as well as patterns known from other studies. Women, persons with a migration background, those with low qualification and those formerly working in large firms retired relatively early, while the overall development was closely connected to the economic and political situation, demonstrating a reversal of the early retirement trend observed during the recession in the early 1990s.

### **Pension income**

The final question in our study is: What determines the level of pension income? For this analysis, we selected everyone who entered OAP within our observation window and looked at the total yearly income in the first year when the person was fully retired.<sup>16</sup> This procedure gave us individuals from three of the cohorts observed in our previous analyses, the youngest born in 1941. Table 2 shows that by this definition, we reach virtually full coverage of Danish retirees. Our dependent variable is logarithmized, adjusted for inflation and reflects total gross yearly income including not only the public transfers (OAP), but also occupational and private pensions as well as, if applicable, work income in Danish crowns.

The income situation in old age might also be influenced by home ownership, that is, individuals who own their homes are probably better off than their renting counterparts. In Denmark, about 80 percent of the population aged 50–69 lived in their own house in the early 2000s, a fairly high proportion that is also reached by Sweden and Italy, for example, and even topped by Estonia (almost 90%), but clearly exceeds the shares in the Netherlands (60 – 70%, depending on age group) or Germany (less than 60%) (Börsch-Supan et al. 2005). However, because information on house ownership is not available in our data, we cannot use it in our multivariate models.

First of all, we found that the pension income of Danish retirees grew steadily over cohorts (Table 8). However, the successive shift toward higher qualification levels is not the reason for this, because taking this into account led to hardly any

change in the effects. Neither can rising income levels in general be made responsible, because introducing last work income did not adjust effect sizes or significance levels of the cohort coefficients (model not shown). Consequently, we argue that the growing coverage of occupational pensions and increasing popularity of private pension plans is responsible for the continuous increase in pension income, as stated earlier in our hypotheses. Remarkably, the cohort born 1938-1941 who had the worst labor market situation and withdrew relatively early from the labor market, still benefited from a pension level growth compared to Danes born earlier.

The higher the age at which one had exited the labor market, the higher was the pension income, particularly for retirement after age 60. The effect sizes for retirement before 60 are very small and not always significant. As a consequence, groups identified as retiring comparatively late (e.g. men, better qualified) are expected to benefit from higher incomes after retirement. In other words, labor market inequalities should translate more strongly into old age inequalities, and this is what we will examine in the next section.

In fact, women had significantly lower pension incomes than men. This gender difference is probably explained not only by differences in retirement timing but also by the gender wage gap that does not translate into the level of OAP but is reflected in occupational and private pensions. The gender difference in pension income has even slightly increased over time, confirming our expectations regarding the maintenance or even widening of labor market inequalities beyond retirement in the course of the shift towards occupational and private pensions, i.e. an increase in actuarial fairness in pension calculation in Denmark.

Also, the qualification of a person proves to be a relatively strong factor influencing the level of pension income, with an upper secondary general education providing higher levels than a vocational training certificate. In short, the incomes of Danish retirees show a clear gradient as a function of their qualifications, although with decreasing impact on the youngest cohort, i.e. higher qualified individuals born 1938-1943 lost part of their advance compared to higher qualified persons born earlier. However, since this is the cohort that suffered most from late career instability, it is well possible that this effect is a specific characteristic for these individuals only and does not indicate a trend over time that will continue. Similarly, the fact that retiring from unemployment shows particularly strong negative impact for this cohort (Model 9), suggests that first and foremost individuals with low incomes and low labor market attachment used unemployment or TBP as pathways to retirement. Further, the number of years in unemployment after 50, some years of self-employment in the late career, and the number of job changes in the late career had a negative effect on pension income as expected.

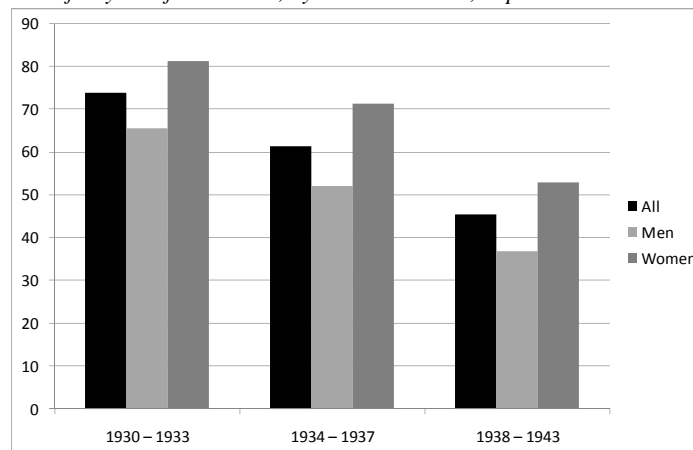
The structural characteristics of the last job also mattered. Compared to private sector workers, public sector employees tended to have a higher pension level, but the difference is quite small.<sup>17</sup> Moreover, Danes working in large firms before retirement enjoyed a higher pension level than workers from small firms,



perhaps because large firms often pay higher wages and, to a higher extent, provide elaborate occupational pension schemes. Notably, workers from large firms had shown a tendency to retire relatively early, thus opposing our assumptions on the influence of retirement timing stated a few paragraphs earlier. Still, we have to bear in mind that the high level of job mobility in Denmark implies that the last employment is not necessarily representative for the late, let alone the whole employment career.

At last, we were also interested in the impact of some country-specific covariates such as, first, the pathway into retirement; here we find that persons whose first state of retirement was DP have lower income than persons who retired through VERP, people entering OAP directly have the highest pension level, while retirement through VERP or TBP does not make a difference. Second, we accounted for the year in which one retired, with the result that the later one retired the higher was his/her income (Model 7). Similar effects are found for the period of entry into OAP (model not shown), all in all confirming the trend found earlier that the Danish retirees' pension income has grown over time.

Figure 6: Median proportion of OAP payments among the total income in the first full year of retirement, by sex and cohorts, in percent



Source: own calculation based on administrative data.

Note: Based on everyone entering OAP between 1980 and 2006 excluding those with self-employment experience after age 50.

In order to substantiate our argument concerning the growth in coverage of pension plans other than the public scheme, we determined the share of OAP among the total pension income by using information from Denmark's Social Statistics Database. Hence Figure 6 shows how much of the individual pension income was represented by OAP payments. Overall, the average share relative to total income in retirement decreased from about three quarters for persons born in the early 1930s to less than half for people born in the late 1930s and early 1940s, with pronounced gender differences and remarkable range, thereby indi-

cating a rapid development: while the median share of public pension transfers was more than 80 percent for retired women in the oldest cohort, this is only little more than a third for men in the youngest cohort. As a consequence, women rely on the flat-rate public pension to a higher extent than men – corresponding to the fact that their overall pension income is lower. However, notably, these results indicate that current retirees – and particularly male retirees – get more than half of their pension income from sources other than the basic public OAP scheme. These findings are in line with the successive development towards OAP as a targeted and basic old age security scheme for people with low labor market attachment on the one hand, and towards the strengthening of occupational pensions as new backbone of the Danish pension system, supported by growing popularity of private pension plans, on the other hand.

## CONCLUSIONS

The aim of this paper is to understand how the increasing need for employment flexibility on globalized markets has impacted on the late careers and the economic situation of older people in Denmark. Therefore, we analyzed the risk of unemployment, the chances of reemployment and the extent of income mobility in individuals aged 50 and over as well as their retirement behavior and the determinants of their income level after retirement.

The major finding is that the labor market risks and chances of older Danes between 1980 and 2006 strongly reflect the development of the business cycle and related labor market policy reactions. Also, retirement behavior was correlated to this, largely due to TBP, a national program offering very early retirement during the recession in the early 1990s. In other words, individuals born between 1934 and 1943 had the misfortune to be going through their late careers during the worst labor market situation of the last 25 years. As a result, they suffered the most from unemployment and low chances of reemployment, often resulting in very early withdrawal from the workforce with help of institutionalized welfare schemes. Nonetheless, it is interesting to see that they benefited from higher pension income levels than Danes born earlier once they reached the official retirement age. Following younger cohorts in the future should reveal if the constant growth of pension levels will continue in line with the recommodification trend of the Danish pension system. According to our hypotheses, our expectation is an ongoing overall growth due to steady increase in coverage for occupational and also private pensions. However, the global financial crisis beginning in 2008 might put an end to this.

Moreover, our analyses showed that the diverse risks and trends are not distributed equally across the Danish population. Although Denmark has succeeded in integrating women into the labor market to a comparatively high extent, gender inequalities still persisted for the women in our observation period, manifested in higher transition rates to unemployment, worse chances of re-employment and earlier withdrawal from the workforce. However, we must take into account that

we do not know to what extent women have opted “voluntarily” for non-employment. But obviously, working by large part in the public sector did not secure their late career employment as expected, their only “advantage” compared to men being their lower tendency to move downwards regarding income. Nonetheless, women’s pension levels were below men’s, and given continuance of the observed trends, the gap is likely to increase even further.

As assumed, another population group strongly and negatively affected is the low qualified. The qualification gradient in the risk of late career unemployment continued throughout our observation period, with the situation of individuals with no or very low qualification becoming even more precarious over the course of globalization. This development did not occur because of the pure fact of belonging to a less attractive part of the workforce, but also because unemployment spells exerted increasingly negative influence on the further course of the employment and economic situation (labor income as well as pension income). The schemes UI, TBP and VERP enabled these persons to withdraw early from the labor market, but at the cost of relatively lower income after reaching regular retirement age.

A third disadvantaged group on the Danish labor market was persons with migration background. Similar to the low qualified – and often overlapping with them – they bear the brunt of labor market risks, have instable late careers and low pension incomes. However, we have to keep in mind the low percentage of these individuals (4 percent) in our sample. Since the share of immigrants to Denmark has been growing over time, it is crucial to keep an eye on this population group though.

It is important to note that the unequal distribution of risks and chances within the Danish labor market was particularly strong when the labor market was tense, that is, when few jobs were available. In such periods, namely, the recession in the first half of the 1990s, it was particularly disadvantageous to have specific personal characteristics, whereas in the subsequent boom, when the labor demand steadily increased, some inequality patterns diminished. In other words, the concept of flexicurity must have a satisfactory macro-economic background to work properly for all population groups.

Finally, some words on the impact of structural characteristics: Public sector employees were largely protected against economic restructuring and fluctuations. Also, employees of the few large concerns in Denmark clearly benefited from a comparatively secure labor market situation – at least before the financial crisis. For both groups, the possibility to switch positions easily in internal labor markets might be part of the explanation; further, these employees retire early, but at the same time do not have to accept loss in pension income. Consequently, the influence of the structural position within the Danish labor market on late career patterns should not be neglected.

Denmark is often cited as a showcase for a successful integration of older workers into the labor market and a comparatively fair and sustainable pension system. In cross-country comparison, this might be justified, but still certain inequalities persist and were even sharpened by recent institutional develop-

ments. Moreover, the Danish population also has to face demographic aging in the coming decades – a challenge for the Danish welfare system as it is for other Western countries.



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## APPENDIX

Table 2: Descriptive indicators for late career transitions and retirement, different birth cohorts<sup>a</sup>, 1980 - 2006

	Men					Women				
	1930-1933	1934-1937	1938-1943	1944-1948	1949-1956	1930-1933	1934-1937	1938-1943	1944-1948	1949-1956
<i>Employment status at the age 50 years</i>										
Dependent employed	66	69	70	73	76	57	64	67	71	77
Self-employed	19	18	15	12	9	12	10	9	7	4
Unemployed <sup>b</sup>	6	5	7	6	6	4	5	7	7	6
Inactive <sup>c</sup>	8	8	9	10	9	27	20	17	15	13
<i>Late career characteristics<sup>d</sup></i>										
Unemployed after age 50 <sup>e</sup>	22	25	24	18	(7)	26	32	31	21	(8)
Re-employed after the first unemployment episode	59	54	55	60	(61)	55	44	42	56	(56)
Upward income mobility	58	59	59	58	(33)	59	58	55	55	(31)
Downward income mobility	59	59	60	58	(30)	60	54	53	49	(26)
<i>Transition to retirement<sup>f</sup></i>										
Median retirement age (in years)	62	62	61	60	-	62	62	61	60	-
<i>Yearly pension income (in US dollar)<sup>fg</sup></i>										
Median income	18,528	19,908	22,908	-	-	15,154	15,742	18,165	-	-
Average income	22,737	24,248	26,763	-	-	17,204	18,106	20,456	-	-
<i>Kind of pension received (in %)<sup>fh</sup></i>										
State pension (OAP)	99	100	99	/	/	100	100	99	/	/
<i>Re-employed after transition to retirement<sup>fi</sup></i>										
	11	14	7	-	-	5	6	3	-	-

Source: Own calculation based on a 5 percent sample of our administrative dataset.

Notes:

<sup>a</sup> In percent if not stated differently.<sup>b</sup> Includes persons on activation or social assistance.<sup>c</sup> Comprises people in education, on immigration pay, disability benefit or out of labor force for unspecified reason.<sup>d</sup> Based on those employed at the age of 50 years.<sup>e</sup> Unemployed for at least once.<sup>f</sup> Based on those employed or unemployed at the age of 50 years.<sup>g</sup> Gross yearly income of retirees including public, occupational and private pensions as well as work income at the age of 68; in prices and exchange rate (Dollar/Danish Crown) of year 2000; excludes persons ever in self-employment after age 50.<sup>h</sup> No information for occupational or private pensions in the data.<sup>i</sup> Individuals retiring on DP are excluded from these numbers because they are allowed to work to a large extent at the same time as they receive their disability pension.

Table 3: Transition to first unemployment after 50 (logistic regression model)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Age</i>						
50-53	ref.	ref.	ref.	ref.	ref.	ref.
54-58	0.00	0.02	0.03	0.12**	0.03	0.03
59-60	-0.64**	-0.61**	-0.59**	-0.43**	-0.59**	-0.59**
61-62	-1.11**	-1.05**	-1.05**	-0.84**	-1.05**	-1.04**
63-65	-1.39**	-1.30**	-1.31**	-1.03**	-1.30**	-1.30**
<i>Cohort</i>						
1930-1933	-0.17**	-0.24**	-0.20**		-0.19**	-0.10**
1934-1937	0.04	0.00	0.02		0.09*	0.08*
1938-1943	ref.	ref.	ref.		ref.	ref.
1944-1948	-0.35**	-0.30**	-0.31**		-0.40**	-0.21**
1949-1956	-0.60**	-0.51**	-0.53**		-0.67**	-0.46**
<i>Gender (women=1)</i>	0.26**	0.24**	0.43**	0.43**	0.43**	0.54**
<i>Qualification</i>						
(1) compulsory education or unknown, no vocational training		0.17**	0.18**	0.18**	0.14**	0.18**
(2) general upper secondary education, no vocational training		-0.03	0.08	0.05	-0.25+	0.05
(3) compulsory general education and vocational training		ref.	ref.	ref.	ref.	ref.
(4) short/medium academic degree		-0.72**	-0.50**	-0.52**	-0.60**	-0.52**
(5) long academic degree or Ph.D.		-1.06**	-0.79**	-0.82**	-0.90**	-0.82**
<i>Firm size</i>						
1-10 employees			ref.	ref.	ref.	ref.
11-50 employees			-0.21**	-0.20**	-0.21**	-0.21**
51-500 employees			-0.40**	-0.39**	-0.40**	-0.40**
501< employees			-0.54**	-0.55**	-0.55**	-0.55**
<i>Sector/industry</i>						
public sector			ref.	ref.	ref.	ref.
private sector						
extractive industry			0.35**	0.34**	0.34**	0.35**
production			0.83**	0.82**	0.82**	0.83**
construction			0.85**	0.86**	0.85**	0.85**
retail			0.60**	0.60**	0.60**	0.60**
private services			0.58**	0.58**	0.58**	0.58**
transport			0.29**	0.28**	0.28**	0.28**
<i>Ethnic minority</i>				0.56**	0.56**	0.56**
<i>Unemployment rate</i>				0.09**		
<i>Qualification*Cohort 1930-1933</i>						
(1)					-0.01	
(2)					0.29	
(3)					ref.	
(4)					0.00	
(5)					-0.13	
<i>Qualification*Cohort 1934-1937</i>						
(1)					-0.12*	
(2)					0.36	
(3)					ref.	
(4)					-0.01	
(5)					-0.27	
<i>Qualification*Cohort 1944-1948</i>						
(1)					0.16**	
(2)					0.51**	
(3)					ref.	
(4)					0.11	
(5)					0.32*	

Table 3: Transition to first unemployment after 50 (logistic regression model) (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Qualification*Cohort 1949-1956</i>						
(1)					0.23**	
(2)					0.37+	
(3)					ref.	
(4)					0.33**	
(5)					0.16	
<i>Gender (women=1)*Cohort</i>						
Gender*Cohort 1930-1933						-0.17**
Gender*Cohort 1934-1937						-0.11*
Gender*Cohort 1938-1943						ref.
Gender*Cohort 1944-1948						-0.20**
Gender*Cohort 1949-1956						-0.14*
Constant	-3.53**	-3.48**	-3.73**	-4.75**	-3.71**	-3.80**
Log likelihood ratio	1,770.02	3,132.40	4,772.68	5,109.18	4,976.50	4,939.68
No. of observations	572,353	572,353	572,353	572,353	572,353	572,353
No. of subjects	72,917	72,917	72,917	72,917	72,917	72,917
No. of events	13,616	13,616	13,616	13,616	13,616	13,616

Significance levels: +  $p \leq 0.10$ ; \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; controlled for missings.

Table 4: Transition to re-employment from first unemployment after 50 (logistic regression model)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Age</i>						
50-53	ref.	ref.	ref.	ref.	ref.	ref.
54-58	-0.53**	-0.53**	-0.52**	-0.53**	-0.53**	-0.53**
59-60	-1.93**	-1.93**	-1.92**	-1.95**	-1.93**	-1.93**
61-62	-1.78**	-1.79**	-1.78**	-1.80**	-1.80**	-1.81**
63-65	-1.72**	-1.73**	-1.75**	-1.69**	-1.76**	-1.76**
<i>Cohort</i>						
1930-1933	0.32**	0.33**	0.33**		0.17*	0.15*
1934-1937	0.06	0.07	0.07		-0.04	-0.05
1938-1943	ref.	ref.	ref.		ref.	ref.
1944-1948	0.32**	0.32**	0.30**		0.27**	0.12*
1949-1956	0.24**	0.23**	0.22**		0.26**	-0.01
Gender (women=1)	-0.33**	-0.32**	-0.27**	-0.29**	-0.28**	-0.53**
<i>Qualification</i>						
(1) compulsory education or unknown, no vocational training		-0.01	-0.01	0.03	-0.13*	0.00
(2) general upper secondary education, no vocational training		-0.02	0.02	0.02	-0.08	0.05
(3) compulsory general education and vocational training		ref.	ref.	ref.	ref.	ref.
(4) short/medium academic degree		0.10*	0.12*	0.09+	0.31**	0.12*
(5) long academic degree or Ph.D.		0.03	0.06	0.06	0.22	0.11
<i>Firm size</i>						
1-10 employees			ref.	ref.	ref.	ref.
11-50 employees			-0.12**	-0.13**	-0.13**	-0.13**
51-500 employees			-0.15**	-0.15**	-0.15**	-0.15**
501< employees			-0.38**	-0.33**	-0.38**	-0.37**
<i>Sector/industry</i>						
public sector			ref.	ref.	ref.	ref.
private sector						
extractive industry			-0.19*	-0.12	-0.20*	-0.19*
production						
construction			0.50**	0.50**	0.49**	0.49**
retail			-0.04	-0.02	-0.05	-0.04
private services			-0.01	-0.12*	-0.01	-0.02
transport			-0.01	-0.05	-0.02	0.00
Ethnic minority				-0.37**	-0.35**	-0.36**
<i>Period of becoming unemployed</i>						
1980-1989				0.11*		
1990-1994				ref.		
1995-1999				0.30**		
2000-2005				0.51**		

Table 4: Transition to re-employment from first unemployment after 50 (logistic regression model) (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Qualification*Cohort 1930-1933</i>						
(1)					0.31 **	
(2)					0.11	
(3)					ref.	
(4)					-0.01	
(5)					0.23	
<i>Qualification*Cohort 1934-1937</i>						
(1)					0.23 **	
(2)					0.69 +	
(3)					ref.	
(4)					-0.19	
(5)					0.14	
<i>Qualification*Cohort 1944-1948</i>						
(1)					0.15 +	
(2)					0.13	
(3)					ref.	
(4)					-0.33 *	
(5)					-0.23	
<i>Qualification*Cohort 1949-1956</i>						
(1)					0.02	
(2)					-0.09	
(3)					ref.	
(4)					-0.31 *	
(5)					-0.43	
<i>Gender (women=1)*Cohort</i>						
Gender*Cohort 1930-1933						0.36 **
Gender*Cohort 1934-1937						0.22 *
Gender*Cohort 1938-1943						ref.
Gender*Cohort 1944-1948						0.36 **
Gender*Cohort 1949-1956						0.46 **
<i>Constant</i>	-0.46 **	-0.46	-0.40 **	-0.47 **	-0.34 **	-0.25 **
<i>Log likelihood ratio</i>	2,148.32	2,153.60	2,294.14	2,436.90	2,356.44	2,359.52
<i>No. of observations</i>	28,122	28,122	28,122	28,122	28,122	28,122
<i>No. of subjects</i>	13,661	13,661	13,661	13,661	13,661	13,661
<i>No. of events</i>	7,271	7,271	7,271	7,271	7,271	7,271

Significance levels: +  $p \leq 0.10$ ; \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; controlled for missings.

Table 5: Transition to an upward income move after 50 (logistic regression model)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Age</i>						
50-53	ref.	ref.	ref.	ref.	ref.	ref.
54-58	-0.30 **	-0.30 **	-0.28 **	-0.30 **	-0.28 **	-0.28 **
59-60	-0.71 **	-0.71 **	-0.65 **	-0.71 **	-0.65 **	-0.65 **
61-62	-0.78 **	-0.77 **	-0.71 **	-0.77 **	-0.71 **	-0.70 **
63-65	-0.75 **	-0.74 **	-0.68 **	-0.74 **	-0.68 **	-0.68 **
<i>Cohort</i>						
1930-1933	-0.01	-0.02	-0.02	-0.01	0.01	-0.12 **
1934-1937	0.00	-0.01	-0.02	-0.01	0.01	-0.10 **
1938-1943	ref.	ref.	ref.	ref.	ref.	ref.
1944-1948	-0.03 *	-0.02 +	-0.03 *	-0.02 +	0.01	0.01
1949-1956	-0.20 **	-0.19 **	-0.19 **	-0.19 **	-0.15 **	-0.17 **
<i>Gender (women=1)</i>	-0.01	0.00	0.01	-0.01	0.01	-0.02
<i>Qualification</i>						
(1) compulsory education or unknown, no vocational training		0.09 **	0.09 **	0.09 **	0.09 **	0.08 **
(2) general upper secondary education, no vocational training		0.22 **	0.20 **	0.20 **	0.26 **	0.19 **
(3) compulsory general education and vocational training		ref.	ref.	ref.	ref.	ref.
(4) short/medium academic degree		-0.09 **	-0.08 **	-0.09 **	0.04 +	-0.08 **
(5) long academic degree or Ph.D.		0.13 **	0.13 **	0.12 **	0.18 **	0.12 **
<i>Ethnic minority</i>			0.22 **	0.23 **	0.22 **	0.22 **
<i>Job change</i>			0.81 **		0.81 **	0.81 **
<i>Unemployed &gt; 6 months</i>				0.05 **		
<i>Qualification*Cohort 1930-1933</i>						
(1)					0.04	
(2)					-0.01	
(3)					ref.	
(4)					-0.17 **	
(5)					-0.30 **	
<i>Qualification*Cohort 1934-1937</i>						
(1)					-0.02	
(2)					-0.02	
(3)					ref.	
(4)					-0.08 +	
(5)					-0.11	
<i>Qualification*Cohort 1944-1948</i>						
(1)					0.00	
(2)					-0.05	
(3)					ref.	
(4)					-0.19 **	
(5)					-0.03	
<i>Qualification*Cohort 1949-1956</i>						
(1)					0.02	
(2)					-0.14	
(3)					ref.	
(4)					-0.20 **	
(5)					-0.03	
<i>Gender (women=1)*Cohort</i>						
Gender*Cohort 1930-1933						0.22 **
Gender*Cohort 1934-1937						0.18 **
Gender*Cohort 1938-1943						ref.
Gender*Cohort 1944-1948						-0.08 **
Gender*Cohort 1949-1956						-0.03
<i>Constant</i>	-1.91 **	-1.97 **	-2.05 **	-1.92 **	-2.08 **	-2.04 **
<i>Log likelihood ratio</i>	3,087.40	5,531.42	7,549.22	3,189.96	7,628.08	7,700.22
<i>No. of observations</i>	532,170	532,170	532,170	532,170	532,170	532,170
<i>No. of subjects</i>	63,611	63,611	63,611	63,611	63,611	63,611
<i>No. of events</i>	56082	56082	56082	56082	56082	56082

Significance levels: +  $p \leq 0.10$ ; \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; controlled for missings.

Table 6: Transition to a downward income move after 50 (logistic regression model)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Age</i>						
50-53	ref.	ref.	ref.	ref.	ref.	ref.
54-58	-0.19**	-0.19**	-0.16**	-0.23**	-0.16**	-0.16**
59-60	-0.45**	-0.45**	-0.37**	-0.54**	-0.37**	-0.37**
61-62	-0.46**	-0.45**	-0.36**	-0.49**	-0.37**	-0.36**
63-65	-0.24**	-0.23**	-0.14**	-0.24**	-0.15**	-0.14**
<i>Cohort</i>						
1930-1933	0.04*	0.02	0.02	0.03+	-0.01	-0.07**
1934-1937	-0.02	-0.03*	-0.04*	-0.05**	-0.05+	-0.08**
1938-1943	ref.	ref.	ref.	ref.	ref.	ref.
1944-1948	-0.02+	-0.01	-0.01	0.02	0.00	0.03+
1949-1956	-0.23**	-0.22**	-0.21**	-0.19**	-0.22**	-0.20**
<i>Gender (women=1)</i>	-0.16**	-0.17**	-0.15**	-0.19**	-0.15**	-0.17**
<i>Qualification</i>						
(1) compulsory education or unknown, no vocational training		0.15**	0.14**	0.13**	0.12**	0.13**
(2) general upper secondary education, no vocational training		0.22**	0.20**	0.21**	0.07	0.20**
(3) compulsory general education and vocational training		ref.	ref.	ref.	ref.	ref.
(4) short/medium academic degree		-0.08**	-0.08**	-0.04**	-0.04	-0.08**
(5) long academic degree or Ph.D.		0.14**	0.13**	0.17**	0.16**	0.13**
<i>Ethnic minority</i>			0.27**	0.23**	0.28**	0.27**
<i>Job change</i>			1.05**		1.05**	1.05**
<i>Unemployed &gt; 6 months</i>				1.04**		
<i>Qualification*Cohort 1930-1933</i>						
(1)					0.06+	
(2)					0.07	
(3)					ref.	
(4)					0.07	
(5)					-0.16*	
<i>Qualification*Cohort 1934-1937</i>						
(1)					0.00	
(2)					0.31**	
(3)					ref.	
(4)					0.07	
(5)					-0.07	
<i>Qualification*Cohort 1944-1948</i>						
(1)					0.00	
(2)					0.14	
(3)					ref.	
(4)					-0.10**	
(5)					-0.02	
<i>Qualification*Cohort 1949-1956</i>						
(1)					0.09**	
(2)					0.16	
(3)					ref.	
(4)					-0.12**	
(5)					0.03	
<i>Gender (women=1)*Cohort</i>						
Gender*Cohort 1930-1933						0.20**
Gender*Cohort 1934-1937						0.10**
Gender*Cohort 1938-1943						ref.
Gender*Cohort 1944-1948						-0.09**
Gender*Cohort 1949-1956						-0.02
<i>Constant</i>	-2.02**	-2.08**	-2.22**	-2.08**	-2.22**	-2.21**
<i>Log likelihood ratio</i>	1,772.90	3,894.48	9,235.44	5,716.92	9,305.28	9,346.04
<i>No. of observations</i>	532,170	532,170	532,170	532,170	532,170	532,170
<i>No. of subjects</i>	63,611	63,611	63,611	63,611	63,611	63,611
<i>No. of events</i>	52,069	52,069	52,069	52,069	52,069	52,069

Significance levels: +  $p \leq 0.10$ ; \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; controlled for missings.

Table 7: Transition to retirement (logistic regression models)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Age</i>							
50-53	ref.	ref.	ref.	ref.	ref.	ref.	ref.
54-58	0.36**	0.36**	0.55**	0.55**	0.39**	0.40**	0.40**
59-60	2.97**	3.00**	3.22**	3.22**	3.12**	3.07**	3.07**
61-62	2.75**	2.81**	3.05**	3.05**	3.06**	2.95**	2.95**
63-65	2.48**	2.56**	2.82**	2.82**	2.87**	2.73**	2.74**
66-69	2.87**	2.96**	3.27**	3.28**	3.49**	3.24**	3.25**
<i>Cohort</i>							
1930-1933	-0.12**	-0.18**	-0.16**	-0.15**	-0.18**	-0.20**	-0.17**
1934-1937	0.01	-0.03 +	0.00	0.00	-0.06**	-0.04	-0.03
1938-1943	ref.	ref.	ref.	ref.	ref.	ref.	ref.
1944-1948	-0.66**	-0.62**	-0.66**	-0.66**	-0.68**	-0.72**	-0.61**
1949-1956	-1.03**	-0.96**	-1.01**	-1.01**	-1.00**	-1.14**	-0.81**
<i>Gender (women=1)</i>	0.51**	0.48**	0.42**	0.42**	0.29**	0.41**	0.45**
<i>Qualification</i>							
(1) compulsory education or unknown, no vocational training		0.18**	0.19**	0.19**	0.19**	0.15**	0.18**
(2) general upper secondary education, no vocational training		-0.57**	-0.62**	-0.62**	-0.62**	-0.66**	-0.67**
(3) compulsory general education and vocational training		ref.	ref.	ref.	ref.	ref.	ref.
(4) short/medium academic degree		-0.36**	-0.42**	-0.42**	-0.30**	-0.34**	-0.34**
(5) long academic degree or Ph.D.		-0.98**	-1.05**	-1.06**	-0.92**	-1.05**	-0.97**
<i>Firm size</i>							
1-10 employees			ref.	ref.	ref.	ref.	ref.
11-50 employees			0.08**	0.08**	0.13**	0.11**	0.12**
51-500 employees			0.14**	0.14**	0.24**	0.21**	0.21**
501 < employees			0.15**	0.15**	0.26**	0.23**	0.24**
<i>Sector/industry</i>							
public sector			ref.	ref.		ref.	ref.
private sector							
extractive industry			-0.15**	-0.14**		-0.10*	-0.10*
production			-0.23**	-0.23**		-0.11**	-0.11**
construction			-0.06 +	-0.06 +		-0.08*	-0.07*
retail			-0.15**	-0.15**		-0.10**	-0.10**
private services			-0.25**	-0.25**		-0.21**	-0.20**
transport			-0.10**	-0.10**		-0.03	-0.03
<i>Ethnic minority</i>				0.17**	0.02	0.03	0.03
<i>No. of job changes since age 50</i>						0.29**	0.29**

Table 7: Transition to retirement (logistic regression models) (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
<i>Employment status</i>							
dependent employed					ref.		
self-employed					-0.97**		
unemployed					1.49**		
<i>Partner's age</i>							
single					ref.		
same age					0.02		
partner is >3 years younger					-0.13**		
partner is >3 years older					0.14**		
<i>Qualification*Cohort 1930-1933</i>							
(1)						0.00	
(2)						-0.03	
(3)						ref.	
(4)						-0.03	
(5)						0.18+	
<i>Qualification*Cohort 1934-1937</i>							
(1)						-0.03	
(2)						-0.08	
(3)						ref.	
(4)						0.04	
(5)						0.20*	
<i>Qualification*Cohort 1944-1948</i>							
(1)						0.18**	
(2)						-0.05	
(3)						ref.	
(4)						0.04	
(5)						-0.11	
<i>Qualification*Cohort 1949-1956</i>							
(1)						0.43**	
(2)						0.59*	
(3)						ref.	
(4)						-0.07	
(5)						0.07	
<i>Gender (women=1)*Cohort</i>							
Gender*Cohort 1930-1933							-0.06+
Gender*Cohort 1934-1937							-0.04
Gender*Cohort 1938-1943							ref.
Gender*Cohort 1944-1948							-0.07+
Gender*Cohort 1949-1956							-0.30**
Constant	-4.32**	-4.29**	-4.43**	-4.43**	-4.66**	-4.54**	-4.58**
Log likelihood ratio	59,908.58	61,917.64	64,482.82	64,504.50	73,909.68	69,592.60	69,536.14



<i>No. of observations</i>	679,832	679,832	679,832	679,832	679,832	679,832	679,832
<i>No. of subjects</i>	78,020	78,020	78,020	78,020	78,020	78,020	78,020
<i>No. of events</i>	34,334	34,334	34,334	34,334	34,334	34,334	34,334

Table 8: Regression on pension income (OLS regression)

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>	<i>Model 9</i>	<i>Model 10</i>
<i>Retirement Age</i>										
50-54	-0.05 **	-0.02	-0.02	-0.04 *	-0.04 +			-0.04 *	-0.04 +	-0.03 +
55-56	-0.08 **	-0.06 **	-0.05 **	-0.04 *	-0.06 **			-0.06 **	-0.06 **	-0.05 **
57-58	-0.05 **	-0.03 *	-0.02	-0.01	-0.03 +			-0.03 +	-0.03 +	-0.03 +
59-60	ref.	ref.	ref.	ref.	ref.			ref.	ref.	ref.
61-62	0.10 **	0.07 **	0.07 **	0.06 **	0.07 **			0.07 **	0.07 **	0.07 **
63-66	0.24 **	0.16 **	0.16 **	0.14 **	0.17 **			0.17 **	0.17 **	0.17 **
67-70	0.40 **	0.29 **	0.31 **	0.29 **	0.35 **			0.34 **	0.34 **	0.35 **
<i>Cohort</i>										
1930-1933	ref.	ref.	ref.	ref.	ref.			ref.	ref.	ref.
1934-1937	0.18 **	0.17 **	0.18 **	0.17 **	0.18 **			0.19 **	0.18 **	0.21 **
1938-1941	0.29 **	0.26 **	0.27 **	0.27 **	0.27 **			0.30 **	0.27 **	0.31 **
<i>Gender (women=1)</i>	-0.17 **	-0.15 **	-0.17 **	-0.17 **	-0.17 **	-0.15 **	-0.15 **	-0.17 **	-0.17 **	-0.12 **
<i>Qualification</i>										
(1)		-0.10 **	-0.11 **	-0.10 **	-0.10 **	-0.11 **	-0.10 **	-0.09 **	-0.10 **	-0.10 **
(2)		0.25 **	0.26 **	0.27 **	0.26 **	0.25 **	0.28 **	0.27 **	0.26 **	0.26 **
(3)		ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
(4)		0.35 **	0.34 **	0.33 **	0.34 **	0.33 **	0.34 **	0.37 **	0.34 **	0.34 **
(5)		0.73 **	0.72 **	0.71 **	0.71 **	0.70 **	0.73 **	0.77 **	0.71 **	0.71 **
<i>Firm size</i>										
1-10 employees			ref.	ref.	ref.			ref.	ref.	ref.
11-50 employees			0.04 **	0.03 **	0.03 **			0.03 **	0.03 **	0.03 **
51-500 employees			0.09 **	0.07 **	0.08 **			0.08 **	0.08 **	0.08 **
501 < employees			0.15 **	0.12 **	0.13 **			0.13 **	0.13 **	0.13 **
<i>Sector</i>										
private sector			ref.	ref.	ref.			ref.	ref.	ref.
public sector			0.05 **	0.05 **	0.04 **			0.04 **	0.04 **	0.04 **
<i>Retiring from unemployment</i>					-0.21 **			-0.21 **	-0.11 *	-0.21 **
<i>Years in unemployment after 50</i>				-0.03 **		-0.03 **	-0.03 **			
<i>Years in self-employment after 50</i>				-0.01 **	-0.01 **	-0.01 **	-0.01 **	-0.01 **	-0.01 **	-0.01 **
<i>No. of job changes after 50</i>					-0.02 **	-0.01 **	-0.01 **	-0.02 **	-0.02 **	-0.02 **
<i>Way of retirement</i>										
retired through DP						-0.08 **				
retired through TBP						-0.01				
retiring through VERP						ref.				
retired directly into OAP						0.23 **				

<i>Period of retirement</i>										
retiring before 1990										-0.09**
retiring 1990-1994										ref.
retiring 1995-1999										0.15**
retiring 2000-2006										0.30**
<i>Qualification*Cohort 1934-1937</i>										
(1)										-0.02
(2)										0.11
(3)										ref.
(4)										0.00
(5)										-0.03
<i>Qualification*Cohort 1938-1941</i>										
(1)										-0.02
(2)										-0.15+
(3)										ref.
(4)										-0.09**
(5)										-0.15**
<i>Retiring from Unemploment*Cohort</i>										
Unemployment 1930-1933										ref.
Unemployment*1934-1937										-0.13
Unemployment*1938-1941										-0.20*
<i>Gender (women=1)*Cohort</i>										
Gender*Cohort 1930-1933										ref.
Gender*Cohort 1934-1937										-0.07**
Gender*Cohort 1938-1941										-0.08**
<i>Constant</i>	11.64 **	11.66 **	11.58 **	11.64 **	11.62 **	11.93 **	11.82 **	11.61 **	11.62 **	11.59 **
<i>Log likelihood ratio</i>	3,470.66	6,833.02	6,272.16	6,581.40	6,404.58	6,549.74	7,139.10	6,441.56	6,411.48	6,434.78
<i>No. of subjects</i>	19,738	19,738	19,738	19,738	19,738	19,738	19,738	19,738	19,738	19,738

Significance levels: +  $p \leq 0.10$ ; \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; controlled for missings.

## ENDNOTES

- <sup>1</sup> The cross-national cooperation was financially supported by the TransEurope Research Network ([www.transeurope-project.org](http://www.transeurope-project.org)) which is funded by the European Science Foundation ([www.esf.org](http://www.esf.org)). We also thank Peder J. Pedersen for helpful comments on earlier versions of this paper.
- <sup>2</sup> Employment protection legislation is stricter in Sweden though.
- <sup>3</sup> Directly translated, that means “post-employment wage”.
- <sup>4</sup> Since VERP is more expensive than OAP and most of the Danes were retired by age 65 anyway, the government intended to save money by simply transferring those aged 65 and 66 from VERP to OAP.
- <sup>5</sup> Until a reform in 1964, entitlements were means-tested and before 1973, citizenship instead of residence was the eligibility criteria. Currently, the basic amount is approximately € 650 per month, while the supplement was about the same for a single person and about €310 for retirees with a partner. Both are subject to regular income taxation (WORKINDENMARK 2009).
- <sup>6</sup> We used a sample of all persons employed at age 50 for the analyses on the late career and another sample of all persons in the labor force at age 50 for the analyses on the transition to retirement and retirement income. This explains the difference of about 5,000 persons who were unemployed, in activation/ requalification or on leave at age 50.
- <sup>7</sup> In fact, this variable measures “workplace size”, i.e. the number of employees at the respective plant or agency, not the overall staff size of a company.
- <sup>8</sup> But due to measurement problems, self-employed persons were excluded from all analyses involving income.
- <sup>9</sup> Persons aged 69 or 70 were excluded from the analysis, i.e. figure 4 shows the window from age 50 to 68 for everybody who can be observed through those years.
- <sup>10</sup> Since the pathways shown in Table 4 cover only about 80% of the persons and further, less common pathways might also contain transitions to VERP, these percentages are likely to be lower bounds.
- <sup>11</sup> Among all Danes in our sample who become unemployed after 50, 76% had one unemployment spell, 19% had two spells and 5% had 3 or more spells.
- <sup>12</sup> The lack of significance for the highest qualification group might however be explained by the low case numbers of individuals (281 persons, i.e. only about 2 percent of the sample have a long academic degree or Ph.D.).
- <sup>13</sup> While almost 60 percent of women aged 50 and over worked part-time in the early 1980s, the rate has constantly decreased and has been fluctuating between 30 and 35 percent since the year 2000. The corresponding rates for men grew from below 10 percent to almost 15 percent in the same period (Source: EUROSTAT 2008).
- <sup>14</sup> Older women worked part-time to a much higher extent than their male counterparts and if downward mobility had been more common among women than men, this could have indicated that women change more frequently from full- to part-time in the late career. However, this is not the case: women have less downward mobility than men from the second cohort on.
- <sup>15</sup> This variable refers to number of job changes after age 50, since information on earlier job changes is not available.
- <sup>16</sup> For most of the persons in our sample, this was the year in which one turns 68, with the exception of persons working longer or retiring after 2004 when the legal retirement age was lowered to 65.
- <sup>17</sup> In earlier stages of our work, we also accounted for branch of industry, but the effects were very small and mostly not significant.