Trends in disability benefit recipient rates in post-industrial societies

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The study

This working paper is part of a study organized by International Social Security Association (ISSA). The study is called *Trends in disability benefit recipient rates in post-industrial societies.* The other countries participating in the study are Sweden, United States, United Kingdom, The Netherlands, and Israel. The study is organized in two phases. In phase one, country reports are prepared, and in phase two, comparative studies are carried out. This paper is related to the first phase.

Previous versions of the paper have been discussed with Steen Bengtsson, Ole Gregersen, Jan Høgelund, and Jørgen Søndergaard. I am thankful for their suggestions and help.

The participating countries have financed the study.

Trends in disability benefit recipient rates in post-industrial societies

Country report for Denmark

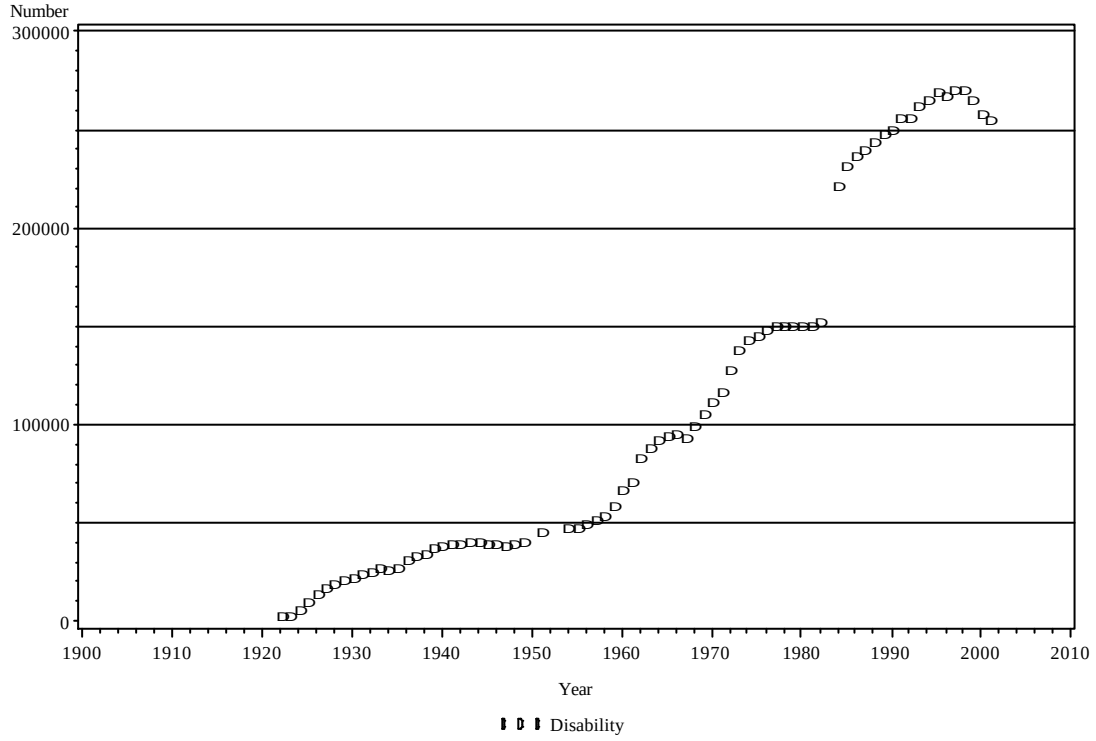
Contents:

1. Introduction

This working paper is a slightly extended version of a paper made as part of the project *Trends in disability benefit recipient rates in post-industrial societies* initiated by the International Social Security Association (ISSA).[1] The overall purpose of the ISSA project is to analyse the development of the number of disability benefit recipients, and especially to discuss why people become recipients. This paper considers the issue for Denmark.

As an introduction, it is useful to illustrate the issue in two ways. Figure 1.1 shows the number of disability benefit recipients during the period 1921-2001, and table 1.1 describes the social state prior to disability benefit.

Figure 1.1. Disability benefit recipients, 1921-2001.



Source: Statistics Denmark, several sources.

[1] Compared to the version prepared for ISSA, section 4.1 and the appendixes are added to this paper and the introduction is longer.

Table 1.1. Primary source of income three years before award of disability benefit (1995-1998), percent of recipients.

Source of income	Distribution
Wage income	48.2
Social assistance	15.2
Unemployment insurance benefit	11.3
Sickness benefit	5.8
Self-employed	5.6
Other or no income	13.8
All	100

Source: Det økonomiske Råd (2000), table III.27.

Figure 1.1 shows significant variation in the number of disability beneficiaries. It is, however, important to relate the scheme for disability benefit to other schemes of public support because schemes can be 'substitutes' for some people and because disability benefit per se is less important than self-dependency versus dependency of public income support. The fact that table 1.1 shows that many beneficiaries prior to award of disability benefit were dependent on other types of social support could indicate that transitions between various types of public income support are quantitatively important. Another example is the increase from 1983 to 1984 in number of disability benefit recipients of approximately 80,000 individuals. The termination of other social programmes and transfer of participants explain the leap from these programmes to disability benefit. Therefore, to explain the historic development – or to make international comparisons – of the number of disability benefit recipients, we pay attention to related social programmes. Table 1.1 indicates that social assistance is an alternative to disability benefit.

To give a simple international comparison of disability recipients, table 1.2 reprints a few statistics from OECD (2003) for the countries participating in this study, except for Israel that was not included in the OECD-study.

Table 1.2. Disability recipient rates for people aged 20 to 64, 1999. Total and by age and gender.

Country	Recipient rate, stock	Inflow rate	Ratio of recipient inflow rate for specific age group over age group 35-44				Proportion of women in stock
			20-34	45-54	55-59	60-64	
UK	6 ¾	12.9	0.8	1.4	1.8	0.9	33
US	4 ¾	6.0	0.6	1.7	3.1	2.8	42
Sweden	8 ¼	7.6	0.4	1.9	4.0	6.3	56
The Netherlands	9	10.4	0.7	1.3	1.0	1.1	40
Denmark	7 ¾	5.7	0.5	2.3	3.6	3.6	57
OECD[1]	5 ¾	6.6	0.4	2.7	5.2	6.7	42

Source: OECD (2003), tables 4.4, 4.5, 4.9, and chart 3.13.
[1] This row does not include the same countries for the three sets of columns.

The relative size of the stock of beneficiaries in Denmark is in the middle of the group of countries participating in this (ISSA) study, but the inflow rate is low. Compared to stocks, the inflow rate is high in the UK. Together with Sweden and the US, disability benefit in Denmark is often awarded to people above the age of 45 relative to younger people. In the UK and the Netherlands, awards are more evenly distributed across age.

Denmark and Sweden are characterized by a relatively high proportion of women in the stock of beneficiaries. As explained in OECD (2003), the relatively many women among Danish beneficiaries may be related to the universal (non-contribution based) coverage of the Danish disability system, the fact that part of the benefit is not being means-tested, and a high female labour market participation ratio. Concerning the relatively many old beneficiaries in Denmark, OECD points to certain legal advantages in the disability system for the older people, i.e. eligibility on the basis of purely social reasons.

The paper is organized as follows: Section 2 describes the rules for disability benefit and 'related' social schemes. In section 3, a description of the characteristics of disability benefit recipients is given. Trends of disability beneficiaries and participants in related schemes are described in section 4. Section 5 surveys available evidence on effectiveness of reintegration programmes. In Denmark, the authority deciding an individual's eligibility for disability benefit is the municipality. In section 6, evidence of two issues concerning the role of the municipalities is described, namely the effect of the type of the municipality's administrative organization ('bureaucratic' or 'dynamic') and the cost sharing of the disability benefit between state and municipality. In section 7, we present some crude statistics on public health to discuss the relationship with the number of recipients.

2. Rules for disability benefit and 'related' social schemes

From the beginning of 2003 a reform of the rules for disability benefit came into force. Not being able to relate this reform to any data, we set out describing the rules as they were in 2002 for disability benefit as well as for some related social schemes.

2.1. The scheme for disability benefit, 2002

Eligibility and benefit

Very generally stated, an individual is eligible for disability benefit if the vocational ability is permanently reduced due to poor physical or mental state of health or for social reasons. The benefit is for people aged 18-64 years and covers all people if they have lived in the country for a certain period.

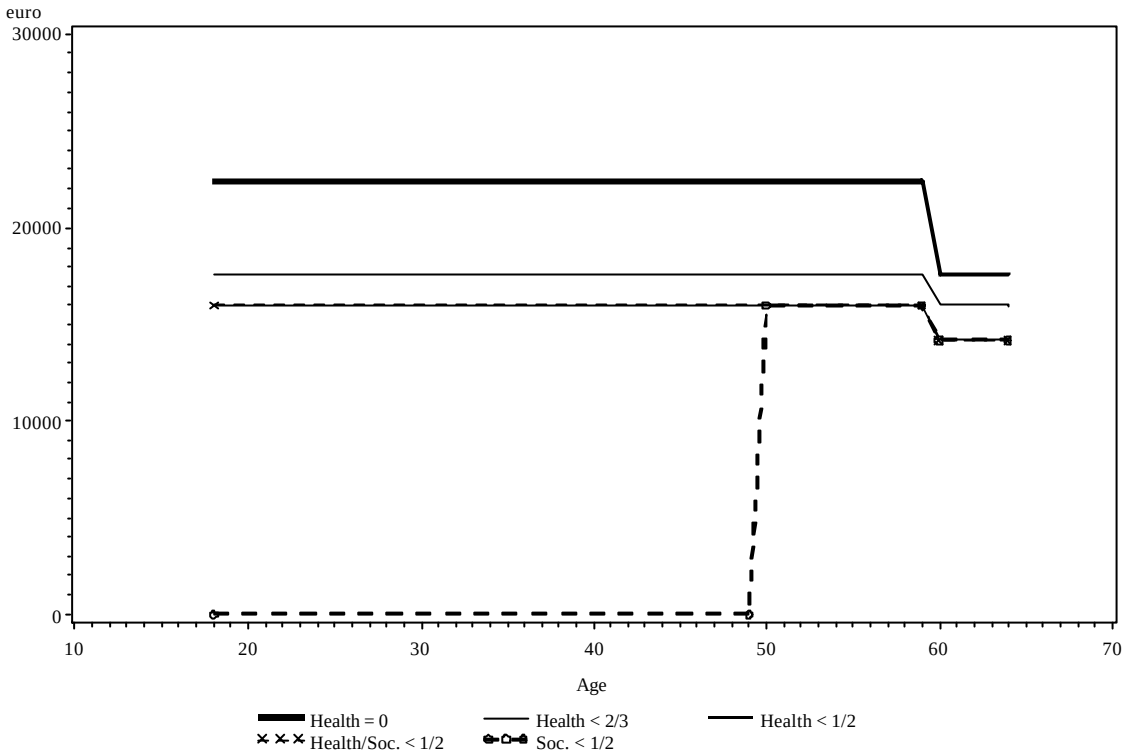
The benefit level is related to ability and age in a rather complicated way (simplified in the 2003-reform). The benefit also depends on income from other sources and whether the person is married or single and on the presence of dependant children. Table 2.1 and figure 2.1 summarize the four types of benefit with respect to age and ability requirements and the maximum level benefit (i.e. prior to means-testing and tax).

Table 2.1. Level of disability benefit on age and ability to work.

Type	Age	Vocational ability		Maximum benefit, euro (DKK), 2002
		Reduction	Reason	
High	18-59	100%	Health	22,376 (166,212)
Medium	18-59	2/3	Health	17,629
	60-64	100%	Health	(130,944)
Low 2	18-59	1/2	Health	15,987
	18-59	1/2	Health and social	(118,752)
	50-59	Not specified	Health and social	
Low 1	60-64	2/3	Health	14,189
		½	Health and social	(105,396)
		Not specified	Health or social	

Source: Forsikringsoplysningen (2002).

Figure 2.1. Level of disability benefit on age and ability to work.



Source: Forsikringsoplysningen (2002).

Note: 'Health=0', 'Health<2/3', 'Health/soc<1/2' means vocational ability reduced to almost zero, less than 2/3 or less than 1/2 due to health or health and social circumstances.

The level of benefit decreases with ability and age. Individuals younger than 49 years cannot claim disability for purely social reasons even if ability is below one half.

Taxation and means-testing

The benefits in table 2.1 are the sum of various components of which most are taxable. The benefits do not depend on the level of income that the recipient has earned previously.

A benefit recipient living in a couple receives up to approximately 3,400 euro less than a single. Part of the benefits[2] is reduced with income from other sources. Other income in excess of approximately 6,700 euro reduces disability benefits at a 30 percent rate. The reduction is increased to 60 percent for other income above a second level.

Other benefits and work schemes for the disabled

Disabled people may obtain benefits to cover personal assistance and material appliances used for alleviating the consequences of the disability.

People, who are eligible for disability benefit but never the less work, may obtain a specific disability benefit (invaliditetsydelse). A disability benefit recipient may try to

[2] A part of the benefit equals to 14,189 or the 'low1'-benefit, see table 2.1, is means-tested.

become self-dependent without loosing the option of returning to the disability scheme.[3]

Light jobs (skånejobs) are jobs on special terms for disability beneficiaries. The participant obtains the disability benefit plus wage. The employer is subsidised. The subsidy is 1/2 of the wage paid but no more than 1/6 of the minimum wage for jobs on ordinary terms.

Employees are covered by work injury insurance. If a work related accident happens, compensation is paid to the victim (in addition to possible disability benefit).

Finally, many people have a supplementary private insurance for loss of income in case of disability.

The 2003-reform
The most important parts of the reform are:

?? A unified system with one level of benefit (rather than four). The level of benefit is approximately 21,100 euro (DKK 157,000) per year. This is slightly lower than the maximum 2002-level, but significantly higher than the minimum 2002-level (cf. table 2.1).
?? To be eligible, 'work capacity' (rather than 'vocational capacity') should be permanently reduced.
?? Persons are ineligible if work capacity can be improved by e.g. activation or if they can carry out a flex job (a subsidised work scheme, see below).
?? A procedure will be introduced in order to secure uniform case management.

The most tangible change is the single benefit level. The changes on eligibility may underline the screening related to work capacity and hence flex job may become a more important alternative to disability benefit. On the other hand, the 'activation policy' has been stressed for years and flex jobs have also been in use for years. The uniform management procedure is presumably introduced in order to reduce the large variation in municipal practice. Finally, the role of medical judgment is (apparently) reduced.

Administration
To decide whether a person is eligible for disability benefit, the municipality first estimates whether reintegration (through rehabilitation, jobs on special terms, etc.) is likely to better the client's case. If so, the person begins such a programme. If not, disability benefit is considered. Decision on benefit due to the state of health is based on a medical judgment. To obtain disability benefit for purely social reasons, the economic needs in the household are estimated. A typical case for obtaining benefit on the basis of purely social reasons is loss of breadwinner for an elderly woman with no work experience.

[3] In principle, on the other hand, authorities may test beneficiaries' work capacity to reassess eligibility. In practice, this rarely (presumably never) happens.

Typically, if a person is in need of some kind of social income support, the municipality is the authority to asses the client's circumstances, for instance the eligibility for various types of income support, the best suited reintegration scheme, etc. Unemployment insurance benefit and the early retirement scheme (see below) are not administered by the municipality but by (subsidised) private funds.

2.2. Schemes related to disability benefit, 2002

Some social programmes may be alternatives to disability benefit in the sense that if conditions (e.g. rules for eligibility) changed a little, some people would obtain disability benefit rather than an alternative benefit. In this paper, it is useful to describe such alternative schemes, since historic fluctuations in the number of disability benefit recipients may be caused by changes in these alternative schemes. (On the other hand, of course, it is not obvious exactly what other schemes are 'alternative' to disability benefit.)

The alternative schemes may be put into various groups. Many schemes in Denmark are designed to support people temporarily until they regain self-dependency. If social support continues (and health is poor), disability benefit may become an option. The design of the schemes for temporary income support affects when, if ever, transfer to disability benefit occurs. A few schemes (a single) are designed for permanent early retirement. For some people, this is a regular alternative to disability benefit. Finally, lower age limit for old-age pension affects the number of disability beneficiaries. Table 2.2 lists the most important schemes (see appendix 1 for details).

Table 2.2. Public income support.

Scheme	Eligibility	Duration/purpose
Sickness benefit	Sickness	2 years
Rehabilitation	Limited work capability	Regain capability
Flex job	Limited work capability	Permanent subsidized job
Early retirement	Contributed to scheme	Retirement for people who reached the age of 60
Social assistance	A 'social event' e.g. unemployment	Infinite duration
Unemployment insurance benefit	Unemployment and member of fund	3 years including periods with activation
Old-age benefit	Reached 65 years	Retirement

The regulation and practice of these schemes could affect the number of disability beneficiaries. For instance, in recent years:

?? The use of flex job has become much more widespread since 1999. This may directly influence the number of disability beneficiaries, since the scheme pertains to people with limited work capability.
?? The duration sick people are on sickness benefit may vary over time. This may postpone or expedite the moment for transiting to disability benefit.

?? The early retirement scheme was reformed significantly in 1999. If – hypothetically – fewer people are covered by the scheme, more people aged 60 with disabilities may apply for disability benefit rather than early retirement.
?? The age limit for old-age pension was lowered in 1999 (with the early retirement reform) from 67 to 65 years. Hence no one aged 65 or 66 years will in the future become disability beneficiaries.
?? The use of workfare policy (activation policy) for unemployment insurance beneficiaries and social assistance recipients has been taken into use during the 1990s. If long periods of temporary income support 'produce' applicants for disability benefit, the widespread use of activation programmes will lower the number of disability benefit awards (of course depending on efficiency and duration of the activation).
?? As workfare in general, the use of vocational rehabilitation has varied the last 20 years.

Economic incentives may affect the number of people on various schemes. Individuals may – ceteris paribus – prefer one scheme to another depending on the level of support. Municipalities manage most schemes but pays only part of the costs (the state reimburses the remaining part). Cost sharing has been a tool for the state trying to influence municipal awarding behaviour at least for the last 10 years. Table 2.3 summarizes benefit levels and municipality costs.

Table 2.3. Level of benefits for various schemes, received by the client and paid by the municipality, year 2002. Index, unemployment insurance benefit=1.

Scheme			Benefit received by client		Share of cost paid by municipality[2]	
Name	Version	Group of clients	Level	Means-tested[1]	2002	Other periods
Disability benefit	Old (-2002)		0.5 – 1.6	Partly	65%	-1991: 0% 1992-98:50%
	New (2003-)		1	Partly	65%	
Sickness benefit			1	None	50%	
Social assistance		Dependant children	0.8	Strongly	50%	
		No dependant children	0.6	Strongly		
Rehabilitation			1	None	50%	
Flex job			Market wage	None	0%	-1997: 50%
Early retirement	New (1999-)	Retired before the age of 62	0.91	Partly		
		Retired at age 63-65	1	Weakly		
Unemployment insurance benefit			1	None		

Source: Forsikringsoplysningen (2000, 2002).
[1] The column indicates if the benefit is reduced due to client's other economic resources. The values (partly, none, ..) only indicates a judgment of how severe the means-testing is.
[2] No values for early retirement and unemployment insurance benefit, since the schemes are managed by unemployment insurance funds.

According to the table, the level of benefit is approximately equal to the unemployment insurance benefit for many schemes. Important exceptions are social assistance and the lowest level of disability benefit.

Municipalities' share of costs for disability benefit is high compared to other types of support, especially flex job. As the last column shows, the shares have been revised in recent years in 'disfavour' of disability benefit compared to rehabilitation, social assistance and flex job.

In appendix 2, a list of historic reforms is given.

3. Characteristics of disability benefit recipients

In this section, we review work on disability beneficiaries with respect to their socio-economic characteristics. The section draws from available evidence typically based on register data. We describe evidence on household characteristics, sex, age, health, education, work experience, trade, and source of income prior to disability benefit.

Table 3.1 presents bivariate correlations of individual characteristics and award of disability benefit.

Table 3.1. Proportion of population awarded disability benefit by characteristics, 1997, percent.

Characteristics		Male	Female	Male and female
Sex (age 50-66)	Male	1.1		
	Female		1.5	
Age	50-66			1.7
	40-49			1.3
	30-39			0.6
	18-29			0.15
Education	No (9 years of school)	1.1	1.4	
	Academic	0.2	0.2	
Accident happened prior to award	Yes	0.9	1.4	
	No	0.7	0.9	
Income, the year prior to award	< 20.200 euro			1.2
	> 20.200 euro			0.3
Social income support (of some kind) prior to award	Yes	2.6	2.7	
	No	0.3	0.4	
Sickness benefit the year prior to award (1993)	> 75% of days	9	6	
	No	<0.5	<0.5	
Social assistance the year prior to award (1992)	> 75% of days	2.2	2.1	
	No	0.5	0.75	

Source: Weatherall (2002).

Women and (obviously) old people are relatively likely to obtain disability benefit. Long education compared to no education strongly reduces the probability of obtaining benefit. To have been victim of an accident (registered by hospitals) increases the probability of benefit. The 'effect' of an accident, however, is not as strong as the 'effect' of an academic education.

The four variables about income prior to disability benefit correlate with reception of disability benefit. The strong correlations, however, may simply reflect that for many people labour market attachment is lost years before disability benefit award. The *very* strong correlation with reception of sickness benefit (compared to, say, social assistance) could reflect strong medical screening for disability benefit.

Det økonomiske Råd (2000) makes the same types of calculations. Table 3.2 (reiteration of table 1.1) shows the distribution of disability benefit beneficiaries' source of income prior to receiving disability benefit.

Table 3.2. Primary source of income three years prior to award of disability benefit (1995-1998), percent of recipients.

Source of income	Distribution
Wage income	48.2
Social assistance	15.2
Unemployment insurance benefit	11.3
Sickness benefit	5.8
Self-employed	5.6
Other or no income	13.8
All	100

Source: Det økonomiske Råd (2000), table III.27.

At least one third lived from other public income support as long as three years prior to reception of disability benefit.

We continue describing multivariate estimations of whether or not a person receives disability benefit. Using a logistic model, Weatherall (2002) finds:

Table 3.3. Characteristics of disability benefit recipients.

	Characteristics	The probability of receiving disability benefit is ...
Household	Having children or living in a couple compared to living alone	Reduced
	Divorce	Mixed
Age	Higher	Increased
Sex	Male	Reduced
Education	Duration (no education compared to short, medium, long education respectively)	Reduced
Work experience	Long	Mixed
Health	Poor	Increased
Source of income, etc., previous year	Wage	Reduced
	Dismissed	Reduced
	Social assistance	Increased
	Long-term unemployment	Mixed
	Sickness benefit	Increased
	Rehabilitation	Reduced

Source: Weatherall (2002). The information is compiled from tables 3.1, 3.2 and 3.3.
Note: The result is 'Mixed' if it is not unambiguous for various sub-samples (e.g. 1990-recipients of social assistance compared to 1990-non-recipients).

The findings given in the table confirm bivariate findings and (presumably) expectations. Old, singles, people with poor health, uneducated, and people with poor labour market attachment have relatively high probability of receiving disability benefit. However, results are 'Mixed' for work experience and long-term unemployment. This means that the result is conditional on the sub-sample investigated. Long work experience indicates strong labour market attachment and hence for most sub-samples reduces the probability of disability benefit. However, for people with no vocational education work experience works the other way, presumably due to the effect of hard work on health. In the same way, long-term unemployed persons in a sub-sample of 1990-social assistance recipients are relatively well off (in this group) and hence have a low probability of receiving disability benefit.

The relation to trade has been studied in Det økonomiske Råd (2000) and Den sociale Ankestyrelse (2001). Det økonomiske Råd (2000) relates disability benefit in 1997 to trade, but it is difficult to summarize the effects – for instance, it does not seem to be the case that manual trades produce more disability beneficiaries. If one should mention a finding, it is that many disability beneficiaries were previously teaching or having jobs in social institutions. Den sociale Ankestyrelse (2001) reports new disability recipients' trade immediately prior to benefit reception. With this method 'manual' trades produce relatively many disabled people and the public sector (including teaching and social institutions) produce few disabled people. Hence the results on trade seem mixed. Results depend on the duration from recording trade to disability reception and on the level of aggregation. No trade is pointed out to produce overwhelmingly many disabled people.

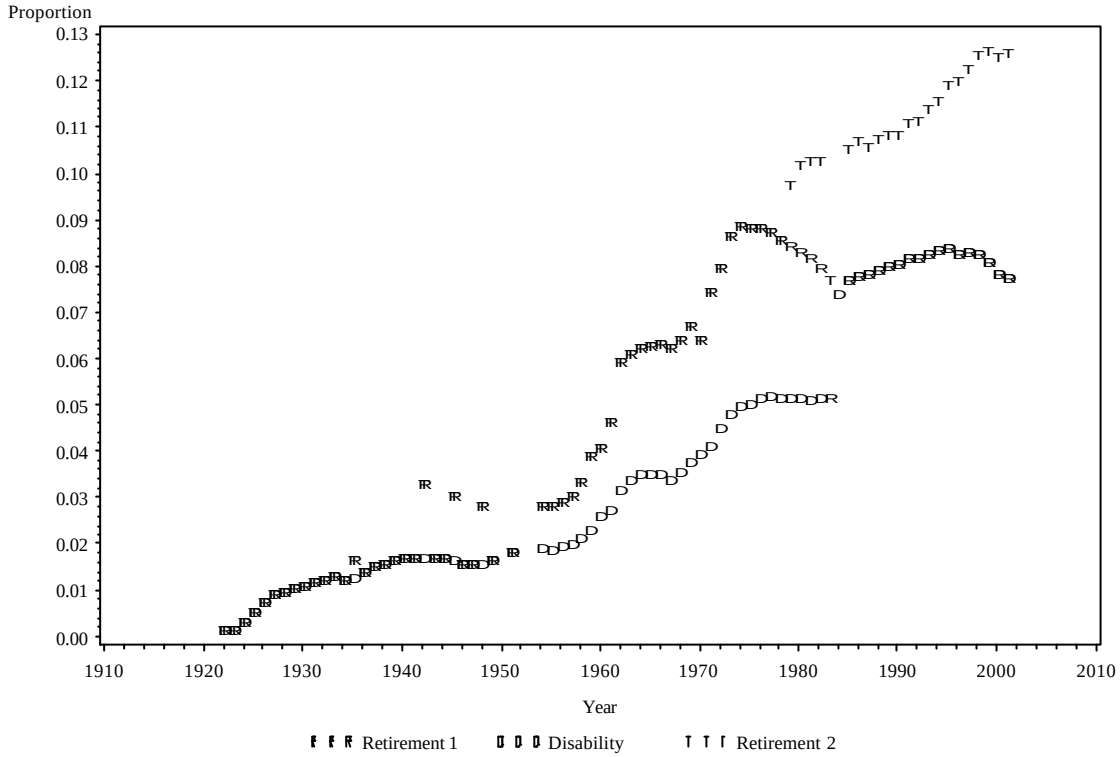
4. Trends in the number of disability benefit recipients

In this section, we describe the development of the number of disability recipients. We put emphasis on the relation to other social schemes. We take a long-term view in section 4.1 and a closer look at the last 20 years in sections 4.2 and 4.3, and discuss reasons for the significant decreasing trend of awards during the 1990s.

4.1. Disability benefit during a century

In appendix 2, a list of historic reforms of disability beneficiaries is given. Figure 4.1 below adds to the disability beneficiaries (shown in figure 1.1) the number of recipients of other public schemes related to early retirement (widow's pension, early old-age retirement). Prior to 1984 various schemes besides disability benefit offered early retirement. In the figure, these schemes and disability benefit are summed up and labelled as 'retirement 1'. Further adding the early retirement scheme introduced in 1979 gives 'retirement 2'. Of course, adding different schemes implicitly suggest that two schemes are clear substitutes for individuals. To relate disability benefit to early retirement schemes makes sense, since in Denmark disability beneficiaries are relatively old and the exit rates from disability benefits are very low.

Figure 4.1. Disability benefit and early retirement schemes, 1921-2001, recipients relative to population aged 20-64 years.



Source: Data are put together from Statistics Denmark, Statistisk Årbog ('Statistiscal Yearbook', several years, especially until early 1980s) and from the online databank Statstistikbanken, www.dst.dk, (especially from early 1980s).

Note: In the figure, disability beneficiaries are people receiving 'førtidspension' and 'invalidepension'. People in 'retirement 1' are disability beneficiaries plus people receiving old-age pension even though they are younger than the official age for old-age pension, widow's pension, and people who receives a certain income support for spouses ('hustrutillæg'). 'Retirement 2' is 'retirement 1' plus people on the early retirement scheme introduced in 1979 ('efterløn'). The number of widow's pensioners between 1960 and 1965 is linearly interpolated (7,980 pensioners in 1959 and 15,960 in 1966).

Early (public) retirement grows throughout the century except for few periods with no growth or decrease. The leap in 1984 for disability beneficiaries is because of the disability benefit reform collecting several early retirement schemes as 'disability benefit'.

The reason for the slow growth in disability benefit and retirement 1 from the mid-70s to the mid-80s could be that some considered the 1979-early retirement scheme as a substitute to disability benefit. The very recent decrease of disability benefit recipients is interesting, since it may very well be related to workfare policy or 'active social policy'.

As concerns the long run development of disability beneficiaries (and early retirement in general), two ideas come to mind. First, the long run growth may be explained as a result of society's general increase of income, allowing more people not to work and offering better insurance in case of unfortunate events. Second, in a medium term, a period of low growth may increase the number of early retirements by 'producing' can-

didates for early retirement. We estimate the relationship between the number of disability beneficiaries and the GPD of the country with an error-correction model. To explain, the long run relationship is assumed to be of the form

(1) $$D_t = \beta_y Y_t + e_t$$

where D is those early retired and Y is income. The 'error' in this long-run relation is denoted e and period is denoted t. The parameter to be estimated is β. We expect the parameter to be positive in the long run, so that the more wealthy society gets, the better welfare programmes it can offer.

In the short run, if D is 'too high' as judged by equation (1) – that is, $e > 0$ – we assume there will be a tendency for the increase of early retired to slow down ('error-correction'). Therefore the short-run relationship is modelled as

(2) $$\Delta D_t = \alpha_0 + \alpha_y \Delta Y_t + \gamma e_{t-1} + v_t$$

where Δ denote the change in a variable from one period to the next, and v is a second error term. Now, γ equal to e.g. 0.3 means that if D was 1 too 'high' in the previous period according to equation (1), the increase of early retired people in the current period is 0.3 less than if D had been in 'equilibrium'. Further, the short-run relationship between income and the early retired (captured in α_y) may be different from the long-run relationship (β_y). We expect α_y to be negative. The interpretation is that when job-market opportunities are good, fewer will apply for early retirement (e.g. disability benefit).

Table 4.1 gives the estimated parameters of an error-correction model for people participating in early retirement-programmes – that is, in the group of programmes called 'retirement 2' in figure 4.1.

Table 4.1. Increase of early retirement as a function of income, 1922-2001.

Dependent variable: change of log of ratio of early retired ('retirement 2', see figure 4.1) to population aged 20-64		
Predetermined variables:	Estimate	T-statistics
Intercept	-1.268	-3.4
Change of log GDP per capita (aged 20-64)	-0.611	-2.0
Long run:		
Lag of log of ratio of retired to pop. aged 20-64	-0.319	-8.6
Lag of log of GPD per cap. (aged 20-64)	0.243	3.2
	(implicit long run: 0.76)	
Time trend (year – 1900)	0.020	4.3
Square of time trend	-0.0001	-4.1

Source: See figure 4.1.

Note The model is estimated in one step (equation (1) is substituted into (2)), so the estimation equation is $\Delta D_t = \alpha_0 + \alpha_y \Delta Y_t + \gamma D_{t-1} + \beta_y Y_{t-1} + v_t$. The long-run income parameter can be derived as $\beta_y = -\beta_y / \gamma = -0.243/(-0.319) = 0.76$. We use a two-year lag in the model.

n ? 70, $R^2 = 0.65$. We report t-statistics even though they are known to overstate the accuracy of this kind of models.

The result of the estimation supports the hypothesis that the increase of the early retired is low when the 'stock' of retired people is high (because the parameter ? is significantly less than zero) and the hypothesis of a positive long-run relationship between retired and income, and a negative short-run relationship between the two.

We can obtain qualitative similar results with 'retirement 1'-programmes (see figure 4.1). The models are not completely robust. Especially, it is difficult to estimate simultaneously the effect from income, time trends (as in table 4.1) plus *freely* estimated parameters to demographic variables (e.g. the proportion aged 50-64). The reason is that income and demographics have clear time trends. We can, however, take account for demographics with natural restrictions on related parameters.

Returning to figure 4.1, the plot suggests that the slow growth of disability beneficiaries in recent years is not because people alternatively chose the early retirement scheme. On the contrary, growth of participants of the early retirement scheme has also been slow in recent years. This slow growth is possibly due to the reform of the scheme that came into force from 1999, or simply the result of a 'saturation point' for early retirement.

High growth of 'retirement 1' in the late 50s may be due to the introduction of widow's pension, and the growth during the late 60s and the early 70s may be because award due to social problems became possible (see appendix 2). The growth in disability beneficiaries from the late 60s may be due to the reform in 1965 when the level of benefit increased and the age for old-age pension was increased to 67 years. Similarly, the growth in 'retirement 1' 1937-46, may reflect low age for old-age pension (60 years rather than 65).

4.2. Awards of disability benefit 1985-2001

Figure 4.2.a shows the number of awards and beneficiaries.

Figure 4.2.a. Awards of disability benefit, 1985-2002.

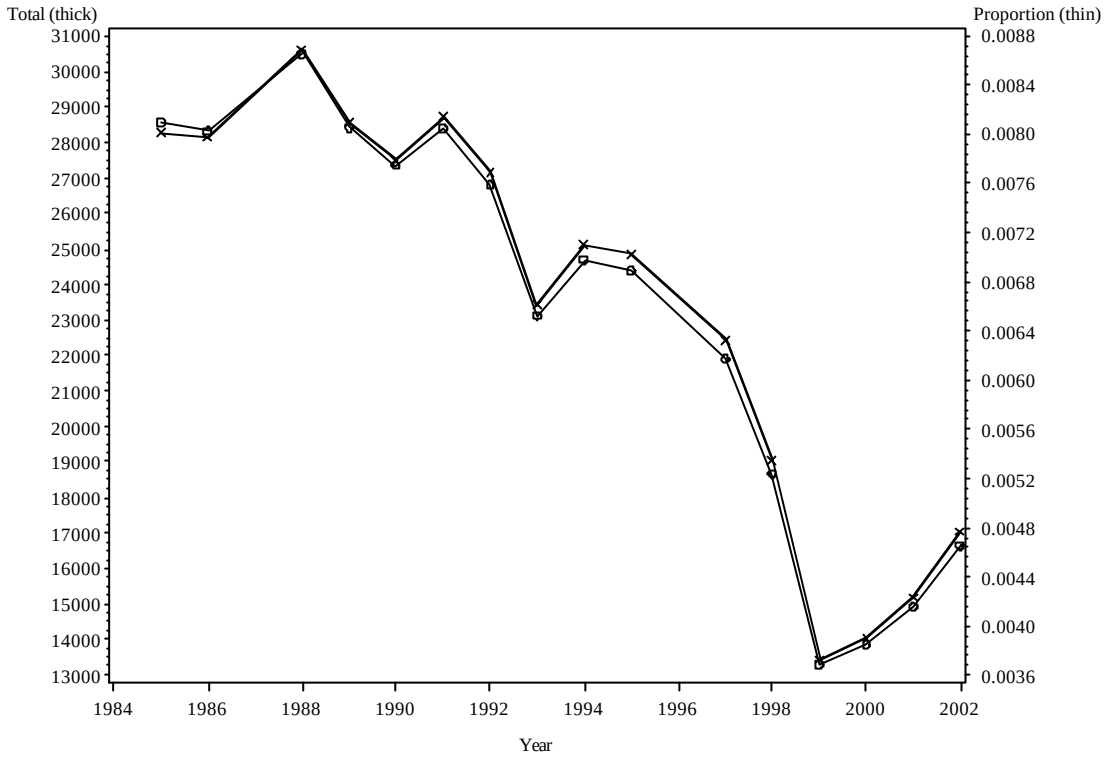
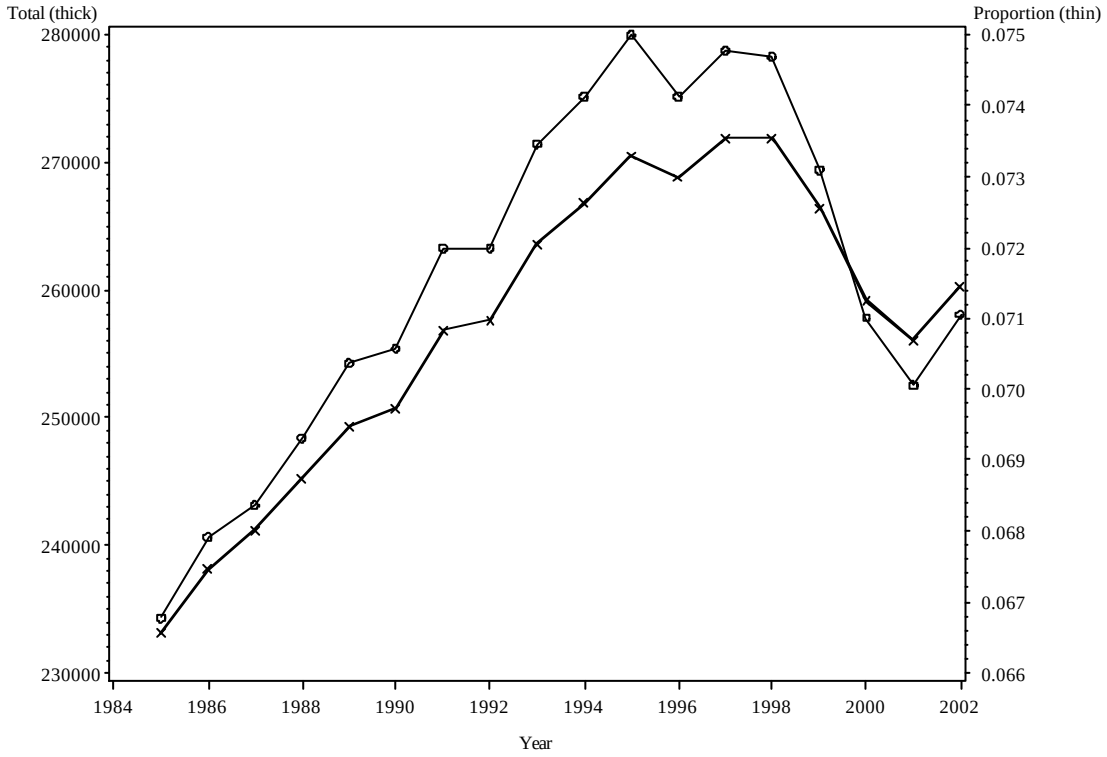


Figure 4.2.b. Number of disability benefit recipients, 1985-2002.



Source: Statistics Denmark (Statistisk Årbog, several years, Statistikbanken). Den sociale Ankestyrelse (2003).

Note: Proportion of the population aged 15-66.

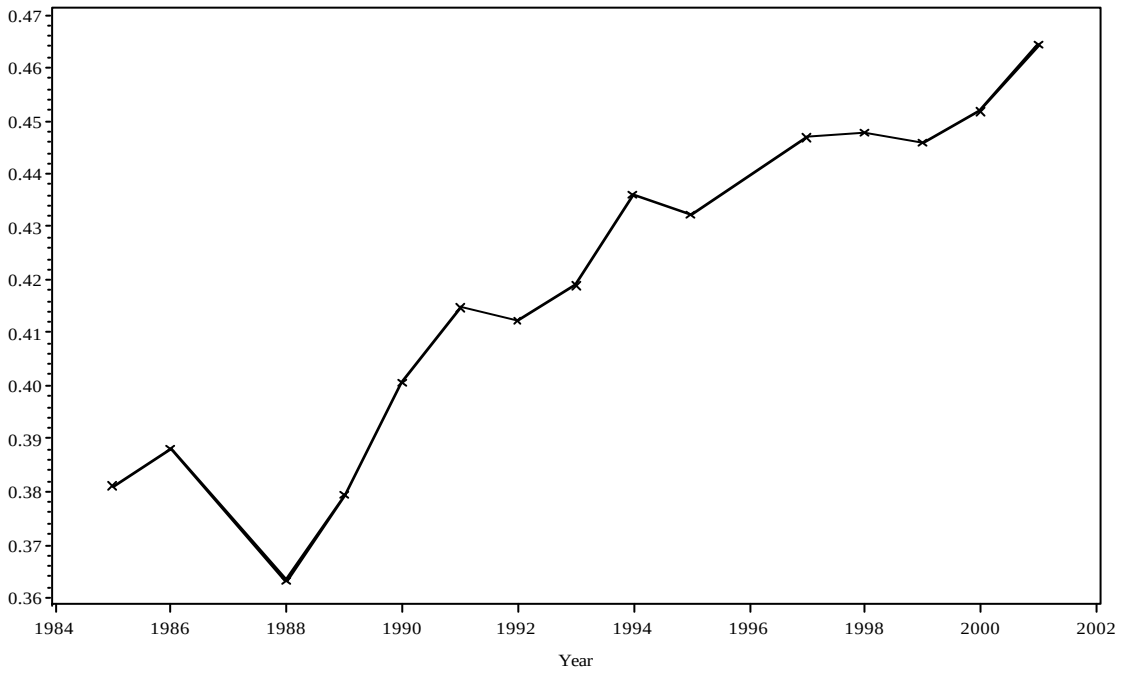
The awards significantly decreased from the late 1980s. Control for distribution of age, gender and education (not shown) reinforces the impression of a lower tendency to apply for or award disability benefit, since with these controls the drop is even larger[4]. A number of explanations are possible: throughout the period the state has made it more costly for municipalities to grant disability benefit compared to other types of social support. In the same period, various types of active labour market policies (or active social policies) have become increasingly more used in Denmark as in other countries. Notably from 1999 flex job replaced other job schemes on special conditions for potential disability benefit applicants. Finally, from the mid 1990s the general economic situation in Denmark has been good.

Note that no major change has been made in the level of disability benefit.[5]

As concern the stock of beneficiaries (figure 4.2.b) the significant drop after 1999 is affected by the reform of the lowering of the age for old-age pension from 67 to 65 years.

Figures 4.3 and 4.4 show age and gender composition of newly awarded beneficiaries.

Figure 4.3. Proportion of awards of disability benefit collected by men, 1985-2001.

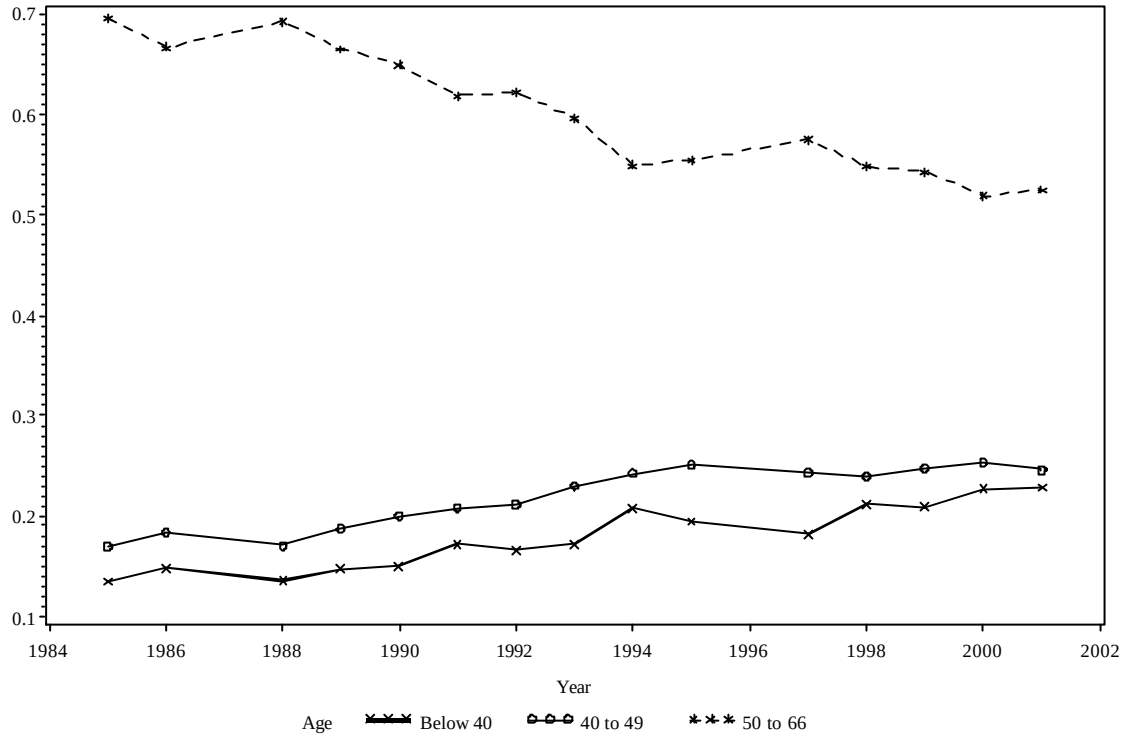


Source: Statistics Denmark (Statistisk Årbog, several years).

[4] The fact that the population gets older and hence more likely to apply for disability benefit is almost, but not completely, counterbalanced by the fact that more are better educated.

[5] Qualifications are: from 1994 all benefits were made taxable. To make net-benefits approximately unchanged, the gross benefit increased. Depending on the individual taxation, some may have benefited from this change. In 1999, a court verdict made it more likely to obtain the higher benefit level.

Figure 4.4. Age distribution of disability benefit, 1985-2001.

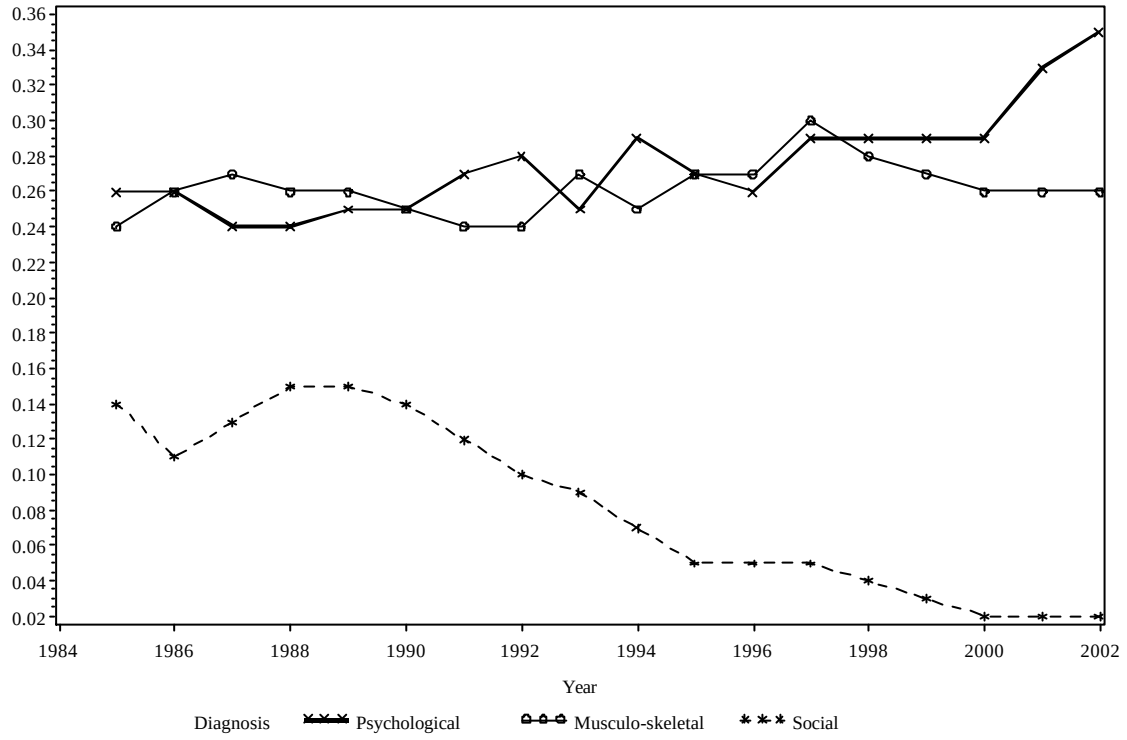


Source: Statistics Denmark (Statistisk Årbog, several years). Den sociale Ankestyrelse (several years).

The proportion of men among new beneficiaries increases from below 40 percent to somewhat less than 50 percent during the 1990s. People more than 50 years old gradually make up a lower fraction of new beneficiaries (the impressions are the same for men and women separately). However, award rates decrease for all age groups during the 1990s but most for the older group (except for men and women below 20 years and women 20 to 29 years – the award rate of the first group increases and it is constant for the second group).

The diagnoses made for new beneficiaries are illustrated in figure 4.5.

Figure 4.5. Diagnoses for persons awarded disability benefit, proportion of all awards, 1985-2002.



Source: Statistics Denmark (Statistisk Årbog, several years). Den sociale Ankestyrelse (several years).

The two quantitatively most important impairments, psychological and musculo-skeletal, each constantly makes up about a quarter of the awards. Awards on the basis of social problems fall during the 1990s to almost nothing. Perhaps this group is most likely to be affected by changes in the alternatives to disability benefits.

At a more disaggregate level table 4.2 shows the distribution of diagnoses. Unfortunately, the classification of diagnoses has changed, and hence the 2001-distributions is compared to the distribution only a few years earlier, namely 1998.

Table 4.2. Awards of disability benefit by diagnoses, year 2001, change since 1998.

Diagnose	Distribution, 2001	Change in distribution (2001 minus 1998)	Significant change?[1]
Mental illness	0.332	0.035	+
Musculo-skeletal	0.254	-0.027	-
Cardio-vascular	0.076	-0.005	-
Nervous system, sense organs	0.077	0.005	+
Cancer	0.064	0.002	0
Respiratory organ	0.031	-0.003	-
Congenital	0.002	-0.003	-
Accidents etc.	0.057	0.003	0
Other	0.074	-0.001	0
Social problem	0.018	-0.019	-
All	1.000	0.000	

Source: Den sociale Ankestyrelse (several years).
Note: A q-test of equal distribution of diagnoses in 2001 and 1998 clearly rejects the hypothesis.
[1] '+'/'-': Significant increase/decrease of proportion, '0': insignificant change. Based on the residuals of the q-test.

People with mental illness or disease in nervous system or sense organs make up a greater fraction of the awards, whereas all other diagnoses make up a smaller fraction or there is no change. Especially the decrease is large for people with social problems and musculo-skeletal disorder. Hence, we may suggest that reintegration (e.g. flex job, rehabilitation) is used with less effort and/or less success for people with mental illness compared to people with physical health problems or with social problems. Of course, it may also be the case that the state of health of the population, and distribution of diagnoses in the population, has changed from 1998 to 2001 (see section 7).

4.3. Disability benefit and other schemes

Flex-jobs, long-term sick and rehabilitation

To discuss the decrease of awards especially since 1998, table 4.3 shows awards of benefit and the number of participants in flex job participants and in vocational rehabilitation, and long-term recipients of sickness benefit.

Table 4.3. Awards of disability benefit and participants in related schemes, 1995-2002.

Year	Disability awards	Long-term sickness benefit recipients[4]	Flex job participants		Rehabilitation	
	All		Stock	Difference	Stock	Difference
1995	24282	11414	.		21800	1137
1996	23132	11860	.		23274	1474
1997	21919	15233	2337[b]		25176	1902
1998	19125	16648	5042[b]	2705	27894	2718
1999	12975	17601	5711[2]	669	33119	5225
2000	13677	16316	8869[2]	3158	32596	-523
2001	14597	16859	13606[2]	4737	30481	-2115
2002	17047[3]	.	20189[2]	6583	29014	-1467

Source: Statistics Denmark, Statistikbanken.
[b] Den sociale Ankestyrelse (various years).

Note: The 'predecessor' of the flex job-scheme is the '50/50-scheme' (50% wage subsidy).
[1] See table 2.1.
[2] Participants in third quarter of the year.
[3] A likely reason (Den sociale Ankestyrelse (2003)) for the increase is that many cases have been concluded before the introduction of the new disability scheme in 2003.
[4] Received sickness benefit for more than 54 weeks.

The number of long-term sickness beneficiaries increases especially from 1996 to 1997[6] and does not seem to be closely related to disability awards. Flex job-participants increase significantly since the introduction of the scheme and the increase may very well influence awards. According to the last column of the table, the increase of flex job-participants makes up a large fraction of decrease of disability awards. If the decrease of disability awards really is affected by the flex job policy, a continued low level of disability awards requires continued expanding of the stock of flex jobs (or a high exit rate from flex job to self-dependency). It is a current debate in Denmark whether a sufficient number of flex job positions will be supplied. The number of participants of vocational rehabilitation programmes increases in the later part of the 1990s, but decreases from 2000 to 2002. Perhaps flex jobs substitute not only for disability benefit but also for rehabilitation programmes.

Summing up, evidence on the relationship between reintegration efforts and disability benefit is unclear. The low number of disability benefit awards may very well be related to the use of flex jobs, but it remains to see whether enough flex job positions will be supplied. Also, it may be that reintegration participation simply postpones rather than avoid disability benefit award.

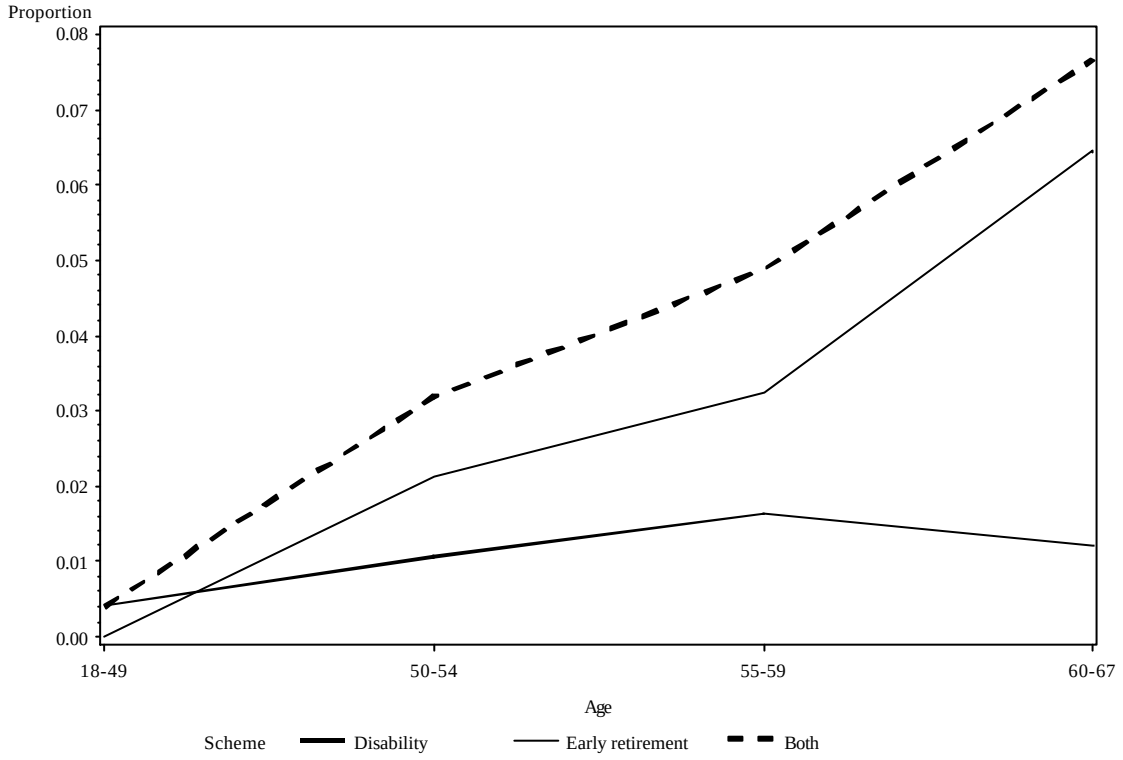
Retirement schemes and age

From the age of 60 a scheme for early retirement is open to most people, i.e. until 1998 for members of unemployment funds, and from 1999 for contributors to the particular programme. Also, during 1994-96 the scheme was open to long-term unemployed aged 50-59. Conceivably, the disability benefit and the scheme for early retirement are

[6] We have found no reason to expect this drop to be caused by a change of statistics or the like.

substitutes at least for some. Figure 4.6 shows the proportion of the population for various age groups transiting to the disability scheme and the early retirement scheme during 1994-96.

Figure 4.6. Proportion of population retiring early, by scheme and age, years 1994-1996.



Source: Registers from Statistics Denmark, own calculations.

The schemes are substitutes but only to some degree. We claim so because transition to disability benefit is lower for people who have reached the age of 60 compared to people in their 50s – and on average health is obviously worse for the older people. On the other hand, from 1997 the early retirement scheme was closed to people aged 50-59. If disability benefit was attractive and open to long-term unemployed we should expect that more people would retire via disability benefit as the early retirement scheme closed, but this was not the case. (Of course, other things were not equal from the mid 1990s to 1997. Especially, the business cycle improved and left fewer long-term unemployed and more weight may have been put on reintegration policies.)

Exits

In many countries, it is a subject of concern that few participants leave the disability benefit scheme (except for transitions to old-age pension or death). In Denmark, the exit rates seem particularly low, i.e. almost zero, see Rasmussen (2002). Presumably this reflects a strict screening for lack of ability to work. This idea is supported by the study of Weatherall (2002). He describes the labour market record for people *rejected* for disability benefit. Only about 20 percent are employed a year after rejection of application for benefit.

In relation to this disappointing description, note that some individuals awarded disability benefit nevertheless work and obtain a special disability benefit (invaliditetsydelse) to compensate for the disability. These benefits are awarded to 500-600 persons each year (compare with 17,047 awards of disability benefit in 2002). Also, some disability beneficiaries work in sheltered jobs (light jobs); the number is 6,007 in the first quarter of 2003.

5. The effectiveness of reintegration programmes

We describe literature on the effectiveness of programmes designed to return people to the ordinary labour market from temporary public income support.

Note that we describe reintegration programmes for people before they obtain disability benefit. We do so because, as we saw in section 3, many disability beneficiaries have a long record of public income support. Furthermore, there are no really quantitatively important vocational reintegration programmes for disability beneficiaries in Denmark. The light job programme mentioned above is not meant for reintegration in the sense that self-dependency is the success criterion. The criterion of the programme is to make use of the productive capacity, which the participants may have, and to give the participants a meaningful everyday life.

We begin with programmes most directly pertained to people who otherwise might obtain disability benefit (vocational rehabilitation) and proceed with activation programmes for social assistance recipients and unemployment insurance benefit recipients. We do not describe quantitative studies on the flex job scheme because such studies have not yet been carried out. Furthermore, as regards to light jobs, the success criterion of the programme is not to return to self-dependency, but rather to obtain a better everyday life and utilisation of production capacity.

Besides, a survey of quantitative results on (typically) the number of people depending on social income support, we put some emphasis on participants' self-reported opinions of and experiences with the programmes.

5.1. Vocational rehabilitation

Filges (2001) estimates the effect on 'social dependency' of rehabilitation. Social dependency is measured as the fraction of a year an individual receives one of several kinds of social benefits. The effect of the programmes is measured as social dependency ex-post minus ex-ante programme participation. With this fixed-effect or 'difference method' the control group is the participants prior to activation. In order to claim that a change of social dependency is an *effect* of the rehabilitation, the necessary assumption is that no change in social dependency would occur without programme participation (this assumption can be relaxed in duration models described below).

Filges (2001) separates participants by degree of social dependence prior to rehabilitation. Table 5.1 shows some results.

Table 5.1. Effects of rehabilitation programmes. Change in social dependency (percentage points).

	Social dependency prior to rehabilitation		
	0-30	30-70	70-100
Rehabilitation completed	20	-1.8	-20.2

Source: Filges (2001). Excerpt from table 4.3.a.
Note Social dependency is measured the fraction of a year an individual receives some kind of social benefit.

According to the study, rehabilitation lowers social dependency only for participants with significant dependency prior to rehabilitation and only after end of rehabilitation. For this group, the programmes are estimated to reduce social dependency by 20 percent.

Storm (2001) uses survey data to analyse rehabilitation participants' experience with rehabilitation programmes. A result on participants' general well-being is reported in table 5.2.

Table 5.2. Change of well-being two years after end of rehabilitation.

Change	Percent
Much better	43.9
A little better	18.2
No change	27.5
A little worse	5.1
Much worse	3.3
Do not know	2.1
All	100.0

Source: Storm (2001), table 4.14.

As noted in section 3, Weatherall (2002) finds rehabilitation to lower the probability of obtaining disability benefit next year.

Høgelund and Holm (2002) estimate the effect of rehabilitation programmes on the probability of returning to work for sickness beneficiaries with a specific diagnosis (low back pain) and a specific type of programmes (educational programmes). They use a duration model to separate duration effects from programme effects. Education programmes are found to affect the probability of returning to work. However, the effects are ambiguous; education does not significantly affect the probability of returning to the old employer (which is the route back to work for many sickness beneficiaries) and as concerns returning to work with a new employer, the probability of employment is reduced as long as the education programme is ongoing. After termination of the programme, the probability of employment increases to a level slightly above the no-participation level.

Relevant effects of reintegration programmes include participants' experience. Hohnen (1999) interviews flex-job participants on this issue. Overall, participants seem to be content with some sides of flex-job related to 'formal' or 'institutional' matters such as income, employers' care for participants' limited work ability, and the job tasks. An institutional feature that most participants are discontent with is the loss of right to participate in the early retirement scheme and the loss of unemployment insurance.

Participants' emotional attitudes towards flex-jobs are mixed. Some feel a natural part of the everyday life of the workplace, whereas others do not.

Hohnen (2001) puts these experiences in relation to theory of social exchange and gift giving. She argues that the 'active social policy' (weight on workfare/activation) and the social debate have conflicting elements that affect the flex job employees' attitude towards the job. On the one hand, the debate focuses on participants' work capacities rather than their disabilities. On the other hand, the debate also focuses on corporate social responsibility, with the number of flex job as an indication of a firm's responsibility. This seems to work contradictory to the 'capacity-view' since the view of flex job as a gift from employer/society is emphasised. Hohnen argues that this gift-relation helps to explain why many have ambiguous feelings towards the job – i.e. they like to work, but have problems with the social relations on the job and their own self-esteem.

Using questionnaires, Høgelund and Kruhøffer (2001) describe the attitudes of employees (on ordinary terms) towards supported jobs on their workplace. Most employees' attitudes to supported jobs are positive; this is true for the jobs in general and with respect to their own workload and chances of staying employed.

5.2. Other workfare-schemes

Workfare for social assistance recipients

Dependency on social income support
Within a year, social assistance recipients should start to participate in some kind of activation programme. Like Filges (2001), Bach (2002) uses the fixed-effect method to estimate the effect on social dependency. Selected results are shown in table 5.3.

Table 5.3. Effects of activation programmes on social assistance beneficiaries. Change in social dependency (percentage points).

Variable	Effect
Type of activation:	
Job training, private	- 16.3
Job training, public	- 10.4
Employment project	- 3.3
Folk high school	2.4

Source: Bach (2002). Excerpt from table 5.7.
Note See table 5.1.

Most programmes are estimated to lower social dependency. The effect of programmes varies. However, participants may be different in terms of their ability to gain from activation. For example, those with a relatively good ability of gaining labour market qualifications through activation may chose job training rather than employment projects.

Motivation effects

Conceivably by the mere prospect of having to participate in activation programmes some social assistance beneficiaries will do more to find a job or in other ways avoid activation programmes. In Bach (2002) beneficiaries are simply asked what they did to avoid activation. Most (approx. 80 percent) have not done anything. The residual found job (7 percent), started job-search (2 percent) or started education (1 percent), or refused activation (7 percent). According to this evidence, the motivation effect is approximately as large as the direct programme effects reported above.

Participants' opinion of the programmes

In Bach (2002), participants' experiences with the programmes are studied. The questions asked revealed whether participants found that the programmes improved labour market prospects and whether the programmes improved their lives in other ways. The results show large variation in participants' opinion of the programmes. Not surprisingly, results vary with the type of programme as different types of programmes have different purposes. Table 5.4 exemplifies the findings.

Table 5.4. Participants' experience with activation. Percentage agreeing with statement of purpose.

Purpose	Type of activation			
	Job training, private	Job training, public	Employment project	Folk high school
Qualifies for education	17	15	7	27
Qualifies for employment	49	33	25	30
Improves everyday life	23	21	24	20
Improves self-confidence	9	7	10	9
Clarifies plans for the future	21	14	13	23
No purpose	23	30	44	18

Source: Bach (2002). Excerpt from table 5.5. In that table, participants are asked 10 questions on their experience with activation.

Regarding qualifications for a job, a fraction, varying from one quarter to half of the participants, reports this to be a purpose of the programme. Some find that the programmes help to clarify plans for the future or qualify for education. Many report no purpose of the programme and some find that the programmes improve the everyday life or improve self-confidence. Overall, on the basis of such evidence, programmes only partly succeed if job chances are the criteria. On the other hand, many find the programmes to have other positive effects. Of course, it is very likely that such 'soft' effects indirectly improve the probability of getting a job in the long run.

Controlling for duration effects

Graversen (2002) uses a duration model to estimate pre-programme motivation effects, locking-in effects and programme effects for activation of social assistance beneficiaries. To identify the mentioned effects as well as the basic duration effect, municipal variation in typical starting time of activation is used. Also, survey information on municipal activation practice is used. The overall impressions of the estimation results are 1) low motivation effects, 2) clear locking-in effects for most programmes other than private job training, and 3) significant programme effects for most types of activation, especially for private job training. Regarding municipalities' practice, there is some, though limited, evidence that 'active' and 'tough' use of workfare policy increase bene-

ficiaries' job search and exit rate out of social assistance. Another result is that unemployment rate in society has clear influence on the exit rate, i.e. demand for labour matters.

Workfare for unemployment insurance beneficiaries

Since 1994, workfare has been an important part of the policy to bring recipients of unemployment insurance benefit back to work. Several authors use duration models to estimate the motivation effects, the locking-in effects, and the programme effects on employment of activation (as in Graversen (2002) for social assistance-workfare). Overall, programme and locking-in effects are at best poor, while motivation effects are positive.

Det økonomiske Råd (2002) studies the programme and locking-in effects of four types of activation. Positive effects on employment are found only for private job-training. The probability of having a job as well as the duration of the employment is estimated to increase for this type of activation.

Geerdsen (2002) and Kyhl (2001) study motivation effects. In both papers, clear evidence of motivation effects of activation is found. Kyhl (2001) also finds business cycle effects to be important.

6. The administrative organisation

A number of issues on the administrative organisation of applications for disability benefit have been discussed in the literature. One issue is the sharing of disability benefit costs between state and municipality. Another issue is that various municipalities seem to administer disability rules very differently. That is, only a small part of the municipal variation in the number of disability awards is explained by demographic and economic characteristics.

The administration of disability benefit has gradually become decentralized through recent decades. It is particularly important that from 1998 individuals became unable to formally apply for disability benefit and from 1999 municipalities were the only administrators (though not for appeals). Before 1999, the authority was shared between municipalities and more centralized institutions.

Based on aggregate data, Christiansen (2000) argues that cost sharing matters, i.e. the greater the share of benefits paid by municipalities the lower the number of awards. The decentralization described above is argued to lower the number of awards. Presumably, one might argue, the reform on decentralization and the cost sharing reform amplifies each other: the effects of the costs for municipalities are more profound if municipalities are monopolized decision-makers.

It seems likely that individuals' inability to formally apply for pension will lower the number of applications, but it is less obvious why this reform should lower the number of awards since (in any case) municipalities take the final decision on award. Actually, the number of rejected cases dropped sharply after 1998 (623 rejected cases in 2002 versus 6,716 in 1997).

A worry of the decentralized system is large municipal variation in practical management. Perhaps this is supported by the fact that many municipalities handle only 20-30 cases a year. Furthermore, only a small proportion of the statistical variation of municipal's number of awards can be explained by municipalities' socio-economic structure.

The Social Appeals Board (Den Sociale Ankestyrelse) monitors municipal variation and guides municipalities through various forms of information. Also, the board carries out investigations of municipal practice by collecting concluded cases and re-do the cases as a control. This is done for selected municipalities. Gregersen and Lindermann (2001) evaluate statistically the effect of this control. They find that the board's control significantly lowers the controlled municipal's idiosyncratic practices (measured as the residual of a regression of municipality awards).

Bengtsson (2002) uses a survey on municipalities' management to explain municipal variation in awards. Every municipality is asked a large number of questions on administrative procedures with relation to disability benefit. Bengtsson (2002) characterises the types of management that award many disability beneficiaries and the types that award few. Municipalities with few recipients (and hence many persons in some

reintegration process) make use of ‘network’ and are ‘dynamic’, whereas municipalities with many pensioners make intense use of professional (medical) advice, advice from interest groups and ‘bureaucratic’ procedures. ‘Network’ may be contact with employers and cooperation of the case-manager and other units of the municipality, e.g. the budget office. A ‘dynamic’ feature might be a category designed for fast management for persons with very low work ability. On the other hand, ‘bureaucratic’ procedures may be intensive division of work (e.g. emphasis on medical judgment and with the case-manager having major responsibility), forecasts of future number of pensioners, and in general the case being managed in accordance with pre-designed schedules, e.g. meetings with the applicant with specific intervals without consideration of the specific characteristics of the case.

7. Trends in public health

In this section we take a brief look at the development of some indicators of public health and mortality from 1987 to 1999/2000. A possible explanation for the decrease in disability awards in the period is improvement of public health. A priori, however, one may suspect public health *not* to be the most important factor for explaining the number of disability awards – at least not during such a short period. Nevertheless, it may be worth having a look at the data.

The data used in the section are crude statistics for mortality rates and self-reported health by age and gender from three years, 1987, 1994 and 1999 or 2000 (mortality and health respectively). We do not perform any analysis of the relationship between award of disability benefit and health. Lund et al. (2001a) find health (chronic bronchitis and musculo-skeletal disorder) to correlate with award of disability benefit for physically heavy occupations. This holds even after control for lifestyle and work environment (body mass index, smoking and skill discretion). Lund (2001b) also finds some correlation of health (musculo-skeletal disorder) and the decision to join the early retirement scheme.

Tables 7.1 and 7.2 present indicators of public health and mortality rates for 2000/1999 and compares with 1987 and 1994.

Table 7.1 Indicators of public health, 2000. Percent of people aged 24-66 suffering from diseases. Years 1994 and 1987 compared to 2000.

		Percent		Test for 2000 compared to ..	
Incidence	2000	2000 minus 1994	2000 minus 1987	.. 1994	.. 1987
In general					
Self-reported health, good or really good	79.7	-1.1	-0.1	.	.
Good mental health	54.1	2.4	n.a.	.	n.a.
High vitality	37.9	1.8	n.a.	.	n.a.
No activity limitations due to mental problems	79.2	3.7	n.a.	*	n.a.
Very restrictive long-standing illness	39.1	3.8	8.2	*	*
Specific diseases					
Musculo-skeletal	16.0	1.0	3.7	.	*
Cardio-vascular	4.8	0.5	0.6	.	.
Diseases of nervous system	4.7	0.0	0.1	.	.
Respiratory diseases	4.4	0.1	1.2	.	*
Asthma within past year	5.3	1.2	2.4	*	*
Low back pain	12.2	0.7	-1.2	.	*
High blood pressure	6.9	1.8	1.5	*	.
Chronic bronchitis	2.4	-0.6	-0.1	*	.
Nervousness	3.0	-0.2	-0.8	.	*
Diabetes	2.1	0.0	0.5	.	.
Other					
Much bothered by general symptoms etc. within last 14 days	33.8	0.3	-1.3	.	.
Body mass index above 30	10.4	2.0	4.4	*	*

Source: Statens Institut for Folkesundhed (2002), various tables. Own calculations.

Note: The test is a Cochran-Mantel-Haenszel test. We test whether the fractions have change from 1987 or 1994 to 2000 (one test for each year for each indicator), controlling for the change in sample distribution on age groups and gender. Stars indicate 2 percent-levels of significance. Tests are based on data reported in the mentioned publication. For 1987 and 1994 the data have low accuracy because fractions are reported in whole percentages. In the hope of making few type-II errors, stars indicate low levels of significance.

Table 7.2 Mortality rates for people aged 24-69, 1999. In total and by selected diagnoses. Years 1994 and 1987 compared to 1999.

	Percent			Test for 1999 compared to ..	
Incidence	1999	1999 minus 1994	1999 minus 1987	.. 1994	.. 1987
Total	0.51	-0.06	-0.12	*	*
Cancer	0.20	-0.02	-0.02	*	*
Diabetes	0.01	0.00	0.00	*	.
Cardio-vascular	0.11	-0.03	-0.08	*	*
Respiratory diseases	0.03	0.00	0.00	.	*
Suicide	0.02	-0.01	-0.02	*	*

Source: Statistics Denmark, statistikbanken, various tables. Own calculations.
Note: The test is a Cochran-Mantel-Haenszel test, see table 7.1. Stars indicate 5 percent-levels of significance.

Put together, the tables show that the fraction suffering from a number of specific diseases have increased in the period, but mortality rates – on the other hand – have decreased. By face value, this development of public health should – ceteris paribus – increase the number of disability beneficiaries (since beneficiaries are alive but have poor health). Three possible explanations for findings are: - if table 7.1 really accounts for development of public health, the health services may have improved to keep people alive. – The increase in public health indicators may reflect greater public awareness of health problems, perhaps due to greater intensity of health services (this idea may perhaps also explain why more people suffer from specific diseases but at the same time, more report to have good mental health, good vitality and no limitation of activities due to mental health). – The data may reflect a polarization of public health, i.e. a greater fraction of the population with good health and a greater one with poor health.

8. Conclusions

The paper aims at giving a broad view of the Danish disability benefit system, perhaps with a bias towards the relationship to other schemes of social income support.

To summarize the paper:

Rules

- ?? The coverage of the system is universal in the sense that everyone aged 18-64 is included without having to contribute to the scheme.
- ?? Eligibility is based on assessment of health and social problems.
- ?? Until 2003, the system had four levels of benefit, with the highest benefit awarded to people below 60 years with severe health problems.
- ?? From 2003, the four levels of benefit are replaced by one level. This level is slightly below the highest 2002-level, but significantly above the lower 2002-levels. The 2003-level is equal to the level of unemployment insurance benefit.

Inflow/characteristics of beneficiaries

- ?? Beneficiaries are relatively old (though relatively few above the age of 60 become beneficiaries, presumably because a scheme for early retirement is open).
- ?? Relatively many women become beneficiaries. Few with long education become beneficiaries. Evidence on trade is mixed.
- ?? The income history of new beneficiaries reveals many with public income support. However, we do not know whether this simply reflects early effects of the poor state of health leading to disability benefit or whether (say) unemployment makes health worse.

Trends

- ?? The number of awards has decreased during the 1990s and especially from 1998 to 1999. This could be related to more frequent use of the work-programme 'flex job'. A good general economic situation in Denmark is also a possible explanation.
- ?? Fewer people awarded disability benefit have reached 50 years.
- ?? Less people are awarded benefit on the basis of non-medical (social) diagnosis.
- ?? Men make up a larger fraction of those awarded benefit.

Reintegration

- ?? The reviewed studies on the effect of vocational rehabilitation programmes meant for people who might apply for disability benefit do not show clear, positive effects of such programmes.
- ?? As concerns vocational reintegration for beneficiaries of unemployment insurance or social assistance in general (who may later become disability beneficiaries), many studies find the active labour market policy to have small effects, though some evidence on motivations effects are found.

Appendix 1. List of schemes related to disability benefit

Sickness benefit
Inability to work due to sickness makes a person eligible to sickness benefit. Some individuals who are not employed and not members of an unemployment fund are not eligible. Examples are persons living on social assistance and housewives living at home.

At first, the maximum duration of sickness benefit is one year. After one year, the benefit may be prolonged for a second year if it is likely that medical treatment will increase the work ability. If the individual is still unable to work, she could be transferred to a reintegration programme or, if work capacity seems low, he or she may be eligible for disability benefit. Until transferring is carried out, the individual may obtain sickness benefit.

Rehabilitation
An individual is eligible for rehabilitation benefit if her work ability is limited and a rehabilitation process is likely to make the individual fully or partly self-supporting.

The rehabilitation programme is tailored the client. It may consist of various types of education, training or jobs on special terms.

Flex-job
The jobs are for people with permanent limitations of work ability. The limitations exclude individuals from ordinary jobs but are not sufficiently severe to entitle the individual to disability benefit. The employer is subsidized by 1/2 or 2/3 of the minimum wage.

Before award of a flex-job, the municipality tests if other types of rehabilitation are a possibility, e.g. activation or rehabilitation.

Early retirement
The early retirement scheme is an option for people to redraw from the labour market before the old-age benefit age.

People aged 60-64 years are eligible if they have been members of an unemployment fund and contributed to the scheme through part of their working life. Therefore, the scheme has some resemblance to private saving accounts. The age of retirement is important for the economic value of the pension. People who retire before the age of 62 will obtain a lower benefit (91 percent versus 100 percent of the unemployment insurance benefit) and the pension will be reduced if the person obtains income from employment-related pension schemes. Contributors who do not retire early are repaid the value of their contributions. Hence the scheme has obvious resemblance to a private savings account (but is heavily subsidized).

From 1999, the scheme was significantly revised, see appendix 2.

During part of the 1990s, the scheme was also open to the long-term unemployed in their fifties.

Unemployment insurance benefit
In order to obtain unemployment benefit, the individual has to be a member of an unemployment fund, be unemployed, be willing to take a job, and have been employed (without subsidy) 52 weeks during the previous 3 years.

Unemployment benefit can be obtained for a period of 4 years at most. After the first year, the 'activation period' begins. A plan is made for activation. This may consist of various types of education or jobs on special conditions. Participation is mandatory.

If unemployment continues after 4 years, the individual will be transferred to social assistance.

Social assistance
Social assistance is for people in economic need as a result of a 'social event', e.g. unemployment, recent divorce, housing problems, or drug abuse. In order to be eligible for social assistance, an individual cannot have any other economic means, e.g. he cannot have any fortune to live on nor can he live on a spouse's income (an important difference between social assistance and unemployment benefit). Finally, social assistance is the 'last resort' of income for people eligible for no other public support.

According to the law, recipients of social assistance begin an activation programme at some time within the first year of receiving the benefit. In regard to unemployment benefit, the activation may consist of various types of education or jobs on special terms. Activation is mandatory.[7]

There is no duration limit to obtaining social assistance.

Old-age pension
The age limit is 65 years and was lowered from 67 years in 1999. A low basic rate is given to everyone and a supplement is means-tested.

[7] According to a recent judgment, an individual who refuses to participate in activation has no right to social assistance.

Appendix 2. History of disability benefit and related schemes

The section is based on Jonasen (1990), Plovsing (1998), Mossin (2003), and especially Bengtsson (2002).

Disability benefit

1891

A poverty law was introduced. The disabled could obtain support without loss of civil rights supported poor otherwise suffered and (presumably) with less work requirement. An old-age law was also introduced. People with 'deserving needs' who reached the age of 60 could obtain benefit.

1922

The first law with the label 'disability benefit' came into force. (The law was similar to the rules that prevailed in Southern Jutland. Southern Jutland joined Denmark in 1920.) Disability benefit partly replaced support according to the poverty law. To minimize unintended use of the scheme, the level of the benefit was low and the medical judgment strong. In order to claim the pension, at least 2/3 of work ability should be lost. The law on disability benefit aimed at putting more weight on principles of law.

1965

The single level of disability benefit was replaced with three levels (the structure was still found in 2002, cf. section 2.1). To obtain the lower benefit, work ability should 'only' be reduced 50 percent. Accordingly, the lower level of benefit was not sufficient to maintain a living.

Due to the reform, a larger proportion of the population became eligible. Furthermore, the real value increased significantly.

1984

Several schemes were now gathered in 'disability benefit'. This included widow's pension and certain schemes for early old-age pension. With the reform, disability benefit was no longer awarded solely on the basis of medical judgment. The lower benefit level was increased and divided into two to form the structure described in section 2.1.

Finally, from 1984 disability could be awarded to individuals aged 18.

1992

Reform of cost sharing. Prior to 1992, the central government paid 50 percent of the social assistance, 75 percent of rehabilitation, and 100 percent of disability benefit. This gave the municipalities' an economic incentive to granting disability benefit rather than the two forms of temporary help. From 1992, the central government paid 50 percent of all types of assistance.

1998

Introduction of flex-jobs and light jobs. In accordance with widespread ideas of workfare, flex-jobs were introduced as a means to test applicants' work ability and as a tool

to reintegrate people into the ordinary labour market or as permanent jobs for the disabled. The scheme was not entirely new, as schemes for wage-subsidized jobs had already existed for some years. The central government pays the wage-subsidy for people in flex-job.

1999
Reform of cost sharing. The central government's part of the cost was now reduced from 50 percent to 33 percent whereas it continued to reimburse 50 percent of the cost for social assistance and rehabilitation.

Related schemes
1856
A law regarding the poverty fund was introduced. Help from the fund was intended to be small (and presumably only temporary) and aimed at preventing beneficiaries from becoming dependant on regular poor relief (with loss of civil rights, confinement to poorhouses, and a risk of permanent social exclusion).

1907
State subsidy to unemployment insurance funds. The poverty fund was renamed the help fund.

1922
The old-age benefit became a fixed amount rather than based on judgment. The age limit was raised to 65 years.

1933
The help fund was replaced with a law for social assistance. Membership of sickness insurance funds became mandatory.

1937
Age limit for old-age benefit was reduced to 60 years (to reduce unemployment).

1946
Old-age benefit limit became 65 years (again).

1959
Widow's pension was introduced. Early old-age pension was introduced.

1960
Law on rehabilitation. Rehabilitation could be obtained for social reasons as well as medical reasons.

1961
Reform of widow's pension. More weight was put on social reasons.

1965
Old-age benefit was reformed. The age limit was raised to 67 years and part of the benefit was not means-tested.

1967
A similar reform for early old-age pension with weight on social conditions.

1973
The level of unemployment insurance benefit was raised for people with low income and maximum duration increased. (In practice it may be argued, duration became infinite since participants in activation programmes regained entitlement to unemployment insurance benefit.)

1976
A reform of social assistance.

1979
Early retirement pension. The scheme described in section 2.3 and appendix 1 was introduced. During 1979-1998, the scheme was different from the description in appendix 1. Early retirement was open for people aged 60-66 who had been members of an unemployment fund. In opposition to the current scheme, the scheme had no similarity with a private savings account.

1992-1996
Early retirement pension was opened to the long-term unemployed aged 55-59.

1994-1996
Early retirement pension was opened to the long-term unemployed aged 50-54.

1999
Reform of early retirement scheme. The early retirement scheme was changed as described in appendix 1. The age for old-age pension was reduced from 67 to 65.

1994
Maximum duration of unemployment insurance benefit was fixed to 7 years. Beneficiaries cannot regain entitlement to a new 7-year period through activation programmes. Activation started within 4 years. Activation for recipients of social assistance starts within a year.

1996
Unemployment insurance benefit maximum duration was 5 years. Activation started within 3 years.

1998
Unemployment insurance benefit maximum duration was 4 years. Activation started within 2 years.

1999
Unemployment insurance benefit activation starts within 1 year.

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