

IZA DP No. 274

Unemployment Traps: Do Financial Dis-incentives Matter?

Peder J. Pedersen
Nina Smith

March 2001

Unemployment Traps: Do Financial Dis-incentives Matter?

Peder J. Pedersen

*CIM, CLS, Department of Economics,
University of Aarhus and IZA, Bonn*

Nina Smith

*CIM, CLS, Department of Economics,
Aarhus School of Business and IZA, Bonn*

Discussion Paper No. 274
March 2001

IZA

P.O. Box 7240
D-53072 Bonn
Germany

Tel.: +49-228-3894-0
Fax: +49-228-3894-210
Email: iza@iza.org

This Discussion Paper is issued within the framework of IZA's research area *The Welfare State and Labor Markets*. Any opinions expressed here are those of the author(s) and not those of the institute. Research disseminated by IZA may include views on policy, but the institute itself takes no institutional policy positions.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent, nonprofit limited liability company (Gesellschaft mit beschränkter Haftung) supported by the Deutsche Post AG. The center is associated with the University of Bonn and offers a stimulating research environment through its research networks, research support, and visitors and doctoral programs. IZA engages in (i) original and internationally competitive research in all fields of labor economics, (ii) development of policy concepts, and (iii) dissemination of research results and concepts to the interested public. The current research program deals with (1) mobility and flexibility of labor markets, (2) internationalization of labor markets and European integration, (3) the welfare state and labor markets, (4) labor markets in transition, (5) the future of work, (6) project evaluation and (7) general labor economics.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character.

ABSTRACT

Unemployment Traps: Do Financial Dis-incentives Matter?*

This paper analyses the importance of financial dis-incentives for workers in Denmark. Based on a panel survey which is merged to a number of administrative registers it is possible to calculate precise measures of the economic incentives for labour force participants between employment in a full time job and being on unemployment insurance benefits and considering also the fixed costs of work. The results indicate large dis-incentives effects for some groups, especially low paid women. In 1996, 6 per cent of Danish men and 13 per cent of the women had a lower disposable net income if working in a full-time job compared to being on unemployment benefits. The effect of these financial dis-incentives is analysed in simple reduced form models of on-the-job search, unemployed search behaviour, unemployment risk, and transitions out of the labour force. We find that the net compensation rate in unemployment has a significant impact on women's propensity to leave the labour force, on measures of search intensity, on the risk of being hit by unemployment and on one of our flexibility measures, i.e. the maximum acceptable commuting time to a job. The net compensation rate has no impact on the willingness to move to another place to get a job. However, here we find a significant impact from job attitude related measures. We end the paper reporting the results from including attitude variables along with economic variables. We find a number of significant effects from attitude variables. However, the main conclusion is that economic incentives dominate the present analysis of unemployment traps.

JEL Classification: I38, J32, J64

Keywords: Unemployment traps, incentives, job attitudes

Peder J. Pedersen
Department of Economics
School of Economics and Management
University of Aarhus
Building 350
8000 Aarhus C
Denmark
Tel.: +45 8942 1581
Fax: +45 8613 6334
Email: pjp@cls.dk

* The project has been partly financed by the Danish Social Research Council (FREJA). The analyses are based on a panel sample collected and financed by the Rockwool Research Foundation. Anne-Sofie Reng Rasmussen and Anders Frederiksen have worked as research assistants on this project. The authors thank Paul Bingley and Jørn Henrik Rasmussen, participants at the CLS and CIM workshop at Aarhus School of Business and participants at the EALE Milan Conference for many helpful comments. All remaining errors remain the authors' responsibility.

1. Introduction

One of the major issues in the discussion of structural unemployment problems in many OECD countries has been the problems of making work pay in low paid jobs compared to being in an income compensating program inside or outside the labour market. In many countries, a high replacement rate in the unemployment insurance or social assistance system for low-skilled workers, sometimes in combination with relatively high income taxes already from a fairly low level of income, has created serious problems of ‘unemployment and poverty traps’, see OECD (1996, 1999a,b). If the disposable income as unemployed or non-participant is higher than or close to the disposable income in a potential job, the incentives to search for jobs are reduced and the economic incentives to quit a low-paid job and become voluntarily unemployed for a shorter or longer period are high.

The dis-incentive problems for low skilled workers and the possible existence of unemployment traps may be part of the explanation of high structural unemployment levels in many OECD countries. Thus, efforts have been made during the most recent years to alleviate some of the problems related to the lack of incentives to hold or to search for a low-paid job. A potential solution to the incentive problem is simply to reduce replacement rates in the benefit system. However, since this solution has obvious effects on the income distribution increasing inequality, at least major reductions in the replacement rates have been ruled out as politically unacceptable in many countries. As an alternative, in-work benefits have been introduced in some OECD-countries¹. This may either be in form of an earned income tax credit (EITC) as for instance in the U.S.A. or through benefits which only employed persons are entitled to. In principle, in-work benefits increase the incentives to search for a job because the net income as employed goes up relative to being non-employed, but without reducing the absolute level of disposable incomes for non-employed as it is the case with reductions in the replacements ratios in the benefit system.

Discussions and analyses in this area often tend to emphasize the eventual negative effects of unemployment insurance and other income compensating programs. Atkinson (1987) has rightly warned against superficial arguments in this area. Later research has also stressed the positive aspects of having an unemployment insurance system. For instance Acemoglu and Shimer (1999)

¹In-work benefits exist in the U.S. (Earned Income Tax Credits, EITC), Canada, Ireland, UK, Italy and New Zealand, see a description in OECD (1996).

show that a moderate amount of unemployment insurance may increase economic efficiency because the unemployment insurance system induces risk averse workers to get better job matches than without an unemployment insurance system. On the other hand, Pissarides (1998) shows in a general equilibrium model that a combined change of the tax and benefit structure which increases the incentives to work may reduce unemployment. A comprehensive general survey of recent research in unemployment insurance can be found in Holmlund (1998).

In this paper, we present empirical evidence concerning the magnitude and the importance of dis-incentives for low paid workers in Denmark. Denmark has no formal in-work benefit systems, but in spite of that there has been a lot of discussion on these issues since Denmark is one of the OECD countries with the largest labour supply dis-incentives for low paid workers as demonstrated by OECD (1996)². The present study is based on a panel sample survey which is merged with administrative registers. The database used allows us to construct very precise individual budget constraints, including information on fixed costs of work, and further it is possible to combine this information with extensive information on labour supply, and on individual attitudes towards work. The individuals are observed over a period of three years and thus, the database allow us to test whether low-paid workers during this 3-years-period seem to react on economic dis-incentives with respect to search effort, labour supply, retirement, other transitions out of the labour force, and geographical mobility.

The results show that there are large dis-incentives effects for some groups in the Danish labour market. In 1996, 6 per cent of the male workers and 13 per cent of the female workers in the labour force had a lower disposable income if working in a full-time job compared to being on unemployment benefits, i.e their net compensation rate exceeded 100 per cent. Despite this, the majority of the group was actually in a job at the time of the interview in 1996. Nevertheless, the analysis shows that economic dis-incentives do seem to matter. In general, men seem to be more sensitive to economic incentives than women. Economic incentives significantly influence the probability of being unemployed during the year, and a number of measures of search intensity and labour market flexibility. Women with small or negative economic incentives in 1993 have a significantly larger probability of leaving the labour market and enter a public income support scheme or become a housewife.

²See also Pedersen and Smith (1995), Graversen and Smith (1998).

The core of the paper concentrates on economic and demographic variables, We include, however, also a number of job attitude related variables. The results from including the attitude variables into the analyses are reported in Section 7.

2. Tax and benefit schemes in Denmark

Despite in-work benefit systems do not exist, Denmark as mentioned above is one of the countries in the OECD-area with the largest dis-incentive problems for low-paid workers³. According to OECD (1996), more than half of the employed workers in Denmark had effective replacement rates in the range from 81 to 100 per cent. Only Sweden had a higher percentage of the employed in this range of replacement rates. The dis-incentives stem from both high taxes on low-incomes and a fairly high gross replacement rate in the benefit schemes for low-paid workers. Further, fixed costs of work, mainly commuting costs and child care costs, are often of a considerable size. In Table 1, the main features of the Danish income tax scheme in 1996 are illustrated.

Table 1. Marginal tax rates on earnings, including the 'gross tax'. 1996.

Annual earnings, DKK	Marginal income tax rate, per cent	Sample distribution
0 - 30,400	7.0	1.1
30,400 - 134,500	47.2	24.5
134,500 - 243,100	51.8	45.6
243,000 -	65.8	28.8
Total		100.0

Note: It is assumed that the person lives in a municipality with 'average' tax rates, and that he does not have any positive or negative capital income or other income and no allowances beside the zero-rated allowance. The marginal income tax rate is calculated as the $7\% + (1 - 7\%)(t^{\text{local}} + t^{\text{state}})$ where t^{local} is the average local tax rate in Danish municipalities and counties, and t^{state} is the progressive state tax rate.

Table 1 does not include the contributions to social insurance since these are for all practical purposes virtually non-existing in Denmark where financing is coming from general tax revenues. The personal income tax system is a piece wise linear, progressive tax system. Taxes

³ In order to alleviate these dis-incentive problems, the Danish income tax system was changed in 1998 in a small 'tax-reform', where the marginal tax rate on income in the range just exceeding the maximum unemployment benefits was reduced, thus increasing the disposable income if getting a full time job instead of being on maximum unemployment benefits. However, the effect of this reform is fairly limited with respect to dis-incentive effects for low-paid workers.

are collected both by the state and two local levels (counties and municipalities). Beside this, there is a proportional tax on all earnings called the gross tax (*'bruttoskat'*).⁴ The top marginal tax rate was 66 per cent in 1996, while the marginal tax rates for all individuals in the low wage group is about 50 per cent.

The benefit system in Denmark consists of unemployment insurance (UI) benefits and social welfare. Unemployment benefits amounts to 90 per cent of previous individual earnings up to a maximum considerably below the average annual earnings for an unskilled worker⁵. It is voluntary to be member of a UI-fund, but since UI-funds are highly subsidized by the state, there is a very high coverage of UI for low-skilled workers with high risks of being unemployed. On average, 80 per cent of the Danish labour force are members of UI funds. In order to be entitled to UI benefits, the unemployed must have been employed for 1 year during the latest 30 months. The maximum duration of UI was 5 years in 1996 (it has been shortened to 4 years in the late 1990s), but after 2 years (1 year since 1999) the unemployed will get a job offer which he or she has to accept to remain eligible in the UI system.

In 1996, the maximum UI benefits were about DKK 136,000 annually, which were not subject to the 7% gross tax rate, i.e. the marginal tax rate on UI-benefits were about 41% while the average earnings in a full time job on the minimum wage was about DKK 185,000 taxed at the margin with 52 per cent. Thus, for most individuals, the average as well as the marginal increase in disposable income from holding a full time job at the minimum wage compared to being on UI-benefits is fairly limited⁶.

The conditions for receiving UI benefits as well as social welfare, is that the person is available

⁴Different types of costs relating to holding a job are allowed to be deducted from the concept of personal income. The costs of work which are accepted to be deducted are transportation costs exceeding a lower limit, membership of unemployment insurance fund and union membership, and a few other types of costs of work. Child care expenditures are not deductible, but prices in day care facilities and in kindergartens are heavily subsidized.

⁵ Since 1996 the rules have been different for young people aged less than 25 years. After half a year of unemployment, the UI-benefits are cut to about 50 per cent of the UI benefits during the first 6 months.

⁶Beside the UI system, there is the social welfare system (*'kontanthjaelpssystem'*) which in principle implies a 100 per cent tax rate on earnings for those who are eligible to social welfare. We do not have information on individuals on social welfare in the sample used in this study, and thus, we do not include social welfare in the analysis.

for the labour market and is an active job searcher⁷. The availability rules and the administration of these rules have been strengthened considerably since the early 1990s. In an international setting, the Danish UI-benefit rules are now characterized as relatively tight, see the description of availability and eligibility rules etc. of the UI-schemes in a number of OECD countries in Grubb (2000). However, during the time period 1993-1996 studied in this paper, the rules were relatively liberal, and even though the unemployment level during that period was declining it was still high, especially for unskilled workers, so that availability conditions were rather difficult to test in practice.

3. Theoretical considerations

The theoretical underpinning of the empirical analyses of the incentive effects of unemployment benefits, income taxes, fixed costs of work etc. can either be found in labour supply theory or in search theory. Earlier Danish studies have analysed the impact from work incentives in a labour supply context, see for instance Graversen and Smith (1998) who, based on the same data as used in the present study, analyse the labour supply behaviour and the effects of progressive taxes and means-tested transfers in a ‘Hausman-labour-supply’ model. In this paper we want to focus on the potential incentives effects on search behaviour, unemployment and exit from the labour market. Thus, we are not primarily interested in the effects of incentives on weekly working hours etc. Instead we focus on the effects on search behaviour for employed as well as unemployed workers, and the incentives effects on observed unemployment experience. The supply aspect enters only in a “negative” sense, i.e. we analyse also the relationship between incentives and the propensity to leave the labour force.

The key variable analysed is the net compensation rate from holding a job relative to collecting UI benefits. Traditionally, in search theory, the compensation rate is defined as the ‘raw’ gross compensation rate in the UI system, which in the case of Denmark is 90 per cent of previous earnings up to a flat rate as described in the previous section. However, the existence of progressive income taxes and means-tested social transfers, and (fixed) costs of work, imply that the total net compensation rate will often be different from (mostly higher than) the UI-compensation rate. We expand on earlier theoretical and empirical work by including these

⁷ If the person receives social welfare but is not able to work due to health or social factors, he does not have to be available for the labour market in order to receive social welfare.

different components and thus calculate an individual ‘total net compensation rate’. We denote this total net compensation rate by δ .

δ is defined as the ratio between disposable income if being unemployed and working $h = 0$ hours, compared to the disposable income if working the standard number of full time hours, h^* . The disposable income when holding a job of h hours weekly is denoted $D(h)$, where $D(h)$ is net income after taxes, including social income transfers when working h hours weekly. If the individual does not work, the disposable income is given by $D(0)$. For simplicity, we ignore that there may be more individuals in the household who contribute to the household disposable income. In the empirical model analysed below these effects are included for the spouse if the person lives in a couple household. Thus, δ , is given by

$$\delta = D(0) / D(h^*),$$

where

$$D(0) = Y^0 + UI(0) + Tr(Y^0 + UI(0)) - T(Y^0 + UI(0))$$

and

$$D(h^*) = Y^0 + wh^* + Tr(Y^0 + wh^*) - T(Y^0 + wh^*) - FC$$

Y^0 is non-wage income, w is hourly earnings potential, $UI(h)$ are UI-benefits, $UI(h^*)=0$, $Tr(.)$ is the transfer function (social welfare, housing subsidies, and child care subsidies), and $T(.)$ is the income tax function. FC are fixed costs of work, typically costs of transportation and child care costs. UI benefits, $UI(h)$, are taxable in Denmark and means testing of public transfers are based on an income measure which includes UI benefits.

Non-wage income may include the wage and capital income of other household members (spouse). The Danish income tax scheme is based mainly on separate taxation among spouses but some categories of non-wage income are taxed jointly among spouses and the zero-rated allowance may be transferred to the spouse, see Dex et al. (1999). Thus, there is some interdependency among household members via the budget constraint besides possible cross substitution effects between spouses’ leisure time in the utility function. However, contrary to many other countries, unemployment benefits depend only on individual wage income, and not on family income. In the empirical analyses presented below, we are able to take into account household effects in the budget constraint since we have full information on all spouses if the

person concerned is living in a couple, whether legally married or not.

Based on the definition given above, a person is classified as being in an unemployment trap if the compensation rate $\delta \geq 1$, i.e. if the individual would have a higher net disposable income as full time unemployed compared to being in a full-time job. Since our measure of δ is based on fairly comprehensive information on each individual, the definition differs from the more summary measures which have usually been used by for instance OECD, see OECD (1996,1999b). The individual size of δ is expected to influence the actual or future labour market behaviour of both employed and unemployed persons. In order to analyse the effects of δ , we estimate a number of partial models of search, mobility and unemployment experience and test whether δ significantly influences observed behaviour of the individuals.

In the basic search theory, see for instance Mortensen (1977), it is found that in a model with fixed duration of UI-payments, sequential search, and a stochastic duration of an employment spell, an unemployed worker will increase his reservation wage if UI benefits are increased. Thus, for an individual who is observed to be unemployed during the survey week, we expect the net compensation rate, δ , to have a positive effect on the reservation rate and a negative effect on search effort and the willingness to move to another region or other aspects of geographical mobility because the utility from getting a job compared to being unemployed on UI-benefits is lower the higher the compensation rate⁸. Likewise, we expect the net compensation rate to have a positive effect on the transition probability to states outside the labour market, eventually with entitlement to an early retirement or leave programme income.

For an employed individual who engage in on-the-job search, the opposite effect on search and potential mobility is expected: The higher the net compensation rate, and thus, the lower utility gain from holding the actual job compared to being on UI-benefits, the more intensive we expect the person to search, the larger the probability of quitting the actual job and accept to move geographically in order to get another job or the higher the chance of becoming voluntarily unemployed, see for instance Pissarides and Wadsworth (1994).

⁸If a non-employed worker is not eligible for UI-benefits, an increase in the net compensation rate may increase search effort and reduce the reservation rate in order to become entitled to UI-benefits by holding a job for the necessary time period.

Since the individual search effort and mobility are expected to be positively related to the probability of getting a job, we expect the duration of unemployment and the probability of experiencing unemployment in a given year to be negatively related to the expected net gain. Thus, we have that the probability of being unemployed in a given year and the duration of the unemployment spell is a positive function of the net compensation rate. We expect the same effect regarding the transition to (voluntary) non-labour market income programs.

The theoretical considerations above are based on expected reactions to short term economic incentives. An obvious criticism is that short term economic incentives are not the only motive which induce people to work. If people have a long term planning horizon, they will take into account, that leaving employment voluntarily due to dis-incentives within the year may be irrational from a long term perspective since human capital tends to depreciate during non-employment periods. Further, in most labour markets there is some upward mobility in wages, i.e. low-wage is not a permanent state for most workers in most labour markets.

Besides these arguments, which are all based on the assumption of some sort of economic optimization behaviour, there are a number of non-economic incentives to work which may give social benefits instead of economic benefits: The job may give a social network, good colleagues, a structured day etc. For some individuals, these social and non-economic benefits may overrule the effects of economic incentives. Thus, the size of the effects of economic incentives may depend on the attitudes and social values of the individual. We examine this further in Section 7 where attitude variables are included along with economic incentives.

Further, a number of people may not be acting fully rationally, simply because they lack precise knowledge of the tax and benefit systems, and they consequently do not make these incentive calculations. Finally, a usual condition for receiving benefits is that the person is available for a job, and this is more or less strictly monitored by the employment office or other authorities. Therefore it is not a completely free choice to react only according to economic incentives.

4. Data

The database is a combined panel survey-register based database. The panel consists of two waves collected by Statistics Denmark in 1993 and 1996 in connection to the regular labour force

surveys, collected by all EU countries⁹. Thus, the survey data contain the variables typically included in labour force surveys plus a number of extra variables, including information on fixed costs of work, attitudes towards work, and detailed information on hours of work. Beside the survey information, the data set includes information from a number of administrative registers, tax and income registers, registers on benefits, unemployment etc. In total the sample used in this study includes 4,954 individuals aged 15-68 years. The distribution on labour market categories in the two waves is shown in Table 2. In both years, unemployed individuals has been over-sampled. Thus, we use weights in the analyses which include unemployed as well as other groups.

Table 2. Employment state at week of interview, 1993 and 1996.

State in 1996 \ State in 1993	Employed as wage earner	Self-employed or assisting wife	Unemployed	Other	Not in survey 1996	Total
Employed as wage earner	1620	34	107	198	381	2340
Self-employed or assisting wife	30	157	6	25	40	258
Unemployed	221	12	125	163	145	666
Other	152	7	20	538	229	946
Not in survey 1993	185	16	43	269	231	744
Total	2208	226	301	1193	1026	4954

The data allow us to calculate rather precise budget constraints for all employed workers in the sample. We are not able to calculate the budget constraints for self-employed individuals because we do not have the income and tax information needed to do that. For unemployed individuals we do not have information on actual hourly wages. However, the unemployed individuals who have to be available for the labour market are asked about their own expectations concerning the wage they would get in a future job¹⁰. The information on the expected wage rate is used as an

⁹ The master sample is described in more details in Smith (1998).

¹⁰As an alternative we have experimented with using a predicted wage rate based on an estimated wage equation corrected for selectivity. The predicted wage rates are compared with the individuals' own expectations on wage rates. We prefer the information on expected wage rates based on the individuals' own expectation because these wage rates seem to be fairly reliable when compared to the predicted wage rates. Further, the predicted wage

alternative to the observed actual wage rate in calculations of hypothetical budget constraints for this group. Thus, for the unemployed we calculate the disposable income if not employed and the disposable income if holding a full-time job at the expected hourly wage rate. The calculation of income taxes is based on information from the tax registers. The sample includes information on all sources of taxable income for each individual of the household. There is also information on all types of tax deductions, including deduction for expenditures on commuting to the job. Further we are able to include actual or potential public housing subsidies for renters and child care subsidies for parents. Both type of subsidies are means-tested against family income, see OECD (1999b). We do not include child subsidies which are not means-tested against family income in Denmark.

The net compensation rate should, according to the previous section, take into account the amount of fixed costs which the person incurs if he or she is working. The sample contains information on the amount and types of fixed money costs of work to transportation and child care for individuals who are employed at the week of interview¹¹. Table 3 shows the distribution of fixed monthly money costs of work in 1996 for all employed individuals.

Table 3. Distribution of fixed monthly money costs of work for employed individuals. Transportation and child care in 1996.

<i>Monthly cost</i>	<i>Transportation cost 1996</i>	<i>Child care cost 1996</i>	<i>Transportation + child care 1996</i>
DKK		----- per cent -----	
0	42	73	32
1 - 400	13	5	11
401 - 800	22	12	21
801 - 1200	10	8	13
1201 -	13	2	23
Total	100	100	100

On average in 1996, all employed workers had monthly fixed costs on transportation and child care amounting to DKK 721. But there is large variation. Workers with children have - as

rates show much less variation than own expected wage rate because the explanatory power of the wage function is fairly low.

¹¹For a more detailed description of the calculation of fixed costs of work, see Pedersen and Smith (1995).

expected - considerably higher average costs than workers without children, and about one third do not report any fixed costs of work. Compared to many other countries, the child care costs are low in Denmark because there is a very high coverage of publicly provided day care which is highly subsidized by the state and municipalities. For individuals who are unemployed at the week of interview, we do not have information on fixed costs of work. For this group we use predicted values of fixed costs of work based on an estimation of a fixed costs relation for the employed individuals¹².

The sample contains information on a number of variables concerning search behaviour for employed as well as non-employed persons. The respondents are asked whether they are actively seeking for a job, and asked about their search effort with respect to time and money costs conditional on active search. Some of this information does only exist in the 1996 survey which was much more detailed than the 1993 survey with respect to information on search behaviour. Further, the non-employed individuals in the sample are asked whether they are willing to move to another region in order to get a job and how long daily commuting time they are willing to accept in a potential future job.

In the estimations below we use the register based information on individual unemployment rates as an endogenous variable which is determined, among other things, by the economic incentives to search and work. We estimate a model of the probability of being hit by unemployment during the year. This variable is based on the unemployment insurance register (CRAM) which includes weekly information on the individual unemployment for all individuals who are insured against unemployment (about 80 per cent of the labour force). Individuals who do not have a registered unemployment rate are assumed not to be unemployed during the year. This assumption seems rather plausible, since membership of an unemployment fund in Denmark is highly subsidized by the state, and those who do not become members of an unemployment insurance fund are typically those individuals who have a negligible risk of becoming unemployed.

In the estimations we control for a number of background variables, including information on age, length of education, family background (marital state and the presence of children aged 0-2 years) and the regional unemployment rate (aggregate unemployment rate in the county

¹²The fixed costs estimation is a simple OLS regression of the observed fixed costs of work on the following explanatory variables: Number of children in different age groups, region, and educational level.

concerned). In some of the estimations we add indicator variables reflecting norms and attitudes towards work in order to test whether these variables change the size and signs of the variable reflecting economic dis-incentives. The attitude variables are based on a number of survey questions about which job characteristics are evaluated to be the most attractive. The results from including the attitude variables are described in Section 7.

In the Appendix, Table A1, mean values for the two years 1993 and 1996 are shown for the variables used in the estimations.

5. Unemployment traps in Denmark

The proportions of workers in the labour force, employed as well as unemployed, who were in an unemployment trap (defined by having a net compensation rate $\delta \geq 1$) are shown in Table 4. In 1993, 5.5 per cent of the male workers and 9.2 per cent of the female workers fulfilled this condition. In 1996, these figures had increased to 6.2 per cent and 13.0 per cent, respectively. During the same period, the number of employed workers with $\delta \geq 1$ increased from 7 to 10 per cent, while the same figures for unemployed workers were 9 and 11 per cent, respectively.

Table 4. Share of employed and unemployed workers who are in an unemployment trap ($\delta \geq 1$)¹.

	1993			1996		
	Men	Women	All	Men	Women	All
	--- per cent ---			--- per cent ---		
Employed	5.6	8.6	7.0	6.2	12.9	9.5
Unemployed	4.9	12.2	9.1	6.7	14.6	10.9
All	5.5	9.2	7.4	6.2	13.0	9.6

1) Excl. self-employed workers, assisting wives, individuals in different leave schemes, and social welfare recipients who may be registered as unemployed. Number of observations in 1993 and 1996 are 2718 and 2433, respectively.

Table 5 shows the transitions between 1993 and 1996 in and out of the unemployment trap state. In 1996, 45 per cent of the men and 40 per cent of the women who were in an unemployment trap in 1993 had escaped the trap while 19 per cent of the men and 20 per cent of the women were observed in an unemployment trap also in 1996. About 40 per cent of the individuals in an unemployment trap in 1993 did not have an observed value for δ in 1996, i.e. they had left the labour force. A large number in this group had entered into a public sector income support scheme different from UI-benefits. Table 5 also shows that women have a larger propensity to

enter into an unemployment trap than men. One obvious explanation of this evidence is that the relative frequency of women is higher for values of δ just below 1.

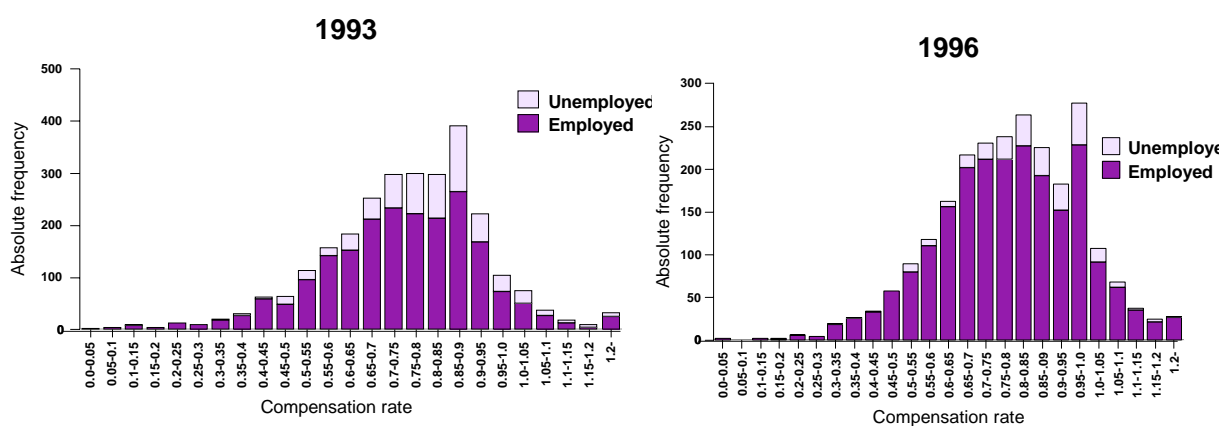
Table 5. The transition between 1993 and 1996 in and out of unemployment traps (i.e. $\delta \geq 1$): Employed and unemployed workers in 1993 and their state in 1996¹⁾.

1993:	Men, 1996				Women, 1996			
	$\delta < 1$	$\delta \geq 1$	δ not obs. or left sample	Total	$\delta < 1$	$\delta \geq 1$	δ not obs. or left sample	Total
	--- per cent ---				--- per cent ---			
$\delta < 1$	70.7	2.8	26.5	100.0	65.0	6.9	28.1	100.0
$\delta \geq 1$	44.8	17.4	37.8	100.0	39.2	19.2	41.6	100.0
All	69.3	3.6	27.1	100.0	62.6	8.1	29.3	100.0

1) See note to Table 4.

This point is analysed further in Figures 1-2 which show the distribution of the calculated net compensation rate in 1993 and 1996. Figure 1 indicates that in both years, there is a relatively large number of observations having a net compensation rate in the interval 90-100 per cent. Unemployed individuals on average tend to have higher net compensation rates.

Figure 1. Distribution of economic incentives, 1993 and 1996.

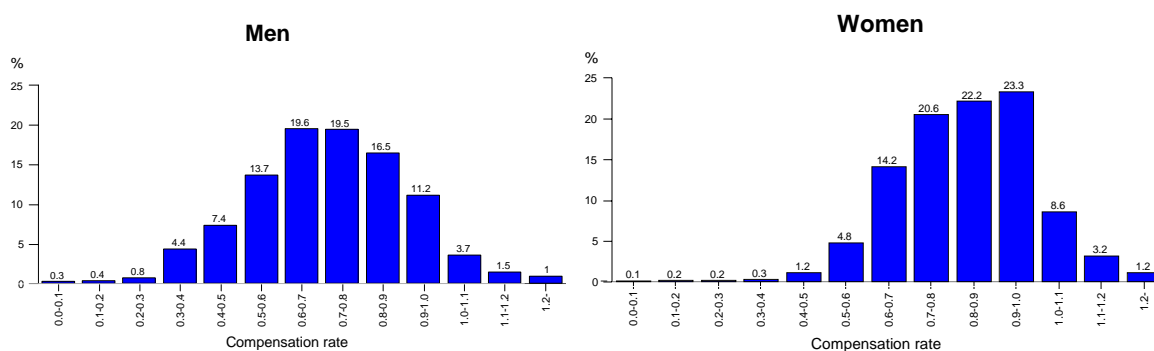


Note: For unemployed individuals the expected wage if getting a new job and predicted fixed costs of work are used in the calculation of δ

Looking separately at men and women in 1996, Figure 2 shows not very surprisingly, since there also still exist a considerable gender wage gap in Denmark (see for instance Rosholm and Smith (1995)) that men tend to have larger economic incentives to work than women. In 1996, 18.5 per

cent of the male workforce and no less than 40 per cent of the female workforce had net compensation rates exceeding 90 per cent.

Figure 2. Distribution of economic incentive in 1996. Men and Women.



Note: For unemployed individuals the expected wage if getting a new job and predicted fixed costs of work are used in the calculation of δ .

6. Analyses of dis-incentive effects

In this section we analyse whether the economic incentives as described above seem to influence the behaviour of employed and unemployed individuals in the Danish labour market. The economic incentives are represented by the calculated value of the log of the net compensation rate, $\log \delta$, which is included in the estimations of observed search and mobility behaviour, and unemployment experience. Further, we analyse whether there are systematic differences with respect to the net compensation rate between those individuals who stay in the labour force, and those who leave the labour force, and between those who stay employed during the period and those who stay unemployed.

6.1 The development from 1993 to 1996

Table 4 presented the surprising evidence that the proportion of employed as well as unemployed workers with $\delta < 1$ increased from 1993 to 1996. One explanation of this evidence may be that the cyclical upturn in Denmark which reduced the overall unemployment rate from 12.4 per cent in 1993 to 8.9 per cent in 1996, seems to have brought relatively many individuals with large incentive problems into employment. If this explanation holds, these unemployed individuals might have been demand constrained instead of suffering from dis-incentive problems. Another

complementary explanation might be that the different labour market reforms which have been put into force in Denmark since 1994, have strengthened the availability rules and eligibility rules, and combined with the cyclical upturn which also helped effective testing of the availability rules, this may have forced many formerly unemployed individuals into employment during the period 1993-1996. A third explanation may be that new leave schemes and an early retirement scheme - announced to be open for entry until 1996 - was introduced in 1994. These schemes were to a large extent created in order to reduce the unemployment rate either by getting unemployed people to enter the schemes or by getting employed individuals to enter the scheme in order to create a temporary - or permanent - job for an unemployed who should substitute the person on leave. The schemes have been most attractive for low skilled workers, see Pedersen and Pedersen (1998).

Table 6 shows the proportion caught in an unemployment trap among the employed and unemployed individuals at the survey in 1993. Only individuals who answered the 1996 survey are included in the table. Looking first at men who were observed to be unemployed in 1993 and who were employed in the 1996 survey, it is found that this group of men on average had strong incentives to get the job they actually had in 1996 as only 1.7 per cent of these men were in an unemployment trap in 1993. Further, for men there is a tendency that those who have left the labour force in 1996 had a higher proportion in an unemployment trap in 1993.

Table 6. Proportion in unemployment trap in 1993, distributed by labour market state at surveys in 1993 and 1996.

	Men: State in 1996			Women: State in 1996		
	Employed	Unem- ployed	Non- participant or leave scheme	Employed	Unem- ployed	Non- participant or leave scheme
State in 1993:	<i>Proportion in category with $\delta \geq 1$ in 1993</i>					
Employed	0.175	0.106	0.257	0.143	0.236	0.176
Unemployed	0.017	0.057	0.068	0.128	0.076	0.140
All	0.157	0.100	0.186	0.141	0.149	0.159
Number of observations (employed+unemployed)	876+113	47+53	74+44	814+109	55+66	125+107

For women the picture is somewhat different. There is no clear tendency - as for men - that the proportion with $\delta \geq 1$ is higher for the group who leave the labour force between 1993 and 1996. Thus, based on the evidence in Table 6 women do not seem to react on economic incentives to the same extent as men. This is different from the results presented in Gregg et al. (1999) who find that women in the UK seem to be more sensitive to economic incentives than men. In general, Table 6 give some support to the view that the cyclical upturn between 1993 and 1996 have pulled a relatively large group of unemployed women (but not men) with low incentives to work into employment. But the table also supports the hypothesis that those who left the labour force and most often entered into another public income support scheme as early retirement, social pension or a leave scheme had lower incentives to work than those who stayed in the labour force. However, as we shall see below, the employment state at the survey week which is the basic grouping variable in Table 6 may not tell the whole story since the survey week may not give a representative picture of the incidence of unemployment. Thus, we supplement this section with an analysis below of the individual unemployment risk during the year.

6.2 Estimation of the propensity to leave the labour market

Policy discussions in the area of “making work pay” is usually concentrating on the transitions between unemployment and employment. There is, however, also the possibility that a high net compensation rate makes it attractive to enter an income compensating programme outside the labour force. In the Danish context in the 1990s this could be a leave scheme implying a temporary exit from the labour force. Alternatively, it could be a non-reversible exit to early retirement or to a status outside the labour force without any income, i.e. being provided for by ones family. In the latter case, the high net compensation rate reflects the low wage potential and not entitlement to an income outside the labour market for this group of people.

Table 7 reports the results from multinomial logit estimations of leaving the labour market to a status of voluntary exit, either as (1) a ‘housewife’ or in a leave scheme (parental leave, sabbatical leave or educational leave) or (2) in a voluntary (not health conditioned) early retirement scheme. The table reveals some interesting gender differences in the propensity to leave the labour market. The net compensation rate is significant for women, but not for men to any of the exit routes. Having a child younger than 3 years is significant for women, reflecting primarily the option of entering a scheme for parental leave. A short education, in practice no more than elementary school education is likewise significant, but only for women. This effect might reflect women

with no or little formal vocational training leaving the labour force to enter an educational leave scheme introduced at the same time as the scheme for parental leave. The leave scheme interpretation regarding women is supported by the significant coefficient for being 30 or younger. The age dummy for being 50 or older is found significant for women entering non-health related early retirement schemes. Finally, being single increases the probability of women remaining in the labour force. For men, the regional unemployment rate is the only variable having a significant impact on entry into a non-health related early retirement scheme. Pooled estimations on women and men, not reported in Table 7, show that women have a significantly higher probability of entering one of the two routes to exit from the labour force.

6.3 Estimation of search intensity and unemployment

In order to get deeper into the question of whether it is mainly economic incentives or whether it is demand conditions, availability rules etc. which are more important explaining unemployment rates for different groups, we estimate different models of on-the-job search, search among unemployed, and individual unemployment experience over longer periods in this section. Since the data set used is a two wave panel, the optimal way to use the information is of course to rely on panel data estimators. However, a number of the questions concerning search behaviour were only included in the 1996 survey, thus restricting some of the analyses to only cross-section analyses for the year 1996.

Table 7. Multinomial logit estimation of the probability of leaving the labour market 'voluntarily' ¹⁾ between 1993 and 1996, conditional on being members of the labour force (employed or unemployed at week of interview) in 1993.

	Endogenous variable = 1 if:			
	(1) has become a housewife or entered a leave scheme in 1996, (2) entered a voluntary early retirement scheme in 1996 ¹⁾ , Endogenous variable = 0 if still in the labour force in 1996			
	Men		Women	
	(1)	(2)	(1)	(2)
Constant	-10.046* (3.737)	-25.740* (0.963)	-3.119* (0.731)	-5.167* (1.040)
Log δ in 1993	2.183 (2.669)	0.215 (0.530)	1.530* (0.777)	1.751* (0.862)
Child aged 0-2 years in 1996	- ²⁾	- ²⁾	1.296* (0.315)	- ²⁾
Education length 9 years or less	- ²⁾	0.096 (0.377)	0.757* (0.367)	0.652* (0.331)
Education length 14 years or more	1.205 (1.421)	-0.577 (0.523)	0.147 (0.341)	-0.454 (0.520)
Age 30 or less in	- ²⁾	- ²⁾	0.857* (0.315)	- ²⁾
Age 50 or more	1.238 (1.390)	- ²⁾	0.581 (0.401)	4.356* (0.732)
Unemployment rate in region in 1996	42.676 (34.472)	20.005* (10.301)	-0.527 (7.897)	-1.535 (8.640)
Single 1996	0.011 (1.773)	-0.316 (0.556)	-1.133* (0.543)	0.118 (0.369)
- Log likelihood	138.1		364.4	
Pseudo R-square	0.320		0.258	
No of obs	1144		1142	

* indicates significance at a 5% level.

1) By 'voluntary' we mean one of the early retirement schemes which are not health conditioned (*overgangsydelse* and *efterløn*). The following states are not included because we do not consider them as voluntary: Social pension, long term sickness, social welfare for individuals who are not supposed to be available for the labour market.

2) The variable is not included because the variable only assumed 1 value in the estimated relation.

Table 8, shows the key results from running a number of logit estimations of the probability that employed individuals have been actively seeking for a new job. The economic incentives are represented by the variable log δ . As discussed in Section 3, we expect a positive coefficient to this variable.

Table 8. Selected coefficients from logit estimation of the probability of on-the-job search. 1993 and 1996. Dependent variable =1 if active job search, else 0.

	Men and women 1993		Men and women 1996		Men 1996	Women 1996
Log δ	0.733*	0.252	1.224*	0.493	0.312	0.806
	(0.321)	(0.290)	(0.339)	(0.323)	(0.412)	(0.616)
Tenure, years	-	-0.112*	-	-0.060*	-0.059*	-0.058*
		(0.019)		(0.015)	(0.021)	(0.021)
Temporary job	-	-	-	1.246*	0.975*	1.417*
				(0.178)	(0.292)	(0.234)

* indicates significance at a 5% level. In the estimations controls for age, education, marital state, young children, local unemployment rate are included.

When controlling for a number of background variables, the net compensation rate has a positive effect on the probability of on-the-job search. The effect is significant in both 1993 and 1996 as indicated by columns 1 and 3. However, the significance disappears if the variables ‘tenure’ (which is negatively correlated with $\log \delta$) and ‘temporary job’ are included in the estimations. The latter variable is only observed in 1996. As it is found in other studies, we find, that the longer tenure at the actual employer, the lower the tendency to search for a new job, and that temporarily employed workers have much higher search intensity than permanently employed workers. Long tenure implicitly reveals acceptance of the job for other motives than the purely financial ones if the compensation rate is high, i.e. the person would lose little or nothing in money terms by quitting the job. Having an announced restricted time horizon in a job obviously dominates the economic incentives. Among the control variables not shown here, the age dummies have the expected impact, i.e. significantly higher probability of on the job search when 30 years or younger, and significantly lower probability when 50 years or older. The regional unemployment rate has an expected positive impact on search on the job.

The search behaviour of unemployed individuals in 1993 and 1996 is analysed in Table 9 which shows the coefficients of the incentive variable $\log \delta$ from a number of different models on search behaviour of unemployed individuals¹³. The coefficient of the economic incentive variable, $\log \delta$ is insignificant regarding the probability of active job search for unemployed individuals in both

¹³For the unemployed individuals we started out estimating the same model as for the employed individuals, except for the variables ‘tenure’ and ‘temporary job’ which of course is not defined for unemployed individuals. The estimations in Table 9 include a number of control variables. For space reasons we present only the results concerning the central economic variable δ .

years. Thus, the search activity of unemployed individuals does not seem to depend on this measure of economic incentives. In estimations not shown here, we have analysed whether this result differs between men and women, but in the relatively small sample of unemployed individuals that is available we are not able to detect gender differences among unemployed individuals with respect to the probability of search. Further, we have experimented with a variable based on a survey question about ‘own expectations’ of the respondents with respect to the economic gains from getting a job to see if such a measure of subjective expectations has any effect on the search probability. Since simple cross tabulations show that many of the respondents are not fully aware of their actual marginal tax rates and economic gain from getting a job, it might be hypothesized that we should use such ‘own-expectations’ instead of the calculated actual compensation rates. However, indicator variables representing these ‘own-expectation measures’ did not come out with any significant results.

Table 9. Coefficient of log δ in different search models. Individuals unemployed at week of interview.

<i>Logit estimation of probability of job search. Dependent variable =1 if active job search, else 0. Men and women</i>		<i>Tobit-estimation of search intensity during the latest month, conditional of search. Men and women 1996</i>			<i>Geographical mobility. Pooled sample of men and women. OLS and Logit estimations</i>	
<i>Active job search 1993</i>	<i>Active job search 1996</i>	<i>No. of contacts to employers</i>	<i>Monthly hours spend on job search.</i>	<i>Monthly expenditures on job search, DKK.</i>	<i>OLS: Max. acceptable daily transportation time, minutes</i>	<i>Logit: Willing to move to another region=1, else 0</i>
-0.205 (0.316)	0.346 (0.552)	-0.624* (0.234)	-0.592** (0.344)	-0.773 (0.624)	-17.694* (5.716)	-0450 (0.312)

* indicates significance at a 5% level, and ** indicates significance at a 10% level.

Columns 3-5 show the results of tobit-estimation of the search intensity of unemployed individuals¹⁴. Search intensity is measured by three alternative variables: Number of contacts to employers during latest month, monthly hours spent on job search, and monthly expenditures spent on job search. The variable log δ has a significantly negative effect in all three models, indicating that the larger the net compensation rate, the lower the search intensity. The respondents have also been asked about the maximum acceptable daily commuting time to a possible new job and about whether they are willing to move to another region to get a new job.

¹⁴We use a tobit-specification because we include the large number of individuals who are observed with no search activity.

The results concerning these indicator questions are found in the last two columns of Table 9. In an OLS estimation of the maximum acceptable commuting time, the compensation rate is found to have a significant impact in the expected direction. In contrast, the compensation rate is insignificant in a logit estimation on the “willingness to move” indicator, reflecting presumably the much higher financial and non-financial costs from moving to another region, compared with accepting a longer commuting time from ones present place of living.

Finally, the search and mobility behaviour, and the potential incentive effects are reflected in the probability of experiencing a positive unemployment rate during the year. Of course this probability is also affected by a number of other factors including individual characteristics, availability rules in the UI-system, tightness of the labour market, etc. A number of these factors are controlled for by including regional unemployment rate, marital status, the presence of young children, age and education besides the log δ variable. Table 10 shows the coefficients and marginal effects from estimation of the probability of experiencing a positive unemployment rate during the year. Contrary to the analyses based on for instance Table 6 where the labour market state at the survey week is used to classify the person, the individual unemployment rate, the duration of unemployment spells and the probability of experiencing a positive unemployment rate during the year may give a more representative view of the experience of unemployment.

The coefficient estimates and the calculated marginal effects give a clear indication that, after controlling for the background factors mentioned above, there is a significant effect from the net compensation rate on the probability of experiencing unemployment during the year. The significant effect exists for both men and women and for both of the years 1993 and 1996. The size of the coefficients may be evaluated by looking at the marginal effects which gives the marginal probability effect of increasing the independent variable by one unit. If the UI-benefits increase by 10 per cent, this would, *cet. par.*, increase the probability of experiencing unemployment during the year by 3 per cent for men and 6 - 7 per cent for women in 1996. For 1993, the effects are estimated to be slightly lower. Thus, the incentive effects from these estimations seem in accordance with the results presented earlier in the paper to be larger for women than for men.

Table 10. Coefficient and marginal effects of log δ from estimation of the probability of being hit by unemployment during the year. Individuals who were employed or unemployed during the survey week.

	Logit estimation of probability of being hit by unemployment during 1993		Logit estimation of probability of being hit by unemployment during 1996	
	Men	Women	Men	Women
Coefficient of log δ	1.349* (0.253)	2.156* (0.349)	2.088* (0.351)	3.350* (0.436)
P=Percentage who were hit by unemployment during the year	0.43	0.47	0.21	0.30
Marginal effect on probability of δ ¹⁾	0.26	0.48	0.28	0.65

* indicates significance at a 5% level.

1) Calculated at the sample mean for the group as $coefficient * P * (1 - P) * \delta$, where *coefficient* is the estimated coefficient shown in line 1, *P* is the percentage hit by unemployment during the year, shown in line 2, and δ is the average value of the net compensation rate for the group concerned.

7. Attitudes towards work versus economic incentives

The analyses above have concentrated on the impact from economic variables and a number of demographic factors. The questionnaire in the survey part of the data base contains a battery of questions where the purpose is to get a measure of the individual attitudes or preferences towards work. The questions were formulated with the intention of making it possible to classify workers into a few broad groups, assumed to react differently to economic incentives in a more narrow sense. The respondents are classified into three groups according to their answers to the relevant questions, i.e.

- a group where short run economic incentives are most important (A “wage earner” life style)
- a group where long run economic incentives are most important (A “career oriented” life style)
- a group where non-economic incentives are most important (A “job security” oriented lifestyle)

The questions used for classification and the specific rules being followed are described in Pedersen and Smith (1998). The distribution of attitudes in the present sample is presented in Table 11 separately for women and men. (In each attitude group, the difference by gender is significant).

Table 11. Attitudes towards the job according to a grouping of the sample relative to importance of economic incentives. Percentages.

	Long run economic incentives most important	Short run economic incentives most important	Non-economic incentives most important	Classification not possible	Total
Women	24,5	18,7	53,6	3,2	100 (1813)
Men	28,0	31,8	37,8	2,4	100 (1695)
Total	26,2	25,0	46,0	2,8	100 (3.518)

Source: Pedersen & Smith (1998, p. 70)

We experiment with the attitude variables in two rounds of estimation. In the first of these, we introduce the attitude variables along with $\log \delta$ and control variables. Short run economic incentives is the excluded category against which we measure the impact from long run economic incentives and non-economic incentives respectively. In the second round, $\log \delta$ is excluded and we estimate the impact from the two included attitude variables along with controls.

The prior expectations are to find long run economic incentives to have a positive impact on measures of search intensity and labour market flexibility. Regarding the probability of being hit by unemployment, we expect a negative impact - i.e. a lower risk - from long run economic incentives being the most important aspect of having a job. The prior expectation regarding an impact from an attitude of considering non-economic incentives as most important is a negative impact on search intensity while we have no strong priors regarding the eventual impact on the individual risk of unemployment.

The significant coefficients to attitude variables found in the two rounds of estimations are shown in Table 12. No significant effects were found from attitude variables on the propensity to exit the labour market temporarily or permanently through one of the routes analysed in Table 7, on the propensity for search on the job, on the probability of active job search, on the number of contacts to employers, or on the maximum acceptable commuting time. Finally, no significant effects were found on the risk of unemployment for men in 1996.

In the first column of Table 12, we find a significant positive impact on the number of hours spent on search from long run economic incentives in accordance with prior beliefs. $\log \delta$ has a

negative coefficient. However, in contrast to Table 9 it is insignificant when the attitude variables are included. Monthly expenditures on search is the topic in the second column of Table 12. Here we find a significant negative impact from non-economic incentives, with short run economic incentives as the excluded group. Like in Table 9, the coefficient to $\log \delta$ is insignificant. Analysing the willingness to move to another place to get a job, both long run economic incentives and non-economic incentives are significant positive, which of course might reflect different motives for those two groups, for the first to move on in a career and for the other group motivated by fear for being stuck in an insecure position as unemployed. Regarding the impact on the risk of unemployment, we find an interesting difference between men and women. Long run economic incentives means a lower risk of unemployment for men in 1993 while non-economic incentives implies a higher unemployment risk for women in 1996.

Table 12. Significant effects from attitude variables.

	Number of hours spent on search	Monthly expenditures on search	Willingness to move to a job	Probability of being hit by unemployment Men 1993	Probability of being hit by unemployment Women 1993	Probability of being hit by unemployment Women 1996
Log δ	-0.175 (0.319)	-0.294 (0.576)	-0.372 (0.316)	1.363* (0.254)	non significant	3.297* (0.441)
Long run economic incentives	0.655* (0.314)	-0.079 (0.510)	0.753* (0.297)	-0.500* (0.196)	non significant	0.283 (0.270)
Non-economic incentives	-0.088 (0.280)	-0.960* (0.453)	0.641* (0.272)	-0.280 (0.176)	non significant	0.469** (0.254)
Long run economic incentives	0.675* (0.305)	-0.047 (0.501)	0.731* (0.292)	-0.535* (0.186)	-0.364** (0.202)	0.166 (0.258)
Non-economic incentives	-0.099 (0.279)	-0.999* (0.446)	0.636* (0.268)	-0.251 (0.167)	0.147 (0.180)	0.531* (0.244)

Summing up, the results regarding the attitude variables contains a number of significant effects, but the main conclusion is that the more purely economic incentives tend to dominate regarding the risk of contributing to create unemployment traps, with attitude measures playing a minor - although non-trivial - role. Long run economic incentives has the expected impact on search intensity and labour market flexibility, but is not significant in relation to all indicators in the

present study. Regarding unemployment, male unemployment risk tends to be lower when long run economic incentives are more important while female unemployment risk is higher for those who tend to put the most value on non-economic incentives.

8. Conclusion

The results found in this paper indicates that large groups in the Danish labour market experience considerable problems with respect to the economic incentives to work instead of being on unemployment benefits. 5.8 per cent of the men and 12.2 per cent of the women had net compensation rates equal to or exceeding 1, indicating that the net disposable income on UI-benefits is higher than the net disposable income holding a full-time job at the actual wage rate (for employed individuals) or the expected wage rate (for unemployed individuals). Looking at the aggregate figures, the incentive problems seem to have increased for employed women while the proportion of unemployed individuals with incentive problems have decreased between 1993 and 1996. The analyses give some support to the hypothesis that the cyclical upturn and/or the labour market reforms which have strengthened availability rules during the period may have pushed or pulled individuals with low incentives into employment. However, this effect only seem to hold for women.

The estimations of search and mobility models show that economic incentives may have positive effects on on-the-job search. But the effect is highly correlated with a negative effect from tenure and the positive incentive effect may reflect that individuals with high tenure tend to have lower compensation rates. We do not find any significant incentive effect on the probability of job search of unemployed individuals. But conditional on active job search, those individuals with the highest incentives to find a job also search most intensively when measured by the time and money spend on job search and the number of contacts to potential employers. The net compensation rate is used also in attempts to explain two flexibility measures, i.e. maximum acceptable commuting time and the willingness to move to another place to get a job. The impact is significant on the maximum acceptable commuting time but insignificant regarding the other flexibility indicators. The net compensation rate has a significantly positive coefficient in the estimation of the probability of being unemployed and receiving UI-benefits during both of the years 1993 and 1996 and for both men and women. The marginal effects of the net compensation rate indicates that with respect to the risk or probability of being unemployed, the incentive effects of the net compensation rate seems to be larger for women than for men. Finally, we find

a significant impact for women from the compensation rate on the propensity to leave the labour force using a voluntary exit route.

The results presented in this paper thus indicate that economic incentives do affect behaviour despite the fact that a fairly large proportion of employed persons in Denmark work even though they experience negative economic incentives to do so. We finally present some preliminary results from including job attitude measures both by themselves and along with economic variables. A number of significant effects are found. The main conclusion is, however, that the purely economic variables dominate regarding influence on the risk of being in an unemployment trap, i.e. being better off financially as unemployed compared to have a job.

9. References

- Acemoglu, D. and R. Shimer (1999), Efficient Unemployment Insurance, *Journal of Political Economy*: 893-928.
- Atkinson, A. (1987), Income Maintenance and Social Insurance, in Auerbach, A. and M. Feldstein (eds.), *Handbook of Public Economics*, North Holland.
- Dex, S., T. Callan, N. Smith and J. D. Vlasblom (1999), Taxation of Spouses: A Cross Country Study of the Effects on Married Women's Labour Supply, CLS WP 99-02, Center for Labour market and Social Research, The University of Aarhus and The Aarhus School of Business and Research Papers in Management Studies, WP 10/99, University of Cambridge.
- Dilnot, A. and A. Duncan (1992), Lone Mothers, Family Credit and paid Work, *Fiscal Studies*, vol. 13, no. 1: 1-21.
- Eissa, N. and H. W. Hoynes (1998), The EITC and the Labour Supply of married Couples, NBER Working Paper 6856.
- Graversen, E. and N. Smith (1998), Labour Supply, Overtime Work and Taxation in Denmark, CLS Working Paper 98-06, University of Aarhus and Aarhus School of Business.
- Gregg, P., P. Johnson and H Reed (1999), *Entering Work and the British Tax and Benefit System*, IFS, London.
- Grubb, D. (2000), The Role of Eligibility Criteria for Unemployment Benefits, *OECD Economic Studies*, No. 31: 147-184.
- Holmlund, B (1998), Unemployment Insurance in Theory and Practice. *Scandinavian Journal of Economics*: 113-141.
- Hotz, V. J. & J. K. Scholz (2000), Not Perfect, but Still Pretty Good: The EITC and Other Policies to Support the U.S. Low-Wage Labor Market, *OECD Economic Studies*, No. 31: 25-42.
- Mortensen, D.M. (1977), Unemployment and Job Search Decisions. *Industrial and Labor Relations Review*: 505-517.
- OECD (1996), *Employment Outlook*, Paris.
- OECD (1999a), *The OECD Job Strategy: Assessing Performance and Policy*, Working Party no. 1 on Macroeconomic and Structural Policy Analysis, Paris.

OECD (1999b), Benefit systems and work incentives, Paris.

Pedersen, P.J. and S. Pedersen (1998), Labour Market Policy, Unemployment and Cyclical Increase in Employment, Ch. 9 in N. Smith (ed.) Work, Incentives and Unemployment (in Danish). Aarhus University Press.

Pedersen, P.J. and N. Smith (1995), Taxed and Non-Taxed Labour Supply: Wages, Taxes and Costs of Work, in G. V. Mogensen (ed.), Work Incentives in the Danish Welfare State, Aarhus University Press.

Pedersen, P.J. and N. Smith (1998), Attitudes towards Work, Ch. 3 in N. Smith (ed.) Work, Incentives and Unemployment (in Danish). Aarhus University Press.

Pissarides, C. A. and J. Wadsworth (1994), On-the-job-search. Some empirical Evidence from Britain, European Economic Review, vol. 38, pp. 385-401.

Pissarides, C. A. (1998), The impact of Employment Tax Cuts on Unemployment and Wages; The Role of Unemployment Benefits and Tax Structure, European Economic Review, vol 42, pp. 155-183.

Rosholm, M. and N. Smith (1995), The Danish Gender Wage Gap in the 1980s: A Panel Data Study. Oxford Economic Papers 48, pp. 254-79.

Scholz, J. K. (1996), In-work Benefits in the United States: the earned Income Tax Credit, Economic Journal, vol. 106: 156 - 169.

Smith, N. (1998), Tax Reforms and Labour Supply, Ch. 8 in N. Smith (ed.) Work, Incentives and Unemployment (in Danish). Aarhus University Press.

Appendix

Table A1. Sample means

	1993			1996		
	<i>mean</i>	<i>std. dev.</i>	<i>no of obs.</i>	<i>mean</i>	<i>std. dev.</i>	<i>no of obs.</i>
Log δ	-0.319	0.323	2719	-0.271	0.302	2433
Indicator of positive individual unemployment rate in the year	0.360	0.480	4210	0.212	0.409	3928
Unemployment rate in region	0.123	0.022	4210	0.088	0.018	3928
Woman	0.528	0.499	4210	0.528	0.499	3928
Single	0.305	0.460	4210	0.302	0.459	3928
Child aged 0-2 years	0.113	0.316	4210	0.111	0.314	3928
Education length 9 years or less	0.258	0.437	4210	0.236	0.425	3928
Education length 14 years or more	0.189	0.391	4210	0.210	0.407	3928
Age 30 or less	0.343	0.475	4210	0.287	0.453	3928
Age 50 or more	0.233	0.423	4210	0.284	0.451	3928
Max. acceptable daily transportation time, min.	60.128	42.441	701	57.699	41.023	339
Willingness to be geographically mobile	0.254	0.436	717	0.199	0.400	351
No. of contacts to potential employers during last month	-	-	-	1.254	2.429	327
No. of hours spent monthly on job search	-	-	-	3.910	8.382	290
Monthly expenditures on job search, DKK	-	-	-	59.972	229.469	290
Indicator for active job search	0.150	0.358	4209	0.129	0.335	3088
Indicator for temporary job	-	-	-	0.132	0.339	2208
Tenure, years	7.958	8.770	2714	7.989	8.555	2207
Attitude: Short run economic incentives most important	0.123	0.327	3559	0.104	0.305	3455
Attitude: Long run economic incentives most important	0.277	0.448	3559	0.345	0.476	3455
Attitude: Non-economic incentives most important	0.573	0.495	3559	0.520	0.500	3455

IZA Discussion Papers

No	Author(s)	Titel	Area	Date
191	G. C. Giannelli C. Monfardini	Joint Decisions on Household Membership and Human Capital Accumulation of Youths: The role of expected earnings and local markets	5	8/00
192	G. Brunello	Absolute Risk Aversion and the Returns to Education	5	8/00
193	A. Kunze	The Determination of Wages and the Gender Wage Gap: A Survey	5	8/00
194	A. Newell F. Pastore	Regional Unemployment and Industrial Restructuring in Poland	4	8/00
195	F. Büchel A. Mertens	Overeducation, Undereducation, and the Theory of Career Mobility	5	9/00
196	J. S. Earle K. Z. Sabirianova	Equilibrium Wage Arrears: A Theoretical and Empirical Analysis of Institutional Lock-In	4	9/00
197	G. A. Pfann	Options to Quit	1	9/00
198	M. Kreyenfeld C. K. Spiess G. G. Wagner	A Forgotten Issue: Distributional Effects of Day Care Subsidies in Germany	3	9/00
199	H. Entorf	Rational Migration Policy Should Tolerate Non-Zero Illegal Migration Flows: Lessons from Modelling the Market for Illegal Migration	1	9/00
200	T. Bauer G. S. Epstein I. N. Gang	What are Migration Networks?	1	9/00
201	T. J. Dohmen G. A. Pfann	Worker Separations in a Nonstationary Corporate Environment	1	9/00
202	P. Francois J. C. van Ours	Gender Wage Differentials in a Competitive Labor Market: The Household Interaction Effect	5	9/00
203	J. M. Abowd F. Kramarz D. N. Margolis T. Philippon	The Tail of Two Countries: Minimum Wages and Employment in France and the United States	5	9/00
204	G. S. Epstein	Labor Market Interactions Between Legal and Illegal Immigrants	1	10/00
205	A. L. Booth M. Francesconi J. Frank	Temporary Jobs: Stepping Stones or Dead Ends?	1	10/00

206	C. M. Schmidt R. Baltussen R. Sauerborn	The Evaluation of Community-Based Interventions: Group-Randomization, Limits and Alternatives	6	10/00
207	C. M. Schmidt	Arbeitsmarktpolitische Maßnahmen und ihre Evaluierung: eine Bestandsaufnahme	6	10/00
208	J. Hartog R. Winkelmann	Dutch Migrants in New Zealand: Did they Fare Well?	1	10/00
209	M. Barbie M. Hagedorn A. Kaul	Dynamic Efficiency and Pareto Optimality in a Stochastic OLG Model with Production and Social Security	3	10/00
210	T. J. Dohmen	Housing, Mobility and Unemployment	1	11/00
211	A. van Soest M. Das X. Gong	A Structural Labour Supply Model with Nonparametric Preferences	5	11/00
212	X. Gong A. van Soest P. Zhang	Sexual Bias and Household Consumption: A Semiparametric Analysis of Engel Curves in Rural China	5	11/00
213	X. Gong A. van Soest E. Villagomez	Mobility in the Urban Labor Market: A Panel Data Analysis for Mexico	1	11/00
214	X. Gong A. van Soest	Family Structure and Female Labour Supply in Mexico City	5	11/00
215	J. Ermisch M. Francesconi	The Effect of Parents' Employment on Children's Educational Attainment	5	11/00
216	F. Büchel	The Effects of Overeducation on Productivity in Germany — The Firms' Viewpoint	5	11/00
217	J. Hansen R. Wahlberg	Occupational Gender Composition and Wages in Sweden	5	11/00
218	C. Dustmann A. van Soest	Parametric and Semiparametric Estimation in Models with Misclassified Categorical Dependent Variables	1	11/00
219	F. Kramarz T. Philippon	The Impact of Differential Payroll Tax Subsidies on Minimum Wage Employment	5	11/00
220	W. A. Cornelius E. A. Marcelli	The Changing Profile of Mexican Migrants to the United States: New Evidence from California and Mexico	1	12/00

221	C. Grund	Wages as Risk Compensation in Germany	5	12/00
222	W.P.M. Vijverberg	Betit: A Family That Nests Probit and Logit	7	12/00
223	M. Rosholm M. Svarer	Wages, Training, and Job Turnover in a Search-Matching Model	1	12/00
224	J. Schwarze	Using Panel Data on Income Satisfaction to Estimate the Equivalence Scale Elasticity	3	12/00
225	L. Modesto J. P. Thomas	An Analysis of Labour Adjustment Costs in Unionized Economies	1	12/00
226	P. A. Puhani	On the Identification of Relative Wage Rigidity Dynamics: A Proposal for a Methodology on Cross-Section Data and Empirical Evidence for Poland in Transition	4/5	12/00
227	L. Locher	Immigration from the Eastern Block and the former Soviet Union to Israel: Who is coming when?	1	12/00
228	G. Brunello S. Comi C. Lucifora	The College Wage Gap in 10 European Countries: Evidence from Two Cohorts	5	12/00
229	R. Coimbra T. Lloyd-Braga L. Modesto	Unions, Increasing Returns and Endogenous Fluctuations	1	12/00
230	L. Modesto	Should I Stay or Should I Go? Educational Choices and Earnings: An Empirical Study for Portugal	5	12/00
231	G. Saint-Paul	The Economics of Human Cloning	5	12/00
232	E. Bardasi M. Francesconi	The Effect of Non-Standard Employment on Mental Health in Britain	5	12/00
233	C. Dustmann C. M. Schmidt	The Wage Performance of Immigrant Women: Full-Time Jobs, Part-Time Jobs, and the Role of Selection	1	12/00
234	R. Rotte M. Steininger	Sozioökonomische Determinanten extremistischer Wahlerfolge in Deutschland: Das Beispiel der Europawahlen 1994 und 1999	3	12/00
235	W. Schnedler	Who gets the Reward? An Empirical Exploration of Bonus Pay and Task Characteristics	5	12/00

236	R. Hujer M. Caliendo	Evaluation of Active Labour Market Policy: Methodological Concepts and Empirical Estimates	6	12/00
237	S. Klasen I. Woolard	Surviving Unemployment without State Support: Unemployment and Household Formation in South Africa	3	12/00
238	R. Euwals A. Börsch-Supan A. Eymann	The Saving Behaviour of Two Person House- holds: Evidence from Dutch Panel Data	5	12/00
239	F. Andersson K. A. Konrad	Human Capital Investment and Globalization in Extortionary States	5	01/01
240	W. Koeniger	Labor and Financial Market Interactions: The Case of Labor Income Risk and Car Insurance in the UK 1969-95	5	01/01
241	W. Koeniger	Trade, Labor Market Rigidities, and Government- Financed Technological Change	2	01/01
242	G. Faggio J. Konings	Job Creation, Job Destruction and Employment Growth in Transition Countries in the 90's	4	01/01
243	E. Brainerd	Economic Reform and Mortality in the Former Soviet Union: A Study of the Suicide Epidemic in the 1990s	4	01/01
244	S. M. Fuess, Jr. M. Millea	Pay and Productivity in a Corporatist Economy: Evidence from Austria	5	01/01
245	F. Andersson K. A. Konrad	Globalization and Human Capital Formation	5	01/01
246	E. Plug W. Vijverberg	Schooling, Family Background, and Adoption: Does Family Income Matter?	5	01/01
247	E. Plug W. Vijverberg	Schooling, Family Background, and Adoption: Is it Nature or is it Nurture?	5	01/01
248	P. M. Picard E. Toulemonde	The Impact of Labor Markets on Emergence and Persistence of Regional Asymmetries	2	01/01
249	B. M. S. van Praag P. Cardoso	"Should I Pay for You or for Myself?" The Optimal Level and Composition of Retirement Benefit Systems	3	01/01
250	T. J. Hatton J. G. Williamson	Demographic and Economic Pressure on Emigration out of Africa	1	01/01

251	R. Yemtsov	Labor Markets, Inequality and Poverty in Georgia	4	01/01
252	R. Yemtsov	Inequality and Income Distribution in Georgia	4	01/01
253	R. Yemtsov	Living Standards and Economic Vulnerability in Turkey between 1987 and 1994	4	01/01
254	H. Gersbach A. Schniewind	Learning of General Equilibrium Effects and the Unemployment Trap	3	02/01
255	H. Gersbach A. Schniewind	Product Market Reforms and Unemployment in Europe	3	02/01
256	T. Boeri H. Brücker	Eastern Enlargement and EU-Labour Markets: Perceptions, Challenges and Opportunities	2	02/01
257	T. Boeri	Transition with Labour Supply	4	02/01
258	M. Rosholm K. Scott L. Husted	The Times They Are A-Changin': Organizational Change and Immigrant Employment Opportunities in Scandinavia	1	02/01
259	A. Ferrer-i-Carbonell B. M.S. van Praag	Poverty in the Russian Federation	4	02/01
260	P. Cahuc F. Postel-Vinay	Temporary Jobs, Employment Protection and Labor Market Performance	1/3	02/01
261	M. Lindahl	Home versus School Learning: A New Approach to Estimating the Effect of Class Size on Achievement	5	02/01
262	M. Lindahl	Summer Learning and the Effect of Schooling: Evidence from Sweden	5	02/01
263	N. Datta Gupta N. Smith	Children and Career Interruptions: The Family Gap in Denmark	5	02/01
264	C. Dustmann	Return Migration, Wage Differentials, and the Optimal Migration Duration	1	02/01
265	M. Rosholm M. Svarer	Structurally Dependent Competing Risks	1	02/01
266	C. Dustmann O. Kirchkamp	The Optimal Migration Duration and Activity Choice after Re-migration	1	02/01

267	A. Newell	The Distribution of Wages in Transition Countries	4	03/01
268	A. Newell B. Reilly	The Gender Pay Gap in the Transition from Communism: Some Empirical Evidence	4	03/01
269	H. Buddelmeyer	Re-employment Dynamics of Disabled Workers	3	03/01
270	B. Augurzky C. M. Schmidt	The Evaluation of Community-Based Interventions: A Monte Carlo Study	6	03/01
271	B. Augurzky C. M. Schmidt	The Propensity Score: A Means to An End	6	03/01
272	C. Belzil J. Hansen	Heterogeneous Returns to Human Capital and Dynamic Self-Selection	5	03/01
273	G. Saint-Paul	Distribution and Growth in an Economy with Limited Needs	5	03/01
274	P. J. Pedersen N. Smith	Unemployment Traps: Do Financial Disincentives Matter?	3	03/01