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The unemployed's financial resources and
the probability of re-employment

Elena G.F. Stancanelli

Research Memorandum 1994-47

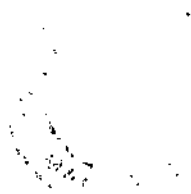
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The unemployed's financial resources and the probability of re-employment¹

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¹This article takes off from joint work still in progress together with Stephen Jones and John Mickleright

1. Introduction

The impact of different levels of savings and debt on the individual re-employment probability is a neglected area of research. Most developed economies provide some social assistance in terms of financial support to the unemployed, presumably on the assumption that unemployed persons may experience financial hardship and that they may face borrowing constraints. In spite of this, there is very limited evidence on the level of financial resources of the unemployed and on whether the levels of financial resources influence the duration of the unemployment spell.

In the simplest model of job search, the assumption of risk neutrality leads to the specification of the objective function of the unemployed in terms of income maximization rather than in terms of the maximization of the utility derived from income. Under this set up, only the difference in expected future income streams is expected to affect the duration of unemployment and the unemployed's level of financial resources plays no role. However, if the assumption of risk neutrality is relaxed, the level of financial resources might exercise an influence on the probability of leaving unemployment. It has been argued that higher degrees of risk aversion result in a lower reservation wage and a shorter unemployment spell (Kohn and Shavell (1974) and Pissarides (1974)). One would expect that higher levels of savings (given a certain degree of risk aversion) raise the reservation wage. Savings can be used to support living standards during unemployment and higher savings allow the unemployed to be more "choosy" about accepting job offers.

I study the impact of the unemployed's financial resources on the individual re-employment probability using the the LSUS data. These data contain rich information on the unemployed's levels of savings and debt. I also look at the impact on the re-employment probability of redundancy payments and other once-off payments associated with the commencement of the unemployment spell. These payment may be seen as an (unexpected) increase in the level of savings.

A drawback of the analysis is that the unemployed may misreport the levels of their savings and debt. In particular, the level of savings might be affected by misreporting because the unemployed might fear that they may be used by the interviewers to check their entitlement to the means-tested social assistance benefit, SB. There is, however, no evidence in this sense.

The structure of the paper is the following. In Section , I review the existing theory (and evidence) and discuss the expected impact of financial resources on the re-employment probability. Next, in Section the data are described. I present some descriptive analysis of the levels of savings and debt reported by the unemployed at different points in time. The results of estimation are discussed in Section . Alternative specifications of the savings and debt variables are tried out. The last Section concludes.

2. The theoretical framework

The literature on the relationship between the financial resources of the unemployed and the probability of leaving unemployment is very limited. In the simplest job search model, the assumption of risk neutrality of the job seeker prevents one from allowing non-labour income and financial wealth to affect the individual re-employment probability. If the assumption of risk neutrality is relaxed, one would expect that higher levels of financial wealth result in higher reservation wages and longer unemployment durations, for a given degree of risk aversion.

Kohn and Shavell (1974) and Pissarides (1974) argued (within the framework of job search theory) that the more the unemployed are risk averse the lower is their reservation wage. This implies a negative relationship between higher degrees of risk aversion and the duration of unemployment. Feinberg (1976) tested empirically this hypothesis by means of multiple regression analysis, using the US Panel Study of Income Dynamics. The author proxied risk aversion using replies to questions on conditions of car, having car insurance, use of seat belts, cigarette smoking, savings available. He concluded that risk aversion has a significantly negative impact on the expected duration of unemployment. The work of Feinberg is about the only empirical work on savings and unemployment duration of which I am aware. Other studies are for example MacKay and Reid (1972), who allowed for the impact of redundancy payments on the probability of leaving unemployment, although this was not their focus of interest. Their work relates to the UK.

The issue of savings and unemployment duration was instead explicitly tackled by Ioannides (1981), although from a different point of view than that of the present study. The author modelled the relation between savings and unemployment duration in a job search framework and focusing on

the dissavings (savings) induced by unemployment (employment). Ioannides (1981) concluded that, under the assumption of a perfect capital market, the steady state rates of savings during periods of employment and of dissavings during periods of unemployment are independent of wealth and constant. In this model savings are an endogeneous variable and the capital market is assumed to be perfect.

More interesting for the purpose of the applied analysis carried out in this paper is the work of Danforth (1979), who relates the unemployed's decision to accept a given job offer to their financial endowments. Danforth (1979) develops a job search model in which the unemployed are assumed to maximize the utility they derive from consumption rather than from income. Within this framework, assuming additively separable utility function and decreasing absolute risk aversion, the author proves the following three propositions:

- higher levels of wealth result in lower acceptance probabilities, i. e. "*the rich are more selective*" (Danforth, 1979, p. 111);
- an increase in the level of wealth raises the expected duration of unemployment; i. e. "*the rich search longer*" (Danforth, 1979, p. 111);
- expected returns from search increase with increased search time, i. e. "*the rich get richer*" (Danforth, 1979, p. 111).

Danforth (1979) does not provide any empirical test of these propositions.

To sum up, according to the theoretical predictions the impact of financial wealth on the re-employment probability is negative, for a given degree of risk aversion. However, higher degrees of risk aversion result in a lower reservation wage and a shorter unemployment duration (Kohn and Shavell, 1974 and Pissarides, 1974).

I estimate here the impact of savings and debt on the re-employment probability. The level of savings represents a measure of the unemployed's financial wealth. However, it may also proxy risk aversion since more risk averse individuals are likely to save more. I allow for the impact of "once-off" payments such as redundancy payments on the individual-employment probability. These payments represent an (unexpected) increase in the unemployed's level of wealth. Following the second of Danforth's propositions,

increases in the unemployed's level of wealth affect negatively the individual re-employment probability and result in longer expected unemployment durations. Instead, higher levels of debt may raise the unemployed's search intensity and lead to shorter unemployment durations (all things equal). However, debt may also proxy access to credit. The unemployed that have access to credit can afford to be more choosy about accepting job offers and may therefore have higher reservation wages (and longer expected unemployment durations).

3. A description of the data

Some descriptive analysis of the savings and debt of the unemployed

The LSUS survey is very rich in information on the financial situation of the unemployed. The principal objective of this survey was, as stated by the survey planners:

“to flesh out discussions of the financial situation of the unemployed people by looking at the implications of levels of income, savings and debts for the material living standards of the families concerned. A particular focus of interest was the extent to which living standards change during a spell of unemployment” (Heady and Smith, 1989, p. 1).

The unemployed and their spouses were asked many questions on the types and amounts of savings accumulated or debt run up. The questions covered the situation one month before the commencement of the unemployment spell and after the commencement of the unemployment spell. I have constructed total savings and debt variables using the information contained in the survey as follows.

The *savings* of the unemployed at different points in time have been defined as the total amount of money held under any of the following forms:

- *a bank current account,*
- *a bank deposit account or bank savings account,*
- *a Post Office Giro account,*

- *a National Savings Bank account at the Post Office,*
- *a Trustee Savings Bank account,*
- *a building society account,*
- *stock shares or other securities,*
- *Premium bonds,*
- *a Christmas Club,*
- *any other form of savings.*

I have computed a separate variable for the amounts of any "once-off payments" such as redundancy payments or "pay in lieu of notice" received just before the commencement of the unemployment spell.

The total level of *debt* of the unemployed at different points in time was computed summing up debt run up under the following forms:

- *informal debt, money owed to friends or relatives,*
- *institutional debt, money owed to*
 - *a money lender, pawnbroker,*
 - *a bank, under a personal loan agreement and/or as an overdraft,*
 - *a finance house,*
 - *a credit card company,*
 - *any other person or organization.*
- *arrears debt, defined as any arrears with*
 - *mortgage payments, including any endowment policy on the mortgage*
 - *rent payments*
 - *rate, water rate or sewerage payments*
 - *gas and electricity bills*
 - *HP payments*
 - *insurance premiums, excluding any endowment policy on mortgage,*

- *any other household bills, such as telephone bills,*
- *any other regular payments.*

I have constructed a separate variable for the amount of mortgage capital outstanding, if any, at the first interview.

Summary descriptive statistics of the savings and debt reported by the unemployed are presented below. I consider two times for the purpose of comparison: one month before the commencement of the unemployment spell and at the first interview. I look at the net change in the level of individual resources passing from one point in time to the next. Next, the resources reported by the spouse (if any) of the unemployed are analysed.

Some unemployed refused to reply to questions concerning their savings and/or debt. These were very few unemployed (less than 1% of the sample) and they are coded as if they had reported zero amounts. Some unemployed that reported extremely large amounts of savings or debt (greater than 6 figures in £) were coded by the survey planners as "-2". They are also very few (2 cases) and I have recoded them as if reporting zero amounts¹. Overall the unemployed in these two categories represent much less than 1% of the sample, at any time. There should be no large (additional) error introduced since it is not possible to exclude that some of the unemployed that reported zero amounts of savings were actually misreporting larger amounts.

The amounts of total savings reported by the unemployed (not considering the amounts reported by their spouses) one month before the commencement of the unemployment spell and about three months into the spell are described in table 0.1. About 38% of the unemployed report having no savings one month before the commencement of the unemployment spell. About 8.5% report small positive amounts of savings of less than £10, at the same date. These small amounts of savings reflect probably transaction balances held in accounts rather than in the pocket. About 11% of the unemployed report positive amounts of savings larger than £10 and smaller than £100, one month before the commencement of the unemployment spell. Almost 11% report positive amounts larger than £100 and smaller than £300. Almost 6% report positive amounts larger than £300 and less than £500. Overall, almost 35% of the unemployed report positive amounts of savings of less than £500 one month before the commencement of the unemployment spell.

¹They are however excluded from the econometric analysis.

Table 0.1: *The amounts of savings before and after the commencement of the unemployment spell*

upper bounds amounts reported in £	Percentage of the unemployed that reported such amounts					
	One month before U			At the first interview		
	%	% (*)	cum. % (*)	%	% (*)	cum. % (*)
0	38.2			42		
< 10	8.5	13.8	13.8	13.2	22.8	22.8
< 100	11.3	18.3	32.1	11.1	19.2	42
< 300	10.6	17.2	49.3	7	12	54
< 500	5.9	9.6	58.9	2.7	4.7	58.7
< 1000	6	9.7	68.6	5.5	9.5	68.2
< 1500	3.6	5.8	74.4	3.1	5.3	73.5
< 2000	3.4	5.5	79.9	2.3	4	77.5
< 3000	2.8	4.5	84.4	2	3.5	81
< 4000	2.3	3.7	88.1	2.2	3.8	84.8
< 5000	1.6	2.6	90.7	1.2	2	86.8
< 10000	2.3	3.7	94.4	2.8	4.8	91.6
< 15000	1.1	1.9	96.3	1.6	2.8	94.4
< 20000	0.7	1.2	97.5	0.9	1.6	96
< 25000	0.6	1	98.5	1.1	1.8	97.8
< 50000	0.6	1	99.5	0.9	1.6	99.4
> 50000	0.3	0.5	100	0.4	0.6	100

The table relates to the subsample of male participants in both sample interviews (2035 units). The () indicates that the percentage is taken over the observations that report positive savings.*

The unemployed with savings larger than £500 and less than £1000 are 6%. Almost 10% of the unemployed report savings larger than £1000 and less than £3000. The reader should perhaps be reminded that £3000 correspond to the threshold level of the savings of the nuclear family below which the unemployed would gain entitlement to the means-tested unemployment benefit in 1982 (if they had passed the income test)². Overall, about 50% of the unemployed report positive amounts of savings of less than £3000, one month before the commencement of the unemployment spell. Including also the unemployed reporting no savings at the same date, the corresponding figure becomes about 90%. The proportion of the unemployed reporting amounts of savings larger than £3000 is about 10% one month before the commencement of the unemployment spell.

Almost half (46.9%) of the unemployed with positive amounts of savings at the first interview report savings of less than £3000. Overall (including the zero amounts) 89% of the unemployed report amounts of savings lower

²The award of SB is conditional on passing both an income test and an assets test. The reference period is taken to be 1982 since all the information on benefit receipt at the first interview is collected in 1982 amounts, which were in force until November 1983.

than £3000 at the first interview.

About four percent less of the unemployed report having any savings after the commencement of their unemployment spell: the percentage of the unemployed that report no savings (of any type) is 38.2% one month before the commencement of the unemployment spell and 42% three months into the spell. Instead, the number of the unemployed with savings of less than £10 increases by about 5% at the first interview (three months into the unemployment spell). The number of the unemployed with savings greater than £100 but less £5000 decreases slightly at the first interview relative to one month before the commencement of the observed unemployment spell. Instead, the number of the unemployed with savings larger than £5000 goes up by about 2%. This is probably explained by the receipt of redundancy or severance payments.

Table 0.2: *The amounts of once-off payments*

<i>Upper bounds</i> in £	<i>Percentage of the unemployed that re- ported such amounts</i>		
	%	% (*)	cum. % (*)
0	56.4		
< 10	0.1	0.2	0.2
< 100	8.8	20.1	20.3
< 300	11.1	25.5	45.8
< 500	3.7	8.5	54.3
< 1000	4.1	9.4	63.7
< 1500	2.3	5.3	69.0
< 2000	1.6	3.7	72.7
< 3000	2.4	5.4	78.1
< 4000	1.8	4.0	82.1
< 5000	1.7	3.8	85.9
< 10000	3.0	6.7	92.6
< 15000	1.1	2.5	95.1
< 20000	1.1	2.5	97.6
≥ 20000	1.1	2.5	100

The table relates to the subsample of male participants in both sample interviews (2035 units). The () indicates that the percentage is taken over the non-zero observations.*

Descriptive statistics of the amounts of redundancy payments and other “once-off” payments are given in Table 0.2. These payments are due to the ending of a work contract: they go from redundancy and severance payments to pay in lieu of notice and “week in hand”. About 43% of the sample report to have received some “once-off” payment just before the commencement of their unemployment spell. However, the majority (54%) of the unemployed

with positive "once-off" payments reports payments of less than £500. These small amounts are "week in hand" or "pay in lieu of notice" payments. Some of the unemployed report instead much larger amounts. For instance, about 6% (of those that report positive "once-off" payments) report amounts larger than £10000. These large amounts are redundancy or severance payments.

The total amounts of debt run up with friends, relatives, financial institutions and being in arrears with one's payments are shown in Table 0.3. Almost 50% of the unemployed report some debt one month before the beginning of their unemployment spell and almost 60% report some debt three months into the unemployment spell (at the time of the first interview). The majority of the unemployed that are in debt owes amounts of money not larger than £500, at the two times considered. About 90% of them reports amounts of debt not larger than £3000 and about 95% not larger than £5000, at any time considered.

Table 0.3: *The amounts of total debt run up*

Upper bounds amounts reported in £	Percentage of the unemployed that reported such amounts					
	One month before U			At the first interview		
	%	% (*)	cum. % (*)	%	% (*)	cum. % (*)
0	53.7			41.6		
< 10	0.3	0.7	0.7	1.3	2.3	2.3
< 100	8.2	17.7	18.4	13.7	23.5	25.8
< 300	11.4	24.6	43.0	19.8	23.6	49.4
< 500	6.3	13.6	56.6	6.9	11.8	61.2
< 1000	3	17.3	73.9	10.5	18.0	79.2
< 1500	3.8	8.2	82.1	3.5	6.0	85.2
< 2000	2	4.3	86.4	2.4	4.1	89.3
< 3000	2.5	5.4	91.8	2.5	4.2	93.5
< 4000	1.2	2.6	94.4	1.3	2.2	95.7
< 5000	0.7	1.5	95.9	0.7	1.2	96.9
< 10000	0.9	1.9	97.8	0.9	1.5	98.4
< 15000	0.4	0.9	98.7	0.4	0.7	99.1
< 20000	0.2	0.4	99.1	0.1	0.2	99.3
< 25000	0.1	0.2	99.3	0.1	0.2	99.5
< 50000	0.3	0.7	100	0.3	0.5	100
≥ 50000	0	0	100	0	0	100

The table relates to the male participants in both sample interviews. The () indicates that the percentage is taken over the non-zero's observations. Total debt is defined as the sum of informal, institutional and arrears debt. The debt run by the spouses is not taken into account in this table.*

Table 0.4: *The change in net savings of the unemployed over time*

Upper bounds Absolute change in £	Percentage of the unemployed that reported such amounts			
	net change t1		net change t2	
	%	cum. %	%	cum. %
> - 5000	1.0	1.0	4.1	4.1
> - 3000	1.3	2.3	2.9	7.0
> - 1000	8.6	10.9	9.3	16.3
> - 500	7.6	18.5	6.7	23.0
> - 100	20.8	39.3	14.3	37.3
> - 10	12.7	52.0	8.5	45.8
< 0	1.5	53.5	7.6	53.4
0	17.7	71.2	0.6	54.0
≤ 10	1.5	72.7	2.0	56.0
≤ 100	8.3	81.0	10.2	66.2
≤ 500	7.7	88.7	15.4	81.6
≤ 1000	2.8	91.5	7.4	89.0
≤ 3000	3.2	94.7	6.3	95.3
≤ 5000	1.5	96.2	1.5	96.8
≥ 5000	3.8	100.0	3.2	100.0

The table relates to the male participants in both sample interviews. The times t_k , t_1 , t_2 relate respectively to one month before the commencement of the unemployment spell, to the time of the first interview and to the time of the second interview. Net savings are equal to total savings minus total debt, at a given point in time. The absolute change in net savings at the first interview (t_1) is computed subtracting the net savings at time t_k from the net savings at time t_1 . Similarly, the absolute change in net savings at the second interview (t_2) is computed subtracting the net savings at time t_1 from the net savings at time t_k .

Next, I look at the individual change in the level of net savings passing from one month before the commencement of the unemployment spell to the time of the first interview (three months into the spell) and from the time of the first interview to the time of the second interview (fifteen months into the spell). The results are summarized in Table 0.4.

About 53% of the unemployed experience a reduction in the level of their net financial resources passing from one month before the commencement of the unemployment spell to three months into the spell. About 1% of the unemployed sees their net financial balances decrease by less than £10. About 13% loses between 10 and 100 £. About 21% loses between 100 and 500 £. About 7% loses between 500 and 1000 £ and about 8% loses between 1000 and 3000 £. About 2% loses more than £3000. Almost 18% experiences no change in the level of their net financial balances, passing from one month before the commencement of their unemployment spell to three months into the spell.

Almost 29% sees their financial resources increase after the commencement of their unemployment spell. However, almost 10% gains less than £100. Almost 8% gains between 100 and 500 £. Almost 3% gains between 500 and 1000 £ and about 3% gains between 1000 and 3000 £. About 5% experience an increase of more than £3000 in the level of net financial balances. The increases in the level of net financial balances are explained in large part by the receipt of "once-off" payments associated with the ending of a previous work contract and the commencement of the observed spell of unemployment, as discussed above.

The proportion of the unemployed that see their net financial balances decrease passing from the first to the second survey interview is about 53%. This figure is almost identical to the corresponding figure for the change in net financial resources passing from one month before to three months into the unemployment spell. The proportion of the unemployed that experience no change in the level of their financial resources is now much smaller and equal to less than 1%. About 34% of the sample sees their financial resources increase passing from the first survey interview to the second. About 12% of the unemployed experience an increase of less than £100 in the level of their net financial balances. About 15% gains between 100 and 500 £ and about 7% gains between 500 and 1000 £. About 6% sees their net financial resources go up by more than £1000 and less than £3000. About 5% gains

more than £3000.

Overall, the number of the unemployed that sees their net financial balances increase passing from the first to the second survey interview is higher than the corresponding number from one month to three months into the spell. This result is simply due to the fact that a large number of the unemployed have gone back to work between the first and the second survey interview. In general, it is possible to conclude that the financial resources of the unemployed change considerably during the course of the unemployment spell. The largest number of the unemployed sees their net financial balances go down during the course of the unemployment spell.

Descriptive statistics of the explanatory variables

Descriptive statistics of the explanatory variables are given in Table 0.5 below for the full sample considered (2030 observations) and for the unemployed with positive amounts of savings or debt (1629 observations). The reader is referred to Stancanelli (1993). for a definition of the explanatory variables. I discuss below the specification of the savings and debt variables. Some unemployed and/or their spouses reported very large amounts of savings/debt, of more than six figures in pounds. In the survey, the amounts reported by these persons were coded as “-2” rather than the actual reported amount. Since it turns out that only five unemployed and/or their spouses reported such large amounts of savings and/or debt, these cases are dropped from the econometric analysis carried out in this paper. Indeed, they might have been misreporting their savings/debt, but even if they reported the true amounts, they would anyway be too few to be representative of the incredibly rich or incredibly poor unemployed.

The levels of savings and debt are measured one month before the commencement of the unemployment spell to avoid potential endogeneity problems. Indeed, the level of the financial resources of the unemployed may vary during the course of the unemployment spell as a function of the duration of the unemployment spell. As a consequence, the savings and debt of the unemployed at the first (or the second) survey interview might be endogeneous to the model.

About 80% of the sample reported positive amounts of debt and/or savings one month before the commencement of their unemployment spell (see

Table ??). I find that the distribution of savings and debt of the unemployed is very skewed, with some unemployed reporting, for example, amounts of (total) savings or (total) debt of less than £10 and some unemployed reporting amounts larger than £10000. Some unemployed did not report any amounts of savings and/or debt or refused to reply to these questions. It is of course possible, as already discussed above that these people did not reply sincerely to the questions. Sensitivity of the results of estimation of the econometric model to the exclusion/inclusion of these observations is checked.

From Table 0.5, it emerges that the unemployed that report positive amounts of savings or debt have higher mean expected earnings (called "predicted" earnings in the Table) than the full sample, which includes the unemployed that report zero amounts of savings or debt. No other substantial differences emerge between the two groups (except for differences in the mean levels of savings and debt).

The savings and debt variables are entered separately into the model. The expected impact of higher levels of savings is to raise the unemployed's reservation wage by making the unemployed more "choosy" about accepting job offers (for a given degree of risk aversion). The expected impact of savings on the re-employment hazard rate is, therefore, negative. However, savings may also proxy risk aversion since the more risk averse individuals will tend to save more. Higher degrees of risk aversion are expected to result in lower reservation wages and shorter unemployment durations. If savings proxy risk aversion, then higher level of savings will be associated with shorter unemployment duration.

The expected impact of debt is not clearcut either. Higher levels of debt may lower the unemployed's reservation wage and result in shorter unemployment durations. However, debt may also proxy access to credit. In this case, the expected impact of higher levels of debt on the hazard rate is similar to the expected impact of higher levels of savings (for a given degree of risk aversion). The unemployed that can borrow more can also afford to be more choosy about accepting job offers. If debt proxies access to credit, the expected impact of higher levels of debt on the hazard rate is negative.

The savings and debt variables are specified in levels. A logarithmic specification does not seem appropriate since it would imply that proportional increases in these variables have equi-proportionate effects on the hazard.

It seems plausible that a 100% increase in debt (or savings) has a different impact if debt (or savings) increases, for instance, from £500 to £1000 than from £10 to £20. This choice is supported by the fact that the distributions of savings and debt are very skewed. However, savings and debt will be entered in logs for the purpose of sensitivity analysis.

The “once-off” payments associated with the ending of the previous work contract and the commencement of the unemployment spell may be seen as representing an (unexpected) increase in the level of savings. The expected impact of this variable on the hazard rate is negative. This variable is entered in levels for the same reasons given above. A logarithmic specification is also tried out.

The savings and debt variables considered relate to the unemployed person. In the econometric analysis, I test also for the significance of the family’s savings and debt. These are equal to the sum of the unemployed’s savings (or debt) and the spouse’s savings (or debt).

Table 0.5: Descriptive statistics of the economic variables

Variable	Full sample		Non zero wealth	
	Mean	SD	Mean	SD
Left truncation period	13.407	1.057	13.395	1.040
Unemployment duration (weeks)	44.588	17.755	43.600	17.718
F/t work most part year before U.	.653	.476	.692	.462
Unemployed most part year before U.	.222	.415	.193	.395
Sick, no work most part year before U.	.036	.187	.029	.169
Professional Occupation	.019	.137	.021	.145
Intermediate Occupation	.154	.361	.172	.378
Unskilled Occupation	.058	.234	.048	.215
Occupation not available	.071	.256	.056	.230
Age 20-24	.124	.329	.112	.316
Age 25-34	.323	.468	.319	.466
Age 35-44	.248	.432	.249	.432
Age 45-54	.198	.398	.202	.402
Age 55-58	.108	.310	.118	.323
Has any child old less than 5	.341	.474	.328	.470
Married	.867	.339	.875	.330
Spouse working 1 month before U.	.269	.443	.295	.456
Searches less than before	.096	.294	.096	.295
Values Leisure more than Labour experiences some shortage of money	.137	.344	.142	.350
House owner outright/with mortgage	.733	.443	.726	.446
County unemployment rate	.381	.486	.432	.495
County unemployment rate	13.586	3.205	13.500	3.224
Receives only UB at t1	.362	.481	.381	.486
Receives no UB nor SB	.046	.210	.050	.217
benefit time varying (£)	3978.682	1855.357	3945.793	1877.564
Predicted earnings, in £	9097.565	2257.838	9201.237	2335.497
predicted earnings not available	.011	.106	.012	.110
total savings one month before U. £	1440.582	5736.440	1799.622	6361.343
total debt one month before U. £	618.116	2750.075	772.171	3054.499
total family savings one month before U. £	1688.01	7559.100	1682.200	8133.040
total family debt one month before U. £	648.887	2765.740	689.290	2995.420
mortgage capital outstanding, £	2383.12	17423.920	2675.89	19123.990
"once-off payments", £	1211.604	4423.350	1376.549	4584.826

The number of units that report non zero savings or non zero debt is 1629. The total sample is made of 2030 unemployed. The dichotomous variables take value one when the condition stated for each of them is satisfied. The mean unemployment duration is computed including the right-censored observations. The total family savings are equal to the sum of the savings of the unemployed person and their spouses for the married people and to the unemployed's savings for the single people. The total family debt is equal to the sum of the debt of the unemployed person and their spouses for the married people and to the unemployed's debt for the single people. "U." stands for "the unemployment spell".

4. Results of estimation

Non parametric Kaplan-Meier estimates are provided first. Next, the results of estimation of the more complex econometric model are discussed. This is a competing risks model of the re-employment probability. Two destination states out of unemployment have been allowed for: full-time work and other states. I am interested in the results for the exit into full-time work. The likelihood function for the model is given by Equation 0.1. The baseline hazard rate, a piecewise linear, is allowed to vary each month.

$$\text{Log}L = \sum_{k \in D} \sum_{i \in A_k} \{a_i^k + \beta^k x_i^k(t)\} + \sum_{k \in D} \sum_i \left\{ - \int_{t_s}^{t_i} \exp\{a_i^k + \beta^k x_i^k(u)\} du \right\} \quad (0.1)$$

$$l \in I_l, \quad I_l = \{t | \eta_l \leq t < \eta_{l+1}\}, \quad l = 1, 2, \dots, m,$$

which is a competing risks model with two destination states k ,

$$\begin{cases} \text{full-time work, } k = 1 \\ \text{other economic states, } k = 2. \end{cases}$$

where i indicates an unemployed individual; A is the set of completed spells and B is the set of right-censored spells; A_k is the set of completed spells ending into destination state k . The time t_i is the observed end of individual "i" spell of unemployment, ending with exit from unemployment or right-censoring and t_s is the individual left truncation time, which varies between 11 and 17 weeks.

Non parametric estimates

I have carried out some non-parametric analysis of the re-employment probability for the unemployed with different levels of savings and debt. The survivor functions of different (mutually exclusive) groups of the unemployed have been estimated by Kaplan-Meier method. I compare the estimated survivor functions by means of visual inspection and also using the Log-Rank test³, which is based on the estimated standard errors of the survivor functions.

The survivor function of the unemployed that reported zero levels of savings one month before the commencement of the their unemployment spell

³A good reference for a description of this test is Kalbfleish and Prentice (1980).

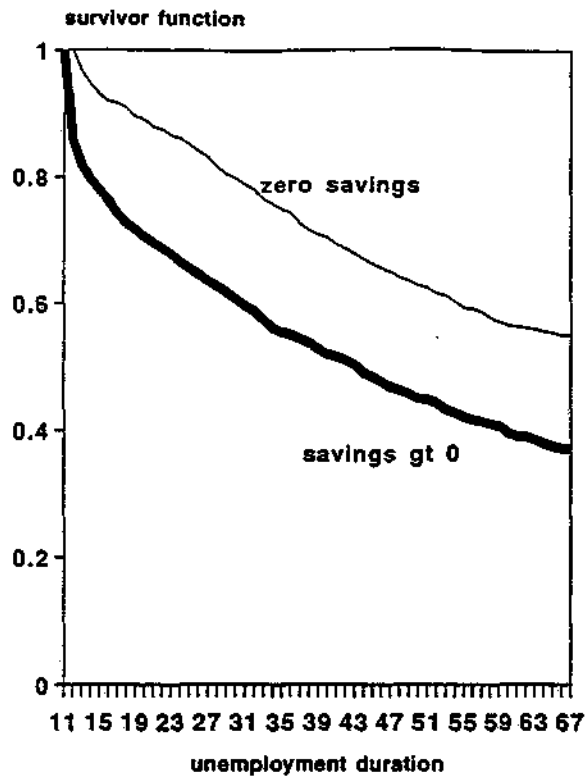


Figure 0.1: *Kaplan-Meier Survivor Functions for the Re-employment Probability*

(776 observations) is compared in Figure 0.1 with the survivor function of the unemployed that reported positive amounts of savings at the same date (1254 observations). The survivor function for the unemployed with positive amounts of savings lies below that for the unemployed that reported zero amounts of savings. The Log-Rank test rejects strongly the null hypothesis that the survivor functions of the two groups of the unemployed are not significantly different ($\chi^2_2 = 24.1$). According to these non-parametric estimates, the unemployed with positive levels of savings are more likely to exit from unemployment to take up a full-time job (at any time) than the unemployed with no savings. However, the non-parametric estimates do not allow for heterogeneity of the two groups of the unemployed. It is possible that the unemployed with positive levels of savings have other “good” characteristics (unaccounted for here) which might contribute to explain the results illustrated in Figure 0.1.

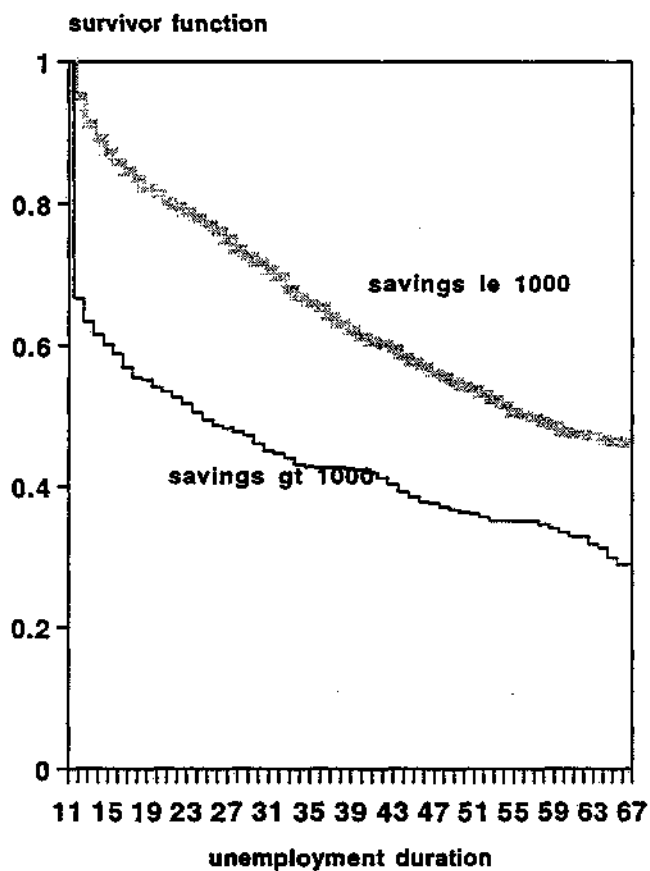


Figure 0.2: *Kaplan-Meier Survivor Functions for the Re-employment Probability*

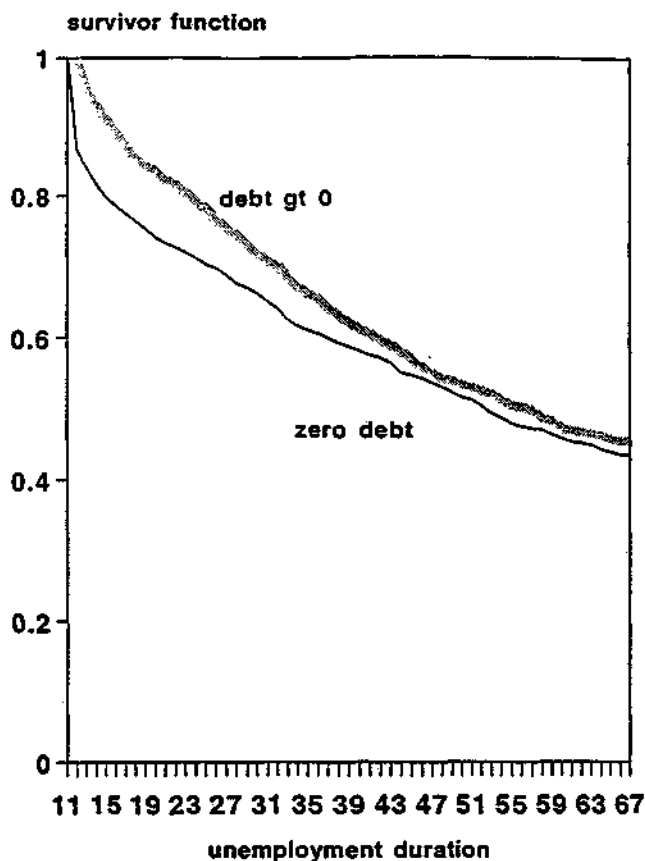


Figure 0.3: *Kaplan-Meier Survivor Functions for the Re-employment Probability*

In Figure 0.2, I compare the survivor function of the unemployed with savings larger than (or equal to) £1000 one month before the commencement of their unemployment spell (415 observations) with the survivor function of the unemployed with savings of less than £1000 at the same date (1615 observations). The estimated survivor functions of the two groups follow a similar pattern than that of the survivor functions of Figure 0.1. The survivor function of the unemployed with savings larger than (or equal to) £1000 lies below the survivor functions of the unemployed with savings of less than £1000. According to these results, higher levels of savings raise the individual re-employment probability.

However, the null hypothesis that the survivor functions of the two groups are not significantly different cannot be rejected on the basis of the Log-Rank test ($\chi^2 = 1.74$). I have obtained similar results by distinguishing the unemployed with level of savings higher than £3000 (203 observations) one month before the commencement of the unemployment spell and the unemployed with savings of less than £3000 (1827 observations). The survivor function of the unemployed with savings larger than £3000 lies below that of the unem-

ployed with savings of less than £3000, at any point in time. The Log-Rank test can not reject the null hypothesis that the survivor functions of the two groups are not significantly different ($\chi^2_2 = 0.96$).

In Figure 0.3, I compare the survivor function of the unemployed that reported zero amounts of debt (942 observations) one month before the commencement of their unemployment spell with the survivor function of the unemployed that reported positive amounts of debt (1088 observations) at the same date. The survivor function of the unemployed with no debt lies below that of the unemployed with positive debt, at any time. This implies that the unemployed in debt are less likely to exit unemployment to take up a full-time job than the unemployed that are not in debt. However, the Log-Rank test cannot reject the null hypothesis that the survivor functions of the two groups are not significantly different ($\chi^2_2 = 5.1$).

Parametric estimates

Alternative specifications of the savings and debt variables were tried out. The results of estimation are given in Table 0.6, Table 0.7 and Table 0.8 below. The reader is referred to Stancanelli (1993) for a discussion of the estimated impact of the explanatory variables of the model. The discussion below focus on the impact of the financial resources variables. I present first the results of estimation of a model where savings and debt are entered in levels. Next, I show my favourite model, where some spline functions are specified to capture the impact of savings and debt on the re-employment probability. I conclude this section with a discussion of some sensitivity analysis.

In specification (1) and (2) of Table 0.6, the model is estimated separately for the full sample (specification 1) and for unemployed that reported positive amounts of savings or debt (specification 2). The impact of the explanatory variables does not differ much across the two models. In particular, higher level of savings are found not to affect significantly the individual re-employment probability. The sign of the coefficient on the level of savings is negative. This might confirm the view that higher levels of savings raise the reservation wage and lower the re-employment probability. The coefficient on debt is slightly significant and shows that debt affects negatively the individual re-employment probability. This finding supports the view

that debt proxies access to credit. Access to credit may allow the unemployed to be more choosy about accepting job offers and therefore lower the re-employment probability. The impact of debt is, however, very small. A 10% increase in the level of debt evaluated at the mean (equal to about 14 hundred £) lowers the re-employment hazard by less than 1%.

Table 0.6: Results of estimation

Variable	All (1) unemployed		Reporting non-zero(2) Savings or Debt	
	Coeff.	SE	Coeff.	SE
F/t work year before	0.3713*	0.1368	0.4194*	0.1520
Unemployed year before	0.3027*	0.1477	0.3729*	0.1672
Sick year before	-0.3808	0.2900	-0.2692	0.3488
Profess. /Intern. Occ.	0.2110*	0.0985	0.2129*	0.1050
Unskilled Occupation	-0.4393*	0.1720	-0.5629*	0.2100
Age 20-24	0.2230*	0.1075	0.1855	0.1228
Age 35-44	-0.1786*	0.0903	-0.1247	0.0979
Age 45-54	-0.5951*	0.1107	-0.5506*	0.1213
Age 55-58	-1.2643*	0.1734	-1.2035*	0.1825
Has any child aged < 5	-0.1989*	0.0871	-0.1886*	0.0962
Married	0.1404	0.1237	0.0935	0.1360
Spouse working	0.3656*	0.0873	0.3060*	0.0935
Searches less	-0.7549*	0.1728	-0.7659*	0.1919
Values Leisure more	-0.2781*	0.1146	-0.3269*	0.1250
experiences money shortage	0.1890*	0.0862	0.2224*	0.0963
House owner	0.3373*	0.0739	0.3022*	0.0800
County U rate	-0.0202*	0.0106	-0.0194	0.0117
Receives only UB	0.2006*	0.0849	0.1919*	0.0930
Receives no UB, SB	0.0200	0.2799	-0.1269	0.2991
UB/SB time varying, logs	-0.0325	0.0603	-0.0571	0.0630
Predicted earnings, logs.	0.6488*	0.2021	0.6330*	0.2175
No pred. earn.	2.9561*	0.9591	2.6823*	1.0409
Savings, in 100 £	-0.0009	0.0008	-0.0010	0.0008
Debt, in 100 £	-0.0037	0.0019	-0.0042*	0.0020
Maximum log-likelihood	-6436.9		-5317.2	

The unemployed that reported amounts of savings or debt greater than 6 figures in pounds were excluded from the analysis. Savings and debt relate to the amounts reported as to one month before the commencement of the unemployment spell. The results relate to exit into full-time work. The maximum likelihood is computed by joint estimation of the two competing risks. Descriptive statistics of the explanatory variables are given in Table 0.5.

In Table 0.7, the results of estimation of alternative specifications of the financial resources variables are presented. In specification (3), the level of "once off" payments is entered among the regressors. The estimated coefficient on the level of "once-off" payments is statistically significant and shows negative sign as expected. The "once-off" payments are assumed to represent (unexpected) increases in the level of financial resources associated with the commencement of the unemployment spell (and the ending of a previous work contract). According to the theoretical predictions, an increase in the level of financial wealth allows the unemployed to be more "choosy" about accepting job offers and therefore lowers the re-employment probability. The impact of "once-off" payments on the re-employment hazard is quite small. A 10% increase in the amount of "once-off" payments (evaluated at the mean of 12 hundred £) lowers the re-employment probability by less than 1%. The impact of debt (from specification 1) is unaffected by the additional regressor. The estimated coefficient on savings (not significant) becomes slightly smaller in absolute value.

In specification (4) of Table 0.7, the savings and debt variables are specified using two spline functions. The rationale for this specification is the large skewness of the distributions of savings and debt of the unemployed. The impact of the continuous savings (or debt) variable is allowed to differ for different values of savings (or debt). The following three intervals of savings (or debt) values are considered:

- savings (or debt) less than £500;
- savings (or debt) greater or equal than £500 and less than £3000;
- savings (or debt) greater or equal than £3000.

The coefficients of the debt spline are not significantly different from zero. However, they show negative sign except for the first one, which relates to small amounts of debt of less than £500. It is possible that amounts of debt of less than £500 signal "no access to credit". There is, however, no firm explanation for this result. The impact of "once-off" payments does not vary much from specification (3). The coefficients of the savings spline are now statistically significant. The first two —on amounts of savings up to £500 and amounts of savings from £500 up to £3000— show positive sign while the last one —on amounts of savings larger than £3000— has negative

sign. One possible explanation for this result is that smaller amounts of savings proxy, at least to a certain extent, individual risk aversion. In this case, then, higher levels of (small) savings represent higher degrees of risk aversion and higher degrees of risk aversion result in lower reservation wages and shorter unemployment duration. Levels of savings larger than £3000 might, instead, capture only to a limited extent individual risk aversion and to a larger extent the impact of higher levels of financial wealth on the re-employment hazard, which is expected to be positive for a given degree of risk aversion. An increase of 10% in the level of savings (evaluated at the level of 2.5 hundred pounds of savings) raises the re-employment hazard by about 1%, for the persons with savings below £500. An increase of 10% in the level of savings (evaluated at the level of 12.5 hundred pounds of savings) raises the hazard rate by about 1%, for the unemployed with savings between £500 and £3000.

Table 0.7: Results of estimation

Variable	Specification (3)		Specification (4)		Specification (5)	
	Coeff.	SE	Coeff.	SE		
F/t work year before	0.3982*	0.1371	0.3816*	0.1377	0.3662*	0.1372
Unemployed year before	0.3090*	0.1477	0.3246*	0.1483	0.3094*	0.1478
Sick year before	-0.3931	0.2901	-0.3188	0.2915	-0.3486	0.2905
Profess. /Interm. Occ.	0.2151*	0.0980	0.1855	0.0983	0.1854	0.0981
Unskilled Occupation	-0.4407*	0.1720	-0.3874*	0.1726	-0.3893*	0.1725
Age 20-24	0.2325*	0.1076	0.2482*	0.1076	0.2446*	0.1075
Age 35-44	-0.1808*	0.0903	-0.1848*	0.0910	-0.1944*	0.0908
Age 45-54	-0.5703*	0.1104	-0.5990*	0.1116	-0.6068*	0.1114
Age 55-58	-1.2178*	0.1744	-1.3085*	0.1768	-1.3207*	0.1762
Has any child aged < 5	-0.1983*	0.0871	-0.1960*	0.0874	-0.1897*	0.0873
Married	0.1391	0.1237	0.1667	0.1236	0.1651	0.1236
Spouse working	0.3564*	0.0875	0.3487*	0.0879	0.3573*	0.0876
Searches less	-0.7036*	0.1729	-0.6789*	0.1729	-0.6796*	0.1728
Values Leisure more	-0.2540*	0.1147	-0.2660*	0.1151	-0.2728*	0.1149
Experiences money shortage	0.1509	0.0865	0.1804*	0.0873	0.1874*	0.0871
House owner	0.3465*	0.0739	0.2757*	0.0765	0.2764*	0.0758
County U rate	-0.0326*	0.0106	-0.0225*	0.0106	-0.0220*	0.0106
Receives only UB	0.2212*	0.0349	0.1824*	0.0357	0.1862*	0.0356
Receives no UB, SB	-0.0228	0.2802	-0.0692	0.2807	-0.0575	0.2805
UB/SB time varying, logs	-0.0412	0.0604	-0.0397	0.0606	-0.0352	0.0605
Predicted earnings, logs.	0.7123*	0.2026	0.6545*	0.2035	0.6575*	0.2035
No pred. earn.	3.2306*	0.9610	3.0001*	0.9647	3.0194*	0.9646
Savings, in 100 £	-0.0006	0.0008				
Debt, in 100 £	-0.0037*	0.0019			-0.0033	0.0018
"Once-off payments, in 100 £	-0.0030*	0.0012	-0.0031*	0.0013	-0.0031*	0.0013
Spline, $0 \geq$ savings < £500, in 100 £			0.0489*	0.0214	0.0482*	0.0213
Spline, £500 \geq savings < £3000, in 100 £			0.0123*	0.0062	0.0123*	0.0062
Spline, £3000 \geq savings, in 100 £			-0.0028*	0.0013	-0.0028*	0.0013
Spline, $0 \geq$ debt < £500, in 100 £			0.0223	0.0196		
Spline, £500 \geq debt < £3000, in 100 £			-0.0131	0.0077		
Spline, £3000 \geq debt, in 100 £			-0.0022	0.0022		
Maximum log-likelihood	-6433.3		-6416.9		-6421.0	

The estimation is carried out for the full sample except for the unemployed that reported amounts of savings or debt greater than 6 figures in pounds, who were excluded from the analysis. The level of savings and debt relate to the amounts reported as to one month before the commencement of the unemployment spell. The results relate to exit into full-time work. The maximum likelihood is computed by joint estimation of the two competing risks, full-time work and other exits. Descriptive statistics of the explanatory variables are given in Table 0.5.

An increase of 10% in the level of savings (evaluated at 40 hundred pounds of savings) lowers the re-employment hazard by about 1%. The hypothesis that a linear relationship between savings and the re-employment probability (as in specification 3) is to be preferred to this piecewise linear specification is tested with a likelihood ratio test ($\chi^2_4 = 32.8$). The null hypothesis that the additional spline coefficients are not significantly different from zero is rejected.

Specification (5) of Table 0.7, is the same as specification (4) except for the specification of the level of debt that is now entered linearly as before. The coefficient on the level of debt is not significant but shows negative sign, as expected. The coefficients on the savings spline and on the level of "once-off" payments do not change relative to specification (4).

To conclude, a spline specification of the savings of the unemployed performs best. The robustness of the spline estimates is tested to alternative specifications of the savings and debt variables, as illustrated in Table 0.8. In specification (a), the savings and debt variables are entered in logarithms instead than in levels. The implication of the logarithmic specification is that of a constant elasticity, as already discussed in the data section above. The coefficient on (logs) savings is significant and positive. It is close in absolute value to the coefficient on the first spline segment in specification (4). The coefficient on debt is not significant and shows negative sign, as before. The impact of the "once-off" payments is close to that found in previous specifications. The impact of "once-off" payments becomes not significant if this variable is entered in logs (specification b).

In specification (c), the family's levels of savings and debt are entered among the regressors (instead of the unemployed's level of savings and debt). None of the two variables is found to affect significantly the re-employment probability. The estimated impact of "once-off" payments is larger in absolute value with respect to previous specification.

In specification (d), some dummies that take value one for given levels of savings and debt are entered among the regressors instead of the actual levels of savings or debt. The intervals of savings and debt levels considered are the same used for the splines of specification (4) and (5) above. All the savings dummies show positive sign (and are statistically significant). The estimated coefficient on the last savings dummy is however smaller than the coefficients on the previous two savings dummies.

Table 0.8: Some more results

Specification	Coeff.	SE	Max. log-lik.
(a) Same specification as (3) but savings and debt variables are entered in logs			-6433.9
(a) Savings, in logs of 100 £	0.0412*	0.0198	
(a) Debt, in logs of in 100 £	-0.0223	0.0268	
(a) Once off payments, in 100 £	-0.0031*	0.0012	
(b) Same as (a) but "once-off" payments are also in logs			-6437.6
(b) Savings, in logs of 100 £	0.0387*	0.0198	
(b) Debt, in logs of in 100 £	-0.0231	0.0269	
(b) Once off payments, in logs of 100 £	-0.0283	0.0269	
(c) Same specification as (3) but I consider the family savings and debt			-6310.3
(c) Total family savings, in £100	-0.0009	0.0014	
(c) Total family debt, in £100	0.0001	0.0004	
(c) Once off payments, in 100 £	0.0050*	0.0017	
(d) Same as specification (1) but some dummies are used to capture the impact of savings and debt levels			-6423.7
(d) D1=1 if $0 > \text{savings} < £500$	0.2155*	0.0810	
(d) D2=1 if $£500 \geq \text{savings} < £3000$	0.4629*	0.1016	
(d) D3=1 if $£500 \geq \text{savings} < £3000$	0.4143*	0.1427	
(d) D4=1 if $0 > \text{debt} < £500$	-0.0359	0.0818	
(d) D5=1 if $£500 \geq \text{debt} < £3000$	0.0396	0.0885	
(d) D6=1 if $£500 \geq \text{debt} < £3000$	-0.4623*	0.2001	
(e) Same as specification (4) except for the exclusion of "once-off" payments			-5301.7
(e) Spline, $0 \geq \text{savings} < £500$, in 100 £	0.0476*	0.0234	
(e) Spline, $£500 \geq \text{savings} < £3000$, in 100 £	0.0120	0.0062	
(e) Spline, $£3000 \geq \text{savings}$, in 100 £	-0.0029*	0.0012	
(e) Spline, $0 \geq \text{debt} < £500$, in 100 £	0.0194	0.0214	
(e) Spline, $£500 \geq \text{debt} < £3000$, in 100 £	-0.0128	0.0078	
(e) Spline, $£3000 \geq \text{debt}$, in 100 £	-0.0022	0.0022	
(f) No regressors are entered except for the variables below and the monthly constants of the baseline hazard rate			-6584.8
(f) "Once-off payments, in 100 £	0.0003	0.0012	
(f) Spline, $0 \geq \text{savings} < £500$	0.0936*	0.0376	
(f) Spline, $£500 \geq \text{savings} < £3000$	-0.0021	0.0106	
(f) Spline, $£3000 \geq \text{savings}$	-0.0007	0.0013	
(f) Spline, $0 \geq \text{debt} < £500$	-0.0734	0.0415	
(f) Spline, $£500 \geq \text{debt} < £3000$	0.0340*	0.0135	
(f) Spline, $£3000 \geq \text{debt}$	-0.0036	0.0038	
The model is estimated for all the unemployed but those that reported amounts of savings or debt greater than 5 figure in pounds, as in model (1) above. The level of savings and debt relate to the amounts reported as to one month before the commencement of the unemployment spell. The results relate to exit into full-time work. The maximum likelihood is computed by joint estimation of the two competing risks. Descriptive statistics of the explanatory variables are given in the Appendix.			

This confirms the results obtained with the spline specification of the impact of savings. The coefficient on the last debt dummy—which takes value one for the unemployed with debt of more than £3000—is significantly different from zero and negative. The differences with the results of estimation of specification (4) are not so large since none of the estimated coefficients on the splines nor on the dummies are strongly significant. For the purpose of comparison, specification (e) is equivalent to specification (4) except for the exclusion of the “once-off” payments (which were also excluded from specification d).

In specification (f), only the savings and debt variables (and the piecewise constants of the baseline hazard rate) are entered among the regressors. The level of “once-off” payments is now not significant. Only the first of the estimated coefficients on the savings spline is significant and shows positive sign. The coefficient on the second segment of the debt spline is significant and negative.

None of these alternative specifications of the savings and debt variables is found to perform better than specification (4). The detection of a significant but small impact of the level of financial resources of the unemployed on the individual re-employment probability is confirmed.

5. Summary and Conclusions

In this paper, I have investigated the impact of the level of financial resources of the unemployed on the re-employment probability, using the LSUS data.

From the descriptive analysis of the savings and the debt of the unemployed, the following facts emerged. The savings and debt of the unemployed vary in some cases considerably during the course of the unemployment spell. In particular, while the savings of some unemployed increase because of the receipt of “once-off” payments (for example redundancy payments) associated with the commencement of the unemployment spell, the number of the unemployed in debt increases as well. The net financial resources deteriorate for about 53% of the unemployed, passing from one month before the commencement of the unemployment spell to three months into the spell (when the first survey interview took place). The corresponding figure, passing from the first to the second survey interview, is also 53%. About 43% of the unemployed reported “once-off” payments due to the ending of the previous

work contract. The amounts of such payments vary considerably across the unemployed, going from less than £100 to over £10000.

On the basis of this descriptive analysis, it is not possible to conclude on any association between the level of net financial resources of the unemployed and their exiting from unemployment before the time of the second survey interview. The distribution of the net resources of the unemployed with right-censored or completed unemployment spell does not differ substantially. Marital status is not found to affect to a large extent the financial wealth of the unemployed.

The conclusion of the econometric analysis are the following. I find some evidence that the level of financial resources affects the individual re-employment probability. In particular, I find that the receipt of redundancy payments or other "once-off" payments associated with the commencement of the unemployment spell and the ending of a previous work contract has a negative impact on the re-employment hazard rate. This type of payments represent an (unexpected) increase in the level of individual savings and their expected impact on the hazard rate is negative (Danforth, 1979). The magnitude of the impact of these "once-off" payments on the re-employment hazard is, however, very small. A 10% increase in the level of "once-off" payments (measured in hundred pounds) is found to raise the re-employment hazard rate by about 1%.

The savings of the unemployed have a significant non-linear impact on the re-employment probability. The impact of savings is significantly different from zero if a non-linear specification of the savings variable is adopted, such as for instance a linear spline or a logarithmic specification or a series of dummies taking value one for given intervals of savings. Savings are found to affect positively the re-employment probability. An explanation is that higher levels of savings proxy higher degrees of risk aversion. According to the theoretical predictions (Kohn and Shavell, 1974 and Pissarides, 1974), more risk averse individuals have lower reservation wages and shorter unemployment durations. The evidence on the sign and the significance of the impact of savings is, however, not very robust. The impact of savings on the re-employment hazard (when significant) is quite small.

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