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The Nature of Unemployment in Urban Ethiopia¹

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Abstract

With around 50% of the urban men between age 15 and 30 unemployed, Ethiopia has one of the highest unemployment rates worldwide. This paper describes the nature of unemployment among young men in urban Ethiopia. We analyse the determinants of incidence and duration and find that most variables have the same effect on both. Unemployment is concentrated among relatively well-educated first time job seekers who come from the middle classes. Mean duration of unemployment is close to four years and is higher for those aspiring to a public sector job. The unemployed have realistic reservation wages. Those living in Addis are less likely to become unemployed, and ethnicity has no effect. We find that both the incidence and duration of unemployment are negatively related to household welfare. Since we cannot reject that the latter is endogenous, this suggests that households use their savings and cut back consumption to cope with unemployment.

Those with a father working as a civil servant have shorter durations, suggesting that this provides an information advantage. The medium of job search also has a strong effect indicating that information is costly. Social networks only help after one has become unemployed. Our results are robust to changes in the macro environment. We explain why people do not take up a job while waiting in unemployment.

JEL classification: J64, O18, R23

Keywords: unemployment, youth, duration, urban labour market, Ethiopia

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*The man asks whether he will be allowed in.
'Possibly', says the doorkeeper, 'but not at the moment.'*

Kafka (1924)

1. Introduction

Although unemployment in developing countries has received considerable attention, its treatment in the literature lags far behind that of unemployment in industrialised countries. With the increased availability of micro-data, more empirical work is emerging.² Most of this work investigates the incidence but not the duration of unemployment.³ This paper is an empirical investigation of the nature of unemployment in urban Ethiopia. In the mid nineties, urban Ethiopia had one of the highest unemployment rates worldwide. In 1994, 34% percent of the male work force was unemployed. It was especially concentrated among the young: 50% of men under 30 were in unemployment. In the next paragraph we discuss the data. In section 3 we investigate the incidence; section 4 looks at the duration of unemployment. Section 5 summarises and concludes.

2. Data Description

We use the first round (1994) from the Ethiopian Urban Socio-Economic Survey (EUSES) household data collected by the Economics Department of Addis Ababa

² see for example Glewwe (1987), Tunalı and Assaad (1992), Horton et al. (1994), Dickens and Lang (1996), Assaad (1997), Manning and Junkar (1998), Kingdon and Knight (2000, 2001) Rama (1998, 1999), Aly and Shields (1999)

³ The two are needed to truly capture the nature of unemployment. The US for example has historically a low incidence (4%) but a long duration (around 100 days), implying that unemployment is borne by a small number of people. Spain in the early nineties on the other hand, had one of the largest OECD unemployment rates (22%), but mean duration was much shorter (closer to 50 days) (see Katz (1986); Bergstrom and Edin (1992); Bentolila and Ichino (2000)).

University in co-operation with Göteborg University. The survey collected data on a random sample of 1500 households in the 7 largest towns.⁴ Table 1 gives some more descriptive statistics.

Table 1: Descriptive statistics for men between age 15 and 60

<i>Sample size</i>	
Number of households	1,500
Number of men above 15	2,567
<i>Employment distribution (of active men only)</i>	
Public sector	27%
Formal private sector	7%
Self employment, casual workers and informal private sector	33%
Unemployed	34%
<i>Age</i>	
15-30	63%
Beyond 30	37%
<i>Median real earnings per month (1994 PPP USD)⁵</i>	
Public sector employee:	
International Organisation	126
Civil servants	83
Public sector enterprise employee	66
Private sector wage employee	44
Self-employed	26
Casual workers	38
Co-operative worker	33
<i>Household characteristics</i>	
Average number of household members	6
Average number of household members that is unemployed	1
Average monthly total household expenditures per capita (in 1994 PPP USD)	25
Average monthly food household expenditures per capita (in 1994 PPP USD)	18
Average value of household assets per household member (in 1994 PPP USD)	289

The urban labour market in Ethiopia is dominated by the public sector, which employs roughly one third of the adult men. Another third works as self-employed. The formal private sector employs less than 10%, a direct consequence of the policies of the ancient regime, which ensured that most medium and large-scale enterprises were under government control. Private firms were explicitly restricted in size and were not

⁴ 900 households in Addis, 125 in Dire Dawa, 100 households in Bahir Dar, Dessie, Jimma and Mekele and 75 households in Awassa. A more detailed overview of the sample can be obtained from the author.

⁵ In 1994 the exchange rate of the Ethiopian Birr (ETB) with the USD, corrected for purchasing power parity was 0.21875. One PPP dollar is worth 1.75 its equivalent in USD [World Bank (2000)], and the exchange rate is 8 ETB to 1 USD.

allowed in all sectors.⁶ We observe two earning groups: relatively high earnings associated with jobs in international organizations, civil service, and public and private sector employment; and lower earnings associated with self-employment, casual work and co-operative work. The gap in wages is quite high and may suggest a segmentation of the labour market in good and bad jobs (see Saint-Paul 1996), as we will discuss. Ethiopia has no unemployment benefit system and the unemployed rely mostly on the household. On average 1 household member out of 6 is unemployed. Average consumption per household member is 25 USD, which is below 1 USD per day.⁷ 70% of the household budget is spent on food. The mean value of household assets, excluding dwellings, is 289 USD.

We focus our analysis on young men between age 15 and 30. The lower boundary is determined by the fact that formal employment is illegal below the age of 15 and we find very observations. The upper boundary is chosen because beyond 30, unemployment in is at a sustained and significant lower level.⁸ Table 2 reports descriptive statistics for these young active men.⁹ Their education levels are relatively high: 87% have completed at least primary education while almost two thirds have finished junior secondary school or higher. Only 5% of the young men are married. Over 50% are unemployed.

⁶ At the start of the reforms public enterprises accounted for about 60% of employment and more than 80% of value added in the manufacturing sector alone. The state also dominated the construction, wholesale trade and transport sectors (Mengistae and Teal 1998).

⁷ From nationally representative data we know that average food expenditure per capita for the whole of Ethiopia is around 12 USD per month [Source: Dercon (1997) and own calculations] This means that our sample contains less-poor households, which is what one expects from a sample that is restricted to the 7 largest towns.

⁸ Using a t-test, we find that unemployment at age 30 is significantly different from unemployment beyond age 30; while unemployment at age 31 is no longer significantly different from unemployment beyond age 31.

⁹ excluding students, who represent 40% of all young men

Table 2: Descriptive statistics for young men aged between 15 and 30

<i>Highest Level of Education</i>	
None	13%
Primary education	14%
Junior secondary education	36%
Senior secondary education	31%
Tertiary education	6%
<i>Family situation</i>	
Married	5%
<i>Employment distribution</i>	
	<i>active only</i>
Public sector	15%
Private sector wage employment	7%
Self employment, casual workers and informal private sector	27%
Unemployed	51%

A key issue is how we measure unemployment. Respondents were asked to describe their main activity.¹⁰ Once the main activity is known, a list of questions was asked. The level of detail of the questions makes it impossible to pretend to be unemployed (or working). A number of control questions were also incorporated. We have information on two types of unemployment: those ‘looking for work but unable to find any’, and those ‘not in paid work and not looking for work’. There is discussion on whether those who are not looking for work should be considered as unemployed [see Flinn and Heckman (1983)]. We count them as unemployed. Given the high unemployment rates, it is not unlikely that job searching is passive and that people are waiting, rather than actively looking for a job, as argued for Kingdon and Knight (1999) for South Africa. We also find indications that job searching takes place through social networks, which may further induce waiting behaviour. However, none of our results are sensitive to this (broad) definition. The unemployed who are ‘not at paid work and not looking for work’ only represent 6% of the unemployed, implying a

¹⁰ The enumerator then selected one of the 25 categories that best described the respondent’s activity. If needed, a new category could be added.

difference between the narrow and broad unemployment rate of less than 2%. We also find that the two categories do not differ in their main characteristics.¹¹

How do we measure unemployment duration? For those who are working we have a direct observation (in months): they are asked how long their last spell of unemployment had lasted. Unfortunately, in the first round of the survey the unemployed themselves were *not* asked how long they had been unemployed. However, we can *construct* a measure of duration for them.¹² In brief, we predict the age at which schooling was completed for the unemployed, taking a selectivity bias into account, using 6 different models.¹³ We then construct the measure of duration as follows as: *Unemployment duration = Age – time working – estimated age at completing education*. From the 6 obtained measures of duration we select the most reliable one. In a later round of the survey we include a question for the currently unemployed and ask the unemployed directly how long they had been unemployed. We obtain a mean duration that is very close (and not significantly different) to the constructed one (42 versus 45 months) and that follows a similar distribution. A detailed 13 page description of the methodology to construct duration measure can be asked on simple request.

¹¹ The interested reader will notice that we carefully avoid the notion *involuntary unemployment* in this paper. The reason is that we do not believe it to be a terribly illuminating concept. As Berry and Sabot (1978) suggest, and Layard, Nickel and Jackman (1991) argue, in a segmented labour market, the unemployed are both at once. They are involuntary unemployed in the sense that they are willing to work at the going wage in the primary sector, but cannot find a job; and they are voluntary unemployed in the sense that they are not willing to work in the secondary sector at the going wage. In most economies there are always some bad jobs available. Does this mean that all the unemployed are voluntary unemployed? The neoclassical approach to see it as a choice does not seem to fit reality; but neither does the Keynesian approach, which regards the unemployed as excluded from the labour force, fit the picture. Some would prefer to combine the two and call it quasi-voluntary unemployment (see Edwards 1987), which does not illuminate the discussion either. One of the areas for future research is precisely to unravel why people do not want certain jobs, even while waiting or searching for a better job in unemployment.

¹² There are three reasons why this is relevant. First, considering completed unemployment spells only would lead to a selection bias because those who remain unemployed would be excluded. Second, completed spells only reflect past unemployment. Third, by also taking the currently unemployed into account, we obtain more observations which allows for a more robust analysis.

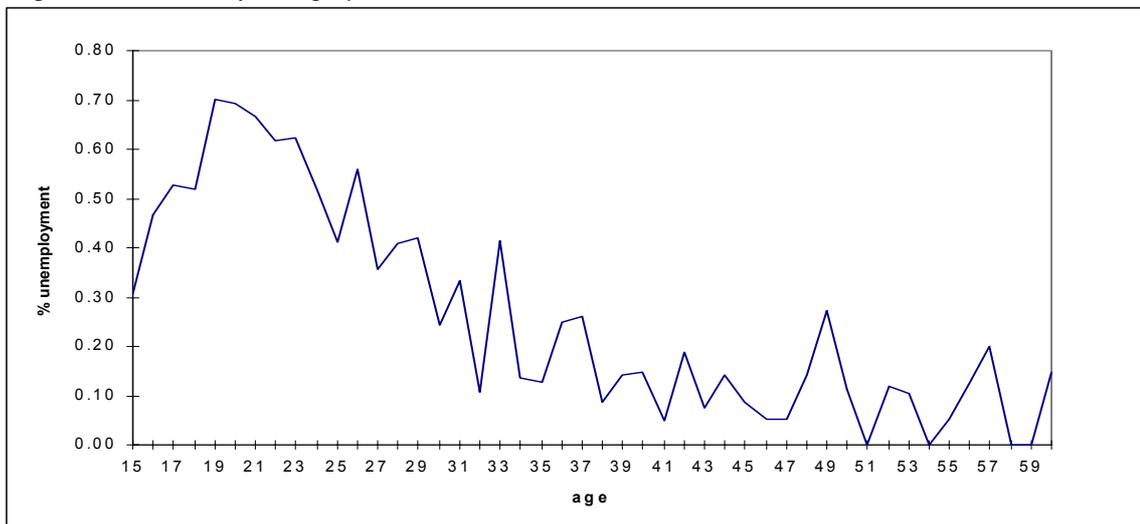
¹³ In many early analysis of unemployment duration in OECD countries, the measure was constructed as age – work experience – year of schooling – 6. This is inaccurate for developing countries because many finish school late.

3. The Incidence of Unemployment

3.1. Who are the unemployed?

Figure 1 plots the incidence of unemployment against age to illustrate the concentration of unemployment among the young. The graph reaches a peak at age 19 and falls after age 20. Only beyond age 30 does it reach a constant level.

Figure 1: Incidence of unemployment in 1994



The descriptive statistics in Table 3 give us further information on who the unemployed young men are. Only 6% of them are not looking for a job, so the vast majority is willing to work at the going wages. The majority are first time job seekers; they have never worked before. This is similar to other developing countries¹⁴, and may be an important distinctive characteristic from unemployment in industrialised countries, where movements in and out of unemployment are more frequent [see Layard et al (1990)]. Half of the young men are looking for a job in the public sector while almost

¹⁴ see for example Glewwe (1989), Dickens and Lang (1996) and Rama (1998) for Sri Lanka; Rama (1999) for Tunisia; Manning and Junankar (1998) for Indonesia; and Tenjo (1990) for Colombia

two thirds are looking for a job with a relatively high wage (public sector and private sector wage employment). Comparing these aspirations with the actual distribution of jobs in the youth labour market indicates that the public sector attracts more candidates than it can offer places. While 13% aspire to a job in a public enterprise, the sector employs only 9% of the working male young adults.¹⁵

Table 3: Descriptive statistics for young unemployed men

	Young unemployed (age 15-30)
Looking for Work?	
Looking for work but unable to find any	0.94
Not at paid work and not looking for work	0.06
Ever worked before?	
No	0.85
Yes	0.15
Job looking for:	
Public sector	0.50
Private sector wage employment	0.13
Self-employment, casual work and informal private sector work	0.14
Any work	0.23
Ever refused a job?	
Have never refused a job	0.98
Have ever refused job	0.02
Reservation wage (1994 PPP USD)¹⁶	
Mean	41
Standard deviation	28
Minimum	0
Median	33
Maximum	197
Medium for search	
Through friends, relatives, church, ethnic associations	0.40
Through government employment agency	0.15
Through advertisements	0.40
Asked prospective employer	0.05
How support yourself while unemployed	
Through parents' help	0.84
Small occasional jobs	0.12
Through help from friends, spouse, own savings or loan from relative	0.04

¹⁵ The difference is even more outspoken for civil servants: while 37% hope to get employed as a civil servant, only 20% will actually get such a job.

¹⁶ For the exchange rate see Footnote 5

Since the public sector is expected to contract, rather than expand, young men overestimate their chances of getting a public sector job. This is not uncommon; psychological research finds that youngsters typically perform poorer than adults in decision making.¹⁷ The poor performance is also obvious from a game theoretical perspective. Considering a career as a dynamic game, the transition from school to work is the very first stage of the game, and young men have never played the game before, so they have not had a chance to test their beliefs and revise them appropriately. An alternative explanation is that young people take higher risks. Evidence suggests that youngsters are indeed less risk averse.¹⁸ In our data we find little evidence that young people are risk *loving*: 98% of the young unemployed have never refused a job. We also find little evidence for unrealistic reservation wages: the median reservation wages is below that of a young casual worker (compare with figures in Table 4).

Table 3 also shows that the most used media for job searching are social networks and consulting advertisements. When we compare this with how working young men found their job (see Table 4), it becomes clear that the unemployed focus too much on advertisements and not enough on approaching the employer directly. Note that search through the government employment agency, on which the official unemployment figures are based, represents only 15% of the young male unemployed.¹⁹ We also find

¹⁷ Psychological research finds that adults outperform youths, especially younger adolescents (12-15 years) in decision making competence measures such as consideration of all options, risks, and long term consequences (Halpern-Felsher and Cauffman 2000). The reason is that they have poor information about the market and about themselves.

¹⁸ For an overview see Gruber (2001).

¹⁹ The Ministry of Labour and Social Affairs (MoLSA) has a division in each region, concerned with matching labour supply and demand. Although reporting is not compulsory, neither for job seekers nor for employers, this is *the* source for official unemployment figures, published by the Ministry of Labour and Social Affairs (MLSA) and used to determine government policy. However, not only do these figures represent just a fraction of the unemployed, changes in the figure do not necessarily reflect changes in actual unemployment. The early nineties for example are believed to be characterised by a sharp increase in unemployment, while this rise may well reflect an increase in reporting due to increased confidence in the new government.

that the unemployed get most of their support from their parents. In the next sections we discuss the determinants of the probability of being unemployed.

Table 4: Descriptive statistics for young working men

	Young employed (age 15-30)
Wage (1994 PPP USD)²⁰	
Median	44
Mean	58
Standard deviation	53
Minimum	2
Maximum	551
<i>Median real earnings per month (1994 PPP USD)²¹</i>	
Public sector employee:	
International Organisation	91
Civil servants	61
public sector enterprise employee	59
Formal private sector employee	
private sector enterprise employee	42
Informal private sector	
Self-employed	45
Casual workers	37
Co-operative worker	28
Domestic worker	9
Medium through which job is found	
Through friends, relatives, church, ethnic associations	0.33
Through government employment agency	0.19
Through advertisements	0.26
Asked prospective employer	0.22

3.2. Individual characteristics

Table 5 shows the marginal effects for a probit on unemployment for young men. The model only includes exogenous variables. We test the model for homoscedasticity and normality using a conditional moment test (Pagan and Vella 1989) and it passes both. Age has a positive effect indicating that the relatively older young men are more likely to be unemployed. Up to senior secondary education, one is more likely to be

²⁰ See Footnote 5.

²¹ See Footnote 5.

unemployed the higher one's level of education. Tertiary education is insignificant, which indicates that having a university degree no longer ensures one will get a job.²² Ethnic origin has no significant influence, whatever ethnic variable we put in, rejecting the belief that unemployment is lower among the Gurage, who are traditionally associated with trade and self-employment; or among the Tigray, who are strongly represented in the current government.

Table 5: Probit young unemployed men with exogenous variables only (marginal effects)

	(1)	(2)	(3)	(4)
	unemployed	unemployed	unemployed	unemployed
Age	0.161 (0.060)**	0.151 (0.060)*	0.162 (0.060)**	0.153 (0.060)*
Age squared	-0.004 (0.001)**	-0.004 (0.001)**	-0.004 (0.001)**	-0.004 (0.001)**
Primary is highest level of education	0.136 (0.080)+	0.134 (0.080)+	0.134 (0.080)+	0.150 (0.079)+
Junior secondary is highest level of education	0.252 (0.069)**	0.251 (0.069)**	0.251 (0.069)**	0.274 (0.068)**
Senior secondary is highest level of education	0.384 (0.061)**	0.389 (0.061)**	0.383 (0.061)**	0.413 (0.060)**
Tertiar is highest level of education	0.148 (0.095)	0.155 (0.095)	0.151 (0.094)	0.176 (0.093)+
Amhara	0.049 (0.043)	0.046 (0.043)	0.060 (0.042)	0.063 (0.042)
Ln(bmi)	-0.142 (0.116)		-0.139 (0.115)	-0.137 (0.116)
Height for age		-0.039 (0.030)		
Years of schooling mother	0.010 (0.007)	0.010 (0.007)	0.012 (0.007)+	0.015 (0.007)*
Father works in formal sector wage work	0.107 (0.048)*	0.107 (0.048)*		
Father works in civil service			0.091 (0.053)+	
Father works as self-employed				-0.083 (0.047)+
Living in Addis	-0.119 (0.045)**	-0.120 (0.045)**	-0.123 (0.045)**	-0.127 (0.045)**
Observations	679	679	679	679
Robust standard errors in parentheses				
+ significant at 10%; * significant at 5%; ** significant at 1%				

²² During the previous regime, the tertiary educated were guaranteed a job in the public sector, but this was abolished in 1991.

3.3. Household background

Health, as measured by the logarithm of the Body Mass Index has a negative effect, but is insignificant. Because the variable may be endogenous²³, and we do not have convincing instruments for individual health, we replace it by height for age. This variable reflects long term nutrition health, accumulated over the years, which is exogenous. Height for age has a smaller but still insignificant effect, indicating no link between urban unemployment and nutrition health, as suggested by efficiency wages models.²⁴ It also suggests that physical appearance of health (height or body mass index), is not used as a sorting device by employers. As we will see, this result is independent from the job aspired to, or the welfare of the individual's household.

Our results confirm the finding by Krishnan (1996) that household background is important for labour market performance in urban Ethiopia. Table 5 shows that mother's education may play a role, although the coefficient is limited in size and its significance is low and unstable. The father's profession, on the other hand, has a strong and significant effect that is robust for different specifications of the model. As we can see in column 1 of Table 5, young men with a father working as a formal sector wage worker are more likely to be unemployed. In columns two and three we replace this variable by *a father working as civil servant* and *as self-employed* respectively, the two dominant types of work. This shows that the effect comes mainly from fathers who are civil servants. Having a self-employed father has a *negative* effect on a young man's chances to become unemployed. However, when we introduce household

²³ If the missing income of the unemployed would represent an important part of the household's income, unemployment may *cause* a lower body mass index.

²⁴ see Leibenstein (1957), Dasgupta (1993) and Dasgupta and Ray (2000).

welfare (see below), the effect becomes insignificant, indicating that this is a welfare effect.

Table 5 also shows that young men living in Addis Ababa are less likely to become unemployed relative to those living in other towns. This suggests that even if youngsters have migrated to Addis, they are still more likely to find a job than in any of the provincial towns.

Household welfare is not included in the model in Table 5 because it is potentially endogenous. But we expect it to play an important role because unemployment duration is long and Ethiopia has no unemployment benefit system while the majority of young men are supported by their parents during unemployment. We consider two proxies for household welfare: assets and consumption. The first is measured by the mean value of household assets per household member and can be interpreted as a measure of household savings; the second is measured by per capita consumption per month, although we obtain the same results when we use food consumption, measured per capita or per adult equivalent. Table 6 shows that the unemployed come from households with lower household welfare, whichever indicator we use.

Table 6: T-test on the difference in means between employed and unemployed for potentially endogenous variables indicating welfare

	Young (age 15-30)		p-value for one-sided test, allowing for different standard deviations
	(1) Unemployed	(2) Employed	
Mean value of household assets per hh member (USD) ²⁵	221	529	0.001
Total consumption per capita per month (USD)	21	26	0.001
Food consumption per adult equivalent per month (USD)	16	20	0.000

²⁵ see Footnote 5

When we test formally whether each of these variables is individually omitted from the model in Table 5, we find that they are (the p-values for a score test are below 0.008 for assets, consumption or food consumption). We also find, using a conditional moment test for endogeneity (Stewart 1998) that both variables are endogenous (p-values for score test are below 0.002). We therefore run an instrumental variable probit where household assets and household consumption are instrumented for.²⁶ The results for the second stage regression are shown in Table 7. A Hausman test indicates that the results of the instrumental variable model are not different from the model *without* instruments, so endogeneity does not bias the results. Although the two welfare variables are not highly correlated (0.33), we include them separately as well as together. Both variables have a significant negative effect. This confirms that the unemployed come from households with relatively lower household welfare. The effects of the other variables remain largely the same, with three important observations: (i) primary education has become insignificant; (ii) mother's education has become significant, and still has only a small effect; and (iii) father's profession is now insignificant, indicating that its effect was mostly a household welfare effect.

The dominant view in the economic literature is that unemployment in developing countries is concentrated among the better off. It is a luxury (Udall and Sinclair 1982) and a 'bourgeois phenomenon' (Myrdal 1968). However, there is very little empirical evidence for this. Our results suggest that the urban poor are more likely to be unemployed in urban Ethiopia. To study whether the effect is inverse U-shaped we included squared terms of household welfare, but this only renders the effect of these variables insignificant.

²⁶ To select the instruments, we start from a general model of household welfare. We then compare their correlation with unemployment with their correlation with asset value and consumption and select those instruments which are highly correlated with last but lowly correlated with the former.

Table 7: Instrumental variable probit unemployment of young men (marginal effects)

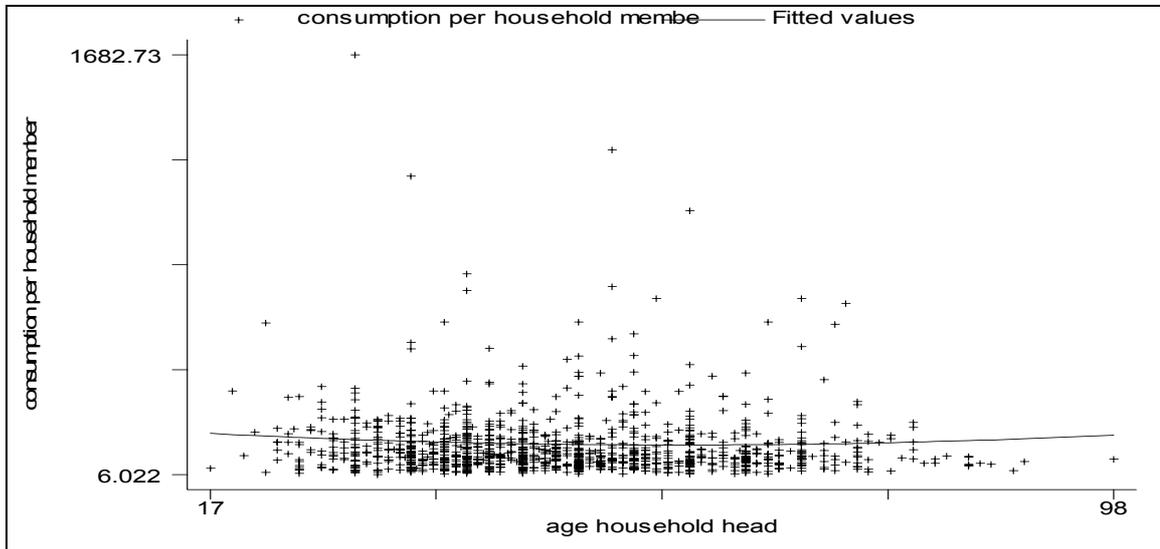
	(1)	(2)	(3)
	unemployed	unemployed	unemployed
Age	0.17303 (0.07860)*	0.11764 (0.07723)	0.17796 (0.08335)*
Age squared	-0.00425 (0.00166)*	-0.00308 (0.00164)+	-0.00436 (0.00177)*
Primary is highest level of education	0.09991 (0.10101)	0.12837 (0.10274)	0.08811 (0.10866)
Junior secondary is highest level of education	0.20624 (0.08702)*	0.25286 (0.08377)**	0.21171 (0.09073)*
Senior secondary is highest level of education	0.34268 (0.07753)**	0.38468 (0.07865)**	0.34989 (0.08418)**
Tertiary is highest level of education	0.11348 (0.11901)	0.17088 (0.11717)	0.12002 (0.12614)
Amhara	0.03384 (0.05432)	0.02261 (0.05426)	0.03487 (0.05543)
Ln(bmi)	-0.11117 (0.15595)	-0.12278 (0.15696)	-0.10769 (0.15939)
Years of schooling mother	0.01788 (0.00877)*	0.02053 (0.00912)*	0.01842 (0.00930)*
Father works in formal sector wage work	0.04205 (0.05989)	0.05534 (0.05924)	0.03766 (0.06116)
Living in Addis	-0.13219 (0.05619)*	-0.13888 (0.05967)*	-0.13101 (0.06113)*
Mean value of household assets per hh member (I)	-0.00006 (0.00002)**		-0.00006 (0.00003)*
Total consumption per capita per month (I)		-0.00114 (0.00056)*	-0.00014 (0.00073)
Observations	472	472	472

Standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%
(I)= Instrumented by monthly wage income of the parents in the household; gender, age, education, marital status, ethnicity, religion, and profession of the household head; and place of living

But the results do not necessarily imply that urban unemployment is *caused* by urban poverty? Since unemployment is concentrated among the young the negative association between household welfare and unemployment may be a consequence of the household's life cycle. Households with unemployed youngsters may be in the poorest phase of their life time. To test whether this is the case, we plot household welfare measured by consumption per capita, against the age of the household head. As we can see in Figure 2, we obtain a horizontal line, indicating that there is little variation in consumption per head over the household's life cycle. We get the same result when we plot assets per household member against the age of the household

head.²⁷ Variation over the household life cycle therefore offers no good explanation for the negative association between household welfare and unemployment.

Figure 2: Age of the household head plotted against consumption per household member



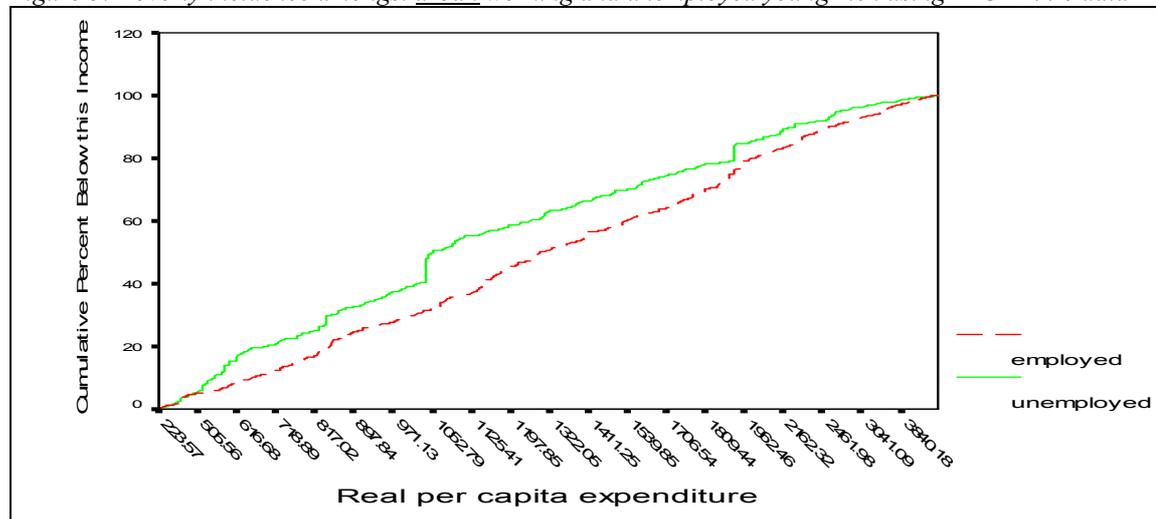
Another explanation for the negative association may come from the strong evidence for endogeneity of household welfare. This indicates that causality may run in the opposite direction and reflects a coping mechanism. When insurance against unemployment is lacking, households reduce their consumption or sell their assets to cope with the unemployment of one of their members.

Of course our sample consists of urban households. To check the robustness of our finding, we compare with the results from a larger and more representative sample, using the national Household Income and Consumption Expenditure (HICE) 1996 data provides supporting evidence. When we restrict ourselves to the urban unemployed, we find indeed that they come from households with levels of consumption below those of households where the employed come from. The graph in Figure 3 plots real

²⁷ We also get the same results when we replace the age of the household head by the number of young people in the household.

household per capita expenditure on the X-axis, and the head count index on the Y-axis.²⁸

Figure 3: Poverty incidence amongst urban working and unemployed young men using HICE 1996 data



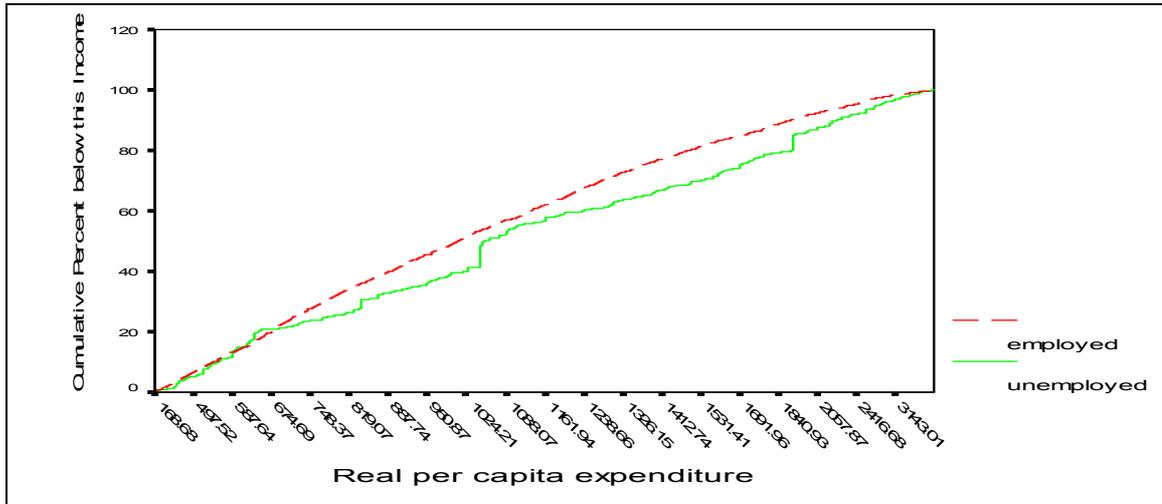
For all levels of income, the head count index for the employed is lower than for unemployed young men. This first-order dominance confirms the robustness of our finding.²⁹

However, when we draw the same graph for the entire country, including rural areas, we find that the unemployed come from *better off* households than the employed, except at the bottom end of the distribution, as can be seen in Figure 4.

²⁸ The head count index reflects the percentage of people below a poverty line. A nutrition based poverty line, based on a national diet that allows each household member to reach 2200 KCal (adapting for adult equivalent units), and marked up with a budget for non-food that should be drawn at 231 PPP USD per year. [see Dercon (1997)]

²⁹ More accurately, it shows that wherever we draw the poverty line, the unemployed young men come from households with lower levels of consumption than the employed.

Figure 4: Poverty incidence amongst all (urban and rural) working and unemployed young men using HICE 1996 data



Thus, relatively speaking, the unemployed do not come from the poorest households. Since household welfare does not have a positive effect on unemployment, they also do not come from the richest households. This confirms that unemployment is a ‘middle class phenomenon’, as suggested by Myrdal (1968). The observation that the unemployed are reasonably well educated also supports that.

The fact that we find a significant negative relationship for the urban sample is thus best explained as a coping mechanism to deal with unemployment. To maximize expected future earnings, middle class families support their sons in queuing for a public sector job. Because the queuing takes so long, this is a drain on household resources. Lowering consumption or selling assets is the household’s coping mechanism.

3.4. The role of job aspirations

An important question is the effect of job aspirations on unemployment.³⁰ The results are presented in Table 8. We find that aspiring to a public sector job has a large significant positive effect, while aspiring to self employment or casual work has a large significant negative effect on the probability of becoming unemployed. This underlines the importance of job aspirations and suggests that those who are queuing for a public sector job - about half the number of young unemployed – would be more likely to find a job if they changed their preferences.

Table 8: The effect of job aspirations

	(1) unemployed	(2) unemployed	(3) unemployed
Aspire to a public sector job	0.15945 (0.06317)*		
Aspire to a private sector wage job		0.07138 (0.08158)	
Aspire to self employment or casual work			-0.34266 (0.06536)**
Observations	466	466	466

Standard errors in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%
The model controls for age, age squared, level of education, ethnicity, log of body mass index, years of schooling of the mother, professional activity of the father, location and household welfare (I).
(I)= Instrumented by monthly wage income of the parents in the household; gender, age, education, marital status, ethnicity, religion and profession of the household head; and place of living

3.5. The importance of the job search medium

Table 9 shows that those searching for a job through the most anonymous media - government agencies and advertising - face a higher probability of becoming unemployed; while those asking the employer directly are less likely to be unemployed. The results of a qualitative pilot survey indicate that many youngsters are

³⁰ Since we do not have information on past aspirations of those in work, we assume that the working end up in the job they want. The variable thus reflects the actual job for those working, while it reflects the aspired job for the unemployed.

too shy to ask an employer directly. This suggests that directly asking the employer signals assertive behaviour, and pays off. Job searching through social networks, relatives, friends, or ethnic and religious associations is, however, not rewarding. These results remain the same when we control for the type of job. They contrast with the finding that social capital - especially friends and relatives - is important for job search in industrialised countries [Holzer (1988), Granovetter (1994)]. However, we will see in Section 4. that those looking for work through their social capital have shorter durations of unemployment, suggesting that job search through social capital only works once someone is unemployed.

Table 9: The importance of the search medium

	(1)	(2)	(3)	(4)	(5)
	unemployed	unemployed	unemployed	unemployed	unemployed
Job search through relatives and friends	-0.01644 (0.05756)				
Job search through government agency		0.22387 (0.07764)**			
Job search by asking prospective employer			-0.34342 (0.06658)**		
Job search through consulting advertisements				0.17101 (0.06003)**	
Job search through ethnic or church association					-0.14656 (0.15786)
Observations	472	472	472	472	472

Standard errors in parentheses ; + significant at 10%; * significant at 5%; ** significant at 1%
The model controls for age, age squared, level of education, ethnicity, log of body mass index, years of schooling mother, professional activity father, location, household welfare (I)
(I)= Instrumented by monthly wage income of the parents in the household; gender, age, education, marital status, ethnicity, religion, and profession of the household head; and place of living

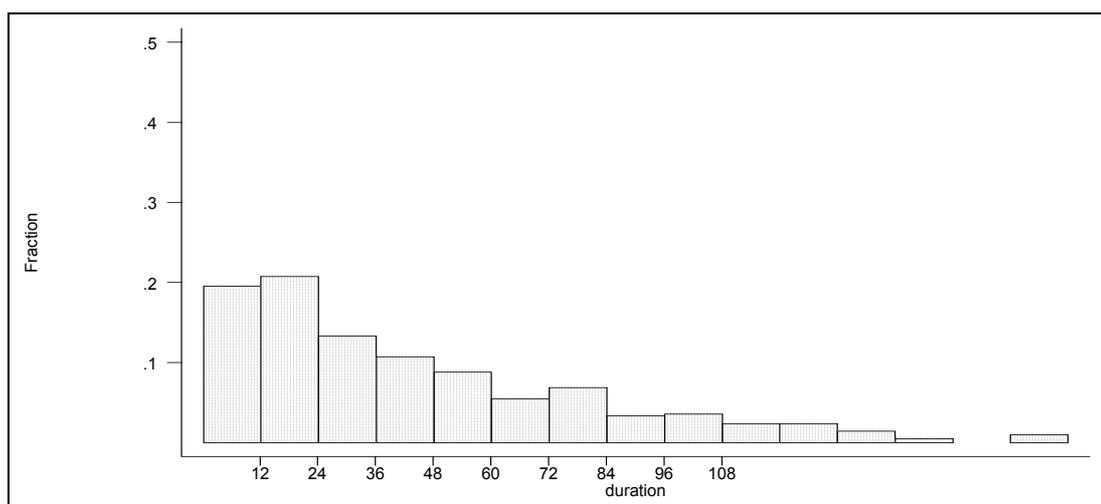
4. The Duration of Unemployment

We know of only four papers that analyse the duration of unemployment in developing countries. Dickens and Lang (1996) find that unemployment duration in Sri Lanka is 4 years or more, but do not analyse its determinants because they only have data on uncompleted spells. Nevertheless, they show that duration is not related to education in Sri Lanka. Kingdon and Knight (2001) find that about a third of the unemployed in

South Africa have a duration of one year or less, while 37% having a duration of more than 3 years. Two other papers exclude first time job seekers, so their results are not strictly comparable with ours. Tunali and Assaad (1992) consider unemployment among casual contract workers in the construction sector. They show that the average construction worker frequently experiences unemployment spells and is unemployed 36% of the time. The spells last on average 23 days and there are significant differences between skill and trade classifications, but education and experience have no effect.³¹ Appleton, Knight, Song and Xia (2001) study unemployment duration among retrenched workers in China and find an expected duration of 47 months. Time spent in unemployment is longer for the unhealthy and less educated.

We find that for young men in urban Ethiopia, allowing for right censoring, the expected duration is 45 months or almost 4 years, while the median is 35 months or close to 3 years. Figure 5 shows that the distribution of the non-zero duration spells is skewed to the right: spells below 2 years represent almost 40%.

Figure 5: Distribution of the duration of unemployment spells, excluding the zero durations



³¹ They consider unemployment ‘due to lack of acceptable employment’ - which is further undefined. Using data that is collected during the recession of the late eighties, they find that the average worker is thirty-six percent of the time involuntarily unemployed. They do not control for unobserved heterogeneity, which usually affects the results [see Nickel (1979), Lancaster (1990), Kiefer (1988) and van den Berg (2000)] but they do test for alternative specifications of the hazard, and find that their results are robust.

We analyse unemployment duration by investigating the determinants of the hazard rate, which is the probability of leaving unemployment conditional on having been in unemployment so far.³² To interpret the determinants of the hazard rate, one uses a proportional hazard (PH) model. The strong assumption underlying this type of model is that the explanatory variables have the same proportional effect on all points of the hazard. For example, having completed senior secondary school would have the same effect on the hazard after one year as it would have after four years of unemployment. The hazard can be written as a product of two components: one depending on t alone - the baseline hazard - and one depending on the explanatory variables alone. The proportionality assumption means that the two components enter the hazard function multiplicatively. This cannot readily be justified on economic-theoretical grounds. Only if the optimal strategy of the individual is myopic, proportionality can be deduced from theory, as is shown by van den Berg (2000). The most obvious case for this is when discount rates are high, but the opportunity to engage in ‘repeated search’ may also play a role. When agents know they have a second chance, they will be more likely to behave myopically. We know that the unemployed come from households with low levels of welfare, hence the unemployed will have relatively high discount rates. It is also known that young people often use high discount rates and behave myopically (O’Donoghue and Rabin 2000). There is also evidence for repeated (on-the-) job search in Ethiopia. Mengistae (1999) finds that people in the private sector queue for a public sector job. These arguments provide a conceptual basis for proportionality, but whether it holds in practice is an empirical question; which we address formally in the next section.

³² We model the hazard rate rather than duration since we are interested in the transition from one state to another, which reflects an individual’s career path. From a methodological point of view, it is of course equivalent to model duration or hazard. Assuming a particular distribution of the duration spells is equivalent to pinning down a course for the hazard rate.

4.1. Testing proportionality

The Cox model allows us to test the proportionality assumption.³³ We find that it is rejected at the 0.03 level³⁴, implying that we should be cautious with interpreting the coefficients in the usual way. Interestingly enough, the point estimates obtained by the Cox-model do not vary significantly from the estimates obtained from other models.³⁵ We conclude that the coefficients are robust to different specifications. However, because the data fails proportionality, we proceed with an alternative model, namely the piece-wise constant hazard model, which does not require this assumption.

Note that in all our models, we control for unobserved heterogeneity. This is important because especially in duration analysis, the results are sensitive to unobserved heterogeneity (van den Berg 2000). We control for it in a parametric rather than a non-parametric way (using a mixture model), for three reasons. First, we find that all our estimates remain the same assuming alternative distributions for unobserved heterogeneity. Second, there is evidence that the main cause of bias in the results of mixture models is misspecification of the baseline hazard rather than assuming the wrong distribution of heterogeneity (Ridder and Verbakel 1983). Third, the method to estimate mixture models is complex and its calculations are long and error prone (Lancaster 1990). Because it has not been applied frequently, little is known about the properties of its estimator.

³³ The actual test is based on the findings by Grambsch and Therneau (1994) that the Schoenfeld residuals should have a slope of zero for each covariate. So the test looks at whether the covariance between the residual and the time-dependent regressor is large. The residuals can be interpreted as the nonparametric estimate of the log hazard ratio function. The basic mechanics of the test are explained in Lancaster (1990) p323.

³⁴ The test allows for different uses of time. The lowest p-value is $p=0.03$.

³⁵ Table 15 in appendix reports the estimates from the Cox and PH models.

4.2. Piece-wise constant hazard estimation allowing the coefficients to vary

The piece-wise constant hazard model considers a constant hazard but allows the hazard to shift over time by introducing dummy variables for different time segments. We interact these dummies with the independent variables, thus allowing the variables to have different effects over the defined intervals. The interpretation is similar to an OLS regression with time-specific slopes. We define two intervals: below 6 years and beyond 6 years. This choice is based on the course of the hazard rate. We find that a Weibull model fits the data well and that the hazard follows an inverse U-shape which reaches a maximum around 6 years.³⁶ The results are presented in column one in Table 10. The coefficients reflect the change in the log of the hazard due to a one-unit change in the variable concerned. Column two takes the same approach but slices the first 72 months further down into 3 segments of 24 months. This is of interest because 78% of the unemployed spend less than 72 months in unemployment.

Table 10: Piecewise constant hazard with varying coefficients

	Hazard rate 2 segments of 72 months	Hazard rate 4 segments of 24 months
Age	-1.37088 (0.39282)**	-1.57839 (0.44980)**
Age x d2	2.68488 (1.69373)	0.90621 (1.11407)
Age x d3		0.57413 (2.07545)
Age x d4		2.84944 (1.71195)+
Age squared	0.02758 (0.00805)**	0.03243 (0.00927)**
Ages x d2	-0.06760 (0.03439)*	-0.01851 (0.02284)
Ages x d3		-0.01553 (0.04106)
Ages x d4		-0.07170 (0.03482)*
Primary is highest level of education	0.14469 (0.44069)	-0.46165 (0.58441)
Primary x d2	-1.46836 (1.26601)	1.20101 (1.10176)
Primary x d3		2.25403 (1.48622)

³⁶ A more detailed discussion of the course of the hazard rate can be found in Serneels (2002a).

Primary x d4		-0.81354 (1.33476)
Junior secondary is highest level of education	0.25512 (0.45323)	-0.07296 (0.57444)
Junior secondary x d2	-25.44132 (1.27366)**	0.96967 (1.09450)
Junior secondary x d3		1.53246 (1.76979)
Junior secondary x d4		-30.02288 (1.31187)**
Senior secondary is highest level of education	0.43233 (0.43104)	0.04726 (0.55814)
Senior secondary x d2	2.71421 (1.48720)+	0.97185 (1.02565)
Senior secondary x d3		1.97731 (1.62794)
Senior secondary x d4		3.17294 (1.53706)*
Tertiar is highest level of education	0.27157 (0.71529)	0.37541 (0.73107)
Oromo	0.50287 (0.28116)+	0.52309 (0.28003)+
Gurage	-0.03267 (0.32828)	-0.00969 (0.32188)
Tigray	0.10733 (0.45501)	-0.04205 (0.45313)
Body Mass Index	0.01008 (0.01415)	0.01148 (0.01339)
Years of schooling mother	0.04379 (0.03672)	0.02549 (0.04982)
Years of schooling mother x d2	-0.35669 (0.12322)**	-0.03476 (0.09262)
Years of schooling mother x d3		0.17468 (0.08419)*
Years of schooling mother x d4		-0.33032 (0.12523)**
Father works in civil service	0.02284 (0.28594)	0.20272 (0.36460)
Father civil servant x d2	1.60540 (0.59039)**	-1.54770 (1.08918)
Father civil servant x d3		0.25478 (0.76040)
Father civil servant x d4		1.42083 (0.64414)*
Father works as self-employed	0.01326 (0.29610)	-0.08324 (0.40215)
Father self-employed x d2	1.68505 (0.66259)*	0.04643 (0.64635)
Father self-employed x d3		0.45642 (0.75201)
Father self-employed x d4		1.77032 (0.72533)*
Father is unemployed	-27.77527 (0.48808)**	-32.89287 (0.57340)**
Father unemployed x d2	1.23463 (1.15857)	-0.11258 (0.84359)
Father unemployed x d3		-0.54899 (1.24116)
Father unemployed x d4		1.02679 (1.31230)
Living in Addis Ababa	0.04330 (0.25122)	0.07119 (0.25033)
Local unemployment rate	-4.41350 (2.21440)*	-4.64509 (2.26782)*
Constant	12.26913 (4.58157)**	14.79692 (5.07136)**
d2	-24.74370 (20.53043)	-11.72198 (12.94179)
d3		-6.57162 (25.03750)
d4		-26.71165 (20.71419)
Ln_the:Constant #	-13.12033 (1.11696)**	-16.27127 (1.26981)**
Number of observation s	393	393

Standard errors in parentheses; + significant at 10%; * significant at 5%; ** significant at 1%
is the parameter that indicates heterogeneity

4.3. Individual characteristics

Age has a strong negative influence on the hazard rate, even after controlling for the individual's highest level of education. The older one gets, the lower the probability of leaving unemployment if one has not already done so. The age effect is convex and becomes less negative over time. A young man aged 18 is 4 times less likely than an otherwise identical young man of 15 to leave unemployment, while a 22 year old is at least 12 times less likely to leave unemployment than the 15 year old. This effect has the same sign but is considerably larger than in OECD countries. It suggests that if employers are using unemployment duration as a screening device, as suggested by Blanchard and Diamond (1994), they use it in combination with age.

Different levels of education have different effects on the hazard. Primary education has no effect - this is what we expect given the relatively high levels of education in urban Ethiopia.³⁷ In contrast, secondary education does have strong effects, but only for long durations. Those with junior secondary schooling are (dramatically) *less* likely to leave unemployment in the long run, whereas senior secondary school educated are *more* likely to leave unemployment in the long run. Given the limited number of those who are tertiary educated, we cannot draw any inference on its effects. Figure 6 visualises the education effects. For the majority of unemployed (those with durations below seventy-two months), education has limited effects on the hazard. In the long run however, higher levels of education only have a positive effect for senior secondary education. Thus junior secondary education combined with long duration is interpreted

³⁷ The gross primary school enrolment rate for boys in urban areas was 98.2 in 1996 [Dercon (1999)].

as a signal of low ability. Note also that those who are junior secondary educated do not have higher chances in the job market than those who are primary educated.³⁸

Figure 6: Effect of education on the hazard for spells below 6 years



Ethnicity has a significant effect in the sense that the Oromo are slightly more likely to leave unemployment. This may indicate an overhaul of the government policy in the early years when the Tigray were said to be favoured. Further supporting evidence for this interpretation is that when we only consider unemployment spells that started before the political change, being Oromo has no effect (results not reported).

We find no evidence for an effect of health, as measured by body mass index, on the hazard, which supports the conclusion from the incidence analysis, that nutrition health does not have an obvious effect on labour market performance in urban Ethiopia.

³⁸ We make an abstraction from the effect education has on the *kind* of job and the wage one gets. (For the latter see for example Krishnan (1996).

4.4. Household background

Mother's education has a negative effect on the hazard in the long run, which may reflect an indirect effect of mother's education on job preferences and reservation wages. The father's profession plays an important role, but only in the long run: the long term unemployed with a father working as a civil servant or as a self-employed are *more* likely to leave unemployment. The father's employment status on the other hand, has an immediate effect: those with a father in unemployment are significantly less likely to leave unemployment in the first few years. As we will see, these variables remain significant when we include household welfare, indicating that the negative effect from having an unemployed father is more than just a welfare effect. It may be that young men with an unemployed father are discouraged from looking for work, or that it is related to other unobservable characteristics.

The high significance of father's profession reveals something about the job searching process. Public service vacancies in Ethiopia are advertised by the Federal Public Service Commission following strict procedures. From anecdotal evidence, we know that the hiring procedure for civil servants takes several months. It is unlikely that fathers have a direct influence on their sons' hiring because the procedures are so strict. However, in this bureaucratic environment, having inside information is vital and having a father working as a civil servant creates an information advantage. Self-employed fathers can of course recruit their own son, or they may provide information on how to set up their own business.

Another interpretation of the importance of the father's profession is that it affects the son's preferences. Young men with a father working as a civil servant may be more likely to aspire to a civil service job; likewise for the self-employed.

Interestingly enough, duration spells in Addis are not significantly longer or shorter than in the other big cities. To better capture the effect of the local labour market, we construct a local unemployment rate. Evidence from the US and the UK shows that unemployment is often concentrated in certain regions. Kingdon and Knight (1999) confirm this for South Africa and show that unemployment is concentrated in the home lands. Since we are especially interested in how the state of the local labour market affects the hazard, we develop a local unemployment rate for each town and for six separate identified neighbourhoods in Addis Ababa.³⁹ We find that the local unemployment rate has a large negative and significant effect on the hazard. This effect weakens, but still remains significant when we control for household welfare. Locality thus plays an important role. It also suggests that immobility, possibly driven by home ownership, contributes to unemployment in an important way.⁴⁰

4.5. The importance of the constant

One of the most important results of our analysis is the high significance of the constant, which suggests that the hazard rate does not change over time and that there is limited duration dependence.⁴¹

³⁹ Each town in Ethiopia is divided in weredas, which is again divided into kebeles, the smallest urban dwelling unit. Using this detailed data, we identify six different parts of Addis Ababa that can be considered as geographical units of economic activity. Given their limited size, the other towns are considered as one unit.

⁴⁰ Muellbauer (1994) and Oswald (1996) find that immobility due to home ownership is an important factor in the United Kingdom.

⁴¹ The reasons for this are investigated in Serneels (2002a).

4.6. The role of job aspirations

Job aspirations have a strong effect on the hazard, as shown in Table 11. Those aspiring to a public sector job are less likely to leave unemployment, while those going for self employment or casual work are more likely to leave unemployment. Since the public sector is associated with relatively high wages, while self employment and casual work are associated with low wages, this indicates that the unemployed are queuing for a high paid job.

Table 11: The effect of job aspirations on the hazard

	(1)	(2)	(3)
	Hazard rate	Hazard rate	Hazard rate
Aspiring to public sector	-0.49378 (0.25252)+		
Aspiring to formal private sector		0.31814 (0.28838)	
Aspiring to self employment or casual work			1.03405 (0.25048)**

Robust standard errors in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%
The model controls for age, age squared, level of education, ethnicity, body mass index, mother's education, father's professional activity, place of living, local unemployment rate, constant, a dummy taking the value one for spells longer than seventy-two months, and an interaction term of this dummy with age, age squared, education level, mother's education, father's professional activity, and the constant. The model control s for unobserved heterogeneity, which is assumed to follow an inverse Gaussian distribution

When we introduce job preferences, this does not weaken the effect of junior secondary education (results not reported). The long term unemployed who enjoyed junior secondary education still have a lower hazard than the primary educated, suggesting that, even though junior secondary education may affect job preferences, it also has a direct effect and does not increase one's chances in the labour market. This supports results from Krishnan (1996) who finds that returns to junior secondary education are negligible.

4.7. The importance of social networks

Table 12 confirms earlier findings that the medium through which job searching takes place is important. Those who look for a job through friends and relatives have shorter durations. Combined with the lack of effect of social networks on the incidence of unemployment, this suggests that social networks only pay off once the individual actually *is* unemployed, rendering support to the interpretation of social capital as an insurance mechanism: it gets into operation after the individual has been exposed to the risk. It suggests that friends and relatives only report vacancies to the *actual* unemployed. They may do this because the actual unemployed have a higher marginal utility of getting a job. A notion of fairness may also play a role, where people prefer to provide job information to unemployed for a job rather than working friends looking for a better job. As in the analysis on the incidence of unemployment, those who search by asking the prospective employer directly also have shorter durations.

Table 12: The role of the medium of job search

	(1)	(2)	(3)	(4)	(5)
	Hazard rate	Hazard rate	Hazard rate	Hazard rate	Hazard rate
Job search through relatives & friends	0.66841 (0.23727)**				
Job search through government agency		0.11169 (0.32176)			
Job search through church/ethnic association			0.55161 (0.67840)		
Job search through advertisement				0.08135 (0.23226)	
Job search by asking employer directly					1.03565 (0.28954)**

Robust standard errors in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%
The model controls for age, age squared, level of education, ethnicity, body mass index, mother's education, father's professional activity, place of living, local unemployment rate, constant, a dummy taking the value one for spells longer than seventy-two months, and an interaction term of this dummy with age, age squared, education level, mother's education, father's professional activity, and the constant. The model controls for unobserved heterogeneity, which is assumed to follow an inverse Gaussian distribution

4.8. The role of household welfare and other issues

Table 13 includes household welfare in the model. We find that it is negatively correlated with the hazard. Those coming from richer households leave unemployment earlier however we measure household welfare - as the value of assets per capita or as household consumption per capita. Unemployment duration is thus *shorter* for those coming from better off households. This is consistent with what we found for the incidence analysis.

Table 13: The role of household welfare

	(1)	(2)	(3)
	Hazard rate	Hazard rate	Hazard rate
Value of assets per household member	0.00004 (0.00001)**		0.00006 (0.00005)
Consumption per capita		0.00212 (0.00040)**	0.00191 (0.00041)**

Robust standard errors in parentheses, + significant at 10%; * significant at 5%; ** significant at 1%
 The model controls for age, age squared, level of education, ethnicity, body mass index, mother's education, father's professional activity, place of living, local unemployment rate, constant, a dummy taking the value one for spells longer than seventy-two months, and an interaction term of this dummy with age, age squared, education level, mother's education, father's professional activity, and the constant. The model controls for unobserved heterogeneity, which is assumed to follow an inverse Gaussian distribution

A formal test for endogeneity in duration models is cumbersome to construct.⁴² To see whether the results in Table 13 are biased by potential endogeneity of household welfare, we test whether the coefficients are different when we include its predicted value from an auxiliary equation. We find that none of the coefficients change significantly whether we use assets or consumption, as can be seen in Table 16 and Table 17 in appendix 7.6. This suggests that even if the variable is endogenous, it does not bias our results.⁴³

⁴² The most straightforward way is to follow the general methodology for correcting standard errors in two step models, as set out by Murphy and Topel (1985), or McKenzie and McAleer (1990) and applied to duration models by Tunali and Assaad (1992). But if standard deviations are high, it may be more appropriate to estimate the model by full maximum likelihood.

⁴³ Comparison with the results without household welfare also shows that our results are robust.

Again we cannot draw any conclusions on the *causality* of the relationship between unemployment duration and household welfare, and the relationship may suggest the existence of coping mechanisms where households with unemployed lower their levels of consumption and sell their assets.

We found earlier that having a mother who is self-employed has a significant negative effect during the first six years (results not reported), suggesting that the long term unemployed are more likely to have a mother who is self-employed. It is not clear what the direction of causation is. However, since the effect remains significant, even after we control for household welfare, it is likely to run in the other direction, suggesting that mothers supply additional labour when their son has been unemployed for a while. A formal investigation whether there is indeed this type of added worker effect from mothers as a response to the unemployment of their sons is carried out in a separate paper.

Finally, we find that household composition⁴⁴ or size has no significant relationship with the hazard, nor does the migration status of the household. Being married is positively and significantly related with the hazard, but direction of causation may well be the other way round.

4.9. Changes in the political and economic environment

In all our models, unobserved heterogeneity is significant and large. Given that we are using cross sectional single spell data, an important candidate for heterogeneity is the timing of the unemployment spell. Ethiopia underwent substantial changes in the

⁴⁴ Neither the number of other unemployed in the household, nor the number of dependants (children and elderly) in the household has a significant effect.

socio-economic environment during the years before the survey. In 1991, the job guarantee for the tertiary educated was also abolished. Until then, university graduates had been assured of a job as civil servant. We investigate whether these changes have affected the duration of unemployment. When we include a dummy variable to indicate that the unemployment spell started in or after 1991, it has a small coefficient which has very low significance.⁴⁵ The abolishment of the job guarantee for the tertiary educated has had no effect on the duration of unemployment, presumably because the number of tertiary educated is very small.

5. Summary and Conclusion

We find that the nature of unemployment in urban Ethiopia is not unlike that observed in Sri Lanka, Indonesia, Malaysia, Tunisia and Colombia⁴⁶: it is concentrated among relatively well educated first time job seekers who aspire to a well paid job, especially a public sector job. The vast majority of unemployed have never refused a job and are supported by their parents. Mean duration of unemployment is around 4 years, which is similar to what Dickens and Lang (1996) observe for Sri Lanka.

When we compare the determinants of incidence and duration of unemployment, we find that they have very similar determinants, reflecting that unemployment is a queuing process.⁴⁷ There are two important qualifications: (1) Whereas junior secondary education has a positive effect on the duration (or a negative effect on the hazard) in the long term, senior secondary education has a negative effect on duration

⁴⁵ The results remain the same when we try 1989, 1990 and 1992 as the dates for a structural break.

⁴⁶ see Glewwe (1989), Dickens and Lang (1996), Manning and Junankar (1998), Rama (1998, 1999), Tenjo (1990)

⁴⁷ In contrast to the analysis before, here we focus on *duration* rather than on the *hazard rate*. Since we use a piecewise constant hazard, the effect of duration is the negative of the effect on the hazard. Table 18 in appendix gives an overview.

in the long term; and (2) job search through friends and religious and ethnic associations has no effect on the incidence but a negative effect on duration, suggesting that social capital is important for job searching, as suggested by Holzer (1988) and Granovetter (1992), but only starts working once the individual is unemployed.

Combining the results, we conclude that unemployment in Ethiopia is consistent with unemployment in a segmented labour market.⁴⁸ Public sector and formal private sector employment are considered 'good jobs' because they pay well, while self employment, casual and co-operative employment are bad jobs because they pay badly. Civil service is the dominant good job and requires some level of education; self employment and casual work are the dominant the dominant 'bad jobs'. The former pays two and a half times the earnings of the latter. This provides an incentive for the middle classes to get education and queue in unemployment for a good job, especially a public sector job, while foregoing earnings as self-employed. However, a number of those who aspire to a public sector will never get one. At the same time, a minority of young men would like to start their own business but is constrained to do so, indicating that credit constraints are another cause of unemployment. We find suggestive evidence that households reduce their savings and consumption to cope with unemployment, although further research is needed to establish this.

A crucial assumption in a segmented labour market model is that mobility between the sectors is limited. Using data from the most recent round of the panel survey, we find

⁴⁸ A convincing formal test for labour market segmentation is not available since sector allocation may always be driven by unobserved characteristics, as argued by Heckman and Hotz (1986), Heckman and Sedlacek (1985) and Magnac (1991). Nevertheless, most economists agree that segmented labour market theory has something to offer and that the evidence is too strong to neglect the theory altogether. (See Katz and Summers (1989), Saint-Paul (1996), Stiglitz (1982), Lang and Dickens (1992), McCormick (1990). McDonald and Solow (1985) and Bulow and Summers (1986).)

Our view is that, although we can not test segmentation of the labour market formally for the moment, it is worth exploring it further. This is also the approach followed by Saint-Paul (1996), who provides the most important contribu

support for this assumption. Comparing the occupations over a 6 year period, we find that 84% of those working in a good job remain in it, while 82% of those working in a bad job remain in it.⁴⁹ An intriguing question is why young men do not take up a casual job while they are waiting in unemployment for a public sector job? We see 4 reasons. First, they do not have the funds to start their own business. This is confirmed by the answer to a question included in the most recent round of the survey. 86% the unemployed who aspire to a public sector say they do not become self-employed because they do not have the start-up capital. Second, social networks are the most important channel through which a job is found, but it only works once one actually *is* unemployed. Young men are thus implicitly encouraged to be unemployed rather than take up a temporary job. Third, school results play a role in the public sector screening process. Current practice is that people can resit secondary school exams to improve their results. Anecdotal evidence suggests that some young men resit their exams to get higher marks and improve their chances to be accepted for a public sector job, although this does not seem to happen on a large scale. A fourth reason is that social status is important. Bad jobs are associated with low social status. If individuals have a reservation level for social status that is above the level associated with bad jobs, they will not accept a bad job. The reservation level of social status may be explained by social custom. In a stratified society, each caste has its norms and deviation of the norm may imply a loss of reputation, as suggested by Akerlof (1976, 1980). Glewwe (1989) suggests that the lack of social status of bad jobs in Sri Lanka stops young unemployed men taking up a bad job and a pilot survey of qualitative interviews with unemployed men suggests that this is also the case in urban Ethiopia.⁵⁰

⁴⁹ Public sector, international organization and private sector wage work are considered good jobs, while self employment, casual work and co-operative work are considered bad jobs.

⁵⁰ A fifth potential reason would be that people are waiting for a response from their potential employer. But the new round of the survey shows that this is not a valid explanation: seventy-two percent of public

6. Bibliography

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7. Appendix

7.1. Results of the first stage regression on assets and consumption

Table 0-14: First stage regression of household welfare on selected instruments.

	(1)	(2)
	Value of assets per hh member	Consumption per capita
Main income parents	0.06221 (0.02722)*	0.00346 (0.00063)**
Household head is male	516.71500 (266.84422)+	2.88756 (16.04889)
Age of household head	-38.34316 (88.75848)	0.25102 (4.05786)
Age of household head squared	0.90126 (1.01621)	-0.00686 (0.03835)
Years of schooling household head	232.62307 (37.70748)**	6.50945 (1.52648)**
Household head is married	-744.84298 (318.46585)*	-20.94064 (12.13153)+
Household head is self employed	967.00838 (301.98352)**	2.85274 (14.52834)
Household head is unemployed	-52.62959 (249.42880)	-26.35957 (15.25417)+
Household head is Gurage	-1,045.07764 (314.54595)**	-35.62182 (11.15907)**
Household head is Amhara	-238.53593 (324.42249)	2.10156 (9.15560)
Household head is muslim	130.25600 (393.28807)	-3.00365 (14.47242)
living in Awassa	-1,488.65331 (413.79930)**	-10.10525 (25.77828)
living in Dessie	117.08524 (957.62667)	68.55341 (94.66447)
living in Diredawa	653.05194 (472.29775)	38.84904 (24.31270)
Constant	-251.50870 (1,849.85876)	93.01681 (109.43818)
Observations	472	472
R-squared	0.20	0.15
Robust standard errors in parentheses		
+ significant at 10%; * significant at 5%; ** significant at 1%		

7.2. Comparing Estimates for Different Proportional Hazard Models

Table 15: Estimates for proportional hazard models assuming Inverse Gaussian heterogeneity, in accelerated failure time format

	Parametric			Semi-parametric ⁵¹
	Exponential	Weibull	Gompertz	Cox
Age	-1.29443 (0.38409)**	-1.64888 (1.44713)	-1.32041 (0.38868)**	-1.33917 (0.39153)**
Age squared	0.02517 (0.00789)**	0.03222 (0.03064)	0.02544 (0.00795)**	0.02600 (0.00797)**
Primary is highest level of education	0.13420 (0.44126)	0.16182 (0.56789)	0.14696 (0.44621)	0.12848 (0.43542)
Junior secondary is highest level of education	0.34675 (0.44761)	0.41437 (0.70424)	0.41735 (0.47844)	0.40323 (0.47101)
Senior secondary is highest level	0.77623 (0.41831)+	0.90311 (0.57498)	0.86739 (0.46918)+	0.81503 (0.45877)+
Tertiary is highest level of education	0.57015 (0.68039)	0.75180 (0.86843)	0.61651 (0.69628)	0.59897 (0.68131)
Oromo	0.54507 (0.27483)*	0.74175 (1.19506)	0.54648 (0.27774)*	0.53541 (0.27261)*
Gurage	0.07403 (0.32101)	0.03656 (0.51280)	0.06969 (0.32185)	0.08722 (0.31793)
Tigray	0.10597 (0.45709)	0.03851 (0.85178)	0.12910 (0.46620)	0.10554 (0.46612)
Body Mass Index	0.01137 (0.01538)	0.01437 (0.01853)	0.01143 (0.01587)	0.00987 (0.01558)
Father works in civil service	0.13701 (0.27399)	0.07202 (0.45380)	0.13784 (0.27637)	0.10537 (0.27210)
Father works as self-employed	0.10289 (0.27719)	0.06960 (0.37411)	0.10215 (0.27978)	0.08068 (0.27564)
Father is unemployed	-27.45593 (0.48185)**	-20.22955 (1.55033)**	-28.19139 (0.48464)**	-45.00663 (0.00000)
Years of schooling mother	0.03098 (0.03633)	0.03474 (0.04441)	0.03235 (0.03667)	0.02973 (0.03616)
Living in Addis Ababa	0.01738 (0.24381)	0.00146 (0.34820)	0.02612 (0.24735)	0.03328 (0.24576)
Local unemployment rate	-3.76277 (2.09617)+	-4.53599 (4.08630)	-3.73252 (2.11512)+	-3.60136 (2.11616)+
Constant	11.40834 (4.48253)*	14.95354 (15.90315)	11.70810 (4.53724)**	
Ln_the :Constant	-13.40315 (1.62693)**	0.51968 (8.30268)	-13.08669 (2.55954)**	
Ln_p :Constant		0.25920 (0.70599)		
Gamma :Constant			0.00273 (0.00434)	
Observations	378	378	378	378

Robust standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

⁵¹ Note that the Cox model scores very weakly relative to other models. Using the Akaike Information Criterion (AIC), it performs substantially poorer than any of the fully parametric models. Inspection of the goodness of fit for the Cox model can be done by comparing the observed and expected number of events for the completed spells, as pointed out by Hosmer and Lemeshow (1999) and developed by Coviello (2000). For the model with all observations, the observed and the expected risk are not significantly different in any of the deciles (lowest p-value 0.19), while for the model with completed spells only, it is only in the second deciles that the expected is different from the observed risk at the p=0.04 level, the lowest p-value for the other quintiles is 0.20. Unfortunately this evaluation method is cumbersome and does not have its ready equivalents for the other models. Comparison between models remains therefore difficult. Hence our preference to use the AIC.

7.3. The Role of Household Welfare for Duration

Table 16: Comparing the coefficients with household welfare, measured by hh assets, and its predicted value

	(1)	(2)	(3)
	Hazard rate	Hazard rate	Hazard rate
Age	-1.37088 (0.39282)**	-1.41538 (0.37368)**	-1.49916 (0.40121)**
Age x d2	2.68488 (1.69373)	2.96661 (1.70827)+	3.46441 (2.23905)
Age squared	0.02758 (0.00805)**	0.02818 (0.00766)**	0.02999 (0.00821)**
Age squared x d2	-0.06760 (0.03439)*	-0.07313 (0.03473)*	-0.08055 (0.04682)+
Primary is highest level of education	0.14469 (0.44069)	0.03923 (0.47321)	0.48561 (0.54919)
Primary x d2	-1.46836 (1.26601)	-1.24596 (1.29128)	-2.84338 (1.24080)*
Junior secondary is highest level of education	0.25512 (0.45323)	0.30123 (0.46596)	0.24469 (0.57850)
Junior secondary x d2	-25.44132 (1.27366)**	-24.32934 (1.27650)**	-29.61596 (1.62644)**
Senior secondary is highest level of education	0.43233 (0.43104)	0.41151 (0.44538)	0.61776 (0.56129)
Senior secondary x d2	2.71421 (1.48720)+	2.84518 (1.51694)+	0.07762 (1.49680)
Tertiary is highest level of education	0.27157 (0.71529)	0.19140 (0.73630)	-0.44265 (1.13478)
Bmi	0.01008 (0.01415)	0.00773 (0.01622)	0.02478 (0.00902)**
Oromo	0.50287 (0.28116)+	0.58164 (0.27999)*	0.29694 (0.32580)
Gurage	-0.03267 (0.32828)	-0.19579 (0.36617)	-0.32177 (0.34595)
Tigray	0.10733 (0.45501)	0.10409 (0.45736)	-0.08226 (0.43139)
Father works in civil service	0.02284 (0.28594)	-0.03270 (0.27981)	0.03953 (0.31355)
Father work in civil service x d2	1.60540 (0.59039)**	1.59268 (0.54733)**	1.80829 (0.82728)*
Father works as self-employed	0.01326 (0.29610)	0.06902 (0.29870)	0.05382 (0.32176)
Father works as self-employed x d2	1.68505 (0.66259)*	1.61260 (0.66888)*	2.56700 (0.91948)**
Father is unemployed	-27.77527 (0.48808)**	-27.30235 (0.49235)**	-29.34052 (0.56775)**
Father is unemployed x d2	1.23463 (1.15857)	1.17174 (1.13054)	0.70664 (1.29431)
Years of schooling mother	0.04379 (0.03672)	0.04639 (0.03628)	0.00241 (0.03972)
Years of schooling mother x d2	-0.35669 (0.12322)**	-0.35353 (0.12203)**	-0.52263 (0.21154)*
Living in Addis	0.04330 (0.25122)	0.00822 (0.25375)	-0.08649 (0.27311)
Local unemployment rate	-4.41350 (2.21440)*	-3.75352 (2.24107)+	-5.42215 (2.38001)*
d2	-24.74370 (20.53043)	-28.30091 (20.69958)	-34.57985 (26.03600)
Ln_the:Constant#	-13.12033 (1.11696)**	-14.96384 (1.07419)**	-15.62805 (1.02694)**
Mean value of household assets per household member		0.00004 (0.00001)**	
Linear prediction of mean value hh assets per hh member			0.00021 (0.00010)*
Constant	12.26913 (4.58157)**	12.79526 (4.34115)**	13.96838 (4.46943)**
Observations	457	452	315

Robust standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%
indicates parameter of heterogeneity

Table 17: Comparing the coefficients with household welfare, measured by consumption and its predicted value

	(1)	(2)	(3)
	Hazard rate	Hazard rate	Hazard rate
Age	-1.37088 (0.39282)**	-1.12293 (0.42127)**	-1.53205 (0.42115)**
Age x d2	2.68488 (1.69373)	3.37990 (1.84829)+	3.60582 (2.12792)+
Age squared	0.02758 (0.00805)**	0.02205 (0.00862)*	0.03064 (0.00859)**
Age squared x d2	-0.06760 (0.03439)*	-0.08051 (0.03833)*	-0.08349 (0.04448)+
Primary is highest level of education	0.14469 (0.44069)	0.00389 (0.46866)	0.48959 (0.54274)
Primary x d2	-1.46836 (1.26601)	-1.79399 (1.32184)	-2.80495 (1.24514)*
Junior secondary is highest level of education	0.25512 (0.45323)	0.29098 (0.49121)	0.32690 (0.56709)
Junior secondary x d2	-25.44132 (1.27366)**	-26.37347 (1.34418)**	-28.47385 (1.61609)**
Senior secondary is highest level of education	0.43233 (0.43104)	0.32074 (0.47530)	0.70355 (0.54652)
Senior secondary x d2	2.71421 (1.48720)+	2.29418 (1.55435)	0.30076 (1.51678)
Tertiary is highest level of education	0.27157 (0.71529)	-0.61339 (0.98707)	-0.33735 (1.13824)
Bmi	0.01008 (0.01415)	0.01247 (0.01365)	0.02369 (0.00853)**
Oromo	0.50287 (0.28116)+	0.75375 (0.28448)**	0.28160 (0.33068)
Gurage	-0.03267 (0.32828)	0.13711 (0.34831)	-0.19948 (0.35838)
Tigray	0.10733 (0.45501)	0.31368 (0.46395)	-0.10530 (0.45223)
Father works in civil service	0.02284 (0.28594)	-0.24842 (0.34472)	-0.00629 (0.31943)
Father work in civil service x d2	1.60540 (0.59039)**	1.89595 (0.62335)**	1.85492 (0.83816)*
Father works as self-employed	0.01326 (0.29610)	0.02226 (0.30216)	0.06359 (0.32677)
Father works as self-employed x d2	1.68505 (0.66259)*	1.71448 (0.69553)*	2.45483 (0.92202)**
Father is unemployed	-27.77527 (0.48808)**	-27.72934 (0.48685)**	-28.54538 (0.57302)**
Father is unemployed x d2	1.23463 (1.15857)	1.29679 (1.20343)	0.78843 (1.27140)
Years of schooling mother	0.04379 (0.03672)	0.05091 (0.03867)	0.01311 (0.04052)
Years of schooling mother x d2	-0.35669 (0.12322)**	-0.40060 (0.13706)**	-0.50418 (0.19638)*
Living in Addis	0.04330 (0.25122)	0.04432 (0.26970)	0.03547 (0.26462)
Local unemployment rate	-4.41350 (2.21440)*	-4.29834 (2.35911)+	-5.68109 (2.46264)*
D2	-24.74370 (20.53043)	-33.50821 (21.83501)	-36.35656 (24.79103)
Ln_the:Constant#	-13.12033 (1.11696)**	-14.94235 (0.97716)**	-15.54573 (1.13209)**
Total consumption per capita		0.00212 (0.00040)**	
Linear prediction of consumption per capita			0.00382 (0.00390)
Constant	12.26913 (4.58157)**	9.19071 (4.81076)+	14.22330 (4.76158)**
Observations	457	420	315

Robust standard errors in parentheses

+ significant at 10%; * significant at 5%; ** significant at 1%

indicates parameter of heterogeneity

7.3. Comparing the Determinants of Incidence and Duration of Unemployment

In contrast to the analysis before, here we focus on *duration* rather than on the *hazard rate*. Since we use a piecewise constant hazard, the effect of duration is the negative of the effect on the hazard.

Table 18: Comparing the determinants of incidence and duration of young men

	Incidence	Duration (*)
Age	Positive concave	Positive concave
Education		
Primary education	No effect	No effect
Junior secondary	Positive effect	Positive effect in the long term
Senior secondary	Positive effect	Negative effect in the long term
Tertiary	No effect	No effect
Ethnicity	No effect	Oromo has negative effect (but not for spells started before 1991)
Health	No effect	No effect
Location	Addis has negative effect Local unemployment rate has positive effect (+)	Addis has no effect Local unemployment rate has positive effect
Household Background		
Mother's education	Positive small effect	Positive effect in the long term
Father's profession	Formal sector wage work has positive effect Public sector work has positive effect Self-employed has negative effect	Civil service has negative effect in the long term Self employment has negative effect in the long term
Father's employment status	Father unemployed has weak positive effect (+)	Unemployment has immediate positive effect
Household welfare	Negative effect	Negative effect
Job Aspiration	Aspiring to a public sector job has positive effect Aspiring to be self-employed has a negative effect	Aspiring to a public sector job has positive effect Aspiring to be self-employed has a negative effect
Search Medium	Job search through government agency has positive effect Job search by asking employer directly has negative effect Job search through advertisement has positive effect	Job search through relatives and friends has negative effect Job search by asking employer directly has negative effect
Other processes		
Married	Negative relationship	Negatively related
Household head	Negative relationship	No relationship
Household composition and size	No relationship	No relationship
Household migration	No relationship	No relationship
Household labour supply	Number of other unemployed is positively correlated Mother working as self-employed or in domestic work is positively correlated	No relationship with other unemployed in the household Mother in self employment or domestic work is positively related

(*) The effect on duration is the negative of the effect on the hazard

(+) Result not discussed in main text