**Unemployment, Not Working and Jobs for the Young in Urban Africa:
Evidence from Ghana**

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Abstract

The question posed in this paper is the nature and role of unemployment in African urban labour markets. Unemployment has been modeled as a device for equilibrating wages between high and low wage sectors, as a pool of labour learning about its skills and as a costly scaring process resulting from a policy failure to create jobs. In this paper we use panel data from Ghana's urban labour market to investigate the nature of its unemployment and the mechanisms that affect the transition into jobs particularly for the young. We show that conventionally measured unemployment rates, even for the young, can be low while the numbers not working are very high. The analysis suggests that the numbers not working decline rapidly with age and that the labour market is characterized by substantial transitions across types of job and between being in and out of paid employment. Time spent not working does not appear to change the probability of finding a job, increase earnings or scar workers. The problem suggested by the data is not that jobs cannot be found it is that, for the young, jobs pay so little.

Key words: Unemployment, urban Africa, labour markets, Ghana

1.   Introduction

Creating jobs for urban youth is probably the most politically sensitive issue in Africa today. The very high proportion of the young in their labour force points to the need to find them employment if social unrest is to be mitigated. Indeed that "there are no jobs" is probably the most potent and widespread sentiment among young adults in Africa. Three broad hypotheses have been advanced as to the nature of unemployment which we will examine in this paper in the context of Ghana's urban labour market.

The first is that markets are segmented and unemployment acts as a mechanism to equate expected wages across different sectors. This model originally due to Harris and Todaro (1970) of rural urban differences was adapted by Fields (1975) to include a low paid urban sector. The interpretation of unemployment as a queue for higher paying jobs can be found in numerous papers which include Myrdal 1968; Serneels, 2007; Dickens and Lang, 1996; Glewwe, 1989; Rama, 1999 and Tenjo, 1990. The second hypothesis draws from models of human capital formation, Becker (1964), and job search (see Mortensen (2005) for a review), to argue that the urban "unemployed" can be viewed as learning about the application of their skills to urban job opportunities. In such a model migration is not limited by the effects of unemployment on expected wages but by the differing times it takes heterogeneous individuals to learn about and respond to their differing abilities in urban markets, Lucas (2004). The third hypothesis, mainly considered in the context of developed economies, is that extended periods of unemployment, resulting from insufficient demand, may scar workers and hinders their access to desirable jobs later in their career (Arulampalam, 2001; Narendranathan and Elias, 1993, Stewart, 2000, Boheim and Taylor, 2000). It is this third hypothesis that underlies the argument, for example of the ILO, that high levels of youth unemployment imply the need for urgent job creation.

In this paper we use panel data drawn from urban Ghana over the period 2004 to 2010 to assess the nature of the unemployment that characterises its youth labour market. We will document the extent of and nature of unemployment and investigate the employment transitions of the young and their income and job outcomes. The first hypothesis hinges on the extent of income differences across sectors which have been investigated for an earlier version of this data in Falco et al (2011). They find that there are substantial income differences across sectors even with a full set of controls for both observable and unobservable dimensions of human capital. If that is correct then it implies the possibility that there is indeed queuing for the higher paying jobs. The data in Falco et al (2011) also confirms the importance of individual heterogeneity across workers with similar observable characteristics thus leaving open the possibility that the second hypothesis of learning about skills is consistent with the data. One of the extensions we make in this paper is that we explicitly allow for the possible role of lack of employment in "scarring" workers. In other words is it true in this particular labour market that ILO concerns that the young are disadvantaged by unemployment is reflected in their lower employment and earnings outcomes.

The paper is organized as follows. In the next section we document the nature and extent of unemployment in Ghana in the recent past. In section 3 we set out the panel data that we will use in this paper. Transitions into work and the duration of unemployment are examined in section 4. Whether

waiting increases your chances of a job or your earnings are assessed in sections 5 and 6. A final section concludes.

2. Measuring Unemployment

The rather striking fact about unemployment in Ghana, as measured by the data from the Household surveys, is that it is very low. Table 1 provides a breakdown of the data for the most recent three waves of the GLSS data. As a proportion of the population aged 15 to 64 unemployment as conventionally measured has ranged from 2.5 to 3.5 per cent of the population. For 2005/06 unemployment is less than 5 per cent of the labour force.

Table 1 Occupational Breakdown for Population aged 15 to 64

	1991/92		1998/99		2005/06	
	Percentages	No. of workers	Percentages	No. of workers	Percentages	No. of workers
Private Wage in small firm	2.7	224,903	3.4	352,401	6.7	886,391
Private Wage in medium firm	1.1	96,751	1.7	175,675	1.9	254,128
Private Wage in large firm	0.3	28,007	0.7	68,376	0.3	38,995
Civil servant	6.1	521,097	4.5	475,479	4.3	566,306
State firm	0.9	78,080	0.7	70,480	0.2	23,409
Other wage job	0.3	26,309	0.3	29,454	0.1	9,597
Wage in Agriculture	1.1	92,507	1.3	131,493	0.3	33,347
Self-employment no employees	23.2	1,968,964	24.1	2,532,030	16.6	2,204,060
Self-employment with employees			0.7	73,636	2.0	259,764
Farmer	41.7	3,537,346	35.1	3,689,169	37.3	4,951,174
Family	1.2	104,389	3.4	355,557	3.4	448,993
Unemployed	2.5	209,627	3.2	334,518	3.5	458,379
Apprentices	5.3	445,563	5.3	560,686	5.5	728,470
Out of the labour force (a)	6.0	505,820	5.6	585,933	5.7	760,394
Students	7.6	645,854	10.3	1,085,607	12.4	1,645,095
Total	100	8,486,914	100	10,519,443	100	13,268,502

(a) Out of the Labour Force excludes Students
A small firm is defined as one employing less that 11, a medium size is defined as one employing from 11 to 99 and a large firm as one employing 100 or more. Other wage jobs are a residual category.
Source: GSS, GLSS surveys (see Appendix 1 for Population numbers used to input the number of employees).

The panel data that we will be presenting in the next section is drawn from urban areas over the period from 2004 to 2010. We wish to focus on young adults in particular so to put this data in context Table 2 presents a breakdown similar to Table 1 but confined to the population aged 15 to 25 broken down by gender. While conventionally measured unemployment rates are higher for these young adults they still seem low ranging from 5.9 per cent for women in 1998/99 to 4.3 per cent for men in 2005/06. As a proportion of the labour force the rates are higher – 9.3 per cent for women and 8.1 for men in 2005/06 – but are below 10 per cent.

Table 2 Occupational Breakdown for Young People: Population aged 15 to 24 by Gender

	1991/92		1998/99		2005/06	
	Percentages	Numbers	Percentages	Numbers	Percentages	Numbers
Female						
Private Wage in small firm	1.5	20,557	3.4	58,353	3.7	85,305
Private Wage in medium firm	0.2	3,261	0.3	5,320	0.9	21,969
Private Wage in large firm	0.1	1,701	0	0	0.1	2,103
Civil servant	0.8	11,484	0	0	0.5	11,452
State firm	0.0	0	0	0	0.0	701
Other wage job	0.1	851	0	0		0
Wage in Agriculture	0.4	4,962	0.4	7,037	0.1	1,402
Self-employment no employees	18.2	257,603	12.4	212,131	8.3	194,683
Self-employment with employees	0	0	0	0	0.4	10,050
Farm	35.1	497,059	21.7	372,945	19.7	461,349
Family	2.8	40,264	7.6	130,780	7.0	163,599
Unemployed	3.8	54,299	5.9	100,745	5.2	121,297
Apprentice	9.1	129,156	12.6	215,563	9.9	232,310
Out of the labour force	11.4	162,048	11.1	190,849	11.8	276,716
Student	16.5	234,494	24.6	422,374	32.3	753,957
Total	100.0	1,417,739	100	1,716,268	100	2,337,126
Male						
Private Wage in small firm	1.9	29,777	1.5	27,517	5.42	127,800
Private Wage in medium firm	0.6	9,978	2.2	40,432	0.92	21,693
Private Wage in large firm	0.2	2,693	0.1	1,872	0.07	1,651
Civil servant	0.9	13,463	0.3	5,428	0.53	12,497
State firm	0.3	4,435		0		0
Other wage job	0.1	1,742	0.1	1,872		0
Wage in Agriculture	1.6	25,342	0.3	5,428	0.27	6,366
Self-employment no employees	5.2	82,202	3.0	56,905	2.43	57,298
Self-employment with employees	0	0	0	0	0.43	10,139
Farm	42.2	667,914	29.6	554,823	25.6	603,633
Family	2.1	33,419	6.6	123,169	4.6	108,701
Unemployed	2.5	39,755	2.5	45,861	4.3	101,156
Apprentice	9.4	148,883	10.8	201,975	8.8	207,970
Out of the labour force	7.8	122,749	7.8	145,070	6.6	155,388
Student	25.4	401,667	35.3	661,332	40.0	943,884
Total	100	1,583,861	100	1,871,872	100	2,357,941

(a) Out of the Labour Force excludes Students
A small firm is defined as one employing less that 11, a medium size is defined as one employing from 11 to 99 and a large firm as one employing 100 or more. Other wage jobs are a residual category.
Source: GSS, GLSS surveys (see Appendix 1 for Population numbers used to input the number of employees).

How is it possible to reconcile the perception that there are no jobs for the young with these low rates of unemployment? As Haywood and Teal (2010) have argued in the context of the Nigerian labour market

conventional measures of unemployment can be low when there are no jobs available for three reasons. First the distinction between being in and out of the labour force can make little sense if many are discouraged from seeking work knowing there is none. Secondly, if there are few jobs there is an incentive to enter training and stay in school which also takes these individuals out of conventional definitions of the labour force. Thirdly, the lack of job opportunities can increase the numbers classified as working as unpaid family employees. The importance of these issues is apparent from Table 2. While in 2005/06 only 5.2 per cent of women aged 15 to 24 were classified as unemployed only 14 per cent had any paid urban job. For men the comparable number was 10 per cent. Finally when young people speak of jobs they may well mean wage jobs that pay well. As Falco et al (2011) show such jobs are located in larger enterprises. The numbers of young people working in firms with greater than10 employees is tiny - about 1 per cent of the cohort. A complete absence of such wage jobs for the young is wholly compatible with low measured rates of unemployment.

In seeking to understand how the labour market in urban Ghana works for young adults it is necessary to consider the numbers in school and in training. As Table 2 shows the expansion of the numbers aged 15 to 24 in school has been dramatic - for women the proportion has doubled from 16 to 32 per cent of the age cohort over the period from 1991/92 to 2005/06, while for men the proportion has increased from 25 to 40 per cent. Apprenticeship is also an important activity for the young being for both men and women about 10 per cent of the cohort. Thus roughly half of these young adults are either in school or apprenticeships. As Heckman et al (2009) have stressed in their reinterpretation of the Mincerian earnings function the return to schooling depends on the job offers forthcoming at different levels of schooling. The large numbers remaining in school may reflect the higher wage jobs seen as available after schooling is completed or they may reflect the lack of wage opportunities in the market. A full modelling of the youth labour market, which requires an analysis of these school and training choices, is beyond the scope of this paper. Here we focus on those who choose to leave school and we use not the conventional measure of unemployment but add to it the numbers classified as outside the labour force thus reflecting the numbers not working. We believe this measure of "not working" captures much better the notion of "unemployment" that underlies the models surveyed above than the conventional measure used in Tables 1 and 2.

3.   The Panel Data

We use the Ghana Household Urban Panel Survey (GHUPS) data collected by the Centre for the Study of African Economies, between 2004 and 2010. The survey covers a representative sample of urban workers in 4 major urban areas (Accra, Kumasi, Takoradi and Cape Coast), initially drawn from the 2000 Census listings. In 2006 the sample was extended to include additional households from the original list. Workers between the ages of 15 and 65 are surveyed extensively, and a wealth of information is gathered on their employment, as well as on a wide array of corollary characteristics, ranging from health to household-level information.

The panel data enables us to look at aspects of unemployment invisible in the cross section namely how long individuals remain without work and it also enables us to ask whether the patterns we observe in the cross section are a function of the time invariant unobserved characteristics of the individuals. In other

words the panel is a major step forward in enabling us to understand how this labour market works and to assess which of the interpretations of "unemployment" surveyed in the introduction is most relevant.
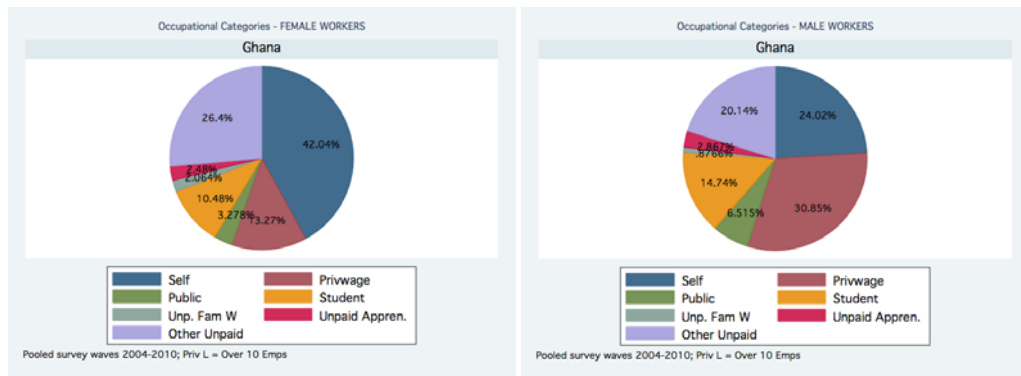
Figure 1   Occupational Breakdown of the Urban Panel

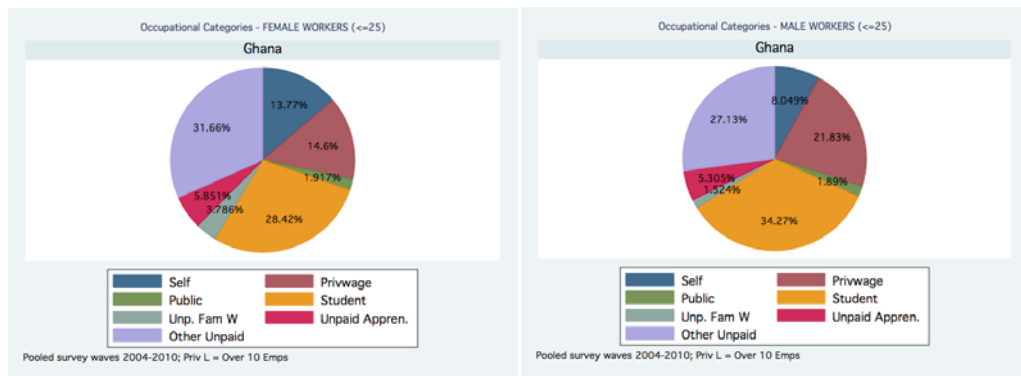*ALL*   *YOUNG*
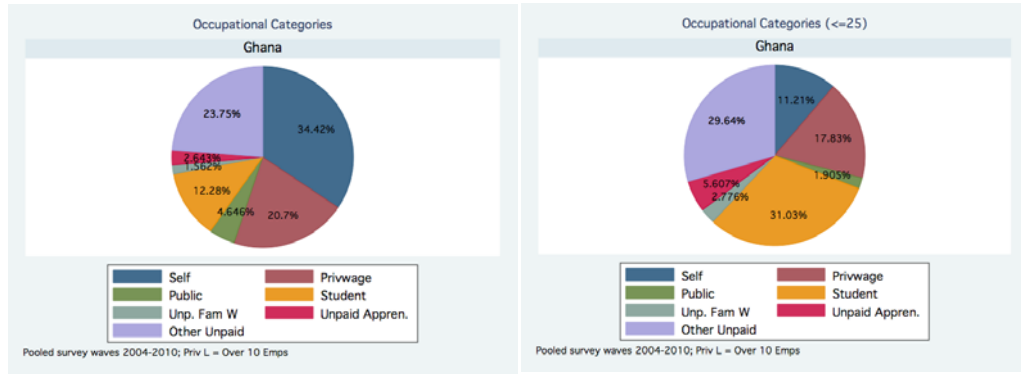
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In Figure 1 we present a breakdown of the occupational structure in our data. We see that the broad patterns are what we would anticipate from the GLSS surveys. The occupational breakdown in the top left of the figure is for those in the pooled data aged between 15 and 64 in the urban centres surveyed; 34 per cent are in self employment and 20 per cent in wage employment (the vast majority in small firms which is not shown in the Figure). Public employment comprises 5 per cent, the remaining 40 per cent are in some form of unpaid activity either as students (12 per cent), unpaid family workers or unpaid apprentices (4 per cent) or out of the labour force and unemployed (24 per cent). This last category is higher for the young (those between 15 and 25) at 30 per cent. Figure 1 also shows a breakdown by gender. For both men and women some 55 per cent have either a private wage job or incomes from self-employment; however for men wage employment predominates while for women it is self-employment. For both young men and young women a large proportion are either out of the labour force or classified as unemployed (and not in school or training). It is how these young people gain access to jobs that we need to understand.

4.   Transitions into Work and the Duration of Unemployment

In Figure 2 we show how access to work varies across the ages of individuals in the sample. We make a distinction between being unpaid (which includes those in school and those working as unpaid apprentices) and those classified as out of the labour force and unemployed (ie those without work). Figure 2 shows that considering the first of these categories, the unpaid, there is a continuous fall from more than 80 per cent for those aged 15 to below 20 per cent for those aged 35. The second curve in the Figure, which is for those without work, shows that there is a rise between those aged 15 and 20 (consistent with some leaving school and entering the labour force without work) and then a steady decline until their early 40s.

The top right part of Figure 2 shows the duration of unemployment spells measured for those who have entered the labour force. It is thus the conventional measure. The average duration of unemployment spells is 2.5 years and the median duration 1.5 years, with a large mass around very short spells, indicating high churning in the labour market.

The results in Figure 2 reflect the cross section. As we have panel data we can ask what lies behind this age effect. In Table 3 we look at transitions across being and not being employed (the unpaid include students). In Table 4 we show the transitions for those aged between 15 and 25. Both Tables 3 and 4 confirm the importance of substantial churning in the labour market. There is substantial movement into and out of being unpaid and for those in wage employment in the initial period some 30 per cent move out of wage employment into another activity and this is the same for both private and public wages.

Frequent unemployment/employment transitions indicate a high rate of churning, consistent with the duration information in the previous graphs (long – term unemployment does not seem to be as pervasive as elsewhere – Serneels (2007) documents significantly longer average spells in Ethiopia in the 1990s).

Figure 2   The Unpaid, those Without Work and the Unemployed

<u>*ALL*</u>
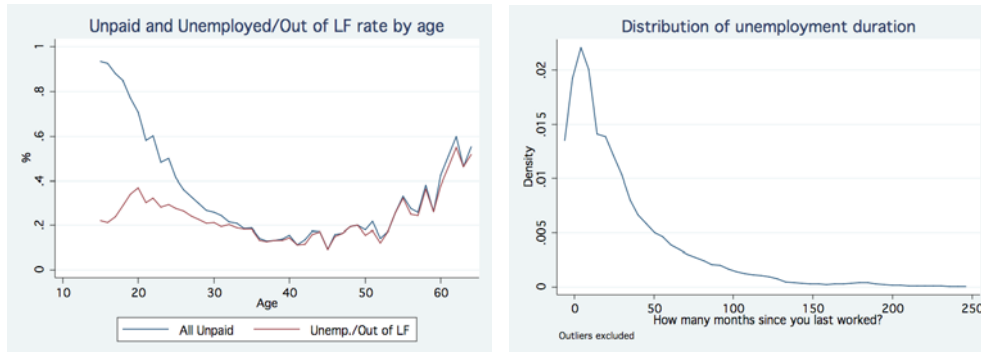
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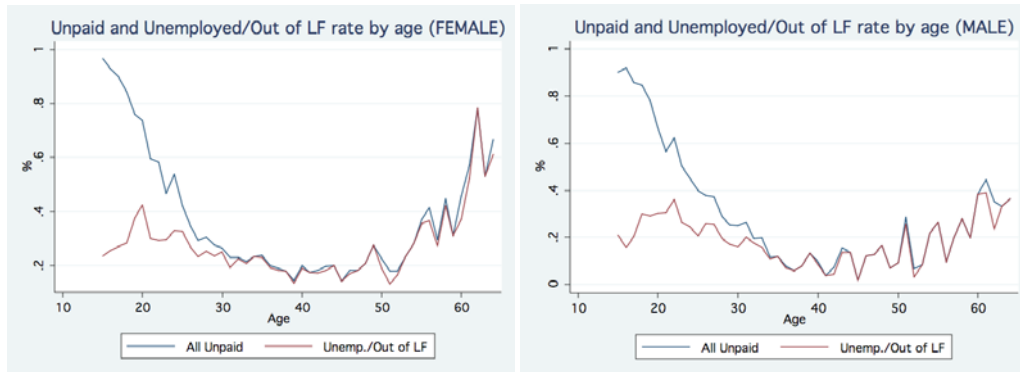
Table 3: 1-Year Transitions					
t-1	*t* **Self**	**Priv Wage**	**Pub Wage**	**Unpaid**	**Total**
Self	1,671	166	9	280	2,126
	78.6	7.81	0.42	13.17	100
Priv Wage	162	775	44	169	1,150
	14.09	67.39	3.83	14.7	100
Pub Wage	10	45	170	23	248
	4.03	18.15	68.55	9.27	100
Unpaid	336	283	41	1,769	2,429
	13.83	11.65	1.69	72.83	100
Total	2,179	1,269	264	2,241	5,953
	36.6	21.32	4.43	37.64	100

Table 4: 1-Year Transitions (<=25)					
t-1	*t* Self	Priv Wage	Pub Wage	Unpaid	Total
Self	129	32	0	52	213
	60.56	15.02	0	24.41	100
Priv Wage	32	193	6	86	317
	10.09	60.88	1.89	27.13	100
Pub Wage	0	5	16	8	29
	0	17.24	55.17	27.59	100
Unpaid	71	155	19	1,180	1,425
	4.98	10.88	1.33	82.81	100
Total	232	385	41	1,326	1,984
	11.69	19.41	2.07	66.83	100

5.   Does waiting increase your chances of a job?

The finding in the cross section that the probability of not working falls rapidly with age is open to alternative interpretations. It is possible that there is no change with age but that the nature of the sample changes so the age effect reflects selection. It is also unclear how much of an age effect would remain if we allowed for the unobservable characteristics of the individual something we can to come extent control for with the panel. The transition matrices certainly show substantial movement but they do not themselves answer the question as to whether years spent not working do alter the probability of getting a job. To address these questions we report in Table 5 a series of tests on a linear probability model of being in and exiting not working.

Column [1] of Table 5 reports the cross section result for those now working (excluding the unpaid). It shows, as we know from Figure 2, that the probability of entering employment (ie exiting not working) rises rapidly with age but at a decreasing rate. It also shows that this exit probability is not a function of education (we have tested for the significance of a non-linear term in education and it is also not significant). Column [2] reports the fixed effects estimate. While the linear term in the cross section cannot be identified in the panel as it is co-linear with time it is possible to identify the quadratic term and the panel regression confirms that there is an increased probability of exiting not working with age. This result is an important piece of information as to the role of age in the process of job search. While the sample may change with age it is true within this panel that we are more likely to see an individual who is older entering employment.

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Table 5: Probability of being in and exiting 'Unemployment/Out of LF'

	CS	Panel	CSpanelsam	YsUn	YsUnInt
	(1)	(2)	(3)	(4)	(5)
Years Unemp				-.069	-.153
				(.080)	(.280)
YearsUnem*Educ					.025
					(.018)
YearsUnem*Age					-.003
					(.006)
Dummy for Male	-.231	.126	-.073	.105	.109
	(.038)***	(.088)	(.048)	(.104)	(.103)
Years of Age	-.090	.129	-.081	.067	.069
	(.008)***	(.021)***	(.011)***	(.026)***	(.026)***
$(age^2)/100$	.114	-.168	.103	-.077	-.074
	(.011)***	(.028)***	(.015)***	(.034)**	(.034)**
Years in Formal Educ	.006	-.009	.003	-.002	-.039
	(.005)	(.012)	(.006)	(.014)	(.028)
YearDummies	Yes	Yes	Yes	Yes	Yes
LocatDummies	Yes	Yes	Yes	Yes	Yes
Obs.	9982	1219	3608	828	828

Standard errors cluster at the worker level; significance levels: *.10, **.05, ***.01; High Educ > 9 Years; A quadratic term for years of education was included and found insignificant. Years Unemp defined as the number of consecutive panel years prior to the current period spent unemp/out of l.f.; Current Students, unpaid apprentices and unpaid household workers get Years Unemp = 0 since they are currently unpaid but not currently unemployed.

Column [3] of Table 5 confines the cross section sample to that used for the panel regression of Column [2]. In Column [4] we take the next step in our investigation of the role of unemployment (incorporating those defined as out of the labour force). The next question we wish to address is the role of being out of work on the probability of entering employment. The view that such unemployment is a queue suggests there should be a positive relationship between the length spent out of employment and the probability of entering employment while the interpretation of unemployment as a scarring process suggests a negative effect. As Table 5 Column [4] shows we do find a negative effect but it is not significant and neither are the interaction terms with age and education, Column [5]. The evidence from Table 5 seems fairly clear that the answer we posed for this section – does waiting increase your chances of a job – is no.

6.   Does waiting pay off?

The next question we wish to pose is whether waiting pays off in the sense of increasing your earnings. Clearly this question could be posed of the data in different ways but here we confine attention to an earnings function in which previous unemployment is allowed to affect earnings. Our results show no indication that waiting may be conducive to higher earnings (Table 6).

- When we pool all jobs (column (1)), the effect of prior unemployment on current earnings is negative, and this effect is greater for older workers (Column (2)).
- When we focus on the first observed job in the panel (hence allowing a worker only to enter the regression once), we find a similarly negative effect (Column (4)) which is also larger the older the worker (Column (5)).

Table 6: Earnings function with prior unemployment

	All	AllYsUn	AllInt	FirstJob	FirstJobInt
	(1)	(2)	(3)	(4)	(5)
Years Unemp		-.068	.074	-.048	.137
		(.022)***	(.095)	(.025)*	(.105)
Educ*YearsUnemp			-.001		-.004
			(.006)		(.007)
Age*YearsUnemp			-.004		-.005
			(.002)*		(.002)**
Dummy for Male	.439	.437	.435	.379	.375
	(.035)***	(.035)***	(.035)***	(.042)***	(.042)***
Years of Age	.085	.083	.084	.069	.071
	(.010)***	(.010)***	(.010)***	(.012)***	(.012)***
$(age^2)/100$	-.089	-.086	-.086	-.068	-.069
	(.013)***	(.013)***	(.013)***	(.016)***	(.016)***
Years in Formal Educ	-.017	-.016	-.016	-.038	-.038
	(.009)*	(.009)*	(.009)*	(.013)***	(.013)***
$(educ^2)/100$	.463	.462	.463	.652	.656
	(.063)***	(.063)***	(.062)***	(.087)***	(.087)***
YearDummies	Yes	Yes	Yes	Yes	Yes
LocatDummies	Yes	Yes	Yes	Yes	Yes
Const.	.970	1.018	.985	1.294	1.224
	(.189)***	(.190)***	(.192)***	(.217)***	(.220)***
Obs.	5436	5436	5436	2069	2069
R^2	.193	.194	.195	.217	.218

Standard errors cluster at the worker level; significance levels: *.10, **.05, ***.01; All = Entire Sample, FirstJob = Only earliest instance of employment in the panel; Workers who are employed in their earliest appearance in the sample get YearsUnem = 0; High Educ > 9 Years;

Next, we carry out the same analysis, but we now focus on the number of years between leaving formal education and one's first employment (Table 7). This should provide a more precise indicator of 'queuing time'. Since queuing is most commonly understood as a phenomenon that takes place between schooling and one's first employment, we would ideally like to focus on the sub-sample of workers who are currently in their first employment. Unfortunately, at this stage the data does not allow us to identify such a sub-sample. However, when we confine the analysis to the young, we should obtain a close approximation.

The results confirm that longer unemployment spells lead to lower earnings.

Table 7: Earnings function with time between school and first emp

	All	AllYsUn	AllInt	FirstJob	FirstJobInt
	(1)	(2)	(3)	(4)	(5)
Years b/n Sch and Emp		-.009	-.007	-.009	.014
		(.004)**	(.018)	(.005)*	(.023)
Age*Years b/n			.0001		-.0004
			(.0004)		(.0005)
Educ*Years b/n			-.001		-.0007
			(.0008)		(.001)
Dummy for Male	.439	.495	.496	.455	.455
	(.035)***	(.044)***	(.044)***	(.059)***	(.059)***
Years of Age	.085	.083	.084	.058	.055
	(.010)***	(.012)***	(.013)***	(.016)***	(.017)***
$(age^2)/100$	-.089	-.083	-.086	-.052	-.045
	(.013)***	(.016)***	(.017)***	(.021)**	(.023)**
Years in Formal Educ	-.017	-.008	.004	-.020	-.012
	(.009)*	(.011)	(.014)	(.018)	(.023)
$(educ^2)/100$	.463	.393	.356	.575	.558
	(.063)***	(.081)***	(.083)***	(.123)***	(.131)***
YearDummies	Yes	Yes	Yes	Yes	Yes
LocatDummies	Yes	Yes	Yes	Yes	Yes
Const.	.970	.925	.850	1.341	1.293
	(.189)***	(.238)***	(.243)***	(.305)***	(.315)***
Obs.	5436	3868	3868	1200	1200
R^2	.193	.195	.195	.242	.243

Standard errors cluster at the worker level; significance levels: *.10, **.05, ***.01; All = Entire Sample, FirstJob = Only earliest instance of employment in the panel; Workers who are employed in their earliest appearance in the sample get YearsUnem = 0; High Educ > 9 Years;

7. Conclusion

Our overall conclusion from the data seems clear, we can find no evidence for a queuing process that leads to better employment prospects. We do find evidence of a steeply sloping age earnings profile consistent with very low earnings for the young. The transition matrices show high rates of turnover in the labour market consistent with workers seeking out and trying different earnings opportunities.

References

Arulampalam, W. (2001), "Is Unemployment Really Scarring? Effects of Unemployment Experiences on Wages", *The Economic Journal*, 111: 585–606.

Becker, G. S. (1964), *Human capital: A theoretical and empirical analysis, with special reference to education*, First edition. Columbia University Press, New York.

Badaoui, E.E. , E. Strobl, F. Walsh (2010) "The formal sector wage premium and firm size", *Journal of Development Economics,* 91 (2010) 37–47

Boheim, R. and Taylor, M. P. (2000). "The search for success: do the unemployed find stable employment?", Programme on Labour Market Dynamics in a Changing Environment, Discussion paper no. 00/52, University of Essex.

Dickens, W. T. and K. Lang, "An Analysis of the Nature of Unemployment in Sri Lanka," *Journal of Development Studies* **31** (1996):620–36.

Fajnzylber, P., Maloney, W., & Rojas, G. (2006). Microenterprise dynamics in developing countries: How similar are they to those in the industrialized world? Evidence from Mexico. *World Bank Economic Review*, 20, 389-419.

Falco, P. , Kerr, A., Rankin, N., Sandefur, J. and Teal, F. (2011) The returns to formality and informality in urban Africa. *Labour Economics*, 18 (SUPPL. 1). S23-S31.

Fields, G. (1975) "Rural-urban migration, urban unemployment and underemployment and job search activity in LDCs" *Journal of Development Economics*, 2, 165-188.

Fox, L. and M. Gaal (2008), "Working out of Poverty: Job creation and the quality of growth in Africa", The World Bank, Washington.

Glewwe, P., "Unemployment in Developing Countries: Economists' Models in Light of Evidence from Sri Lanka," *International Economic Journal* **1** (1989): 1–17.

GSS (Ghana Statistical Service) (2000) *Poverty Trends in Ghana in the 1990s*, Accra, Ghana.

GSS (Ghana Statistical Service) (2007) *Pattern and Trends of Poverty in Ghana: 1991-2006*, Accra, Ghana.

Günther, I. and A. Launov (forthcoming) "Informal employment in developing countries: Opportunity or last resort?", *Journal of Development Economics* .

Harris, J. and M. Todaro (1970) "Migration, unemployment and development: A two sector analysis", *American Economic Review*, 60 (1).

Haywood, L. and Teal, F. (2010) "Employment, Unemployment, Joblessness and Incomes in Nigeria, 1999-2006" Chapter 2 in V. Treichel (editor) *Putting Nigeria to Work: A Strategy for Employment and Growth,* The World Bank.

Heckman, J.J., L.J. Lochner and P.E. Todd, (2009) "Earnings functions, rates of return, and treatment effects: the Mincer Equation and Beyond", Chapter 7 in *Handbook of the Economics of Education*, vol. 1, 2009.

ILO (1972) Employment, Income and Equity: A Strategy for Increasing Productive Employment in Kenya, 1972

Jamal, V. and J. Weeks (1993) *Africa Misunderstood, or, Whatever happened to the rural-urban gap?* Macmillan Press, London.

Jolliffe, D. (1998): "Skills, Schooling, and Household Income in Ghana," *World Bank Economic Review*, 12(1), 81–104.

Kingdon, G., J. Sandefur, and F. Teal (2006): "Labour market flexibility, Wages and Incomes in Sub-Saharan Africa in the 1990s," *African Development Review*, Vol. 18, No. 3, December 2006.

Lewis, W.A (1954) "Economic development with unlimited supplies of labour", *The Manchester School*, 22, 141-45.

Lucas, R. E., (2004) "Life earnings and rural-urban Migration", *Journal of Political Economy,* 2004, vol. 112, no. 1, pt. 2

Mortensen, D.T. (2005) *Wage Dispersion: Why are similar workers paid differently?*, The MIT Press, Cambridge, Massachusetts.

Narendranathan, W. and Elias, P. (1993). "Influences of past history on the incidence of youth unemployment: empirical findings for the UK", *Oxford Bulletin of Economics and Statistics*, vol. 55(2), pp. 161-86.

Oi, W.Y. and Idson, T.L. (1999) "Firm size and wages". Chapter 33 in Handbook *of Labor Economics*, vol. 3, Sections 3-5.

Owens, T and F. Teal (2005) "Policies towards poverty: Ghana and Tanzania in the 1990s" at: http://www.gprg.org/themes/t1-pov-house-well/pol-pov-ghan-tanz/pol-pov-ghan-tanz-indepth-05.htm.

Rama, M., "The Sri Lanka Unemployment Problem Revisited," *Washington DC, The World Bank, Development Research Group*: 45(1999).

Sandefur, J., P. Serneels and F. Teal (2006) "African poverty through the lens of labor economics: Earnings & mobility in three countries" Chapter 5 in P. Paci and P. Serneels (eds.) *Employment and shared Growth: rethinking the role of labor mobility for development*, The World bank, Washington, DC. at
http://www.gprg.org/pubs/workingpapers/pdfs/gprg-wps-060.pdf.

Schneider, F. (2005) "Size and Measurement of the Informal Economy in 110 Countries around the World" Working Paper 2005-13, Center for Research in Economics, Management and the Arts, Johannes Kepler University of Linz.

Sen, A.K. (1966) "Peasants and dualism with or without surplus labour", *Journal of Political Economy*, 74.

Sen, A.K. (1975) *Employment, Technology and Development*, Oxford University Press.

Serneels P. (2007) "The nature of unemployment among young men in urban Ethiopia", *Review of Development Economics*, 11 (1), 170-183.

Söderbom, M. and F. Teal (2004) "Size and efficiency in African manufacturing firms: Evidence from firm-level panel data", *Journal of Development Economics*, 73, pp. 369-394.

Söderbom, M., Teal, F. and A. Wambugu (2005) "Unobserved heterogeneity and the relation between earnings and firm size: Evidence from two developing countries" *Economic Letters*, 87, 153-159.

Söderbom, M., Teal, F., Wambugu, A. and G. Kahyarara (2006*)* "The dynamics of returns to education in Kenyan and Tanzanian manufacturing", *Oxford Bulletin of Economics and Statistics,* June, Vol. 68, No. 1, pp.261-396.

Tenjo, Jaime, "Opportunities, Aspirations, and Urban Unemployment of Youth: The Case of Colombia," *Economic Development and Cultural Change* 38 (4) (1990): 733–61.

Wooldridge, J.M. (2002) *Econometric Analysis of Cross Section and Panel Data*, The MIT Press, Cambridge, Massachusetts.

Appendix 1: Population Numbers

These are the population numbers that have been used to scale up the proportions available from the surveys.

Year	% Population aged 15-64	Total population	Population aged 15-64
1991	52.49	15,919,815	8,356,337
1992	52.64	16,370,808	8,617,491
1993	52.82	16,826,813	8,887,480
1994	53.04	17,280,080	9,166,056
1995	53.33	17,725,205	9,452,926
1996	53.68	18,159,859	9,747,948
1997	54.08	18,586,190	10,050,878
1998	54.51	19,008,696	10,361,092
1999	54.94	19,434,064	10,677,793
2000	55.37	19,866,984	11,000,198
2001	55.78	20,309,104	11,327,929
2002	56.17	20,758,472	11,660,423
2003	56.56	21,211,861	11,996,473
2004	56.93	21,664,441	12,334,643
2005	57.31	22,112,805	12,673,786

These population numbers are taken from the World Development Indicators. The figures for number of employees shown in Tables 1 and 2 are obtained by taking the shares from the GLSS surveys and multiplying those shares by the population aged 15-64 for the relevant years.