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by

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Abstract

We exploit a unique dataset of retrospective information from urban Tanzania to estimate the effect of early labour market experiences on adult labour market outcomes. We consider four labour market entry states – wage employment, self-employment, employment in the family business, and unemployment - and estimate how final earnings are associated with that entry state. The findings suggest that how individuals enter the labour market does matter for final outcome. We find that for those able to access wage employment, an initial period of unemployment while searching for a wage job may be preferred to an initial period in self-employment or the family business. However, for the two thirds who searched for an average of 5 years and still did not find a wage job, the gamble does not pay off.

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Outline

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1.   Introduction and Motivation

A growing body of literature is now investigating the consequences of labour market entry experiences on future career outcomes. Because of its policy implications, the literature for developed economies has focused on less favourable entry positions, such as unemployment and fixed-term contracts, and on their effects on final outcomes (see Gregg, 2001). Both from the theoretical and empirical point of view, however, the results are ambiguous. Drawing from existing theories in economics one can predict both a positive and a negative effect of a less favourable entry position on future career outcome: the former through the accumulation of human capital (Becker, 1994) and the latter through negative signals to future employers (Spence, 1973). Empirically, results are sensitive to the specification of the model and the country under investigation.[1]

In this paper, we exploit a unique dataset of job histories to estimate the effect of labour market entry experiences on final employment status and earnings in urban Tanzania. We examine whether different forms of labour market entry matter for final outcome. If indeed entry experiences in the labour market do matter, then policies should be targeted during the early stages of an individual's job career to facilitate the school-to-work transition.

Given the characteristics of the Tanzanian labour market we identify four types of labour market entry: (i) *unemployed job-seeker*, (ii) *unpaid family worker*, (iii) *self-employed,* and (iv) *wage employed*. We systematically compare these four groups and, by means of a Mincerian-type earnings function, estimate how different forms of market entry shape individuals final earnings, our measure of career outcome.

In Tanzania, wage employment is the preferred labour market status, but the question is whether it is worth a period of unemployment to acquire these jobs. We find evidence that if individuals are able to end up in wage employment, an initial period of unemployment may be preferred than an initial period of work in the family business, suggesting that the returns to "shopping" are higher than the returns to experience gained from working in a household enterprise.

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[1] In section 2, we present an extensive review of the literature mentioned above.

While the Mincerian framework provides us with a simple and effective tool for our investigation, simple OLS offers reliable estimates of the effect of labour market entry on final earnings only under the assumption of exogenous entry into the labour market; that is, how individuals enter the labour market should be uncorrelated with any potential determinant of earnings. This may be too strong an assumption. For example, it is quite likely that individuals with more ability and/or better family networks enter the labour market in more favourable positions and have better future career outcomes. As a robustness check, to overcome this potential omitted variable problem, we follow Falco *et al.* (2011) which draws on a framework presented by Abowd *et al*. (1999) and construct an index of individual unobservable characteristics using the panel dimension of the data. The inclusion of this index in our regression model confirms the results, suggesting that once unobserved characteristics are controlled for, how individuals enter the labour market still matters significantly.

The remainder of the paper is organised as follows. Section 2 presents the conceptual framework and describes the existing literature. In section 3, we present the data and the descriptive analysis, with particular emphasis on labour market entry. Section 4 describes the identification strategy and presents the results. In section 5, we present robustness checks, and section 6 concludes.

2. Conceptual Framework

What are the consequences of labour market entry experiences on future career outcomes? Is any job better than nothing? As we mentioned above, there is still little consensus on the answer to these questions. From existing theories in the literature, we can derive two main (and competing) hypotheses which predict how future career outcomes will be affected by labour market entry experiences: the stepping stones and the entrapment hypotheses (Sherer, 2004).

Becker's (1964) theory of human capital predicts that as individuals accumulate human capital from any (work) experience their productivity as well as their earnings will increase. It follows that as stepping stones for future career, any type of working entry experience will have a positive effect on final earnings.

The entrapment hypothesis, however, maintains that the type of labour market entry experience does matter, and if individuals enter the labour market in *bad* positions there is a risk that they will be trapped in these positions. This hypothesis can be derived, for example, from Spence's (1973) model of job market signalling whereby in a world of incomplete information employers use individuals' education credentials as a signal of their ability level. By the same token, employers may consider individuals labour market entry experiences as signals. *Bad* entry experiences will be considered as negative signals, and so employers will be reluctant to hire such individuals. Hence, this model predicts a negative effect of an unfavourable labour market entry on career outcome.

In the literature on developed economies, several studies investigate empirically the consequences of labour market entry experiences on future career outcomes, and try to assess which one of the above hypotheses is verified. Stejin and Gesthuizen (2006) study the effect of different forms of entry into the Dutch labour market on career development. They compare career outcomes for individuals who enter the labour market in three different states - unemployed, employed on a non-standard contract and employed on a permanent contract - and find evidence that individuals who enter the labour market as unemployed, and with non-standard contracts, experience a penalty on their future earnings, providing evidence in support of the entrapment hypothesis.

In contrast, Gardecki and Neumark (1997) investigate the consequences of initial periods of *churning* and *milling about* on adult labour market outcome. By means of a conventional earnings-type regression they find little evidence of a link between early experiences and career outcomes.

Finally, our work relates to Sherer (2004), who investigates the effect of the first job on future occupational outcomes and compares results for three countries: the UK, Germany and Italy. His findings support the entrapment hypothesis: the initial disadvantages of a *bad* first job are not overcome in adult career outcomes. This is the first study that highlights the importance of country specific labour market structure in determining the effect of labour market entry. If the labour market is flexible, then the stepping stones hypothesis might apply, a *bad* labour market entry experience can then be compensated with faster upward mobility. However, if the labour market presents rigidities, an entrapment scenario is more likely to occur, as individuals are likely to remain trapped in *bad* segments of the market.

Due to a lack of data the literature from developing countries has not tended to investigate the consequences of labour market entry experiences, rather focuses on testing whether markets are segmented (Harris and Todaro, 1970). Segmentation theory implies that workers with similar characteristics will have different earnings if they work in different segments of the market (wage employment *vis-a-vis* self-employment), if wage earners enjoy a premium. The literature, therefore estimates the impact of differences in job type and contract status (i.e. formal or informal wage employment) on earnings differential. If job type differences are indeed an important determinant of earnings differentials then segmentation theory is verified. However, as suggested by Heckman *et al.* (2006) conventional OLS may be biased if individuals sort themselves into job type according to their specific idiosyncratic gains. In case of endogenous sorting, it is likely that individuals in self-employment would not have higher earnings if they were to work as wage employed (Roy, 1951).

Falco *et al.* (2011) investigate this issue using panel data for Tanzania and Ghana. Their findings suggest that although differences in job type do matter for earnings differentials, unobserved characteristics of the individuals are also important. Furthermore, Falco *et al.* (2012) argue that earnings differentials across sectors are not a true reflection of segmented markets. Individuals may prefer certain jobs for reasons other than earnings, such as job security, location and flexibility. Ideally, one would compare workers' marginal utilities across sectors and would show that marginal utilities, not only earnings, are higher in the formal sector. For this reason they propose a measure of job satisfaction as an outcome variable and, using a five year panel of urban Ghana, explore how job satisfaction changes across sectors. By means of an ordered probit estimator they do not find strong evidence of segmented markets in Ghana.

Drawing on this existing literature we examine whether there is a link between type of labour market entry and future career outcomes in Tanzania using a rich retrospective job history dataset for urban Tanzanian workers. In doing so we investigate the effect of labour market entry experiences on final earnings.

3. Data

3.1. Background

Our data covers workers' employment histories of various lengths, with the majority entering the labour force between 1990 and 2000, a turbulent decade in Tanzanian economic history. The decade began with the economy in decline, suffering from high inflation and persistent budget deficits.[2] Growth was sluggish between 1990 and 1995, providing no income growth for the overwhelming majority of the population still living in absolute and extreme poverty (figure A.1). Urban areas suffered as the growth of the non-agricultural sectors was below two percent per annum. In 1995 the government began a new reform program, including a renewed commitment to macroeconomic stability through a structural reduction in fiscal deficits. A new budget system launched in 1996 sharply curtailed deficits, while the public sector share in the economy was reduced through policies such as privatization of state-owned enterprises (SOEs) and liberalization of agricultural trade, while reductions in red tape improved the environment for private sector investment. The fiscal consolidation, including the cut in public investment, initially slowed growth, but by 1997 a growth acceleration began and was sustained throughout the period covered by our data.

An infusion of aid flows beginning around 2000 allowed public investment to grow from less than one percent of GDP in 1997 to six percent in 2003. Domestic private and foreign direct investment both picked up around 2000, the latter stimulated in part by gold mining concessions. The combined effect was a construction boom, especially in urban areas, and strong growth in manufacturing output and employment (but from a low base – manufacturing only accounted for nine percent of GDP by 2000).

The changes in the structure of the economy between 1990 and 2005 brought important changes to the urban labour market and job prospects for new entrants. In 1990, the main source of wage employment for new entrants was the public sector. Queuing for a job in this sector upon leaving school may have been a normal labour force entry strategy, especially in the capital city, Dar es Salaam. During the fiscal consolidation period, employment opportunities in the public

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[2] The economic background in this section is taken from Utz, (2008)
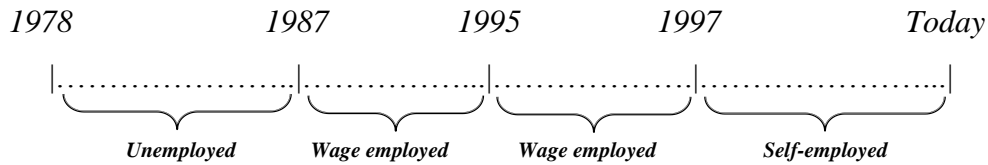
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sector declined, as did wage employment as a share of total employment, while employment in household enterprises surged. Between 2000-2006 wage employment opportunities increased in urban areas at twice the rate of growth of the labour force (Kweka and Fox, 2011), but mostly in the private sector, where hiring is usually more decentralized, which affects job search strategies. These employment trends suggest that successive waves of new entrants faced changing labour market conditions, requiring adjustments in both final career outcome expectations and transition to work strategies.

Overview of THUPS and Sampling Design

The main source of data is the Tanzania Household Urban Panel Survey (THUPS) conducted by the Centre for the Study of African Economies (CSAE) at Oxford University, in collaboration with the Tanzanian National Bureau of Statistics. It is a labour market survey which collects information on occupational status, income, education and other demographic features for labour market participants between the ages of 15 and 65. Both workers in the formal and informal sector were interviewed. The sample is a stratified random draw of urban households taken from the 2000 Household Budget Survey (HBS), and covers the main urban areas of Tanzania including Arusha, Dar es Salam, Iringa, Morogoro, Mwanza and Tanga. We use all three waves of this survey conducted in 2004[3], 2005 and 2006.

The unique feature of this survey and one that we exploit in this paper is its collection of individuals' retrospective information on previous jobs. Specifically, individuals were asked their job history since leaving school. Recall questions for each activity included the start and end date, a description and the amount of earnings received. For each individual it is possible to create a time line which describes their job history. For example, the job history of individual **2201101** can be illustrated as follows:

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[3] Initiated by one of the authors of this paper.

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1978              1987         1995        1997         Today
|......................|.................|.................|......................|
      _____/  _____/  _____/  _____/
        Unemployed    Wage employed  Wage employed   Self-employed
```

After leaving school in 1978, individual 2201101 experienced a period of unemployment until 1987, when she found wage employment (in a bar). In 1995, she switched job and went to work in an office, again as a wage earner. Finally, in 1997 she decided to be self-employed, where she has remained.

We focus our analysis on individuals aged between 20 and 35. The reason for this choice is two-fold. First, we do not consider individuals younger than 20 years of age because their job history is limited.[4] Second, a potential concern with data of this type is recall bias. Older individuals in the sample may find it more difficult to recall earlier employment states. For robustness we consider the full sample – the results remain unchanged. Also, as we are interested in labour force participants, we drop individuals who are currently out of the labour force (OLF); this category includes housewives, disabled people and students. Considering the above restrictions, we have a sample of 412 individuals.

3.2. Descriptive Analysis

Table 1 provides summary statistics for the sample of interest. The first column refers to the whole sample. In columns (2) and (3) we compare current self and wage employed, 284 and 88 individuals, respectively. In the last column we report p-values. Wage employed appear to be more educated than their self-employed counterparts: they report to have completed more than two years of additional schooling; more likely to have achieved higher levels of both levels of secondary education (secondary and advanced level); and more likely to have a vocational certificate. Not only are individuals in wage employment more educated, but their parents are as well: wage employed fathers and mothers both report an additional year of schooling than parents of the self-employed.

Amongst the human capital variables we also include a measure of labour market experience. Since experience is rarely measured with accuracy, the literature

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[4] There are only five individuals in the sample under 20 who report a job history.

uses a measure of *potential experience* (*i.e. age - years of schooling - 6*). Our unique dataset, however, allows us to compute a *true* measure of experience using the retrospective employment history.

The average age of the truncated sample is 27.[5] Individuals entered the labour market, on average, at the age of 18 and 20 for men and women respectively; and had their first job at the age of 20.[6] In figure A.2, we show the age at which individuals find their first job with the associated job type. We see that 90 percent of the individuals find their first job by the age of 25. In figure A.3, we restrict our attention to those individuals who entered as unemployed. Again, over 95 percent of the individuals find their first job by the age of 25, but we see a clear pattern of the wage employed finding their first job later. After the age of 25 all the individuals who started off as unemployed become self-employed. This finding confirms the idea of "waiting and searching," that is, individuals prefer to work in wage employment, but as the probability of getting such employment decreases, individuals decide/are forced to become self-employed. This evidence is further strengthened by the fact that of the 87 percent of the sample reporting to be self-employed, the reason as to why they started their own business was that they "c*ouldn't find salaried work.*"

We now turn to the outcome variable: final monthly earnings. To keep our outcome variable uncontaminated from potential measurement errors, we use monthly earnings, controlling for (log of) number of hours worked, rather than computing a measure of hourly earnings.[7] Moreover, because of the small sample size, and the fact that earnings usually have a long right tail, in the tables we report the median value of monthly earnings as opposed to its mean value. Median earnings are 22,687 Tz Shillings per month (almost 15 US dollars). As expected, wage employed report a higher level of earnings than self-employed.[8]

We further distinguish between self-employed with and without employees. Self-employed with at least one employee are defined as Entrepreneurs. Only a

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[5] This is the same for both wage and self-employed categories.

[6] On average individuals left school at the age of 16.

[7] We also use hourly earnings as a robustness check and find the results do not differ.

[8] Densities of (log of) monthly earnings can be found in the Appendix, figure A.4 and A.5, which confirms a log normal distribution.

small fraction of self-employed have employees, 10 percent, and of these the majority have only one employee. We also distinguish between wage employed in the private and public sector: over 70 percent of wage employed are in the private sector. In what follows, we exploit the retrospective dimension of the data and compare individuals according to their labour market entry.

3.3. Labour Market Entry

We begin by examining differences between individuals who enter the labour market in different states; and whether these differences matter for final earnings. Using summary statistics we consider individuals entry into the labour force in four (mutually exclusive) states: (i) *unemployed job-seeker*, (ii) *unpaid family worker*, (iii) *self-employed* and (iv) *wage employed*.[9] The majority of the sample (59 percent) enter as either self-employed or family worker, indicating the importance of this type of employment in urban Tanzania (Kweka and Fox, 2011). Table 2 compares the baseline characteristics of these four categories.

Individuals who enter as wage employed and unemployed have the highest level of education, reporting 9.7 and 9 years of schooling, respectively. We observe the same pattern for parental education. If we assume parental education to be a proxy for family wealth, then the data supports the idea that unemployment is a *luxury good,* which only the wealthy families can afford. Unpaid family workers and self-employed entrants appear to be the least educated. We do not observe a (statistically) significant difference in completed years of schooling between these two groups. This suggests that whether individuals enter as self-employed or family workers is not explained by education. Instead the table shows that individuals who enter as self-employed report a higher level of parental education. One rational for this may be that more educated and hence wealthier families support their children in building up their own business. In the last row we report final (median) monthly earnings for the four categories. Again, individuals who enter as wage employed and as unemployed report the highest levels of earnings.

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[9] We acknowledge that in the context of Tanzania, where there is no unemployment benefit, unemployment may include odd jobs. It is possible that individuals would not report a job that paid for a couple of days or weeks, as they would still consider themselves unemployed.

Up to now, the data does not seem to show any earnings penalty for individuals who enter the labour market in the form of unemployment. On the contrary, according to the current level of earnings, it seems that these individuals are later rewarded for this choice. To investigate this further we present transition maps of individuals' job history. Specifically, starting from their labour market entry, we follow their transition to their subsequent state. We report four different types of transition: (1) entry as unemployed; (2) entry as unpaid family worker; (3) entry as self-employed and (4) entry as wage employed.

Entry as Unemployed

Figure 1 shows the transition of individuals who enter the labour market as unemployed. The map shows that 83 individuals enter the labour force in this state. More than a half, 65 percent, eventually find a job (54 individuals) and the rest, 35 percent, are still unemployed looking for a job. Of those who find employment 17 percent find a job as wage employed and 48 percent as self-employed. Looking at the figure, the numbers in the arrows represent the duration of the spell. The transition from unemployment to self-employment, on average, takes 55 months; whereas the length of the unemployment spell is longer for those who eventually become wage employed, 66 months. The map also shows that these later individuals end up with higher earnings. Again, this seems to suggest that conditional on ending up in wage employment, job search pays off. Individuals who could afford to stay unemployed for a longer period, eventually found a more financially rewarding job.[10]

Entry as Unpaid Family Worker

We now consider individuals who enter the labour market as unpaid family workers, figure 2. Only 10 percent are still unpaid family workers in the subsequent state. The majority, 57 percent, became self-employed and only 14 percent became wage employed. The data suggests that two types of individuals enter the labour market in this state: (1) individuals with the intention of accumulating work

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[10] Those who enter self-employment earlier may do so because they could not afford to wait, or because they realised they would not get a wage job, or because they could do just as well/better in self-employment.

experience and enough capital to start up their own business in the future; and (2) women who help in the family business.

Entry as Self-employed

As figure 3 shows, 123 individuals were self-employed at labour market entry; 94 percent of them are still self-employed in the subsequent period. Only a small fraction, 3.6 percent, switched from self to wage employment, and those who switched reported higher incomes as a result. This table highlights the low labour mobility in urban Tanzania. Once individuals enter the labour market as self-employed, it is very likely that they stay in this state.

Entry as Wage employed

Finally, in figure 4 we can see the transition for individuals who enter the labour market as wage employed. Again, we notice the low labour mobility. Of the 84 individuals who enter as wage employed, 76 percent did not switch job type.

Two main findings can be drawn from the figures above. First, it appears that individuals who experience an initial period of unemployment do not ultimately suffer any pay penalty from the foregone years of experience.[11] For the majority who ended up in self-employment, their final earnings are as high as those who entered directly as self-employed, and a similar pattern is seen among those who made it into the wage segment of the labour market. Second, there appears to be a low level of labour-mobility amongst urban Tanzanians. Once individuals enter into either self or wage employment it appears unlikely that they will switch job type. Self-employed, in particular, appear the least mobile of all.[12] In the next section, we will test the robustness of these findings in a regression framework.

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[11] Although we acknowledge there would have been a potential loss of earnings during the initial period(s) of unemployment.

[12] This is also confirmed in tables A.1 and A.2 in which we provide transition matrices from initial to subsequent state, and initial to final state, respectively. As expected, the values of the main diagonals are high suggesting that individuals rarely change job-type, highlighting the issue of low-labour mobility in urban Tanzania.

4. Labour Market Entry and Final Earnings

4.1. Ordinary Least-Squares Regression

The most intuitive way to test the effect of labour market entry on final earnings is through a Mincerian-type earnings equation. Before proceeding to the estimation, we create four dummy variables which take the value one if the individual enters the labour market in one of the four states discussed above. Consider the following equation:

$$y_i = \alpha + E_i'\beta + X_i'\gamma + \varepsilon_i; \qquad (4.1)$$

where y_i is final log of monthly earnings for individual i; E_i' is a vector of dummy variables which indicates how individual i enters the labour market; β represents the effects of labour market entry on final earnings; X_i' is a vector of covariates which includes schooling, experience, tenure and other demographic characteristics of the individual and ε_i is a random disturbance.

In Panel A of table 3, we report OLS estimates of equation (4.1). Specifically, in column (1) we report results for the whole sample, while in column (2) and (3) we compare (current) self and wage employed.

Considering the whole sample, only entry as wage employed is significant in explaining final earnings. Specifically, individuals who enter the labour market as wage employed have a 43 percent premium when compared to individuals who enter the labour market as unpaid family workers. If we consider column (2), labour market entry experiences do not seem to matter for the current self-employed; the coefficients of interest are statistically insignificant. For wage employed, in column (3), we find instead a strong positive correlation for wage employed and unemployed entrants.

As previously shown in the literature, human capital is important in explaining earnings. We argue there is a premium attached to completing a level of education and subsequently use education level dummies, rather than completed years of schooling. The returns to schooling are positive and convex. Returns to experience are also positive, but only significant for wage employment.[13] The female dummy

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[13] We omit the square of experience since it is never jointly significant in any of our specifications, presumable due to the age of our sample. In line with the literature (Gregg, 2001) we also include

variable is negative and significant but only for wage employed. The coefficient implies that women have a 17 percent penalty when we consider the whole sample, with the penalty reaching 50 percent when we consider only wage employed. Entrepreneurs have a 40 percent premium with respect to self-employed with no employees. This is expected, as entrepreneurs probably have high levels of unmeasured skills that are also correlated with earnings. Likewise, we observe a 50 percent premium for wage employed in the public sector. Again, this is expected, only the most educated and skilled individuals probably make it to the public sector.

The results are robust to the addition of a number of controls that could be correlated with current earnings. For example, it is often argued that parental activity may be correlated both to individual's current activity and, consequently, to individual's earnings. If parents have a good job, through the network of people they know they may be able to help their children find a better job. In order to control for this possibility, in table A.3 we include two dummy variables which equal one if father and mother's usual job type is/was wage employment. Overall, we observe that these variables are not significant and that the labour market entry coefficients change remarkably little with their inclusion.

As explained, in order to leave the outcome variable uncontaminated from potential measurement errors in reported numbers of hours worked per week, we use monthly as opposed to hourly earnings in the analysis. As a robustness check, we estimate the model using log hourly earnings. We report estimates of log hourly earnings on labour market entry in table A.4. Again, we observe that the coefficients of interest remain consistent with the findings reported.

Finally, it is likely that the effect of entry experiences may vary according to the year individuals enter the labour market. We address this potential time effect in two ways. First, we include in the model a time dummy variable which equals 1 if the individual entered the labour market after 1999 – a period of important economic growth for Tanzania. We further investigate this issue by interacting the labour market entry dummies with the time dummy. Table A.5 shows the results for the estimation. As expected, the effect of labour market entry experience for wage

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the duration of labour market entry experience which we found to be consistently insignificant and therefore is not included in the final specifications.

employed appears to be much stronger in the period of economic growth, i.e. after 1999.

Overall, the results presented show an important correlation between labour market entry and final earnings. A potential limitation of this approach is that there may be a number of omitted determinants of earnings that correlate with labour market entry. For example, individuals with more ability and/or better family networks are likely to enter the labour market in more advantageous positions and have better future career outcomes. In what follows, we discuss how we address this issue.

4.2. Controlling for Unobservable Characteristics

Ideally, in order to estimate the causal effect of entering the labour market in a certain state, *j*, we would like to observe the counterfactual; that is, the difference between the outcome of individual *i* who enters the labour market in state *j* and what would have happened had individual *i* entered the labour market in state *k*. Formally, the causal effect of entering the labour market in state *j*, can be written as:

$$\Delta_j = Y_i^j - Y_i^k \qquad \forall j \neq k; \qquad (5.1)$$

where Y_i^j are the earnings of individual *i* who enters the labour market in state *j* and Y_i^k are the earnings of individual *i* had he entered in state *k*. Because individuals enter the labour market in only one of the four states we cannot observe the above difference. Nor are we in the position to control for unobservable differences.

To address this concern we follow the approach used by Falco *et al.* (2011), who draw from Abowd *et al.* (1999), and exploit the panel dimension of the data to construct an index which could be viewed as a proxy for ability. At the very least this measure represents an index of the unobservable elements of the individual (such as drive, ambition, entrepreneurial spirit), of which ability is a large component.

Next we explain the main steps of this procedure. Consider the following equation:

$$y_{it} = \mathbf{Z}_{it}'\pi + \boldsymbol{\theta}_i + \delta_t + u_{it}; \qquad (5.2)$$

where y_{it} is the natural log of monthly earnings for individual *i*; $\mathbf{Z}_{it}'$ is a vector of time-varying covariates and $\boldsymbol{\theta}_i$ is a vector of time-invariant covariates; δ_t are time

dummies and u_{it} is a random error term. We further assume that $\boldsymbol{\theta}_i$ consists of an observable and an unobservable component, as follows:

$$\boldsymbol{\theta}_i = O_i\mu + A_i; \tag{5.3}$$

where O_i is the time invariant "observable" component and A_i the time invariant "unobservable" component – what Abowd *et al.* (1999) call a *pure individual effect*. In order to derive this index, A_i, we need two steps: (1) to estimate equation (5.2) using fixed effects techniques;[14] (2) use the estimated values of the individuals fixed effects, $\widehat{\boldsymbol{\theta}}_i$, as the dependent variable in order to estimate equation (5.3). The residuals obtained from this estimation will define the index.[15] The identifying assumption of this strategy is that the unobserved features described by the index must be time-invariant. We now include the derived index in equation (4.1) as follows:

$$y_i = \alpha + \boldsymbol{E}_i^{'}\beta + \boldsymbol{X}_i^{'}\gamma + A_i + \epsilon_i. \tag{5.4}$$

Panel B of table 3 reports the results of this exercise. The coefficients of interest remain positive and strongly significant. Also in this specification, when we consider the whole sample, column (4), individuals who enter the labour market as wage employed report a premium in their final earnings. This is also true in column (5) for current self-employed, suggesting that once unobserved characteristics are accounted for, individuals who switched from wage employment to self-employment have higher earnings. In column (6) we report a premium in earnings for those individuals who entered as unemployed. As we have seen in the summary statistics, this suggests that job search pays off only for those who make it into wage employment. Again, consistently with the model estimated in Panel A, the estimated coefficient for wage employed entrants is positive, suggesting a premium in earnings for individuals who

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[14] A caveat to this method is that because we construct the index by fixed effect techniques, we are implicitly assuming that the unobserved variables that we control for are time invariant. This may not be the case; unobservable features such as motivation and ambition may vary through time and through jobs.

[15] Although the estimated individual fixed effects are consistent only if T is large enough, they are still unbiased estimates for $\boldsymbol{\theta}_i$ (see Cameron and Trivedi 2005, pp 727).

entered as wage-employed.[16] A joint test of statistical significance confirms that labour market entry experiences are an important factor in determining final earnings (p-values 0.01, 0.05 and 0.03 for columns (4) (5) and (6) respectively).

Again, we observe a strong positive relationship between earnings and schooling for both self and wage employed; experience is positively correlated with earnings, and it appears to matter more for self-employed. The female coefficient is still negative and significant, but its magnitude has decreased considerably, the earnings penalty for women is 10-12 percent. As opposed to the previous specification, we have no premium for entrepreneurs and for wage employed in the public sector. This makes sense. As mentioned before, it is likely that individuals who become entrepreneurs and make it to the public sector are more likely to have more skills and higher ability; therefore, we expect these coefficients to lose significance once we include the index in the model.

Overall, the inclusion of the index confirms the importance of labour market entry experiences in explaining current earnings. As the summary statistics suggest in section 3.3, this strong effect may be due to the low labour-mobility in the Tanzanian labour market, and once individuals enter a certain position they are likely to be *stay* in that segment.

4.3. First Job Experience

A potential limitation of our results is that individuals who report entering the labour market straight into employment may fail to recall an initial unemployment state. Potentially, all individuals go through an initial period of unemployment after school, and if some individuals report it and some others do not, this may affect our findings. This could be due to recall, or simply viewed by the individual as such an insignificant event it is not worth mentioning.

Because there could be a bias in reported labour market entry, we assume that all individuals in the sample experienced an initial phase of unemployment after leaving school, no matter how small. If we make this assumption, then (because everyone enters the labour market as unemployed) our research question changes slightly. Now we are not interested in the relationship between labour market entry experiences and final earnings, but rather in the relationship between first job and

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[16] The estimated coefficient has a p-value of 0.12.

final earnings. In particular, we can test the effect of the first job on final outcome; that is, we consider whether individuals whose first job is self-employment or unpaid family worker has a penalty in their final earnings compared to those whose first job is wage employment.[17] Table 4 provides the results of this exercise. Consistent with the previous findings, we observe a strong negative correlation between individuals whose first job is in non-wage employment (i.e. self-employed or unpaid family worker) and final earnings. The penalty of having a first job in non-wage employment ranges between 28 and 38 percent.

5. Conclusion

We exploit a unique dataset of retrospective job histories to investigate whether different forms of labour market entry have an effect on career outcomes in urban Tanzania between 1990 and 2005. Specifically, we consider whether there is a link between labour market entry and final career outcome – both job type and earnings. To the best of our knowledge, the link between labour market entry and career outcomes has not yet been considered in developing countries.

We identify four types of labour market entry and estimate a Mincerian-type earnings function, in order to identify how different forms of market entry affect final earnings, our measure of career outcome.

Our findings suggest that how individuals enter the labour market does matter for final outcome. Specifically, for those that end up in wage employment an initial period of unemployment is preferred to a period in non-wage employment; the time spent looking for a *good* job does appear to compensate for the years of foregone experience that they would have accumulated had they entered self-employment. Notably only 26 percent of those who had found a job by 2005 were in wage employment; the rest ended up in self-employment. This could imply that only individuals with better networks and work-related connections have positive returns to job search while unemployed.

The average period of unemployment for those who had found a job in our sample was five years. This is quite a long period of unemployment and job search; it is not surprising that concerns about idle urban youth have surfaced in Sub-Saharan Africa. As this is the first quantitative study on labour market entry and final outcome, the relevance of the analysis for other countries in the region is unclear. It may be that the changing labour market conditions over the period in Tanzania affected both the number of people entering as unemployed and the length of the job search. During the period of declining public sector wage employment, new entrants may not have been aware that their chances of finding a wage job, and thus the returns to their search, had diminished. During the later period, where wage employment was expanding (although mainly in the private sector), inital entrants may not have had sufficient information about the new wage employment opportunities nor their chances of obtaining such a job. This suggests that there could be private and public returns to increased provision of information to entrants about the urban job market so that they and their families can better assess the prospects and make a more efficient transition.

Finally, both descriptive and multivariate analysis seems to suggest low labour-mobility to be one of the underlying causes of the results. Further research should focus on the determinants of labour mobility, what prevents and what determines individual's transition from one segment of the market to the other.

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Labour Market Entry and Earnings:

Evidence from Tanzanian Retrospective Data

TABLES AND FIGURES

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Table 1: Summary Statistics – Current State

	Overall	Self employed	Wage employed	P -value
Years of Schooling	8.37	7.92	9.49	0.012
Primary Education	0.54	0.59	0.42	0.004
Ordinary Level	0.27	0.25	0.28	0.802
Advanced Level	0.02	0.01	0.05	0.009
Vocational Cert.	0.10	0.07	0.23	0.001
Father years of Schooling	8.13	7.74	8.81	0.075
Mother years of Schooling	4.97	4.60	5.81	0.014
Experience	8.28	9.30	7.47	0.009
Tenure	6.13	6.35	5.43	0.087
Female	0.60	0.63	0.56	0.132
Married	0.45	0.50	0.48	0.503
Current Age	27.94	28.25	28.52	0.983
Age First Job	19.89	19.58	20.70	0.030
Age Labour Market Entrance	18.77	18.38	19.83	0.002
Final Monthly Earnings	14.2 US$	13.8 US$	17.8 US$	0.010
Dar es Salam	0.48	0.49	0.45	0.612
Log(Hours Worked)	3.95	3.94	3.99	0.531
Entrepreneur	-	0.10	-	-
N° employees	-	1.85	-	-
Public	-	-	0.27	-
Firm size	-	-	3.09	-
Obs	412	284	88	88

Table 2: Summary Statistics – Entry in Labour Market

	(1) **Unemployed**	(2) **Family Worker**	(3) **Self employed**	(4) **Wage employed**
Years of schooling	9.09	7.44	7.88	9.69
Primary Education	0.48	0.62	0.62	0.39
Ordinary Level	0.40	0.21	0.24	0.30
Advanced Level	0.05	0.02	0.01	0.02
Vocational Cert.	0.06	0.04	0.07	0.27
Father years of schooling	8.44	7.23	8.19	9.18
Mother years of schooling	5.82	3.80	4.57	6.44
Father wage employed	0.42	0.32	0.40	0.21
Mother wage employed	0.10	0.08	0.15	0.21
Female	0.49	0.64	0.64	0.60
Current Age	26.05	28.17	28.46	28.69
Experience	3.84	12.46	7.45	7.82
Final Monthly Earnings	20.9 US$	15.8 US$	19.2 US$	29.8 US$
Observations	83	122	123	84

Figure 1. Transition Mapping.
Entry as Unemployed.

Unemployed at Labour Market entrance

83 individuals

35% Still unemployed

57

66

Self-employed
48%
Monthly Earnings
15 US dollars

Wage employed
17%
Monthly Earnings
20 US dollars
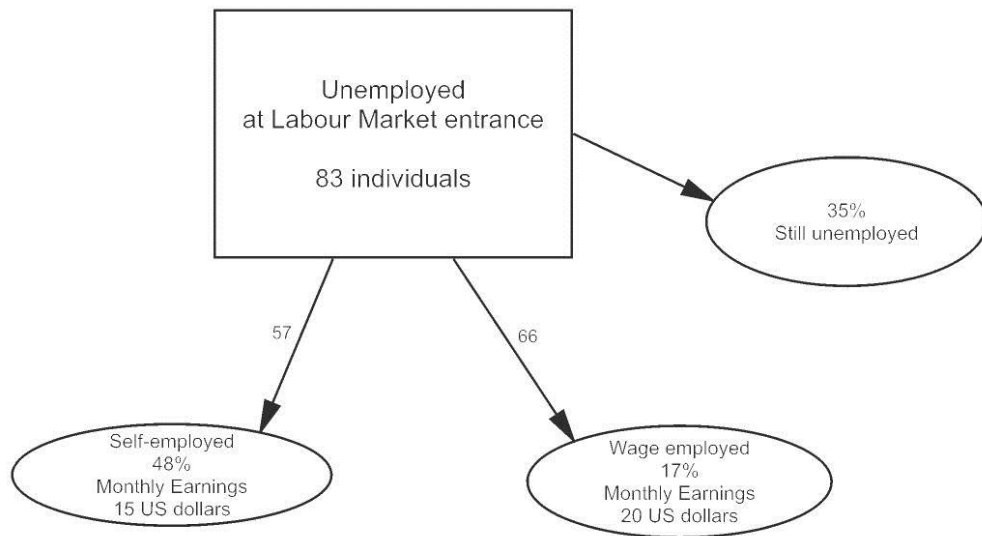
Figure 2. Transition Mapping.
Entry as Family Worker.

Unpaid family worker at Labour Market entrance

122 individuals

10%
Did not leave family work

67

56

26

55

Self-employed
57%
Monthly Earnings
12.5 US dollars

Wage employed
14%
Monthly Earnings
10 US dollars

Unemployed
1%

OLF
18%
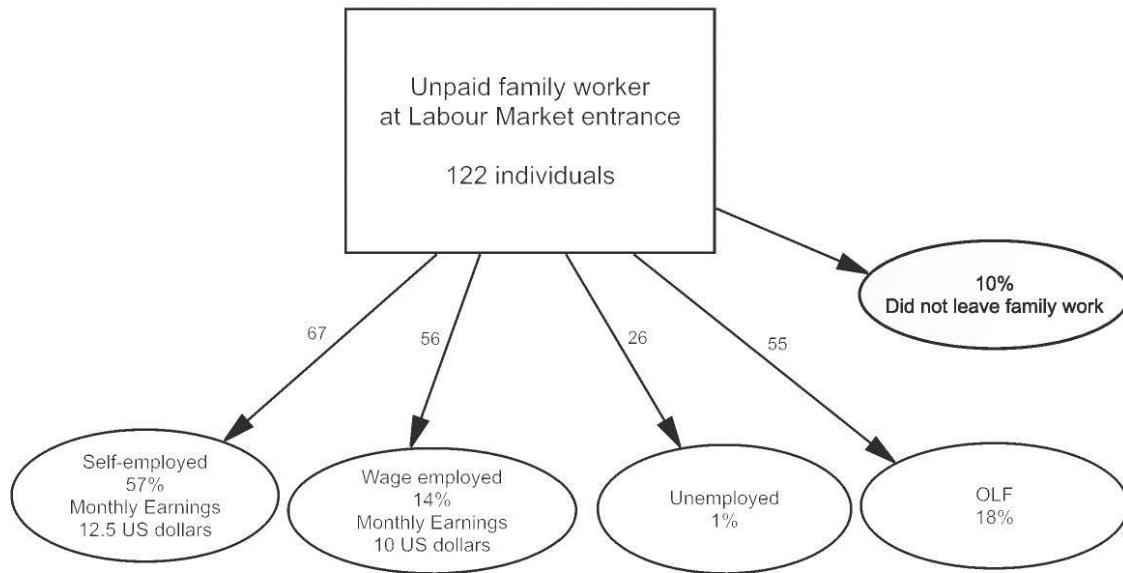
SOURCE: Authors own calculation using THUPS.

Figure 3. Transition Mapping. Entry as Self-employed.

Self-employed at Labour Market entrance

123 individuals

94%
Still self-employed
Monthly Earnings
9 US dollars

41.5

Wage employed
3.5%
Monthly Earnings
15 US dollars

139

Unemployed
1.4%

51

OLF
0.8%
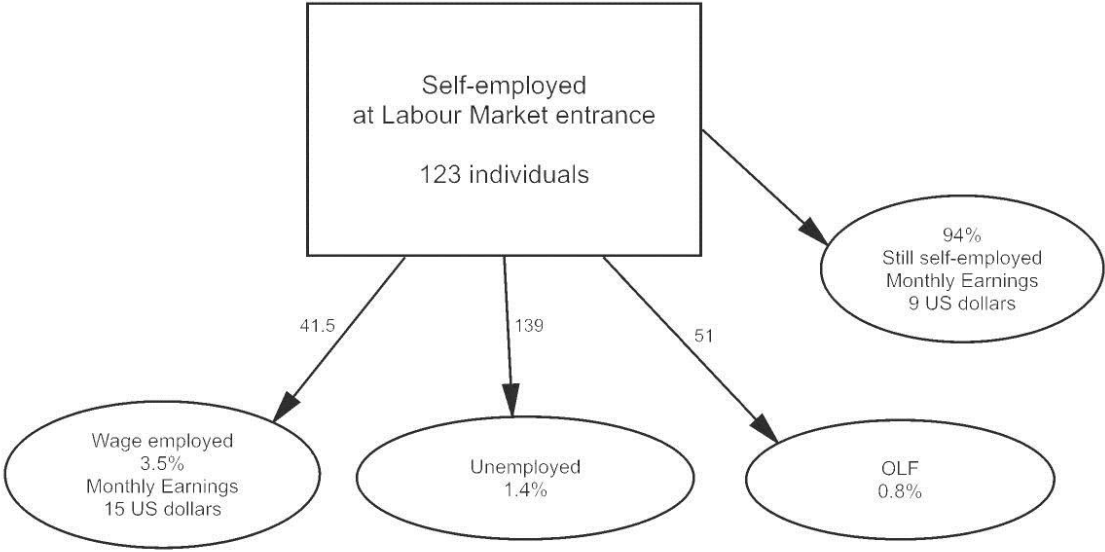
Figure 4. Transition Mapping. Entry as Wage employed

Wage employed at Labour Market entrance

84 individuals

76%
Still wage employed

Monthly Earnings
17.2 US dollars

74

Self-employed
22%
Monthly Earnings
18.5 US dollars

83

Unemployed
1%

34

OLF
1%
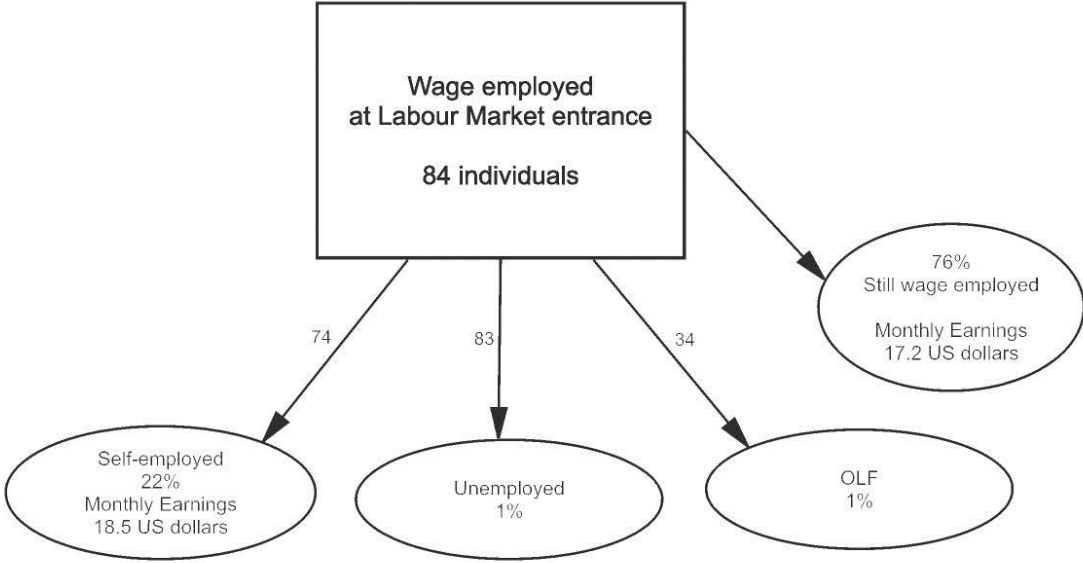
SOURCE: Authors own calculation using THUPS.

Table 3: Labour Market Entry and Earnings

	Panel A: Ordinary Least-Squares			Panel B: With Individual Effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	Whole	Self-employed	Wage employed	Whole	Self-employed	Wage employed
Entry as Unemployed	0.284	0.154	0.502*	0.126	0.127	0.292**
	(1.88)	(0.98)	(2.36)	(0.67)	(0.45)	(3.36)
Entry as Self-employed	0.172	0.159	0.060	0.009	-0.046	0.032
	(1.44)	(0.91)	(0.18)	(0.20)	(-0.44)	(0.07)
Entry as Wage employed	0.437**	0.403	0.340*	0.246**	0.364**	0.275
	(3.14)	(1.83)	(2.29)	(2.96)	(2.58)	(1.63)
Primary Education	0.166	0.174	0.153	0.197	0.180	0.512
	(1.69)	(1.40)	(0.50)	(1.32)	(0.78)	(1.58)
Ordinary Level	0.569***	0.495**	0.562*	0.638***	0.620***	0.807**
	(5.99)	(4.01)	(2.38)	(9.70)	(4.64)	(2.64)
Advanced Level	1.229***	0.986**	0.868***	1.046***	0.816**	1.125***
	(6.64)	(3.75)	(4.08)	(5.49)	(2.59)	(4.48)
Vocational Cert.	0.696***	0.565	0.344	0.718**	0.720*	0.645
	(5.03)	(1.79)	(0.98)	(3.81)	(2.45)	(1.56)
Experience	0.012	0.007	0.032*	-0.000	-0.003	-0.012
	(1.24)	(0.65)	(2.21)	(-0.04)	(-0.28)	(-0.84)
Father years of schooling	0.023**	0.012	0.046*	0.031**	0.024*	0.040**
	(2.98)	(1.44)	(2.26)	(3.79)	(2.38)	(2.83)
Mother years of schooling	-0.019	-0.011	-0.019	-0.031*	-0.031	-0.023***
	(-1.63)	(-0.87)	(-1.99)	(-2.23)	(-1.80)	(-5.58)
Female	-0.167*	-0.075	-0.517***	-0.313***	-0.219	-0.490***
	(-2.56)	(-1.06)	(-6.47)	(-4.17)	(-1.57)	(-6.44)
Married	0.024	-0.082	0.094	0.053	0.092	0.018
	(0.22)	(-0.73)	(0.82)	(0.61)	(0.71)	(0.15)
Log(Hours Worked)	0.265***	0.351***	0.102*	-0.068	0.050	-0.177
	(4.69)	(5.71)	(2.24)	(-0.52)	(0.23)	(-1.10)
Dar es Salam	0.113	0.322	-0.096	0.204**	0.314**	0.011
	(0.71)	(1.74)	(-0.45)	(3.80)	(3.39)	(0.44)
Individual Effect	-	-	-	0.421***	0.477**	0.326***
	(-)	(-)	(-)	(5.61)	(3.98)	(4.37)
Entered After 1999	-0.206*	-0.250	0.037	-0.035	-0.094	0.061
	(-2.55)	(-1.74)	(0.25)	(-0.27)	(-0.82)	(0.37)
Entrepreneur	-	0.391*	-	-	0.140	-
	(-)	(2.24)	(-)	(-)	(0.77)	(-)
Public	-	-	0.463**	-	-	0.303**
	(-)	(-)	(3.33)	(-)	(-)	(3.56)
Firm size	-	-	0.046	-	-	0.051*
	(-)	(-)	(1.25)	(-)	(-)	(2.04)
Observations	305	228	69	222	150	69
R^2	0.228	0.200	0.595	0.557	0.563	0.732

t statistics in parentheses.
Omitted Category: Entry as family worker.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: First Job Type and Earnings

	(1) Whole	(2) Self-employed	(3) Wage employed
Non-Wage Employment	-0.204[*]	-0.384[**]	-0.278[**]
	(-2.27)	(-2.81)	(-3.81)
Primary Education	0.185	0.179	0.505
	(1.24)	(0.80)	(1.39)
Ordinary Level	0.663[***]	0.666[***]	0.798[*]
	(12.11)	(6.33)	(2.24)
Advanced Level	1.050[***]	0.863[*]	1.133[**]
	(5.19)	(2.44)	(2.67)
Vocational Cert.	0.727[**]	0.733[**]	0.647
	(3.42)	(2.65)	(1.36)
Experience	0.002	0.001	-0.016
	(0.33)	(0.13)	(-1.10)
Father years of schooling	0.031[**]	0.024[*]	0.040[**]
	(4.02)	(2.34)	(3.17)
Mother years of schooling	-0.033[**]	-0.031	-0.023[**]
	(-2.61)	(-1.90)	(-3.84)
Female	-0.325[***]	-0.241	-0.490[***]
	(-4.14)	(-1.74)	(-6.69)
Married	0.038	0.072	0.010
	(0.50)	(0.58)	(0.11)
Dar es Salam	0.197[**]	0.321[**]	0.011
	(4.02)	(3.50)	(0.30)
Log(Hours Worked)	-0.060	0.047	-0.197
	(-0.44)	(0.23)	(-1.62)
Individual Effects	0.413[***]	0.475[***]	0.325[***]
	(5.77)	(4.20)	(4.08)
Entrepreneur	-	0.132	-
	(-)	(0.74)	(-)
Public	-	-	0.308[**]
	(-)	(-)	(3.78)
Firm size	-	-	0.048
	(-)	(-)	(2.00)
Constant	9.942[***]	9.635[***]	10.225[***]
	(14.71)	(9.47)	(11.55)
Observations	222	149	69
R^2	0.550	0.560	0.731

t statistics in parentheses
[*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

1. Appendix

Figure A.1: Tanzania GDP growth, 1990-2005.
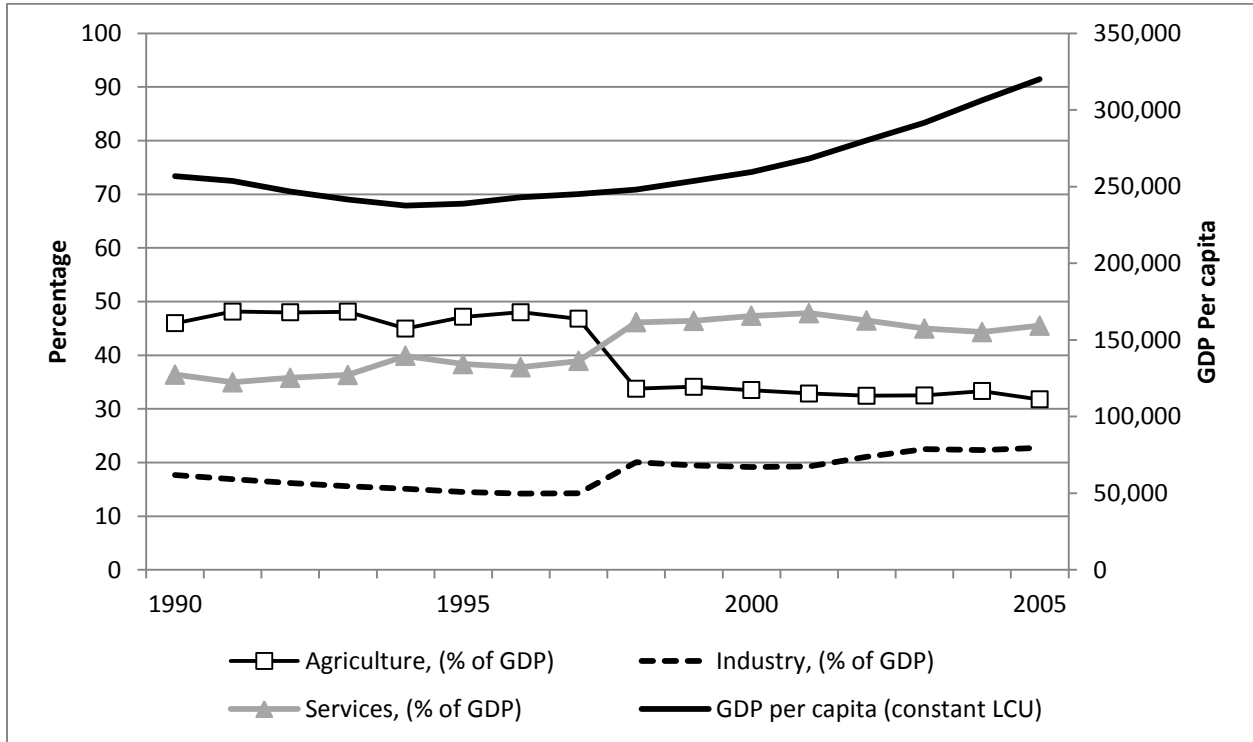
Figure A.2: Age First Job, by first Job Type
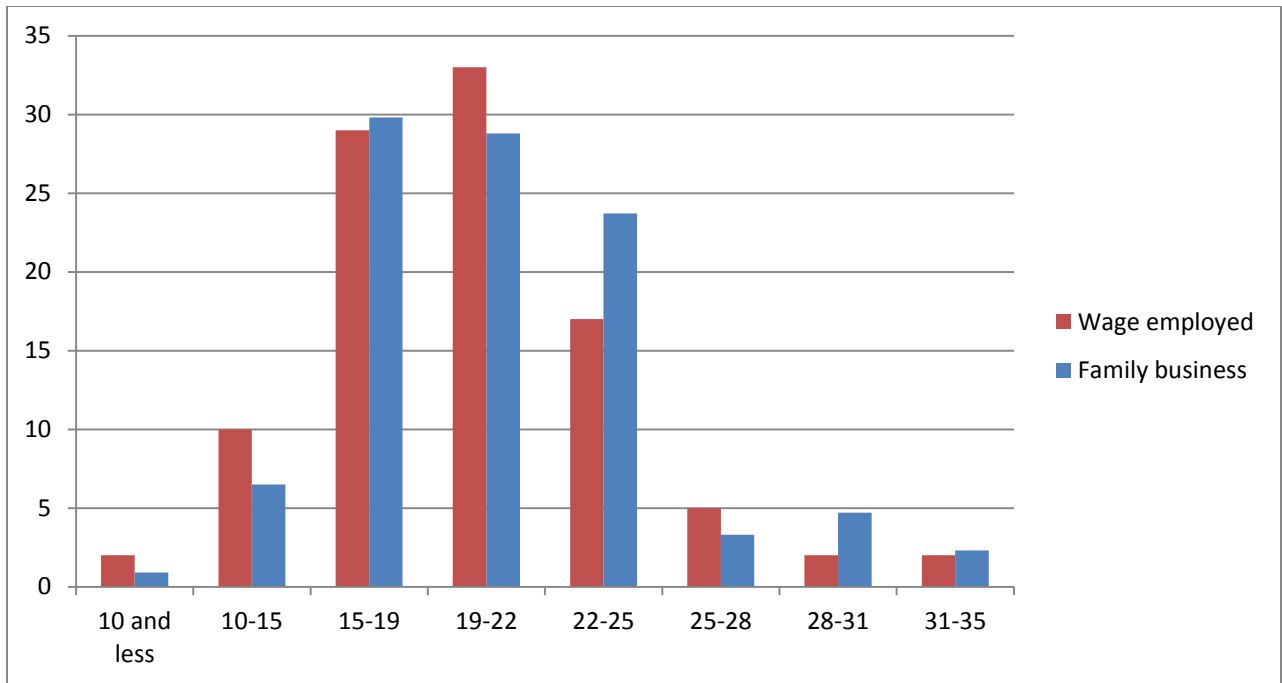
Notes: Family Business includes self-employed and family workers.

Figure A.3: Age First Job, by first Job Type if Entered as Unemployed

Notes: Family Business includes self-employed and family workers.
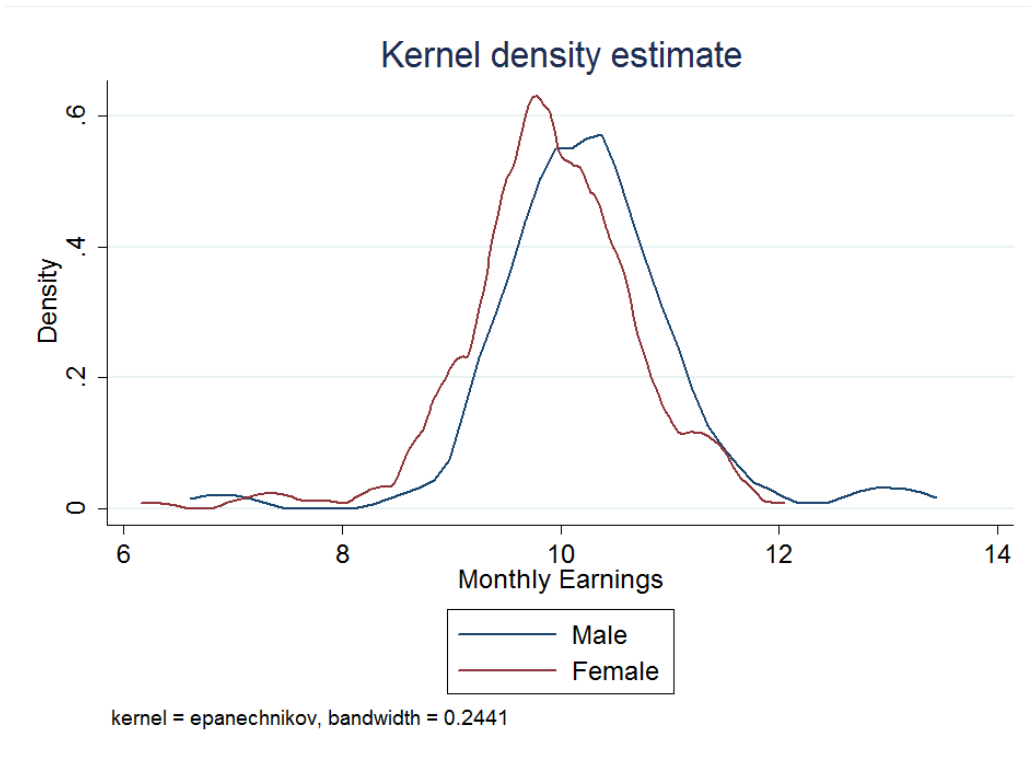
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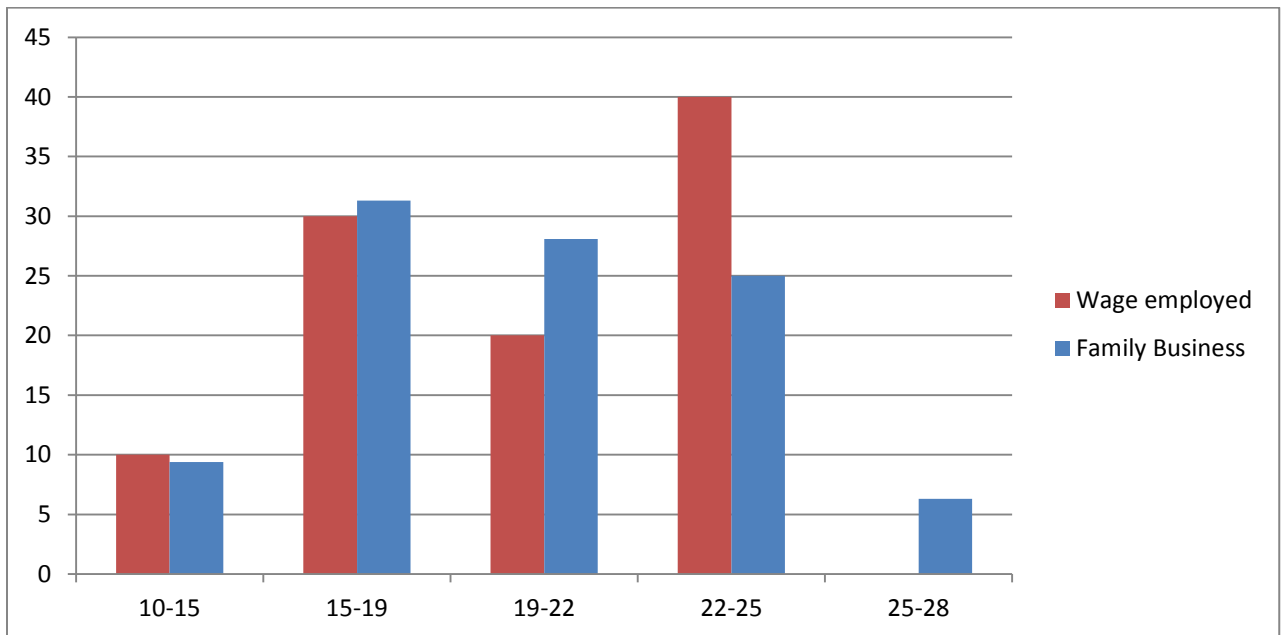
Figure A.4: Log Monthly Earnings, by Gender

Kernel density estimate

kernel = epanechnikov, bandwidth = 0.2441

Figure A.5: Log Monthly Earnings, by Education

Kernel density estimate

kernel = epanechnikov, bandwidth = 0.1596
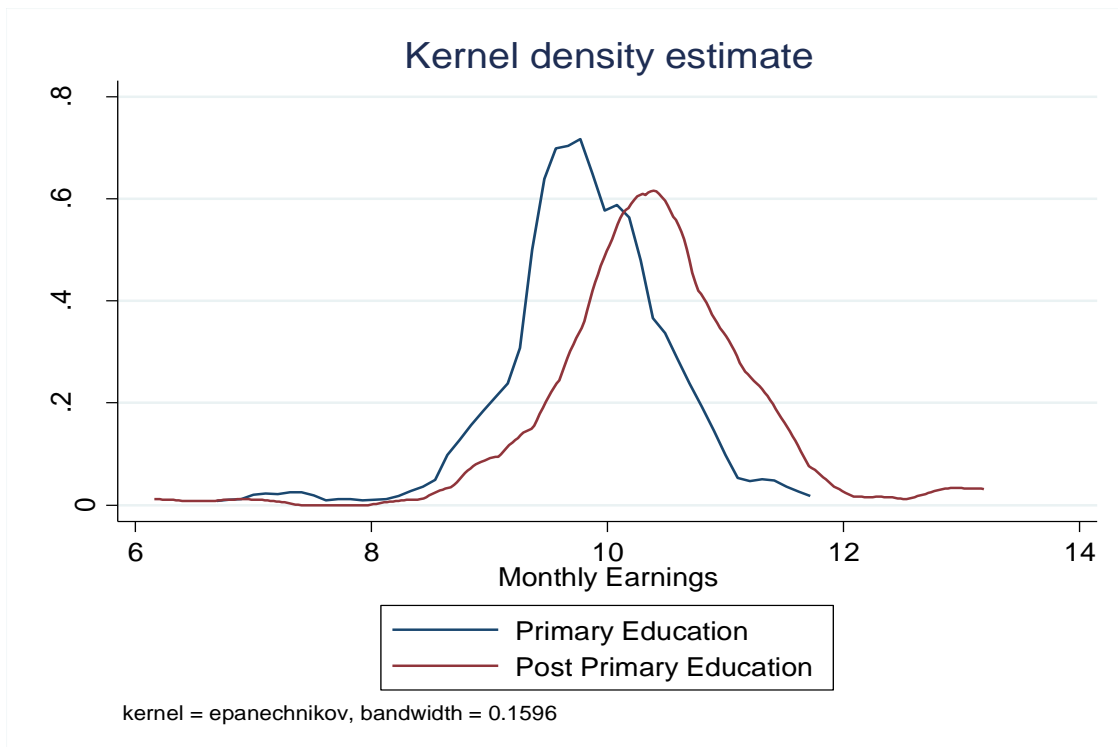
Table A.1: Transition Matrix. From Entrance to Subsequent State

Variables	OLF	Unemployed	Family Worker	Self	Wage	Total
Entry as Unemployed (%)	- -	29 35%	- -	40 48%	14 17%	83 100%
Entry as Family Worker (%)	22 18%	1 1%	12 10%	70 57%	17 14%	122 100%
Entry as Self-Employed (%)	1 0.8%	2 1.6%	- -	116 94%	4 3.6%	123 100%
Entry as Wage Employed (%)	3 2%	1 1%	1 1%	16 19%	64 76%	84 100%
Total (%)	25 5%	33 8%	13 4%	242 59%	99 24%	412 100%

Table A.2: Transition Matrix. From Entrance to Final State

Variables	OLF	Unemployed	Family Worker	Self	Wage	Total
Entry as Unemployed (%)	- -	29 35%	- -	42 50.5%	12 14.5%	83 100%
Entry as Family Worker (%)	- -	5 4%	13 10.5%	90 74%	14 11.5%	122 100%
Entry as Self-Employed (%)	- -	3 2.5%	- -	116 94%	4 3.5%	123 100%
Entry as Wage Employed (%)	- -	3 4%	1 1%	22 26%	58 69%	84 100%
Total (%)	- -	40 10%	14 3%	270 59%	88 21%	412 100%

Table A.3: Labour Market Entry and Earnings, with Parental Occupation.

	(1) Whole	(2) Self-employed	(3) Wage employed
Entry as Unemployed	0.285**	0.143	0.486*
	(2.13)	(0.93)	(1.95)
Entry as Self-employed	0.176	0.168	0.034
	(1.33)	(1.07)	(0.11)
Entry as Wage employed	0.438***	0.415	0.325
	(2.62)	(1.59)	(1.32)
Primary Education	0.172	0.194	0.143
	(1.22)	(1.11)	(0.44)
Ordinary Level	0.579***	0.508**	0.550*
	(3.50)	(2.38)	(1.76)
Advanced Level	1.214***	0.949***	0.862*
	(4.06)	(3.23)	(1.83)
Vocational Cert.	0.724***	0.617**	0.333
	(3.54)	(2.04)	(0.93)
Experience	0.013	0.006	0.031*
	(1.57)	(0.67)	(1.83)
Father years of schooling	0.024**	0.015	0.045**
	(2.28)	(1.11)	(2.32)
Mother years of schooling	-0.019	-0.010	-0.018
	(-1.48)	(-0.60)	(-0.89)
Father wage employed	-0.008	-0.007	-0.016
	(-0.09)	(-0.06)	(-0.10)
Mother wage employed	-0.097	-0.237	0.063
	(-0.64)	(-1.01)	(0.41)
Female	-0.169*	-0.079	-0.513***
	(-1.79)	(-0.68)	(-2.70)
Married	0.021	-0.076	0.094
	(0.23)	(-0.65)	(0.62)
Dar es Salam	0.267***	0.371***	0.096
	(2.69)	(2.88)	(0.65)
Log(Hours Worked)	0.103	0.296	-0.093
	(0.57)	(1.38)	(-0.31)
Entered After 1999	-0.200	-0.269	0.034
	(-1.37)	(-1.27)	(0.16)
Entrepreneur	-	0.392	-
	(-)	(1.65)	(-)
Public	-	-	0.459**
	(-)	(-)	(2.41)
Firm size	-	-	0.050
	(-)	(-)	(1.36)
Constant	8.798***	8.098***	9.300***
	(12.41)	(9.58)	(6.55)
Observations	306	228	69
R^2	0.229	0.206	0.596

t statistics in parentheses.
Omitted Category: Entry as family worker. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Labour Market Entry and Final Hourly Earnings.

	(1) Whole	(2) Self-employed	(3) Wage employed
Entry as Unemployed	0.131	0.027	0.504[*]
	(1.02)	(0.18)	(1.69)
Entry as Self-employed	0.108	0.069	0.039
	(0.86)	(0.48)	(0.09)
Entry as Wage employed	0.324[**]	0.347	0.271
	(2.05)	(1.48)	(1.14)
Primary Education	0.221	0.234	0.443
	(1.26)	(1.22)	(1.15)
Ordinary Level	0.727[***]	0.635[***]	0.958[**]
	(3.60)	(2.80)	(2.48)
Advanced Level	1.495[***]	1.251[***]	1.123[**]
	(4.49)	(3.48)	(2.33)
Vocational Cert.	0.856[***]	0.736[**]	0.610
	(3.69)	(2.35)	(1.58)
Experience	0.011	0.003	0.049[**]
	(1.22)	(0.29)	(2.41)
Father years of schooling	0.015	-0.004	0.056[***]
	(1.25)	(-0.25)	(2.77)
Mother years of schooling	-0.025[*]	-0.011	-0.025
	(-1.81)	(-0.63)	(-1.00)
Female	-0.096	-0.038	-0.492[**]
	(-1.07)	(-0.33)	(-2.07)
Married	0.043	-0.073	0.166
	(0.42)	(-0.58)	(0.99)
Entered After 1999	-0.157	-0.189	0.312
	(-1.04)	(-0.91)	(1.60)
Entrepreneur	-	0.425[*]	-
	(-)	(1.80)	(-)
Public	-	-	0.475[**]
	(-)	(-)	(2.13)
Firm size	-	-	0.110[***]
	(-)	(-)	(2.85)
Observations	305	228	69
R^2	0.237	0.222	0.646

t statistics in parentheses
Omitted Category: Entry as family worker.
[*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

Table A.5: Labour Market Entry and Earnings, with time effects.

	(1) Whole	(2) Self	(3) Wage
Entry as Unemployed	0.231[*]	0.112	0.510[***]
	(2.12)	(1.07)	(4.17)
After1999*Entry as Unemployed	1.165	1.566	1.406[***]
	(0.97)	(0.94)	(6.21)
Entry as Self-employed	0.090	0.085	0.210
	(0.81)	(0.57)	(1.33)
After1999*Entry as Self-employed	1.202	1.641	0.491[*]
	(1.02)	(0.98)	(2.41)
Entry as Wage employed	0.405[***]	0.334	0.456[**]
	(4.95)	(1.51)	(3.32)
After1999*Entry as Wage employed	1.034	1.407	0.640[***]
	(0.82)	(0.79)	(5.15)
Entered After 1999	-1.261	-1.746	-0.714[***]
	(-1.07)	(-1.05)	(-6.88)
Other Controls	**YES**	**YES**	**YES**
Observations	306	228	78
R^2	0.244	0.213	0.538

t statistics in parentheses
Omitted Category: Entry as family worker.
[*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$