

Guide to the School-to-Work Transition^{*}

Niall O'Higgins
Università di Salerno
nohiggins@unisa.it

March 2008

^{*} Thanks are due to Jean Fares, Michael Justesen and participants in the World Bank Workshop on Stimulating Youth Employment in MENA, Washington D.C., December 5, 2007, for their comments on a previous draft.

Abstract

The process by which young people enter the labour market once they have completed their full-time education can be complex and, at times, lengthy. Interest in the “School-to-Work Transition” – hereafter StWT – has increased greatly in the last decade or so in high income countries. Until recently, relatively little attention had been paid to the process as it is experienced by young people in low and middle income countries. Lately this has started to change. This paper sets out to provide a guide to the StWT and to discuss how success and failure in that transition may be sensibly quantified in low and middle income countries. In doing so, the guide discusses various aspects of the transition process and concentrates on indicators of two main aspects of the process: the ease with which transition takes place; and, the degree of success in terms of the outcome.

Arguments are advanced in favour of including the jobless rate in addition to the unemployment rate as a (more) useful indicator of young people’s difficulties in effecting the transition. Moreover, it was strongly suggested that the cross-section estimates of the duration commonly employed these days in OECD countries are of limited usefulness. Indeed, a much simpler and more accurate approach using the proportion of those completing the transition within a given time period is suggested and justified. One key idea running through the paper relates to a concern for producing simple and (relatively) easily understood indicators. A number of ways of doing this is explored, for example, the usefulness of some simple quadratic approximations is illustrated. For the most part, the emphasis of the paper is on how to, and how well one can, obtain indicators of the StWT from cross-section data, however, the paper also discusses some of the uses of panel data and in this regard includes some illustrative examples of the estimation of links between early and later experiences and the estimation of the determinants the duration of transition, both of these requiring. The Appendix contains a list of the suggested indicators arising from the discussion.

The process by which young people enter the labour market once they have completed their full-time education can be complex and, at times, lengthy. Interest in the “School-to-Work Transition” – hereafter StWT – has increased greatly in the last decade or so in high income countries². Until recently, relatively little attention had been paid to the process as it is experienced by young people in low and middle income countries³. Lately this has started to change⁴. This paper sets out to provide a guide to the StWT and to discuss how success and failure in that transition may be sensibly quantified in low and middle income countries. In doing so, the guide discusses various aspects of the transition process and concentrates on indicators of two main aspects of the process:

- the ease with which transition takes place; and,
- the degree of success in terms of the outcome.

In looking at the StWT process in lower income countries, it is clear that any analysis must take into account differences in the ‘typical’ characteristics in such countries vis-à-vis their richer counterparts. Sweeping generalisations are always dangerous, however, there are issues which are of specific relevance to the analysis of the StWT in low and middle income countries.

For example:

1. *Educational Participation* – although on the increase more or less everywhere, participation in basic education is by no means universal in lower income countries. In what sense and can one talk about the StWT when a person has not participated in any education at all?
2. *Labour force participation* – In many lower income countries, participation in the labour force is relatively low, particularly for women. This raises the issue of uncompleted transition and is of direct relevance to the analysis of the duration of transition.
3. *Informal sector* – Many lower income countries are characterised by the large size of the informal sector. This serves to emphasise the importance of looking at the quality of the outcome of the process.
4. *The absence of Social Safety Nets* – in many countries, there are no adequate income support mechanisms for those without employment or other forms of income. This leads *inter alia* to a greater incidence of underemployment which again has implications for the quality of outcomes.

In what follows, I concentrate on three main type of indicator – two which are related to the process of transition itself – the *incidence of problems* in transition as measured by the degree of joblessness and/or unemployment amongst young people and the *duration of transition* – how long does it actually take young people to find an occupation once they have left school. The third type of indicator concerns the *quality of the outcome*.

² See *inter alia* Bowers et al. (1999), Ryan (2001) and Quintini & Martin (2006).

³ That is not to say that specific aspects of the transition have not been analysed. This is particularly true of youth unemployment and in particular the notion of “educated youth unemployment”. See, for example, Manning & Junankar (1998).

⁴ Particularly in the work of International Agencies. See, for example, ILO (2006) and World Bank (2006).

Underlying the analysis is the idea that in some sense, the transition is desirable. Or more specifically, one is analysing the transition from one desirable state – “Education” – to another desirable state – “Employment”. This is an important and by no means automatic assumption which, however, greatly simplifies the analysis.

Young people here are taken principally to refer to those between the ages of 15 and 24 or thereabouts, however, quite often – according to the context - an extended definition of youngish people between the ages of 10 and 29 is utilised.

1. Basic Indicators of the StWT

The concept of the StWT is one which concerns individuals, however, clearly if one wants to gain some understanding of the extent of problems faced by young people as a whole one needs to summarise and/or aggregate this information. This can also simplify the analysis but at the same time one needs to be clear about what aggregate indicators are actually indicating, or rather aggregating. This will be discussed in more detail in the specific relevant contexts below, however, it is important to recognise that for the most part, one uses aggregate information to estimate individual specific concepts and often one uses cross-section indicators to estimate longitudinal phenomena.

1.1 The incidence of problematic transition

1.1.1 The Youth Unemployment Rate Vs. The Youth Jobless Rate

The most commonly used indicator of StWT (or more specifically youth labour market) problems is the youth unemployment rate. This measures the percentage of young people who are without work but who would like it and, in its strict definition, who are actively seeking work. From an individual perspective, this may be thought of as the probability that a randomly chosen young person has not found work given that they are (actively) seeking it. Thus a high youth unemployment rate is undesirable in the sense that a substantial proportion of young people who are actively seeking work do not find it.

Seen from the perspective of the StWT, there are some problems with this indicator. Specifically:

1. This implies a rather restricted definition of the labour market – youth unemployment does not include those people who would like to work but do not seek it because they know or believe that no suitable work is available: the discouraged.
2. More generally, what of those who, given current labour market conditions, choose to do ‘other things’? For example, have and/or look after children, enjoy leisure or travel (or indeed migrate to other countries), or participate in education. For most, the choice to do ‘other things’ is unlikely to be independent of the quantity (and quality) of the work available. If one takes the StWT perspective by which education and employment are, respectively, the desirable start and endpoints of the transition in young people’s lives, then the issue of whether they were actually seeking work may not be very relevant

3. The youth unemployment rate does not necessarily give much idea of the extent of youth labour markets problems as they affect young people as a whole – if almost everyone participates in education until 25, but most of those who do enter the labour market are unemployed, the youth unemployment rate will be very high but it will reflect a relatively small problem in terms of young people as a whole.

Considerations of this type lead to the adoption here of the more inclusive concept of youth joblessness alongside the more traditional youth unemployment rate. There are different possible indicators which might be calculated on this basis, the simplest being the jobless rate as used by, for example, the World Bank’s World Development Report 2007⁵. This is defined as all those who are neither in education or employment as a proportion of the population (of the relevant age-group). This does not resolve all the difficulties with the youth unemployment rate – how exactly is employment defined for example, and, what of the quality of employment? Both of these issues will be returned to below, however, the jobless rate does have the advantage of giving a sense of the size of the ‘youth labour market problem’ i.e. what is the proportion of young people who are not ‘productively’ or ‘usefully’ occupied⁶. Less controversially, the indicator may be seen as an index of the extent to which the potential employment of young people is maximized.

Moreover, the youth jobless rate throws light on issues regarding educational, as well as labour force, participation: the starting point as well as the ‘conclusion’ of the transition. This will be illustrated below.

In order to facilitate the discussion below the it is worth stating the simple formulas for the youth unemployment and jobless rates explicitly:

$$\text{Youth Unemployment Rate} \equiv \frac{\text{no. of young people who are unemployed}}{\text{no. of young people in the labor market}} \quad (2)$$

$$\text{Youth Jobless Rate} \equiv \frac{\text{no. of young people who not employed or in education}}{\text{no. of young people}} \quad (3)$$

Clearly the difference between the indicators lies in differences in both the numerators and the denominators of the expressions. Specifically, the numerator and denominator are both larger in the case of the jobless rate⁷; all those who are unemployed are by definition not in education or employment, but the latter also includes those not seeking work. Similarly not all young people participate in the labor market either because they participate in education or for some other reason do not actively search for work. The consequence is that the jobless rate may be bigger (or smaller) than the unemployment rate according to whether the proportion of the inactive population, as traditionally defined, which is not participating in education is greater (or

⁵ World Bank (2006).

⁶ This does raise rather suggestively the issue of child-bearing and caring and the extent to which this is or is not a ‘productive’ activity. This will be returned to below.

⁷ Strictly speaking, the numerator and denominator respectively of the jobless rate are actually “greater than or equal to” those of the youth unemployment rate, however, for them to be equal, all those not in employment would have to actively seeking work and no young people would be participating in education. Conditions which will never be satisfied in practice.

less than) the proportion of the active population who are unemployed⁸. In other words, other things being equal, the higher the educational participation rate, the lower will be the jobless rate *vis-à-vis* the unemployment rate.

In any event, the use of the jobless rate as an indicator of youth labour market problems is by no means neutral in its implications for the interpretation of the nature of these. Both youth unemployment and youth joblessness affect different types of young people to differing extents. Which groups are most affected will vary somewhat according to whether one uses the unemployment or jobless rates as an indicator of problems and thus will affect the identification of for example, disadvantaged groups in the youth labour market.

Thus, the jobless rate is a useful indicator because:

- a) it includes all those young people who are not in some sort of ‘productive’ or ‘useful’ activity – specifically it includes a potentially substantial group of people who are not actively seeking work but would do so if conditions in the labor market improved. Arguably it is precisely the discouraged young people who are most in need of intervention in terms of education, training and/or Active Labor Market Policies in order to prevent them from becoming entirely detached from the labor market;
- b) it gives a sense of the size of youth labor market problems in relation to the youth population as a whole. The youth jobless rate is an indicator of the incidence of youth labor market problems amongst young people as a whole⁹; and,
- c) Comparison of youth jobless rates with youth unemployment rates also help in the interpretation of the employment adjustment process and consequently throws further light on cross-country differences in youth unemployment rates.

A little more basic algebra may help here. If U is the no. of unemployed young people, N the number of employed (young people)¹⁰, E the number of young people in education, D the number of “discouraged” (young) people neither in employment, ILO unemployment or education and P is the (youth) population, two equivalent expressions for the (youth) unemployment rate, u, are:

$$u = \frac{U}{U + N} \tag{2'}$$

and since $P = N + U + D + E$

⁸ It is a matter of elementary algebra that, $\frac{a+b}{c+d} > \frac{a}{c} \Leftrightarrow \frac{b}{d} > \frac{a}{c}$. If a stands for the unemployed, b the number of those who are neither employed, (ILO) unemployed, or in education, c the size of the labor force, and d stands for the population not in the labor force, then we have the condition stated in the text.

⁹ Thus, for example, if almost all young people continue in education until they are 24, then even if the youth unemployment rate is very high, the youth jobless rate will be low. One might argue consequently that this is not strictly speaking an indicator of ‘labor market’ problems amongst young people. The debate is ongoing. I would argue that it is, at the very least, a useful additional indicator of youth labor market problems – or possibly more accurately school-to-work transition problems – for the reasons given above. Precisely this type of reasoning has led the European Commission to include the youth unemployment ratio (i.e. youth unemployment narrowly defined as a percentage of the youth population) in addition to the youth unemployment rate amongst the standard indicators reported in its *Employment in Europe* annual reports.

¹⁰ I use parentheses here since these formulas are obviously valid for any group of people, or indeed for the economy as a whole.

$$u = \frac{U}{P - E - D} \quad (2'')$$

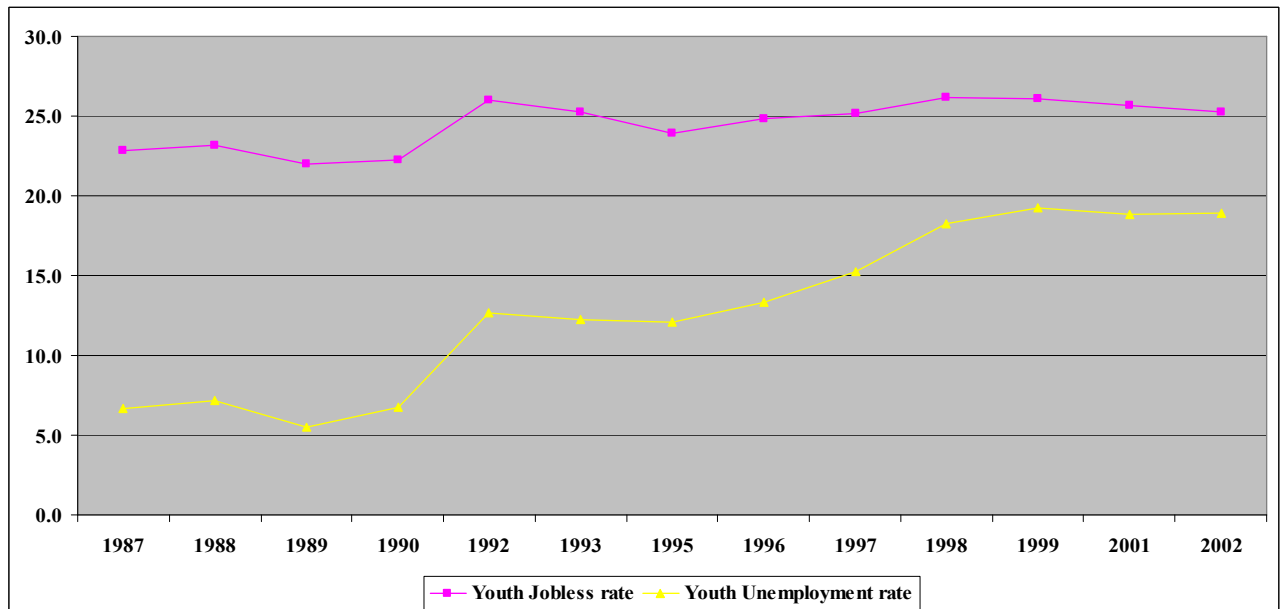
Similarly two equivalent expressions for the (youth) jobless rate, j , are:

$$j = \frac{U + D}{P} \quad (3')$$

$$j = \frac{P - N - E}{P} = 1 - n - e \quad (3'')$$

where j is the jobless rate, n the employment rate and e the educational participation rate of young people. Assuming that the youth population is exogenously given, then - from (3'') - the youth jobless rate will fall (rise) if the proportion of young people in either employment or education rises (falls). On the other hand - from (2'') - the unemployment rate will **increase** if, *ceteris paribus*, participation in education increases, but as with the jobless rate, from (2') will fall if employment increases. The point here is that, using the unemployment rate, an improvement in a 'good' indicator - the educational participation rate - can produce a worsening of a 'bad' indicator - the youth unemployment rate. For the jobless rate, improvements in either of the 'good' indicators, educational participation and the employment rate, improve (i.e. reduce) the bad indicator, the jobless rate.

Figure 1: Youth Unemployment and Jobless rates, Brazil, 1987-2002



Source: author calculations on the BLFS various years

Note: youths are defined as those aged between 15 and 24. The unemployment and jobless rates are defined in the text.

In any event, figure 1 uses data from the Brazilian Labour Force Survey (BLFS) to illustrate some of these issues. Overall, youth jobless rates are significantly higher than unemployment rates in Brazil. One can also observe that both jobless and unemployment rates have tended to

fluctuate from year to year in the same direction¹¹. But, whereas the youth jobless rate has remained roughly constant over time with only a mild upward trend, the youth unemployment rate has almost tripled over the period and consequently the gap (between jobless and unemployment rates) has narrowed. This reflects the fact that whilst **unemployment** now affects a much higher proportion of young labour market than it did in 1987, **lack of employment** affects around the same proportion of young people as a whole. The explanation for this is that, in the new Millennium, a smaller proportion of young people are in employment and a larger one in education than in the 1980s. Both of these developments lead, as noted above, to an increase in the unemployment rate. In contrast, the jobless rate suggests that the proportion of young people not engaged in a ‘positive’ activity has remained roughly constant. The fall in the employment rate is more or less balanced by the increase in the educational participation rate. If one further supposes, reasonably, that participation in education has a greater impact than current employment on the quality of future employment (and indeed future economic growth) than the shift from employment to education is actually a positive one.

1.2 The Duration of Transition

It takes time to find employment. A second important aspect of difficulties with the StWT concerns the length of time it takes for young people to find work once they have completed uninterrupted education. It is less usual to examine in detail the duration of transition, however, since the mid 1990’s the OECD have used a summary cross section indicator of the estimated duration of transition. The idea underlying the indicator is that by comparing the age by which ‘most’ people have left full-time education with the age at which ‘most’ young people have found employment, one can arrive at an indicator of the duration of the transition. This indicator has regularly applied by the OECD in their analyses of the StWT in higher income countries, although the precise definition of ‘most’ has changed over time. Initially, ‘most’ was defined as 75%, most recently this has been reduced to 50%. In other words, in its most recent incarnation, the OECD duration indicator compares the median age of leaving school with the median age of entering employment¹². Thus, in essence it estimates the time it takes for an “average” (in the true sense of the word) or typical individual to make the transition from school to work.

In the context of low and middle income countries some issues immediately arise. As used by the OECD the indicator essentially assumes that:

- i. everyone starts (and leaves) education;
- ii. everyone ends up in employment;
- iii. once one leaves education one stays out; and,
- iv. once one enters employment one remains there.

As regards the first assumption, although educational participation rates are rising more or less everywhere, in many countries – particularly in Sub-Saharan Africa – it is not a reasonable to assume that (more or less) everyone participates in education at some stage¹³. Similarly, the second assumption of (more or less) universal employment is patently not true in most countries and in some – most notably in the MENA region, the employment rates of women in particular

¹¹ Indeed the statistical correlation between the two series is .90.

¹² To my knowledge the indicator of duration was introduced by Bowers et al. (1999) and has been used regularly by the OECD since. See, Quintini & Martin (2006) for a recent example which also defines the duration in months as opposed to years.

¹³ See, for example, Guarcello et al. (2005). The authors of this paper offer an alternative way of estimating the duration of the StWT which will be returned to below.

never reach 50%, let alone universal employment. Strictly speaking, so long as the cut-off point is reached in each case, the indicator remains defined – but the question remains as to what it actually indicates. In practice, both non-universal educational participation, by lowering the estimated median school-leaving age, and non-universal employment, by increasing the estimated median employment entry age, lead to an overestimate of the duration of the StWT.

A more sensible approach in the current context, and one adopted for example, by Guarcello et al. (2005), is to confine attention to those who participate in education in the first place and those who end up in employment. It is usually standard practice in Household Surveys to identify those who never participated in education. So taking this on board is straightforward. Rather obviously, however, we cannot actually know the proportion of young people who will end up in employment by looking at cross-sections. We need to estimate it. The simplest way is to use cross-section surveys to do this, but, if employment rates are rising or falling over time, then there will be some distortion. In any event, I would suggest that a simple modification to the basic ‘OECD’ indicator can deal with these issues. In conceptual terms¹⁴, estimating the median school-leaving age assuming everyone enters education implies identifying the age at which the benchmark

$$e = 100*(1-0)/2 = 50\% \quad (4)$$

is crossed. If we wish to adjust for the fact that say 10% of children never enter school we simply exclude these from the calculation and so estimate the benchmark as :

$$e = 100*(1-0.1)/2 = 45\% \quad (4')$$

For employment entry one can use a conceptually equivalent procedure. For the OECD indicator the benchmark is of course the age at which the threshold:

$$n = 100*(1-0)/2 = 50\% \quad (5)$$

is crossed. Suppose now that only say 70% of the population ever ends up in employment. The modified threshold is now:

$$n = 100*(0.7-0)/2 = 35\% \quad (5')$$

thus, assuming that 10% of children don’t (ever) enter school and 30% never enter employment, the modified indicator looks at the difference between the age at which the 45% educational participation threshold is crossed and the age at which the 35% employment rate is exceeded. The most obvious problem is that we cannot actually know what proportion of young people will successfully enter the labor market. However, we can reasonably estimate it by identifying the single year age-group for which the employment rate is highest and thus take the corresponding employment rate as our estimate of the % of the population which will at some stage enter employment. Armed with these modified ‘medians’ we can proceed to the calculation of the modified duration of transition estimates¹⁵.

In practice, in order to adjust the median educational exit age we can exclude from the relevant population all those who never participate in education. Thus it is possible to directly estimate the 50% threshold on a population which is purged of those who never went to school.

¹⁴ Note that assumptions (iii) and (iv) continue to be considered valid.

¹⁵ One additional potential problem here is that there is no guarantee that the indicator is non-negative.

It may be observed in passing, however, that two important supplementary indicators – the proportion of young people who have never participated in education and the ‘average’ age at which people leave school – should also be collected in that they both provide useful additional information on the transition process.

Both the OECD and the modified (OECD) indicators of the duration of transition assume that once one leaves full-time education one doesn’t return and, more importantly, once one enters employment one remains there. Whilst the first of these assumptions remains largely true, the assumption that people never leave employment is clearly violated particularly amongst young people as well amongst women of all ages. The effect of violation of assumption (iii) will fairly clearly lead to an underestimate of the median school leaving age and the effect of violation of assumption (iv) will similarly lead to an overestimate of the median employment entry age. Clearly then the effect of the violation of either assumption (iii) or (iv) will lead to an overestimate of the duration of the transition as will violations of assumption (i) and (ii). However, correction for this type of bias is not so straightforward inasmuch as it would require more information on interrupted employment (or education) spells than is generally available¹⁶.

An alternative to the cross-section approach available in many labor force surveys is to use longitudinal information of the type: When did you leave full-time education? And, when did you first enter employment? Clearly the ‘real’ duration of transition for specific individuals is the difference between the two. Thus the median duration can be estimated from actually occurring completed durations to individual’s first job. Although having the advantage of being based on individual’s direct experiences, here too there are biases and other issues:

1. such an indicator can only sensibly be based on completed duration – for those who at the time of the survey have not yet completed the transition, we simply do not know how long this will take. Thus, this indicator will end up underestimating the duration of the transition for all young people¹⁷.
2. Moreover, a second issue arises. Suppose we confine attention to young people (who have completed the transition); those aged 15-24. This means estimating (completed) transition durations which have taken place sometime during the previous decade. If we derive such a statistic for say 2006, the issue arises as to in what sense does it relate to 2006 since the actual transitions it is measuring took place over the previous decade. Clearly, this is one problem which does not arise with cross-section indicators.
3. Any such indicator will also be subject to recall error.

To summarise, the OECD indicator, \hat{D}_{OECD} , is based on four assumptions, violation of any of which will lead to an overestimate of the duration of transition. The modified OECD indicator, \hat{D}_{MOD} , removes two of these sources of overestimate, but leaves two. Both indicators will thus inevitably overestimate the duration of transition¹⁸. On the other hand, the estimating

¹⁶ Indeed, since the indicator depends on using cross-section information to estimate longitudinal phenomena, it is not at all clear which information would be appropriate to use in this case.

¹⁷ All the more so if attention is further confined to young people aged 15-24. Some of those initiating the duration whilst they are ‘young’ will complete it when they are no longer so – and so will be excluded from the indicator. Again for fairly obvious reasons, this group will disproportionately involve those with relatively long transitions.

¹⁸ Or, more rigorously stated will provide an upper bound to the ‘true’ value of the median.

of the analogous indicator from individuals' recall data, \hat{D}_R , will tend to underestimate the duration of transition. Moreover, it is also subject to other problems listed above.

In any event, table 1 illustrates the use of the two duration indicators for Brazil and all three for Egypt since in the latter case, there is retrospective information also regarding the age (and year) of entry into the labour force.

Table 1: Indicators of duration

	Year	School-leaving age	Duration indicator		
			OECD (\hat{D}_{OECD})	Adjusted OECD (\hat{D}_{MOD})	Reported duration (\hat{D}_R)
Brazil	1987	15	2	0	na
	1988	15	2	0	na
	1989	15	2	0	na
	1990	15	2	0	na
	1992	15	2	1	na
	1993	15	2	1	na
	1995	15/16	3	0	na
	1996	16	3	1	na
	1997	16	3	1	na
	1998	16	3	1	na
	1999	16	3	2	na
	2001	17	2	1	na
	2002	17	2	1	na
Egypt	2006	18	7	5	1

Source: author calculation BLFS various years & ELFS 2006.

Notes: i) the OECD indicator is based on median school-leaving age and employment entry ages assuming all participate in education and all enter employment

ii) the Adjusted OECD indicator is based on median school-leaving age for all those entering education and employment (assuming the maximum age-specific employment rate corresponds to the % of the population who ever enter employment).

iii) the reported duration indicator is based on self-reports of exit from education and entry to employment for all those who left education by age 25 and completed the transition to employment.

Given the discussion of bias above, one would expect that:

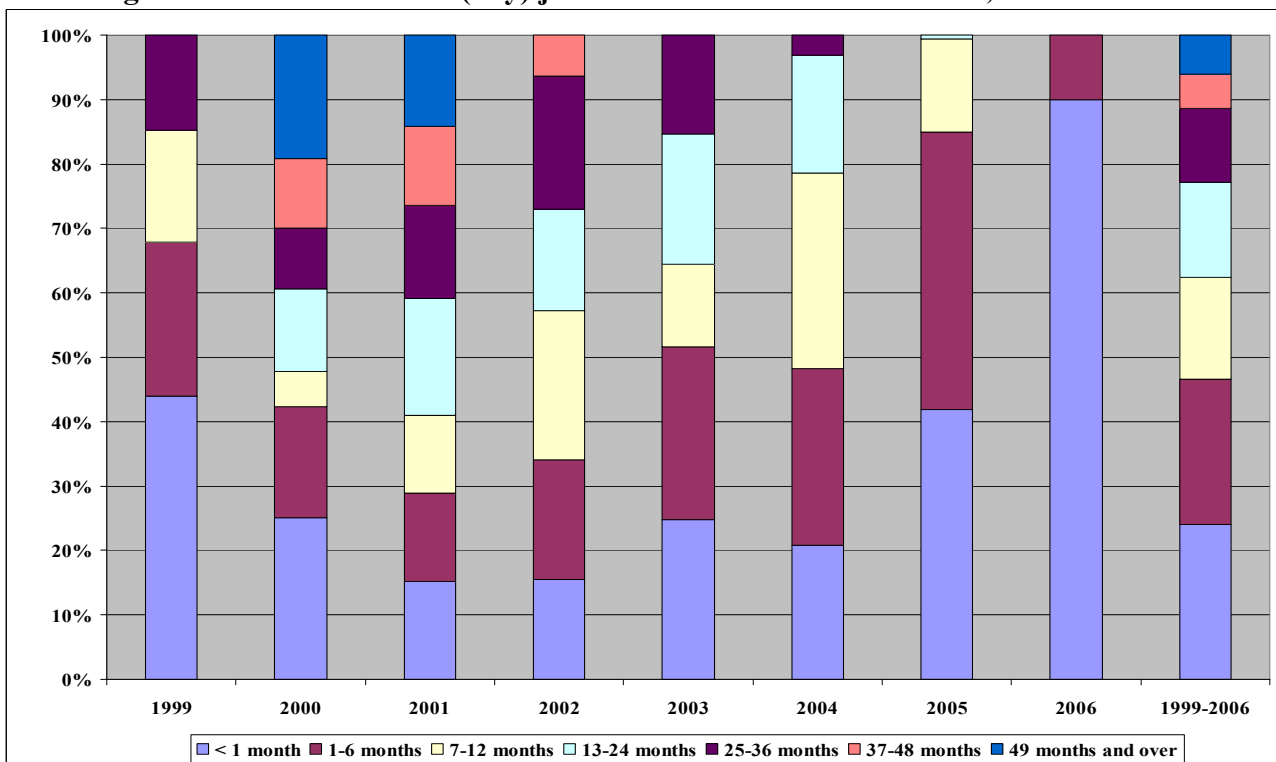
$$\hat{D}_{OECD} \geq \hat{D}_{MOD} \geq \hat{D}_R \quad (6)$$

as indeed one observes from the table. On the other hand, despite all these various biases, in terms of the changes, in particular, over time, the first two indicators are (more or less) consistent with each other. In other words, the two cross-section indicators produce biased estimates of the real duration of the transition from school to work, however, it is reasonable to suggest that they provide reasonably reliable indicators of variation in duration over, say time, or across other characteristics so long as plausibly the relevant biases are likely to be of similar entity across such characteristics.

Generally, it appears that the transition got longer in Brazil during the second half of the 1990s becoming somewhat shorter again following the turn of the Millennium. The table also suggests that the transition is somewhat easier in Brazil than Egypt, however, as we shall see below, this is largely to do with the enormous difference between labour force participation patterns of young men and young women in Egypt. In other words, an OECD type indicator works reasonably well when the group under consideration is relatively homogeneous in its behaviour. If there are big differences due to sex, location or indeed educational participation, the indicator does not tell us very much. This will be returned to below, however, it will be observed that for Egypt the OECD type indicators both produce a very different answer from that produced by retrospective reports to the question: How long does the transition from school to employment take?

Thus, analysis of cross section data in this way takes us further but cannot provide a complete summary of individual experiences. It estimates ‘average’ longitudinal experiences from cross section data. A more accurate picture of what happens to individuals can be provided by looking at panel data itself. Of course this is less frequently collected and is indeed both more difficult and more expensive to do so¹⁹.

Figure 2: Duration to first (any) job in Sri Lanka – school leavers, 1999-2006



Source: Own calculations on Sri Lanka LFS, 2006, module on school-leavers.

Note: weighted data, the figure reports the distribution of completed duration to a waged job or self-employment, by year in which the individual left school.

Data from Sri Lanka allow us to consider some further issues related to the measurement/estimation of the duration of the StWT. Figure 2 reproduces information on the StWT drawn from an retrospective panel module which was added to the Labour Force Survey

¹⁹And indeed such data have their own specific problems - above all, panel attrition bias. See, for example, Nese & O’Higgins (2007) for a recent treatment of the issue in a rather different context.

in 2006. The sample comprises young people aged between 15 and 25 in April/May 2006 who left school between 1999 and 2006. Thus, it can be observed immediately that this is not a random cross-section of young people, those included have, by definition a starting point to the transition – they must have participated in education, at the very least until age 8 – and they must have initiated the transition by having left school. The figure illustrates the distribution of the duration of transition for the period as a whole as well as by year of school-leaving respectively, for all those who had obtained employment by the time of the survey (completed duration. Very obviously, the median completed duration will, at some stage start to rise simply because there is, as a whole a downward bias intrinsic to the measurement of completed duration itself which will tend to increase as the maximum period of time a student could have effected the transition gets shorter. For example, a student leaving education in say May 2003 could not have a completed duration of longer than 36 months since that was the time between May 2003 and May 2006. Moreover, the shorter the time between school-leaving and the survey date, the more likely that individuals who would, at some future date, complete the transition, would not be included because they had not done so during the time period physically allowed for in the sample. Thus, table 2 illustrates this phenomenon. It reports the median duration, by year of school-leaving for those who had completed the transition and also, putting together completed and uncompleted durations, the sample as a whole²⁰.

Table 2: Median duration of StWT in Sri Lanka, 1999-2006.

	% of the sample leaving in specific years	Median Completed duration (months)	Median Completed and Uncompleted duration (months)
All	100	8	At least 17
Left school in 1999	0.95	1	12
Left school in 2000	13.39	15	24
Left school in 2001	15.52	22	30
Left school in 2002	16.36	15	18
Left school in 2003	17.10	6	21
Left school in 2004	15.64	7	At least 18
Left school in 2005	17.07	1	At least 6
Left school in 2006	3.97	0	At least 5

Source: Own calculations on Sri Lanka LFS, 2006, module on school-leavers.

Note: weighted data, the figure reports median completed and uncompleted durations to a waged job or self-employment, by year in which the individual left school.

In addition to the previous comments, it might also be observed that the first and last years are underrepresented, and might be excluded from consideration. In any event, the table illustrates clearly that considering only completed durations leads to an underestimate of the median length of time it takes individuals to find employment. Moreover, as suggested above, the bias involved tends to grow (as far as one can tell) with the maximum possible length of time considered.

Thus, whilst allowing a more accurate picture of how long it takes individuals to get a job, the table also illustrates that biases remain – are indeed inherent to the particular way in which estimates are drawn from the panel data. Moreover, if we consider the period as a whole, we

²⁰ Where possible. Clearly, where the median fell amongst those with incomplete transitions, we can only say that the median was at least x years, where x is the limit of the class defined by those with completed transitions.

should recall that that is exactly what we are doing. To summarise, the estimates of the overall duration of the transition based on the 2006 school leavers module:

1. will tend to underestimate the median duration of transition if we consider only completed duration (and is undefined for completed and uncompleted durations taken together);
2. provide an estimate of the transitions over a fairly extended period of time. That is, relating to the period 1999-2006. This may indeed be an advantage in that, bearing in mind the relatively small sample size for the single year observations, we can get a reasonably accurate picture of the median duration of the StWT for the period 2000-2003;
3. illustrates the downward bias inherent in the restriction of attention to completed duration which partly determines the relatively short duration of transition identified in the Egyptian panel data considered above.

1.3 The Quality of the Outcome of Transition

An important element in measuring the degree of success or failure in the StWT, concerns the quality of the outcome. Even the most basic economics textbook will tell you that some frictional unemployment is inevitable and even desirable in as much as it takes time to find employment and all the more so to find work appropriate to one's abilities, skills and preferences. Clearly there is a trade-off to some extent between the duration of search for employment and the quality of the match achieved. Thus, it is important also to consider the quality of the employment obtained by young people – the quality of the endpoint of the transition. Several indicators are suggested under this heading: the incidence of informal sector employment; the incidence of permanent employment; the incidence of underemployment; and, the wages of young people relative to 'adults'.

1.3.1 Incidence of informal sector, temporary and under- employment

The informal sector is widespread in many low and middle income countries²¹. It is clear that informal employment tends by its nature to be low quality employment with lower wages and no employment protection for participants. It also tends to involve disproportionate numbers of young people²². Table 3 reports the incidence of informal sector employment amongst young people, along with two other indicators of job quality, in Egypt. One will observe that informal employment is much more common amongst young people. Specifically, young employees are around 1.7 times as likely to work in the informal sector as are 'prime-age' adults²³.

²¹ See, for example, Schneider (2006) for an up-to-date review of the situation in many countries throughout the world. I use the terminology informal sector employment to encompass all employment which is not formalised in a legal employment contract with its guarantees and associated social contributions. In practice one might want to distinguish between employment in "irregular" firms with "irregular" employment in "regular" firms. Although it is the former which corresponds to the usual notion of informal employment, it is often the latter which accounts for the bulk of 'informal sector' employment in countries.

²² See, for example, O'Higgins (2007).

²³ The usefulness of the separate comparison group and why the 25-44 age-group is chosen will be returned to below.

Table 3: Indicators of Job Quality Egypt 2006

	Age-Group		Ratio Youth/Adults
	15-24	25-44	
Informal sector employment (% of total employment of age-group)	74.5	42.9	1.7
Temporary employment (% of total employment of age-group)	29.1	14.5	2.0
Incidence of involuntary part-time employment	4.6	3.6	1.5

Source: Author calculations on the ELFS

Note: Temporary employment here includes all forms of non-permanent employment – temporary, casual and seasonal.

Temporary employment is also *ceteris paribus* a lower quality form of employment than permanent employment and is again much more common amongst young people. In Egypt about twice as common amongst young employees than amongst prime-age workers. The use of temporary employment, particularly for young people, is often encouraged – particularly in higher income countries, as a means of helping young people get a foothold in the labour market. Finally one can observe that also under-employment – here measured by involuntary part-time employment is more common amongst young people.

It will be observed that the table reports also the incidence of these forms of employment also for ‘prime-age’ adults. We will return in more detail to this issue below, however, it is worth observing that the use of some other comparison group is often useful to help give meaning to the statistics. In this case, since by their nature these indicators – particularly informal employment and under-employment are subject to much variation of definition and may indeed be difficult to identify, they tend to be in absolute terms, rather unreliable indicators particularly for cross-country comparison. The relative incidence however – youths vs. adults for example – although not free of problems, is much less subject to this type of difficulty. Take the incidence of part-time employment. This is a very poor and above-all incomplete measure of under-employment. However, the relative incidence of involuntary part-time employment is likely to be fairly closely related to other forms of under-employment and consequently the relative situation of youths and adults vis-à-vis this indicator is less sensitive to ‘measurement’ error.

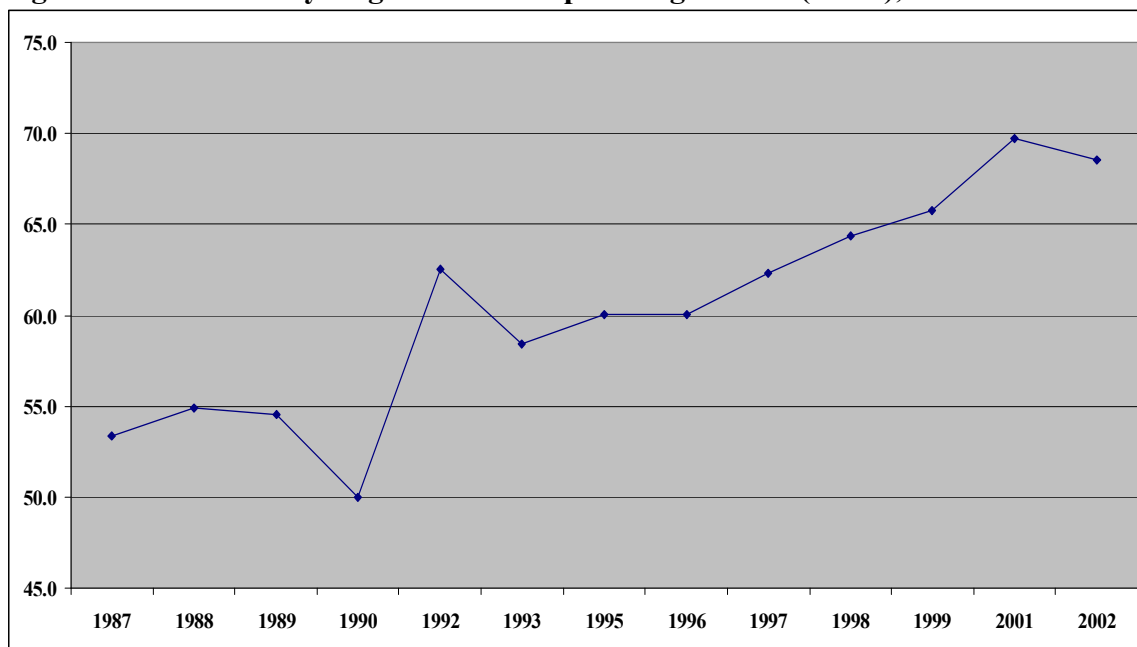
1.3.2 Youth wages

Figure 3 reports the wages of young people in Brazil relative to adults over the 1987-2002 period. The same type of considerations are applicable to wages as to other indicators of job quality – just more so. Self-reported wages are notoriously unreliable. Moreover, they need also to be adjusted for purchasing power²⁴. Given that these adjustments are less than perfect, it makes sense to introduce directly the ‘adult’ comparison group rather than look at the ‘absolute’ levels of youth wages per se. Although caution is in order, the picture here is a gradually rising ratio of youth to adult wages. Caution is particularly advisable since wages depend on many things implicit in this figure. For example, if the average age of labour market entry is rising over the period one might expect that this would of itself cause a rise in the youth-adult relative wage. As with the duration indicator, there are likely to be many composition effects which

²⁴ Depending on the comparison one needs to adjust for inflation and/or PPP across countries.

should be taken into consideration. More on this below, but for now let us observe that, at least from the point of wages, labour market conditions seem to have been improving for young people over the period considered here.

Figure 3: Youth hourly wages relative to prime age adults (25-44), Brazil 1987-2002



Source: Author calculations on the BLFS various years.

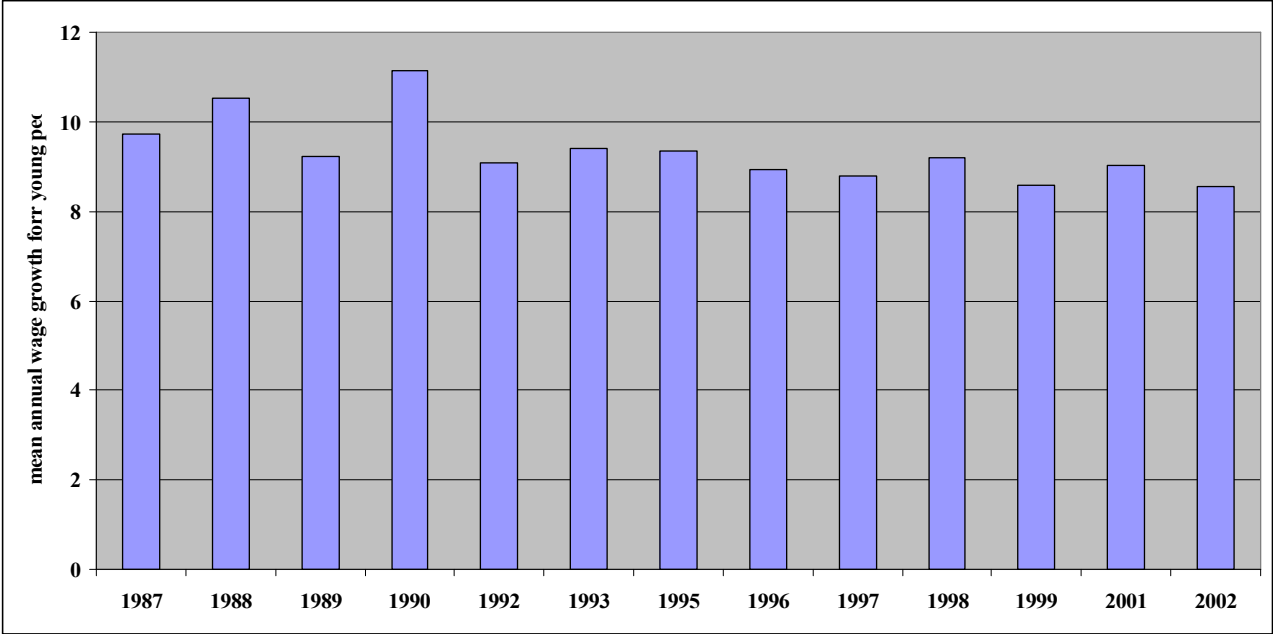
Note: The figure reports youth hourly wages as a percentage of adult (25-44) hourly wages for all employees with positive income.

Looking at wages at a point in time gives a limited picture in itself, a more complete picture would involve also the inclusion of a secondary indicator of wage growth. Mostly, however, we do not have direct information on this from cross-section data, but it can be approximated. In countries where the LFS or HH survey is sufficiently numerous to make single year age comparisons with some degree of precision, one may estimate the age related wage growth by looking at the difference between wages of say 16 year olds compared to 15 year olds. Specifically, one may estimate the average annual growth of wages for young people as the mean of the of single year age-specific percentage changes in wages for the age group 15-25 (figure 4).

As an overall indicator this estimate suffers from a major defect; the indicator is actually based on the wages of different people who differ in age but also in other characteristics - it does not take into account important compositional changes. Specifically, the indicator does not take into account the fact that older young people will tend to have higher levels of educational qualifications, this 'compositional effect' will tend to lead to an overestimate of the rate of wage growth. Moreover, over time. One would expect a rising level of educational attainment and so an autonomous increase in the rate of wage growth estimated in this manner. As far as the reported data go, these issues imply that the rate of wage growth is both estimated and that over time the slight fall in average wage growth visible is likely to actually underestimate the extent of the fall in wage growth over time. In any event, if the data are sufficiently numerous, educational level can be incorporated and better estimates produced. This will be returned to below. The main point is that, whilst not a very useful indicator at the aggregate level, it will be

argued that it does provide useful information of the situation of young people if the educational level is controlled for.

Figure 4: Estimated Mean annual growth of wages, young people (15-24), Brazil 1987-2002



Source: Author calculations on the BLFS various years.

2. Digging Deeper

2.1 Dimensions of disadvantage

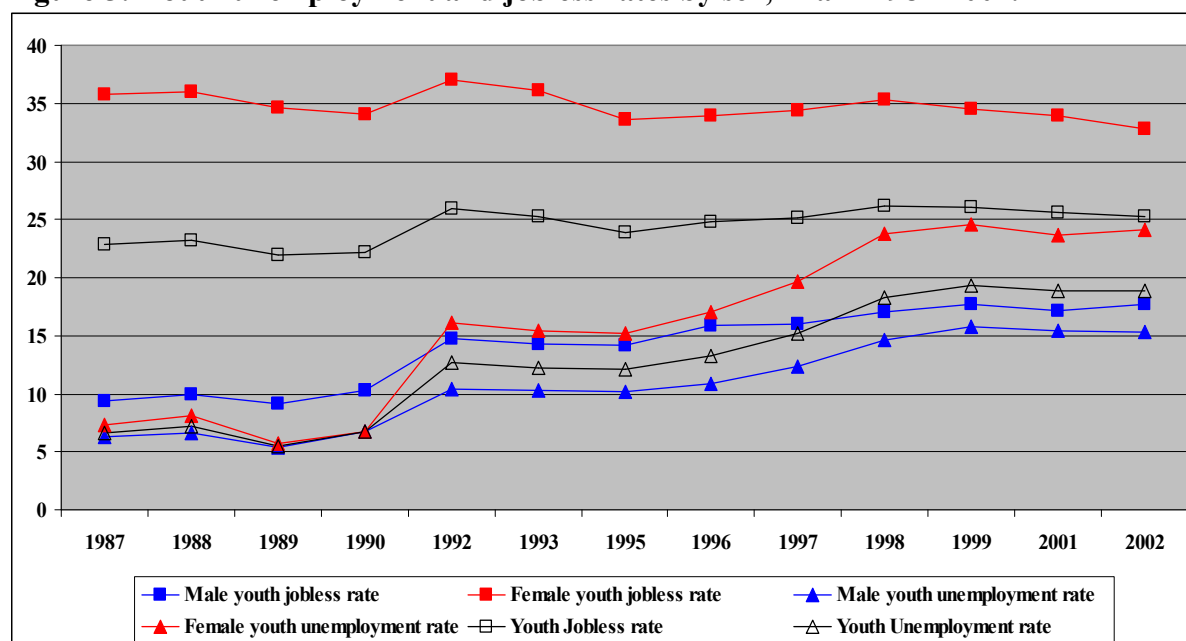
Looking at the core indicators aggregated over all young people gives a rather incomplete picture. Young people are not a homogeneous group and ignoring this will tend to produce a misleading, and in some cases meaningless, picture. Moreover, There are strong arguments to be made that Government policy towards the StWT should concentrate on groups of young people who have the most difficulty in affecting the transition. In any event, it is clear that indicators of the StWT need to include some further dimensions of the situation. In particular, one needs to distinguish between sex, location and skills groups. The importance of doing this will vary according to the indicator – or more specifically, the heterogeneity of the indicator under consideration across these groups. The specific age-group considered is also important. Defining young people as 15-24 year olds may not always be appropriate but even taking this narrow view of youth, the experiences of 15 year olds making the transition to the labour market is likely to be different from those who do not leave education until say 23 or 24. In particular there is a strong argument to be made to distinguish between teenagers aged 15-19 and young adults (20-24)²⁵. In some cases, it makes sense - when the data are sufficiently numerous - to look to report indicators by single year age group. This section looks again at the indicators outlined above across different groups and in doing so allows further consideration on the characteristics of the indicators themselves.

2.1.1 Youth unemployment and joblessness

Figure 5 reports youth unemployment and jobless rates by sex. The figure immediately throws light on the situation identified above - namely that youth unemployment rates have increased fast over the period whilst jobless rates have not. There are two very distinct patterns observable for males and females respectively. In the 1980s the unemployment rates of young men and young women were very close to each other, but from the beginning of 1990s, the unemployment rates of young women began to rise very fast, much faster than the unemployment rates of young men. On the other hand, in the 1980s there was a substantial difference between the jobless rates of young men and young women, but this subsequently began to close. The jobless rates of young women remained more or less constant or even fell, whilst the jobless rate of young men followed a very similar (upward) trend to that observable in the unemployment rate. For both young men and young women the difference between youth unemployment and jobless rates has fallen. In other words, one may reasonably conclude (after having looked at also aggregate economic indicators) that whilst young male unemployment and joblessness are following fairly closely the overall aggregate state of the economy, the female youth unemployment rate reflects also a general trend towards higher participation of young women accompanying the modernisation of the Brazilian economy. Whichever way one looks at it, however, it is clear that young women have a much harder time than young men in establishing themselves on the labour market in Brazil. The substantial difference between female unemployment and joblessness reflects the fact that young women are still less likely than men to participate in the labour force, or, put in another way, are much more likely than young men to be doing something other than working or participating in education.

²⁵ See, for example, O'Higgins (2001) where I argue this point quite forcefully.

Figure 5: Youth unemployment and jobless rates by sex, Brazil 1987-2002.



Source: Author calculations on the BLFS various years.

Table 4: Youth Unemployment and Joblessness in Egypt, 2006

		Males	Females	Males & Females
Jobless rates	Total	18.4	54.6	37.0
	Urban	19.5	49.4	34.9
	Rural	17.2	59.8	39.2
	Urban/Rural ratio	1.13	0.83	0.89
Unemployment rates	Total	13.6	39.4	21.2
	Urban	18.7	45.7	27.2
	Rural	9.5	33.0	15.9
	Urban/Rural ratio	1.97	1.38	1.71

Source: Author calculations on the ELFS

Turning to the Egyptian situation (table 4), one may observe a fairly similar pattern of joblessness and unemployment across gender to that found in Brazil. The table goes a little further also including the issue of urban-rural location. In particular, looking at just unemployment rates and taking these at face value, one would tend to conclude that the incidence of difficulties in the StWT are most marked in urban areas. Looking at jobless rates however, one gets the opposite impression. The youth jobless rate is overall **higher** in rural areas. This in itself provides further support for the use of the jobless rate as opposed to the unemployment rate as an indicator of difficulties. It is well known that material conditions in low and middle income countries tend to be worse in rural areas than in urban areas – otherwise one would not observe the widespread phenomenon of migration **from** rural **to** urban areas - the jobless rate starts to reflect this. The unemployment rate, used as **the indicator** of youth employment problems, needs to be – and typically is - qualified by reference to

underemployment and other ad hoc considerations concerning conditions in rural areas. One may also observe that whilst for young men jobless rates are similar in urban and rural areas, for young women the jobless rate is significantly higher in rural areas as well as being much higher than the rate for young men (in both urban and rural areas)²⁶.

2.1.2 Duration

Turning to indicators of duration, more light can be thrown by looking at the duration indicators in particular by gender. Table 5 does this for Egypt.

Table 5: OECD type duration indicator, Brazil (1987-1990) and Egypt (2006).

	Starting age	Duration Indicators		
		OECD	Adjusted OECD	Reported duration
All	18	7	5	1
Males	19	3	3	1
Females	18	-	17	2
Unmarried Females	20	11	7	-
Urban Males	19	3	3	1
Urban Females	20	-	17	2
Rural Males	18	4	4	1
Rural Females	17/18	-	13	2

Source: author calculations on unweighted ELFS 2006 data.

Notes: i) the OECD indicator is based on median school-leaving age and employment entry ages assuming all participate in education and all enter employment

ii) the Adjusted OECD indicator is based on median school-leaving age for all those entering education and employment (assuming the maximum age-specific employment rate corresponds to the % of the population who ever enter employment).

iii) the reported duration indicator is based on self-reports of exit from education and entry to employment for all those who left education by age 25 and completed the transition to employment.

As noted above, it will be observed that the OECD duration indicator, whether adjusted or not, does not tell us a great deal about the actual duration of the transition. Even where labour market entry is universal – as with the case of Egyptian men – at some point or other the single year age specific employment rate reaches 100% - the OECD type indicator overestimates the duration of employment – at least compared to self-reports. The main cause of the overestimation is the core assumption that there is no movement between states once the choice to leave education and enter the labour market has been made. For young women in Egypt, this is compounded by the fact that for many there is long, permanent even, intervening period of non-participation in employment accompanied by home-making and child rearing. Indeed restricting attention to unmarried women reduces the estimated transition significantly. A similar type of difficulty arise with the indicator suggested by Guarcello et al. (2005). This essentially estimates the mean – as opposed to the median – school leaving and employment entry age using a slightly more sophisticated simple smoothing technique, but is still based on the assumption that there is no movement between states. Evidence from the Sri Lankan survey

²⁶ This last point does raise again the issue of the extent to which the participation of young women in the labour market is necessarily desirable. Particularly in the MENA region, prevailing values in society do not necessarily support the view that it is. Restricting attention to the unmarried, the jobless rate of young women falls to 37.4%. Since marriage is clearly endogenous, however, this in itself raises further issues which for the time being will be left unresolved.

makes it very clear that this is not at all verified in practice. Young people regularly return to education and/or enter and leave employment whilst they are working out what they want to do with their lives.

In any event, the modified OECD and self-reported durations move in the same direction (this time across personal characteristics) and so one might be tempted to suggest the use of these indicators conjointly as upper and lower bounds to the duration of transition. Recall however, that the self-reported duration does not refer to the same period of time – indeed, in the way it is defined here – the transition having started whilst the person was in the youth category (15-24) but at any time in the past means that it is effectively an ‘average’ median duration over many years in the past. This reduces the truncation bias, but means that the estimate does not refer in any real sense to 2006, the year of the survey and will also tend to exacerbate the problem of recall bias²⁷.

Given these problems, an alternative approach might be suggested which goes some way to dealing with all of these. Specifically, rather than concentrate on getting a precise but biased estimate of the distribution of the duration of the transition, it may be argued that it is sufficient to gain an understanding of the phenomenon, to ask those under say 25 or 30, “Did you permanently leave education within the last 12 months?”. This combined with information on current status would be sufficient to estimate the proportion of young people who manage to complete the StWT within one year of leaving school. This is a (reasonably) current indicator, contains a very similar type of information to the estimated duration – and certainly will be highly correlated with the actual duration, but is more likely to be relatively accurately reported and suffers less also from the conceptual problems identified above.

To illustrate this, consider the hypothetical example of figure 6. The figure illustrates 3 hypothetical transition distributions. Keeping things simple, that is ignoring movements into and out of employment and so on for the moment, one will observe that the various duration indicators illustrated above are attempting to identify the crucial ‘median’ point in the distribution, i.e. the time – from leaving school – at which 50% of the group are in employment. In the cases illustrated this occurs after around 6 months or so for group 1, a little over one year for group 2 and somewhere in the region of 8 years for group 3! If one turns the problem on its head and asks, what percentage of young school-leavers have entered employment by the end of the first year, one obtains percentages of the order 65%, 45% and 25% respectively for groups 1, 2 and 3. Very obviously the ordering of the groups is the same, using either method²⁸. Essentially the argument is, using this method one obtains very similar information as one would obtain by estimating the median duration, but at the same time this both a much more reliable method and also much simpler to implement. One can base it on recall data – so one does not have the problems associated with the OECD type indicators, but at the same time it is also much less prone to the biases and other problems associated with the recall method illustrated above:

- One is only information collected for the last year or so – and therefore the estimate is less subject to recall bias;
- Again, because the estimate relates only to the previous year, it is not subject to the ambiguity concerning which period is covered by the estimation; and,
- It is less subject to the influence of movements into and out of employment since it relates to a relatively short period of time.

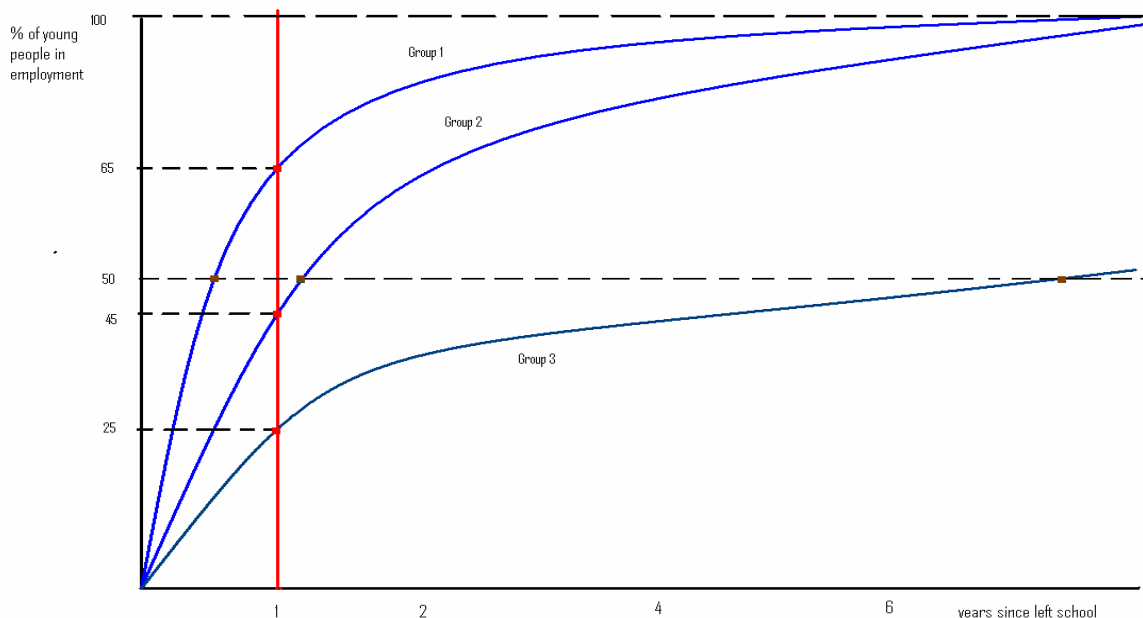
It doesn’t not in itself solve the issue of movements to and from employment, however, if the goal is to get as many people into employment as is possible (as soon as possible) then

²⁷ Indeed, the Egyptian panel data following based on interviews in 1998 and 2005 indicates significant inconsistencies in the reporting of the current age of respondents on which calculations are based before one gets to recall error itself.

²⁸ Although, of course, the relative size of the numbers is not given the non-linear form of the function.

this is not really an issue of contention. Moreover, one can restrict attention to specific groups, if one so wishes (e.g. unmarried women and so on).

Figure 6: Hypothetical example of Duration indicators



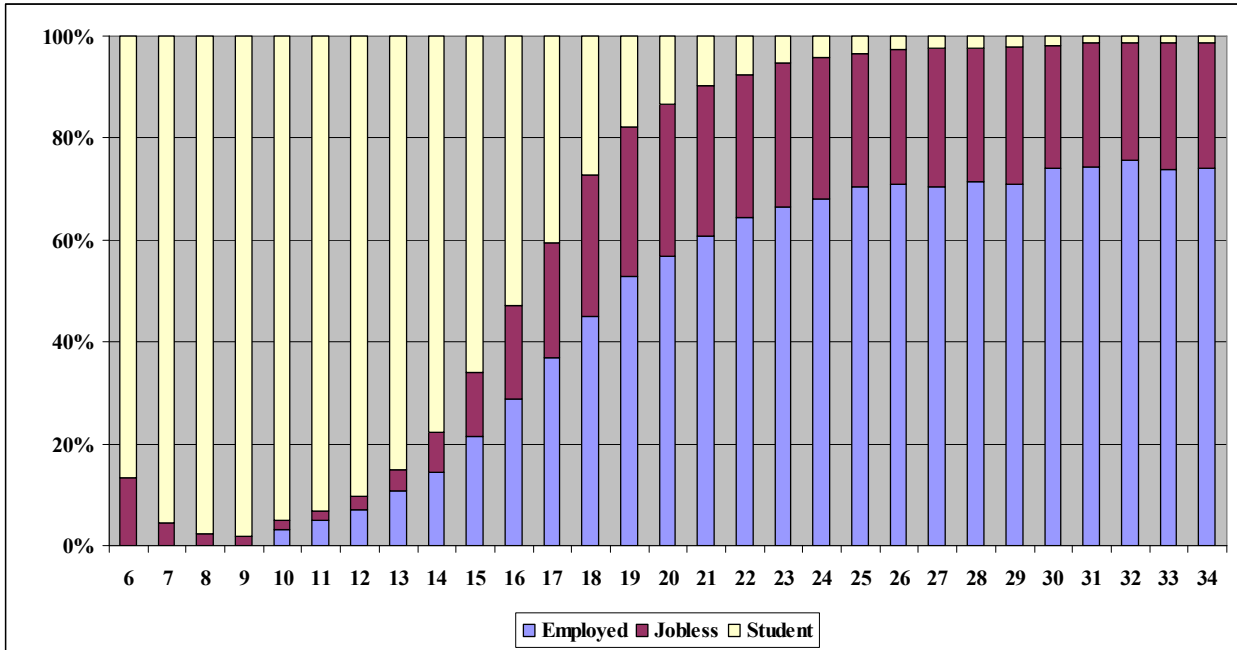
In any event, returning to the OECD-type indicators of duration it is also worth observing that the table gives rather more information than simply the transition duration itself. Also of relevance are the ages at which transition begins (and ends) reflecting the age by which time the majority of young people have left school. Following this line of argument, it is worth looking at the more general picture of young people’s principal activities by single year age-group. If we divide these into ‘in employment’, ‘in education’ and ‘jobless’, one may obtain a much clearer albeit slightly more complex idea of what is going on in the StWT.

Figures 7 and 8 report this information for Brazil in 2002 and Egypt in 2006 respectively. Several points are worth making:

- There is significant “joblessness” at age 6 in both countries reflecting that a significant proportion of young people don’t start school until age 7. The peak in educational participation is actually reached at age 9 in both countries.
- Educational participation lasts longer in average in Egypt than Brazil
- The other side of this coin is that child labour appears to be slightly more common in Brazil and joblessness emerges as a significant phenomenon earlier in that country.
- On the other hand, once young people start leaving in school, the phenomenon increases with age much more quickly than in Brazil. Again this can be in part accounted for by the greater tendency of young women to dropout of participation in the labour market in Egypt.

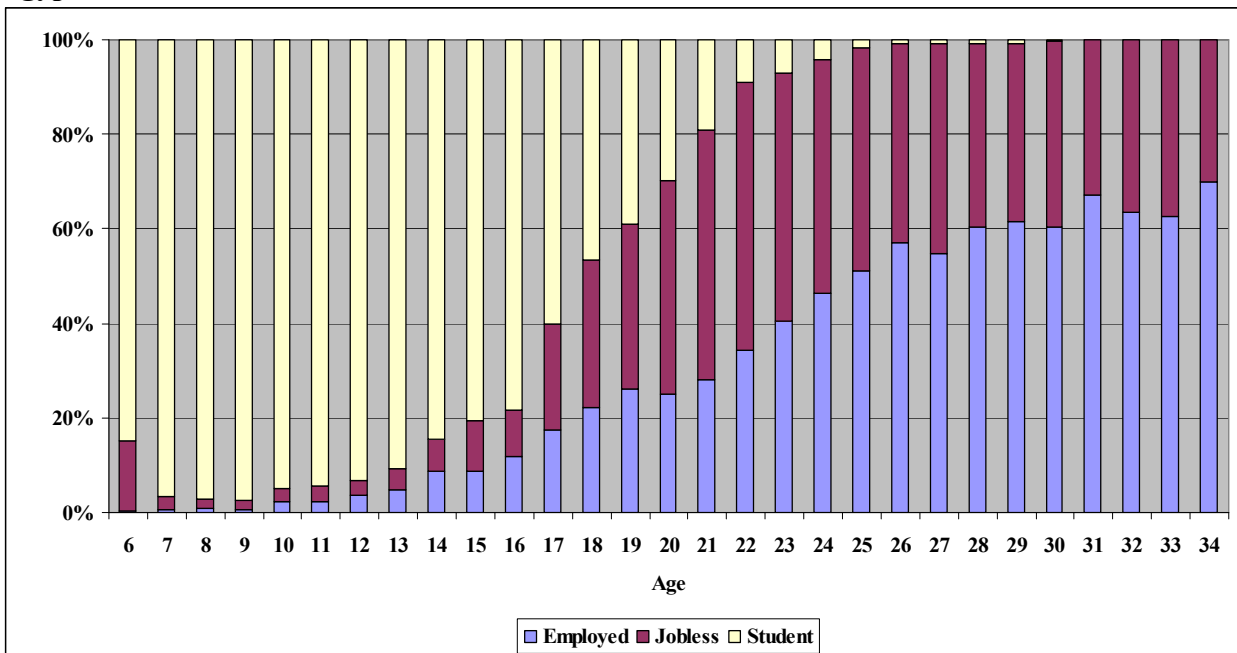
- One can clearly see the inappropriateness of the assumption of no movement between states inasmuch as the employment rate does not rise consistently with age towards some maximum. Although in Egypt this may in part be due to the relatively small sample size, the same cannot be said for Brazil.

Figure 7: Employment, jobless and educational participation rates by single year age-group, Brazil 2002.



Source: Author calculations on the BLFS 2002.

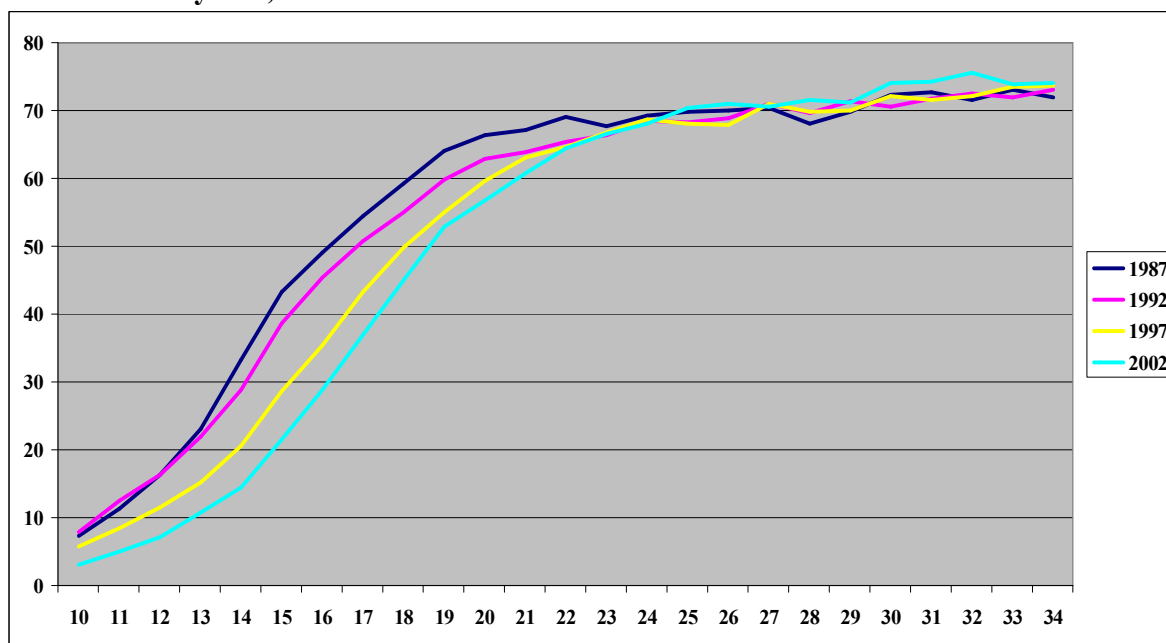
Figure 8: Employment, jobless and educational participation rates by single year age-group, Egypt 2006.



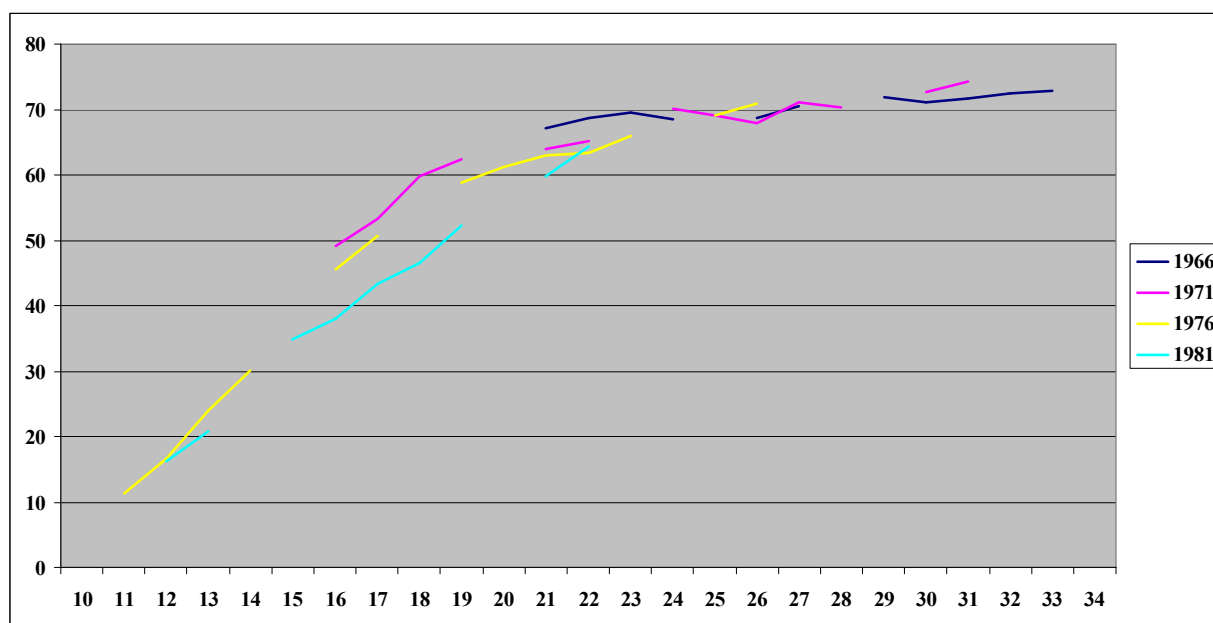
Source: Author calculations on the ELFS 2006.

Taking this as starting point one can go further – relating also the discussion to that before on the duration indicators. One issue that arises is the extent to which the experiences of different ages at one point in time – that is, from the cross-section – actually represent the experience of individuals over the life cycle. The reasonably extensive period covered by the Brazilian Labor Force Survey data examined here allows this question to be examined. Figures 9a and 9b essentially report analogous information from cross-section and a pseudo panel derived from the different Labor Force Surveys.

Figure 9: Employment rates by age.
9a - Different years, Cross-Section data



9b: Pseudo panel

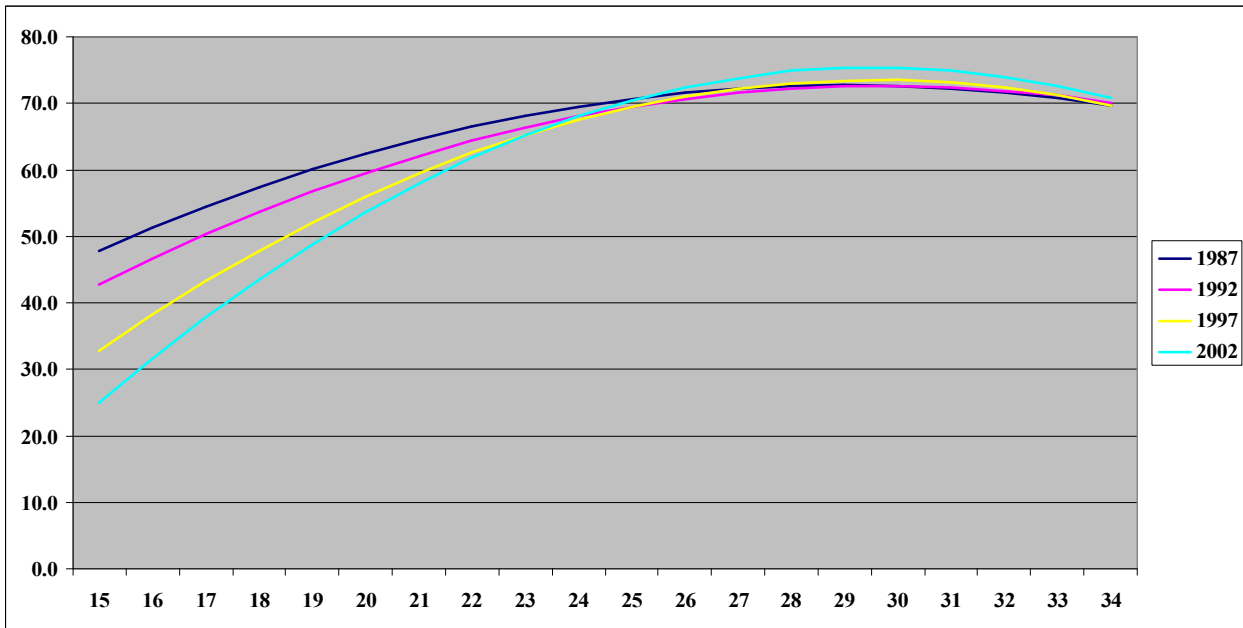


Source: Author calculations on the Brazilian LFS, various years

Note: 9a reports employment rates by age for individual years identified in the legend, 9b reports analogous information based on a pseudo panel – that is, using different years of the LFS, the employment rates of persons born in 1966, 1971, 1976 and 1981 (i.e. 21 in 1987, 1992, 1997 and 2001 respectively) are reported.

The idea is that the colour coded information corresponds between the two figures – and for those who are 21 at the time of the survey, actually coincides. Thus, one can obtain at least a visual impression of the correspondence between the experiences of young people over time (9b) and the estimation of this from cross-section data. Although, of course, one cannot construct a complete profile from the longitudinal data, the correspondence appears to be reasonably close between the figures. Employment rates at younger ages fall and at older ages rises over time. Analogous figures for joblessness, reported in appendix 2, further support this visual impression of the correspondence of experiences.

Figure 10: Quadratic approximation to age-specific employment rates, Brazil



Source: Author calculations on the Brazilian LFS, various years

One can go still step further. If one accepts that the employment rates based on cross-section data provide a reasonable approximation to life-cycle effects²⁹, then, looking at figure 9a one will observe that the age profile, at least from the lower limit of the youth age group (15 years old) looks not dissimilar to quadratic function. Putting this the other way round, it looks like one may be able to estimate a quadratic function which is a good approximation to observed age specific profile of employment rates. Figure 10 does this for the same years as those reported in figure 9a and table 6 reports the coefficients estimated for all the years.

The figure reflects the general impression also obtainable from figure 9 above, however, the table illustrates a rather simple and useful, I believe, way of summarising this aspect for the StWT. One will observe immediately that the approximation is very good, in terms of its fit, and that this improves also over time. Translating the simple mathematical form into the actual experiences of young people, it is reasonable to suggest that one would wish for, *ceteris paribus*, a steep initial slope and a strongly negative intercept – that is, a later start to transition and – more debatably - a quicker entry into employment once it does start. This corresponds to a larger coefficient on age and a smaller (more negative) intercept. From this point of view, the transition in Brazil has improved significantly. In any event, it is reasonable to suggest that such

²⁹ Or, indeed, even if one does not. What is really necessary is that one accepts that the cross-section provides a “reasonable” approximation to the counterfactual experiences of a young person if they were to live their lives in the conditions pertaining in the specific year being examined.

an approximation provides a neat (and reasonable) way of summarising early labor market experiences³⁰.

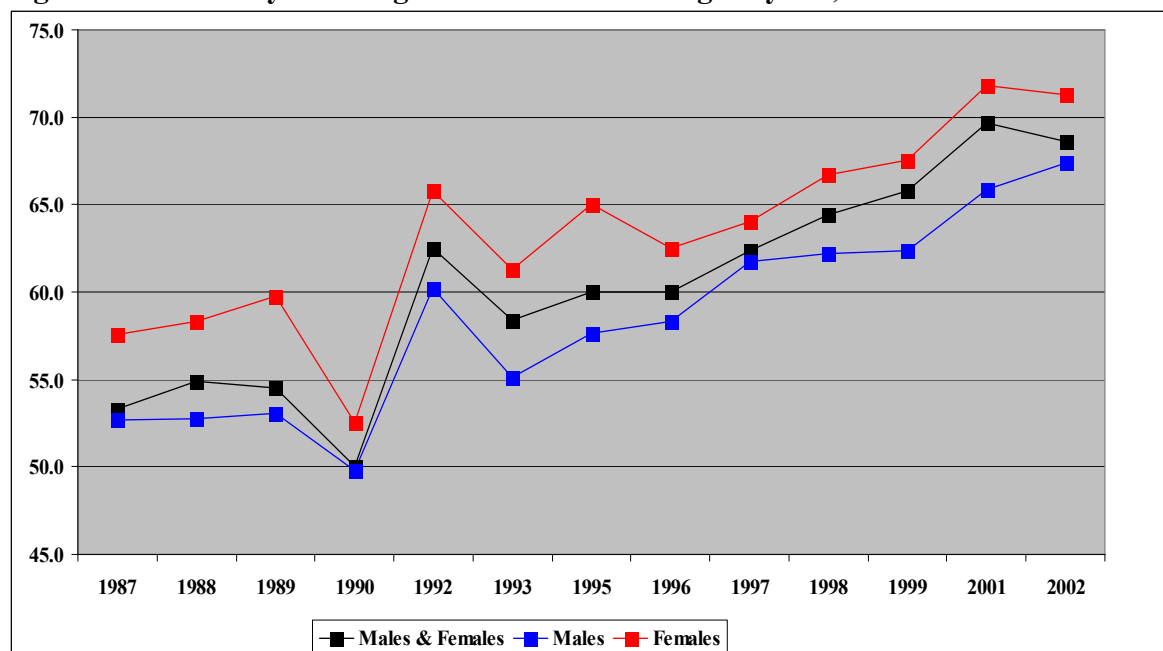
Table 6: Quadratic approximation for age-specific employment rates

Year	Age	(Age) ²	Intercept	Adjusted R ²
1987	7.35	-0.13	-33.90	0.90
1988	7.76	-0.13	-40.17	0.89
1989	7.75	-0.13	-38.83	0.89
1990	7.83	-0.13	-40.77	0.91
1992	8.15	-0.14	-48.69	0.95
1993	8.68	-0.15	-55.62	0.95
1995	9.78	-0.16	-70.61	0.96
1996	11.34	-0.19	-92.33	0.95
1997	11.35	-0.19	-94.23	0.96
1998	12.32	-0.21	-108.33	0.97
1999	12.74	-0.22	-114.57	0.97
2001	13.86	-0.24	-130.17	0.98
2002	14.06	-0.24	-132.50	0.97

Source: Author calculations on the Brazilian LFS, various years

2.1.3 Job Quality – youth wages

Figure 11: Median youth wages as a % of adult wages by sex, Brazil 1987-2002



Source: Author calculations on the BLFS various years.

³⁰ This can, in principal be straightforwardly extended to joblessness and educational participation, however, doing this in the current case produces a poorer approximation. Of course one can simply enlarge the function to a larger polynomial, but in doing so one loses some of the simplicity of the interpretation.

Also in the case of the job quality indicators, it makes sense to consider subgroups of young people; all the more so since there are likely to be significant connections amongst the indicators. For example, informal employment implies no job contract and tends to be associated with relatively low wages.

By way of example, figure 11 plots median youth wages as a percentage of median adult wages in Brazil separately for men and women. One can observe that the wages of young women are closer to those of adult women than those of young men are to adult males. This is likely to be explained in part by the lower average skills content of adult female employment. As noted above, median youth wages have risen as a % of adult wages and the figure illustrates that this trend is present for both young men and young women.

Table 7: Indicators of median hourly wage rates of young people (15-24) for different subgroups, Egypt 2006

	Males	Females
Median Youth Hourly Wages (EGP)		
<i>Urban</i>	1.48	0.98
<i>Rural</i>	1.67	0.89
<i>Formal</i>	1.72	1.22
<i>Informal</i>	1.50	0.72
<i>Urban formal</i>	1.75	1.28
<i>Rural formal</i>	1.67	1.07
<i>Urban informal</i>	1.43	0.69
<i>Rural informal</i>	1.67	0.75
Youth median hourly wages as a % of adult median hourly wages		
<i>Urban</i>	64.0	38.8
<i>Rural</i>	86.1	43.0
<i>Formal</i>	73.6	51.3
<i>Informal</i>	75.8	69.2
<i>Urban formal</i>	69.2	53.4
<i>Rural formal</i>	84.8	47.3
<i>Urban informal</i>	71.5	69.0
<i>Rural informal</i>	89.1	67.6

Source: Author calculations on the ELFS 2006.

Information from the Egyptian LFS 2006 is used in table 7 to add more detail on the interactions between the indicators above-all of job quality. There are some surprising results from this exercise. For example, rural male youth wages appear to be higher than urban wages – due to the higher rate of pay in the rural informal sector. As regards the ratio of youth –to – adult wages however, the picture is what one would expect (on the whole). Specifically relative wages are higher in the informal sector and in rural areas – since informal sector and rural employment will tend to be characterised by lower skills levels. It can be observed however, that in contrast to Brazil, the relative wages of young women are much lower than the relative wages of young men (vis-à-vis their adult counterparts).

2.2 Linkages and causal relations

At the end of the previous section, issues of causal relations began to be implicitly raised. In analysing the StWT it is important to consider, at least to some extent, such linkages and causal relations if one is to design appropriate policies to facilitate the transition. They also help to establish why certain indicators are important. There are many such linkages and relations. I will consider some of the main ones here.

2.2.1 Education

It is well recognized that education and training play a central role in determining youth labor market outcomes. Higher levels of human capital both improve the short run job and wage prospects of their possessors³¹ as well as, through their impact on long-run growth prospects, promoting the general outlook for economic and therefore youth (and adult) employment growth. The issue is however, somewhat complex. Much depends on the appropriateness and quality of education – not just the number of years spent in school. In the context of analyzing the StWT it makes sense, therefore, to include indicators of the levels of educational attainment as well as to sub-divide several other indicators by education levels; the latter providing information on the outcome or **effect** of education.

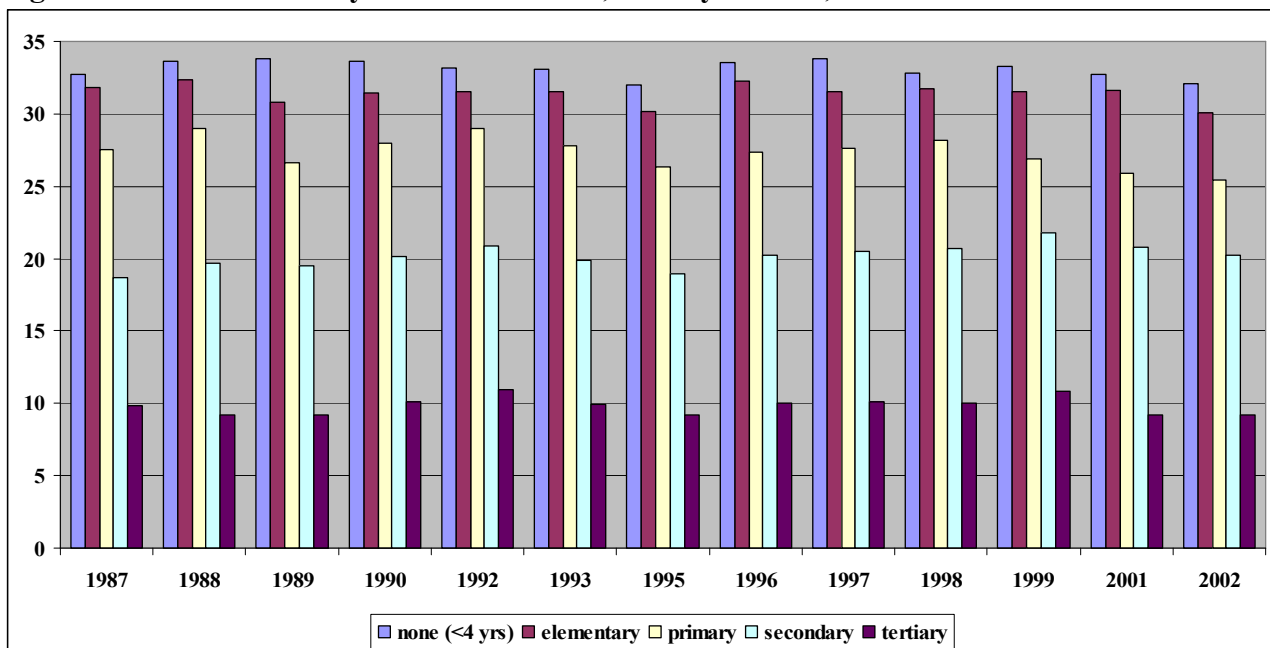
In order to use the information also to justify the type of indicators to include I will deal these issues in reverse order. Specifically, I will first look at joblessness and wages by level of education. In doing so there is immediately a problem affecting principally, joblessness (and unemployment) by education as well as the general educational attainment of young people. Most of those who will in time complete more or less uninterrupted education culminating in the obtaining of a tertiary certificate, do so when they are well into their twenties and many will complete after age 24. This means that if we look at educational attainment of youths aged 15.-24

³¹ The classic example of a system which, through its education and training system effectively promotes youth employment is provided of course by Germany. There, the ratio of youth to adult unemployment rates is of the order of one-to-one - in contrast to most other countries in the EU-15 and ECA region where, as noted above, the youth unemployment rate stands at between two and three times the adult rate. However, in recent years problems have begun to emerge even there, particularly as regards the fate of young people once they leave the dual system and also as regards the system's adaptability in times of rapidly changing occupational and industrial structures. It is also costly. Moreover, there are many questions as to the transferability of the German type system to other countries with differing institutional bases. For example, the German system rests *inter alia* on the existence of substantial numbers of large firms. In post-socialist ECA, companies tend to be small. Notwithstanding this, the German system illustrates the importance of specific design features which could be exported. Perhaps the most important amongst these is the strong involvement of employers in the provision of training which ensures the labor market relevance of training. It provides equitable access to places, and its high (and recognized) quality means that participation does not carry the negative stigma associated with vocational education in many countries (World Bank, 2006c).

we will underestimate the proportion of that group who will at some stage obtain a tertiary qualification. Moreover, when one looks at joblessness by educational level the picture produced by looking at the traditional youth group 15-24 is even more problematic. In this case, the issue is one of comparison groups. Implicit in any such comparison is the fact that the principal difference between the groups being compared lies in the variable of interest. That is, in this example, the level of education. However, very obviously, given the nature and timing of the educational process, 15-24 year olds with different levels of education will necessarily be systematically different in several ways, not just in their level of education, which will also affect the outcome variable – here the jobless rate. Specifically, to take the extremes, 15-24 year olds who have completed tertiary education (and no longer study) will necessarily be concentrated amongst the older members of the group, they will also have completed their education more recently, on average, than those who have completed only primary and/or secondary education, and they will, in many countries, be only a small subset of those who will, in the end complete tertiary education. All these factors will of themselves affect the probability of joblessness and will so 'contaminate' any comparison made on this basis.

For this reason, attention for this indicator is on 25-34 year olds as an imperfect proxy for young people. On any event, figures 12 & 13 illustrate the situation in Brazil (over time) and Egypt (by sex). Obvious from the Brazilian case (figure 12) is the clear inverse relationship between educational level and jobless rate. Although overall rates of joblessness have varied somewhat with economic conditions as noted also above, the relationship between educational level and the rate of joblessness has changed very little over the period 1987-2002.

Figure 12: Jobless rates by educational level, 25-34 year olds, Brazil 1987-2002

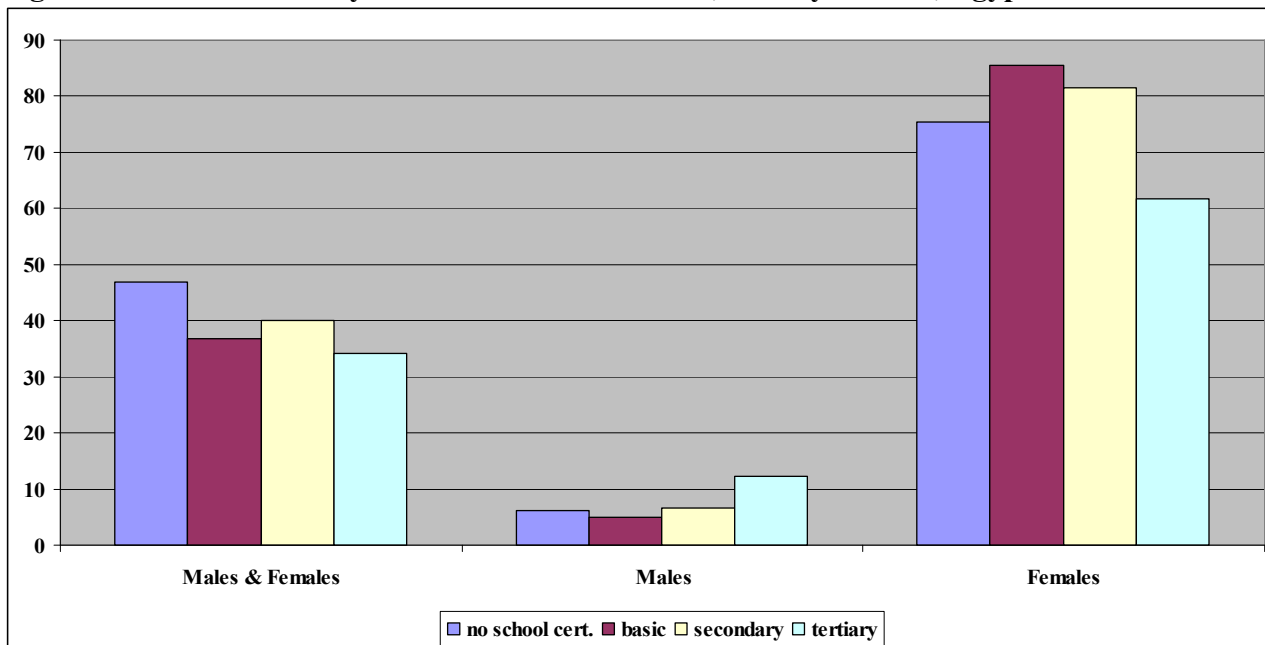


Source: Author calculations on the BLFS 1987-2002.

In Egypt, the situation is rather different. Whilst overall there is, more or less, a weak inverse relation between educational level and jobless rate, this pretty much disappears for males, and must be qualified for females when the two sexes are considered separately. For males with at least some schooling, there appears to be a positive relation between joblessness and education whilst for females the inverse relation exists but only for those with at least minimal levels of schooling. More striking of course is the huge difference between males and females emerging for

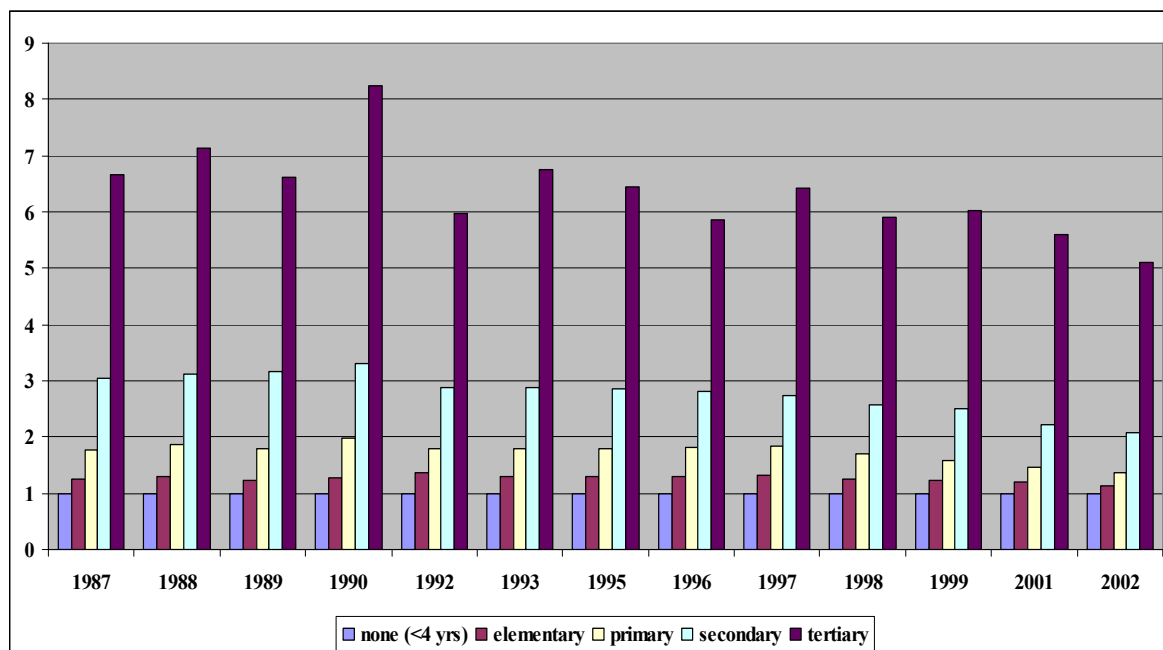
the figure. Although tertiary education appears to reduce the joblessness of young(ish) women, those with tertiary education are still nearly six times as likely to be without employment as the ‘disadvantaged’ group of young university education educated males.

Figure 13: Jobless rates by educational level and sex, 25-34 year olds, Egypt 2006



Source: Author calculations on the ELFS 2006.

Figure 14: Median hourly earnings by education of young people (15-24), Brazil 1987-2002.



Source: Author calculations on the BLFS 1987-2002.

Turning to wages, the situation is clearer. Higher levels of education raise – or at least should raise – one’s level of human capital and therefore the wages one receives once

employment is obtained. Beyond the very obvious significant returns to, in particular secondary and above-all tertiary education in Brazil (figure 14), one may observe that these differentials have been squeezed somewhat over time. Whereas in the 1980s, obtaining a tertiary certificate implied earning between six-and-a-half and seven times the earnings of those with essentially no education, by 2002, university educated young people earned ‘only’ five times what their illiterate colleagues received. Similarly the earnings of those with secondary levels of education have fallen from three times to ‘only’ double the earnings of the illiterate over the period.

As regards educational attainment in itself, first of all one may observe that, although the proportion of university educated young people may be a matter of national pride, and indeed may indeed contribute significantly to the long run economic growth of the country – assuming a large proportion of those obtaining tertiary qualifications do not leave the country in search of better earnings elsewhere, if the concern is with improving the material well-being of all it makes sense to concentrate on those who get left behind. It might be observed that the emphasis these days also in EU countries is on reducing the numbers of young people who do not obtain at least secondary education. Moreover, from a purely practical point of view, a concentration on lower levels of education allows one to deal still with young people without the sort of problems identified above. In practice this means reporting the proportion of 20-24 year olds who have obtained primary and secondary school certificates. This may be complemented by the proportion of 25-34 who have obtained tertiary education.

2.2.2 The effect of earlier experiences on later outcomes.

What happens to young people earlier in life is also an important determinant of their experiences with the transition to the labour market and, indeed also, the experiences of young people when they do enter the labour market is likely to affect also their experiences further down the line. Data from the Egyptian Labour Force Survey Panel can be employed to illustrate this.

Table 8: Probit model of Employment determination young people aged 15-24 in 2006

Males & Females
N = 2659
Pseudo R² = .18

	Coef.	Std. Err.	z
age	.0488638	.0130883	3.66
not in school in 1998	.0713711	.117791	0.61
jobless in 1998	-.3304699	.1184237	-2.79
Education level = 2	.0445919	.1503118	0.30
Education level = 3	-.0411936	.1065031	-0.39
<i>Education level = 4</i>	<i>-.1960222</i>	<i>.1084189</i>	<i>-1.81</i>
Education level = 5	-.40123	.1673656	-2.40
Education level = 6	-.4227449	.1350178	-3.13
Female	-1.252554	.0550967	-22.73
Intercept	-.4104726	.256643	-1.60

Source: Author calculations on the Egyptian panel 1998-2006.

Note: The model is estimated for young people aged 15-24 in 2006 who were no longer in full-time education.

Coefficients in Bold are significant at at least .05, in italics those which are significant at at least .10

By way of example, table 8 reports the results of estimating a simple probit model of employment determination of young people in 2006 as a function, of amongst other things, experiences 7 years earlier using Egyptian panel data. Although one might wish to analyse this with a more articulated model, the results are suggestive. Specifically, it would appear that in this context, early joblessness is an important (negative) determinant of later employment, although, once schooling level is controlled for, having left school ‘early’ is not. The main point arising concerns the importance of including indicators of, in particular, the joblessness and employment of those under 15.

2.2.3 The determinants of the duration of the transition.

Data from the Sri Lankan Panel can usefully be exploited – given the detailed information on states over time - to analyse the determinants of the duration of the transition understood as the time it takes individuals to find their first employment once they have left full-time education. Table 9 reports the results of estimating three models – the time it takes to find a waged job, the time it takes to find any job (including self-employment) and the probability of actually ‘completing’ the StWT by the survey date. Taken together the results provide some interesting insights. Having worked while at school appears to be an important element in shortening the transition, parental education itself does not seem to be so important, however, informal networks appear to play a role as does family income. The positive coefficient on family civil servants (for duration) seems to encourage wait unemployment as does income³². Although not statistically significant at conventional levels, having family members working in private firms seems to reduce the duration and moreover, very much increase the chances of completing the transition. Again one might wish to develop such a model in particular to take account of the interaction between effecting the transition and the time it takes to do so.

³² Indeed, having family members who are civil servants is in itself likely to be positively correlated with family income.

Table 9: Estimates of the determinants of the duration to: a) a waged job; b) any job; and, c) the probability of completing the StWT by the survey date.

	Duration to waged Job		Duration to any Job		Probability of completing transition		
	Coef.	Std. Err.	t	Coef.	Std. Err.	t	
Age	-1.34	0.88	-1.52	-1.46	0.81	-1.80	-0.60
Years of Schooling	<i>1.40</i>	<i>0.86</i>	<i>1.63</i>	<i>1.32</i>	<i>0.80</i>	<i>1.66</i>	0.80
Year left school working while at school	-5.08	0.94	-5.39	-4.91	0.87	-5.64	-3.70
Some training	-6.24	2.61	-2.39	-11.01	1.99	-5.53	-0.68
Mother's education:	6.12	1.45	4.21	5.12	1.32	3.87	-0.90
elementary	-0.44	1.87	-0.24	0.98	1.69	0.58	<i>1.76</i>
Lower secondary	-0.22	1.71	-0.13	-0.85	1.55	-0.55	-0.50
Upper secondary	3.39	4.07	0.83	1.96	3.99	0.49	-0.18
Tertiary	3.32	4.25	0.78	1.49	4.16	0.36	-0.01
Own schooling interrupted	-2.04	1.77	-1.15	-1.88	1.56	-1.21	1.53
Government worker:							
In the Household	5.43	2.45	2.22	4.85	2.26	2.15	-1.74
other family member	3.33	2.06	1.62	4.07	1.91	2.13	0.07
friend	2.41	2.08	1.16	2.33	1.91	1.22	-0.74
Private sector worker:							
In the Household	-2.67	2.69	-0.99	-3.72	2.43	-1.53	4.33
other family member	-3.60	2.62	-1.38	-3.71	2.37	-1.56	4.44
friend	0.72	2.61	0.27	-0.15	2.35	-0.06	2.34
live in family owned home	-1.12	2.36	-0.48	-1.18	2.23	-0.53	-1.24
number of domestic appliances in HH	<i>0.63</i>	<i>0.37</i>	<i>1.70</i>	0.93	0.32	2.92	0.09
Intercept	10189.55	1894.57	5.38	9861.75	1753.00	5.63	3.68
Adj R-squared		0.23		0.23			0.16

Source: Author calculations on the Sri Lanka panel 1999-2006.

Note: models a) and b) are estimated by OLS, c) using a probit model. Coefficients in Bold are significant at at least .05, in italics those which are significant at at least .10

2.3 Contextual indicators

In order to complete the array of indicators needed to provide an overview of the situation of the StWT, two further types of indicator are required. Clearly the situation on the youth labour market is very much dependent on overall economic conditions, so any analysis needs to be prefaced by the introduction of aggregate economic indicators such as the real economic growth rate and the aggregate employment rate & unemployment rate. It also makes sense in this context to compare, in many situations the situation of young people to adults, so one should include also the ratio of youth unemployment and jobless rates to adult (25-44) rates.

The second type of indicator to mention here is concerned with policy intervention in the StWT. It is useful in this context to have indicators at least of expenditures on educational and youth employment policy – particularly active labour market policies. In both cases, expenditure should be reported as a percentage of GDP and in the latter case also as a % of all total expenditure on ALMPs.

3. Towards a Coherent Set of Indicators of the School-to-Work Transition

In this paper a series of indicators for measuring different aspects of the School-to-Work Transition have been examined. Arguments were made in favour of including the jobless rate I addition to the unemployment rate as a (more) useful indicator of young people's difficulties in effecting the transition. Moreover, it was strongly suggested that the cross-section estimates of the duration commonly employed these days in OECD countries are of limited usefulness. Indeed, a much simpler and more accurate approach using the proportion of those completing the transition within a given time period was suggested and justified, it is to be hoped, convincingly. One key idea running through the paper relates to a concern for producing simple and (relatively) easily understood indicators. A number of ways of doing this was explored, for example, the usefulness of some simple quadratic approximations was illustrated. For the most part, the emphasis has been on how to, and how well one can, obtain indicators of the StWT from cross-section data, however, the paper also discusses some of the uses of panel data and in this regard includes some illustrative examples of the estimation of links between early and later experiences and the estimation of the determinants the duration of transition, both of these requiring. The Appendix contains a list of the suggested indicators arising from the discussion.

References:

- Bowers, N., A. Sonnet & L. Bardone** – 1999 – “Giving Young people a Good start: The experiences of OECD Countries,” in OECD, *The Transition from Education to the Labour Market*, pp. 7-86.
- ILO** – 2006 – *Global Employment Trends for Youth*, ILO, Geneva.
- Manning, C. & Junankar, P.N.** – 1998 – “Choosy Youth or Unwanted Youth? A Survey of Unemployment,” *Bulletin of Indonesian Economic Studies*, vol. 34, no. 1, pp. 55-93.
- Nese, A. & N. O’Higgins** – 2007 - “Panel Attrition in the Capitalia Panel”, *International Review of Economics*, vol. 54, no. 3, pp. 383-403, 2007.
- O’Higgins, N.** – 2001 - *Youth Unemployment and Employment Policy: A Global Perspective*, ILO, Geneva.
- O’Higgins, N.** – 2007 – “Youth Labor Markets in ECA,” World Bank, Washington D.C..
- Quintini, G. & S. Martin** – 2006 - “Starting Well or Losing Their Way? The Position of Youth in the Labour Market in OECD Countries,” OECD Social, Employment and Migration Working papers no. 39, OECD, Paris.
- Rees, A.** – 1986 – “An Essay on Youth Joblessness,” *Journal of Economic Literature*, Vol. 24, no. 2, pp. 613-28.
- Ryan, P.** – 2001 – “The School-to-Work Transition: A Cross-National Perspective,” *Journal of Economic Literature*, Vol. 39, no. 1, pp. 34-92.
- Schneider, F.** – 2006 – “Shadow Economies and Corruption All Over the World: What Do We Really Know?” Discussion Paper no. 2315, IZA, Bonn.
- World Bank** – 2006 – *World Development Report 2007: Development and the Next Generation*, World Bank, Washington D.C..

Appendix 1: List of Indicators for the School-to-Work Transition

1. Core Indicators

- **Incidence of problematic transition:**

- *Youth unemployment rate*
- *Youth jobless rate*

In both cases with the following breakdowns:

- male/female
- rural/urban
- teenagers(15-19)/young adults(20-24)
- Standardised Education level – using 25-34 year olds as a proxy for young people

Plus ratios of youth to adult (25-44 or 25-49) rates.

- **Duration of Transition:**

- *Proportion of young people who have **not** obtained employment within one year of leaving education*

Broken down by:

- male/female
- rural/urban
- Standardised Education level (and/or age of leaving education)

- **Quality of Employment (incidence of low quality employment):**

- *Incidence of informal sector employment*
- *Incidence of non-permanent employment*
- *Incidence of underemployment*

Broken down by

- male/female
- rural/urban

as well as by each other (e.g. incidence of underemployment by informal/formal employment)

- *median youth wages; and,*
- *ratio of median youth to adult wages*

By

- male/female
- rural/urban
- Standardised education level
- Formal/informal

And, where possible,

- *Annual wage growth by sex and educational level*

2. Contextual indicators

- Aggregate indicators

- *Real economic growth; and,*
- *Aggregate employment rate (by sex)*

- Children

- *Jobless rate of 10-14 year olds*
- *Employment rate of 10-14 year olds*

- Policy

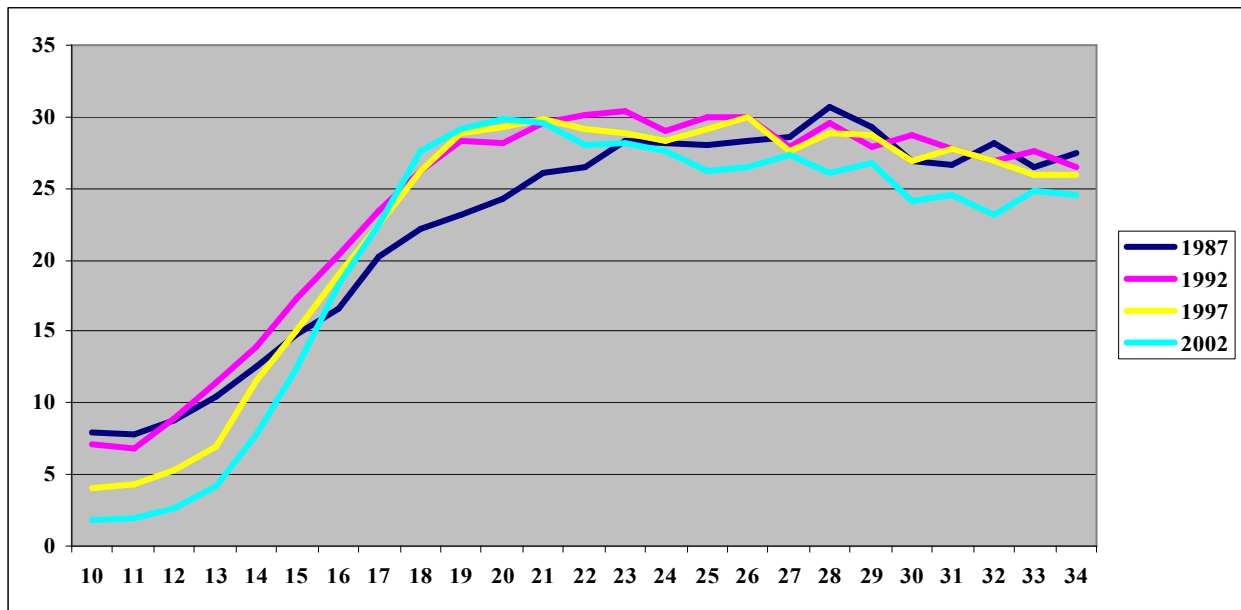
- *Educational expenditure by educational level (% of GDP and % for each level/type)*
- *Expenditure on ALMPs (% of GDP & %% of total expenditure on ALMPs)*

3. Additional (optional) indicators

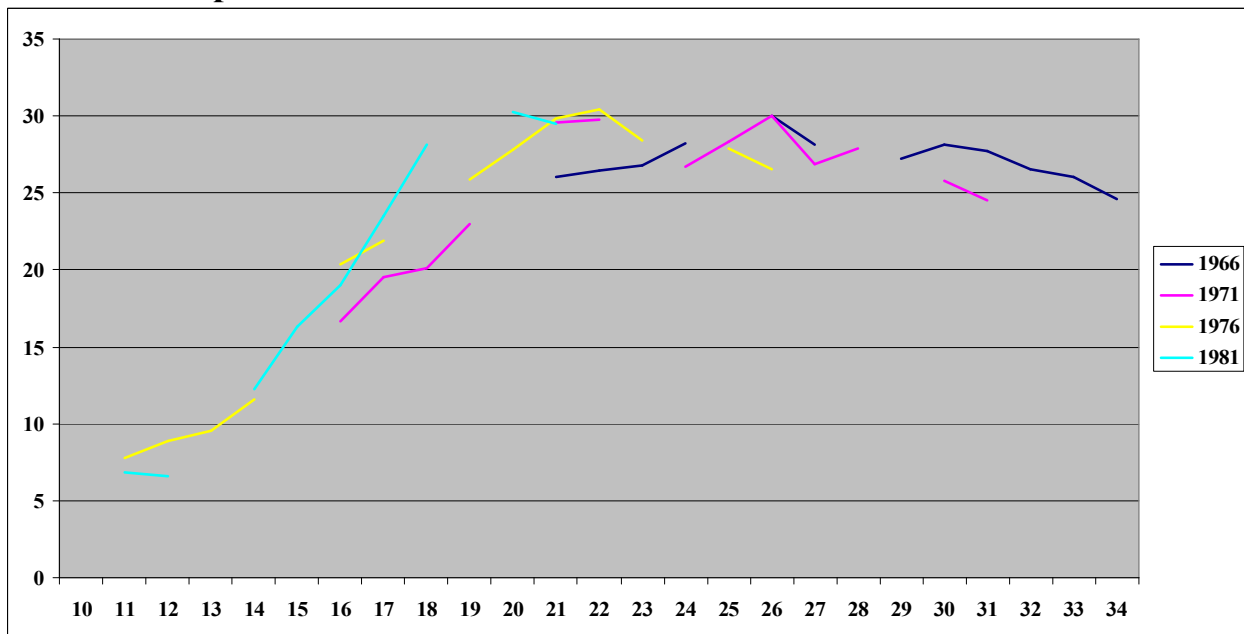
- *Transition matrices (movements between states from one year to the next)*
- *Formal estimation of (Mincerian) returns to education*
- *Inequality of education*

Appendix 2: Age Specific Jobless rates, Brazil 1987-2001.

A1a: Cross-section



A1b: Pseudo panel



Source: Author calculations on the Brazilian LFS, various years.

Note: A1a reports jobless rates by age for individual years identified in the legend, A1b reports analogous information based on a pseudo panel – that is, using different years of the LFS, the employment rates of persons born in 1966, 1971, 1976 and 1981 (i.e. 21 in 1987, 1992, 1997 and 2001 respectively) are reported.