

Title of Paper: **Profiling Human Capital Investment: Earning Patterns from the Periodic Labour Survey**

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Abstract: (Currently this is work that is very much incomplete and in process. Thus, the abstract is very tentative and roughly composed at this stage.)

This is foremost an exercise to look at the characteristics of individuals and the households that they belong to and explore how these characteristics are linked to human capital investment. To phrase it differently we are looking to profile the characteristics of workers in relation to the human capital that they have acquired. We do so by drawing on data from the PLFS (Periodic Labour Force Survey), which is geared to capturing the employment status of the individuals covered by the survey. In addition to garnering employment status, the survey carries information about education and training gained by the sampled individual sampled, as well as capturing some features about the households in which the individuals are located. This information is clearly quite limited and is not able to feed the estimation of standard models of household decision making that can discern human capital decisions by households and individuals. Nevertheless, with some adaptation, we can get heuristic sense of human capital decisions by thinking of along certain directions suggested by Becker's founding work on modelling consumption decisions of the household¹.

Beckers work in this context (unlike how it is approached in much of the literature) is invoked here not so much for the inclusion of time in household decisions but rather to push for the broad sense that inspired Becker to model the household. The key insight that we draw on is that Becker envisioned the household not just as a passive unit of the standard economics text book that exchanges in goods for consumption, but as an analog to a firm as an organizational unit. In relation to human capital concerns it is a unit that "invests in capital assets (savings), capital equipment and capital embodied in its 'labour force' (human capital of family members)." ² In a footnote attached to this statement he says that "this includes the production of market earnings potential" ³. Thus, a household as a producer can be viewed very importantly as looking out for its earnings potential. Thus, we suggest an earnings function embedded in the broad framework suggested by Becker – the household seeks to maximize full income by investing in work activities that will allow them earnings that give them a chance to enjoy the highest level of consumption – such enjoyment is more possible from being employed in a better quality than if one were in a lower quality job.

¹ Robert T. Michael and Gary S. Becker 'On the New Theory of Consumer Behavior' The Swedish Journal of Economics , Dec., 1973, Vol. 75, No. 4 (Dec., 1973), pp. 378-396;G. S Becker 'A theory of the allocation of time' The Economic Journal 75, 493-517, 1965.

² Robert T. Michael and Gary S. Becker 'On the New Theory of Consumer Behavior' The Swedish Journal of Economics , Dec., 1973, Vol. 75, No. 4 (Dec., 1973) page 388

³ Id

To think of this in terms of an empirical model, assume that the earning potential of a job (invoking the sense of Becker's full income) of an individual i as given by a latent variable v_i^* ($0 < v_i^* < +\infty$). This latent variable is assumed to be linearly related to a set of characteristics given by the vector q_i and the relationship is represented by the equation $v_i^* = q_i' \beta + \varepsilon_i$, where β is a vector of unknown parameters and ε_i are error terms which are independently and identically distributed with a probability density denoted by $g(\varepsilon, \theta)$. Since we do not observe the actual earning potential of a job but construct a ranking of three categories and instead observe

$$\begin{aligned} v_i &= 0 \text{ if } v_i^* < \alpha_1 \\ v_i &= 1 \text{ if } \alpha_1 \leq v_i^* < \alpha_2 \\ v_i &= 2 \text{ if } \alpha_2 \leq v_i^* \end{aligned}$$

In this formulation the *earning potential of a job* ranking is constructed by creating a composite variable using information available in the PLFS. We do so by gathering the information regarding (i) Location of Workplace, (ii) Enterprise Type, (iii) Number of workers in the enterprise, (iv) Type of job contract, (v) Availability of Social security, (vi) Usual Principal Activity Status /Nature of Employment), (vii) Earnings in the last 7 days/ Total No. of Hours Worked in Last 7 days. This information was subjected to cluster analysis giving rise to three clusters of high, medium and low quality jobs.

If we assume the error term associated with the model are distributed normally with mean 0 and variance 1 then we can estimate the model as an ordered probit model, using the maximum likelihood method. This gives us estimates of the parameters β as well as the cut points α_1 and α_2 .

Some of the explanatory variables suggested pertain to the individual and others to the household – thus the individual is profiled as regards gender, age marital status, varieties of education – general, technical and training and placed in a household which is defined by characteristics pertaining to size, how educated - how many passed 10th class, Urban/Rural, State(?), Type, Religion, Social group and Consumer expenditure.

The (preliminary) results of these exercises will be presented at the conference.