Search and Matching Friction and Status Conscious Job Choice

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Introduction and Motivation

- Getting job in the organized sector is more difficult compared to getting job in the unorganized sector.
- Interesting co-existence: Unemployed and unorganized sector worker, having the same skill level.
- Micro-level data: Presence of unemployed people is high in higher wealth category.
- Macro-level study: Economies with higher GDP faces a lesser unemployment rate.

Introduction and Motivation

- A theoretical explanation to reconcile these two facts: Status Conscious job choice.
- “employment can be a factor in self-esteem and indeed in esteem by others… If a person is forced by unemployment to take a job that he thinks is not appropriate for him, or not commensurate with his training, he may continue to feel unfulfilled…” --- Sen (1975a, p. 5)
- Status consciousness in the economic literature is not new.

Introduction and Motivation

- Every individual faces a societal stigma in unorganized jobs: higher for the people up in societal ladder.
- Inheritance as a signal of societal status.
- The model solves micro vs macro puzzle.
- The model connects unemployment with inheritance dynamics.
- The model shows long run inheritance distribution crucially depends on labor market friction, but not on the initial distribution.

Brief Empirical Exposition

- 59th round of the NSS data is used.
- This round of survey has reported the individual level data of occupational status and the detail of the wealth of each household, like household specific information on the value of land, house, livestock holding, durable goods, investment etc.
- Major Variable of interest: Per unit asset = $\frac{\text{value of the total asset of a household}}{\text{household size}}$.

*The analysis is restricted for the individuals of age 18 to 35.

Brief Empirical Exposition

- The whole range of per unit asset (taken in logarithm) is divided into 100 quintiles classes. Logarithmic scale is taken to control the outliers.
- Variable of interest:

$y \equiv \ln\left(\frac{\text{freq of unemployed}}{\text{total freq of individuals}}\right)$ for each asset quintile class.

$x \equiv$ asset quintile class (after clubbing the asset value of long term wealth, like TV, jewelries, land holdings etc., we divide it in 100 quintile classes)

Brief Empirical Exposition

- Control variables: a) frequency of individuals at 9 different education levels per asset quintile class,

b) frequency of male individuals per asset quintile class,

c) frequency of individuals at 3 different social groups per asset quintile class,

d) frequency of individuals of 6 different religious groups per asset quintile class.

Brief Empirical Exposition

- Regression equation:

$$y = \delta_1 + \delta_2 \ln(x) + \sum_{i=1}^{9} \delta_{3_i} \ln(E_i) + \delta_4 M + \sum_{i=1}^{6} \delta_{5_i} \ln(R_i) + \sum_{i=1}^{3} \delta_{6_i} \ln(G_i) + \epsilon$$

- We compile the results for rural and urban India separately.
- R-square values are 0.3238 and 0.3723 for the rural India and the urban India respectively.

Brief Empirical Exposition

Table: Regression result for urban India

Variables	coef. (δ_{-1})	P-value	st. Error
x	0.0171 ***	0.001	0.0038
Education level per asset class: level 1	-0.0358	0.472	0.0497
E_2	0.0281	0.249	0.0025
E_3	0.0179	0.320	0.0181
E_4	0.1421***	0.001	0.0151
E_5	0 .3302***	0.001	0.0238
E_6	0.5263***	0.001	0.0221
E_7	0.2955***	0.001	0.0585
E_8	0.3235***	0.001	0.0301
E_9	0.2487***	0.001	0.0739
Male per asset class	0.2198***	0.001	0.0219
religion 1 per asset class	0.0306	0.657	0.0689
R_2	0.0419	0.548	0.0698
R_3	0.0692	0.333	0.0714
R_4	-0.0481	0.509	0.0729
R_5	-0.2359*	0.074	0.1322
R_6	0.0859	0.342	0.0902
social group 1 per asset class	0.0421***	0.006	0.0153
G_2	0.0669***	0.001	0.0126
G_3	0.0263***	0.007	0.0098
Constant(δ_1)	-0.1778**	0.011	0.0701

Brief Empirical Exposition

Table: Regression result for rural India

Variables	coef. (δ_{-1})	P-value	st. Error
x	0.0264 ***	0.001	0.0024
Education level per asset class: level 1	0.1080	0.387	0.0816
E_2	-0.0447	0.232	0.0373
E_3	-0.0416	0.217	0.0337
E_4	0.0450*	0.079	0.0256
E_5	0.2331***	0.001	0.03
E_6	0.5817***	0.001	0.0288
E_7	0.2623***	0.001	0.0568
E_8	0.2844***	0.001	0.0323
E_9	0.2172***	0.001	0.044
Male per asset class	0.2043***	0.001	0.0247
Religion 1 per asset class	-0.1060	0.565	0.1843
R_2	-0.0874	0.635	0.1843
R_3	-0.0726	0.697	0.1866
R_4	-0.2708	0.154	0.19
R_5	-0.2048	0.310	0.2018
R_6	-0.0691	0.717	0.1906
Social group 1 per asset class	0.0721*	0.056	0.0376
G_2	0.0546**	0.011	0.0214
G_3	0.0494***	0.001	0.0120
Constant (δ_1)	-0.0501	0.788	0.1862

Model: Set Up

- Time flows discretely
- Agents: Firms and Individuals
- Firms are infinitely lived
- Two batch of people live simultaneously: young and old
- Each two period live individual derives utility from consumption, bequest and job choice

Model: Set Up

- Each agent endowed with one unit of labor, inelastically
- Mass of each generation is normalized to unity
- Single non-perishable good, Single factor input (labor), CRS production technology
- Two sectors: Organized (superior technology with friction) and Unorganized (inferior technology without friction)

Model: Set Up

$$U = \frac{1}{\alpha^{\alpha}\,(1-\alpha)^{1-\alpha}}\; c^{1-\alpha}\, b^{\alpha} - D_t\, kX_t - D_{t+1}\, kX_t,$$

with $\alpha \in (0,1)$ and $k>0$

- Positive utility (U) through consumption (c) and bequest (b), disutility from working in the unorganized sector
- $D = \begin{cases} 1, \text{if works in unorganized sector} \\ 0, \text{Otherwise} \end{cases}$
- X is inheritance level and disutility is proportional to X
- Utility realization takes place at the end of the life span

Model: Set Up

- Matching process inevitable for organized sector
- Matching function: $M_t = M(u_t, v_t)$
- M is homogenous of degree one, increasing and concave
- $\frac{M_t}{u_t} = M(1, \theta_t)$ and $\frac{M_t}{v_t} = M(\theta_t^{-1}, 1)$, where $\theta \equiv \frac{v}{u}$
- A particular form of matching function, $M_t = [u_t^{\sigma} + v_t^{\sigma}]^{\frac{1}{\sigma}}$, assume $\sigma = -1$, Stevens (2007)
- An additional property: $M(1, \theta_t) + M(\theta_t^{-1}, 1) = 1$

Model: Set Up

- Production: The organized sector produces 'p' units and the unorganized sector produces 'a' units of the consumable good with one unit of labor. Where, $p > a$
- Organized sector:

$$V_t = -d + M(\theta_t^{-1}, 1)\left[\phi_t J_{yt+1} + (1 - \phi_t) J_{ot+1}\right] + \left(1 - M(\theta_t^{-1}, 1)\right) V_{t+1}$$

$V_t \equiv$ expected infinite income stream from a vacant post at 't'.

$d \equiv$ cost of posting a vacancy, $\phi_t \equiv$ proportion of young searcher in total searching population at t, $J_{jt} \equiv$ expected gain from a filled job with a 'j'-type worker at time 't'. j= young (y), old (o), $r \equiv$ discount rate.

Model: Set Up

$J_{yt} = 2(p - w_{myt}) + V_{t+2}$ and $J_{ot} = (p - w_{mot}) + V_{t+1}$

w_{mj} ≡ organized wage of ‘j’-type worker

- Wages

Unorganized Sector’s Labor market is perfect.

w_n≡unorganized sector wage= a

Organized sector wage is set by Nash Bargaining

Model: Equilibrium

- Free entry guarantees $V_t = 0$, for all ‘t’
- $M(\theta_t^{-1}, 1) = \frac{d}{\phi_t J_y + (1-\phi_t) J_o}$
- Organized sector optimal wage: $w_{my} = w_{mo} \equiv w_m = \beta a_m$, β is the bargaining power parameter

Model: Equilibrium

Optimal Decision

	O	N	W
L	w_m	$w_n - kX$	0
U	not applicable	$w_n - kX$	0

Optimal solutions are illustrated below

for, $X \leq w_n/k$

if L then O

if U then N

for, $X > w_n/k$

if L then O

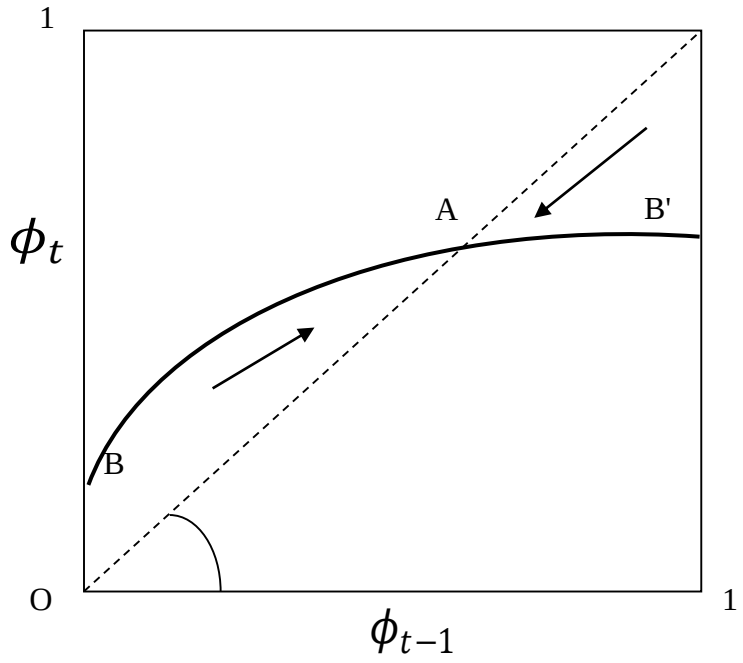
if U then W

Model: Equilibrium

- Unemployed per period: $u_t = 1 + (1 - M(\theta_{t-1}, 1))$
- Young unemployed: $\phi_t \, u_t = 1$
- Solves to, $\phi_t = \frac{1}{\left(1 + \frac{d}{\phi_{t-1} J_y + (1 - \phi_{t-1}) J_o}\right)}$

Model: Equilibrium

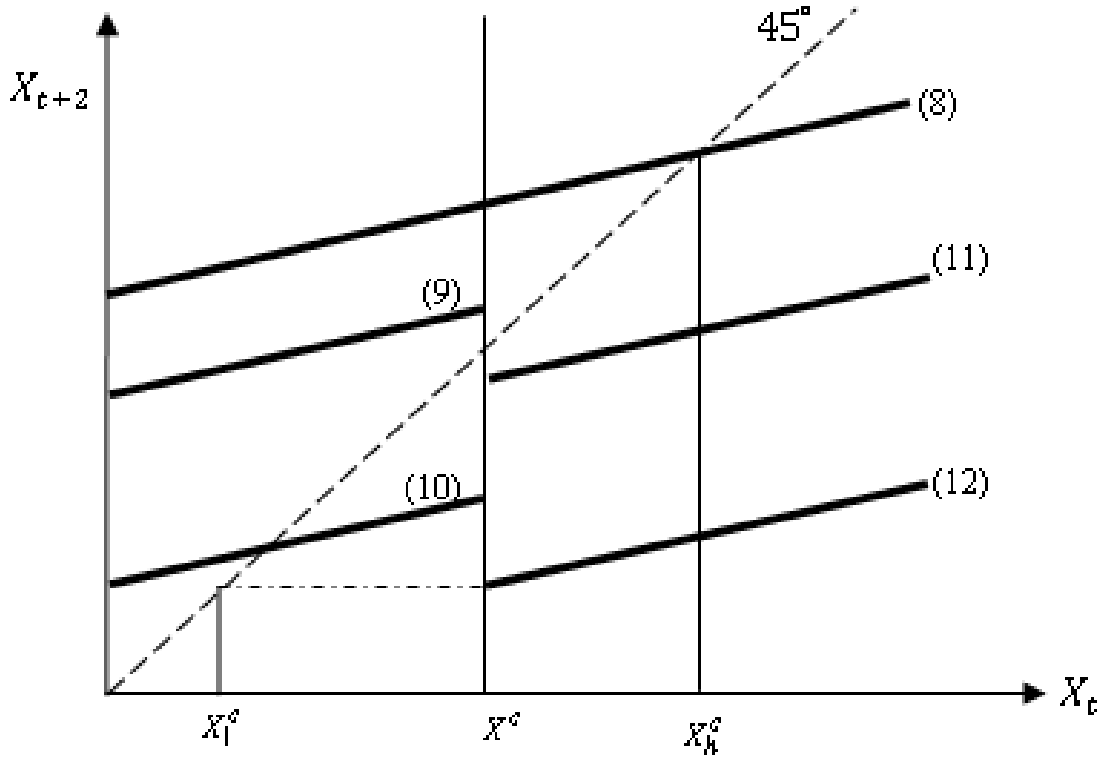
- Long run time independent ϕ^* is solved, and M^* (implies, $M(1, \theta^*)$ and $M(\theta^{*-1}, 1)$.)



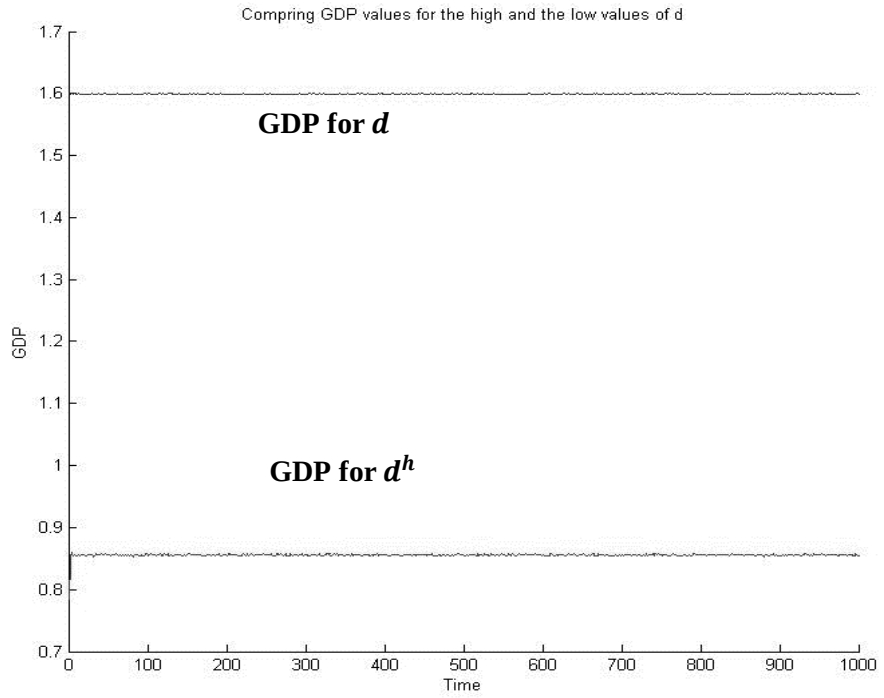
Model: Dynamics of inheritance

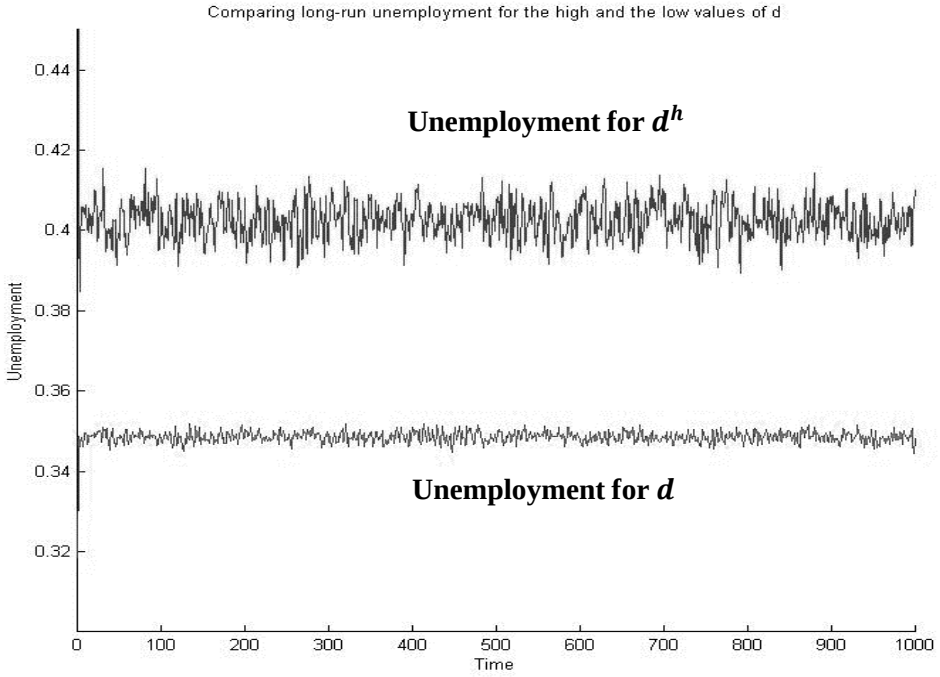
- If, $X_t \leq X^c$
- $X_{t+2} = \alpha(X_t + 2w_m)$, with probability $M(\theta^*, 1)$
- $X_{t+2} = \alpha(X_t + w_n + w_m)$, with probability $(1 - M(\theta^*, 1))M(\theta^*, 1)$
- $X_{t+2} = \alpha(X_t + 2w_n)$, with probability $\left(1 - M(\theta^*, 1)\right)^2$
- If, $X_t \geq X^c$
- $X_{t+2} = \alpha(X_t + 2w_m)$, with probability $M(\theta^*, 1)$
- $X_{t+2} = \alpha(X_t + w_m)$, with probability $(1 - M(\theta^*, 1))M(\theta^*, 1)$
- $X_{t+2} = \alpha(X_t)$, with probability $\left(1 - M(\theta^*, 1)\right)^2$

Model: Dynamics of inheritance



Simulation Results





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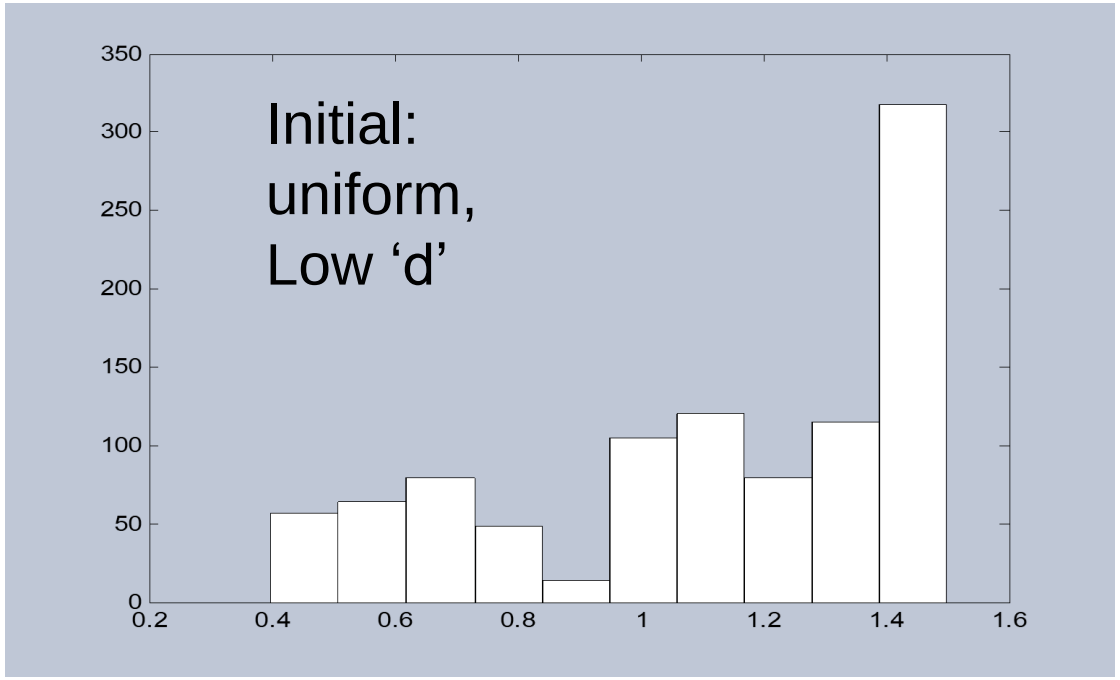

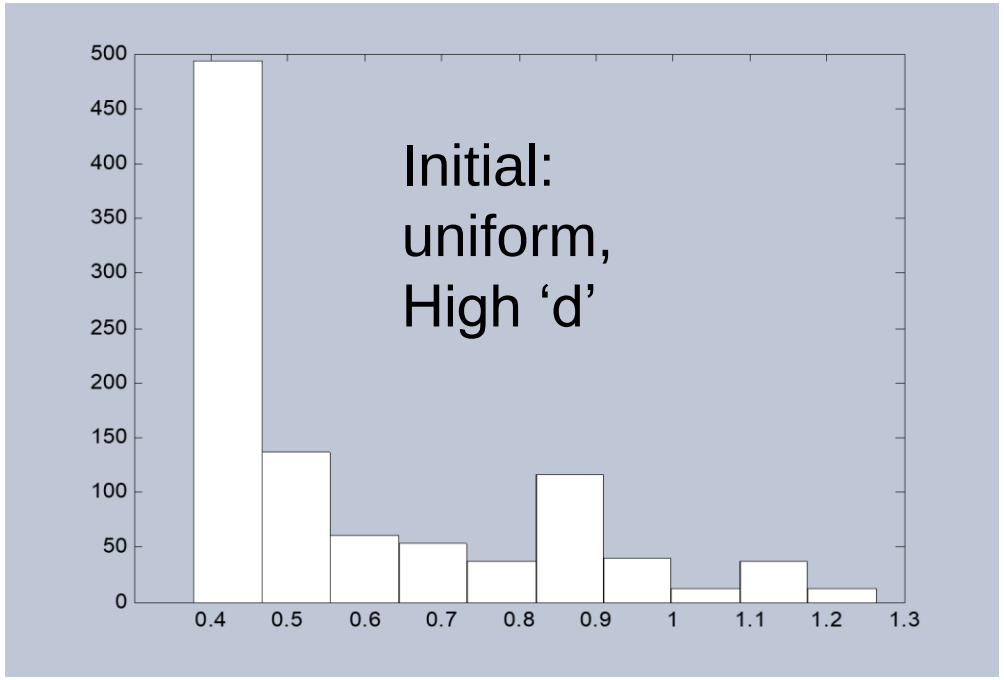

Simulation Results

Convergence test starting from two different initial distribution of inheritance

Two different initial distributions	**Kolmogorov-Smirnov test statistic**
Normal vis-à-vis Uniform	0.0164 (0.1345)
Normal vis-à-vis Single valued (below the cut-off)	0.0267 (0.5306)
Normal vis-à-vis Single valued (above cut-off)	0.0086 (0.8519)
Uniform vis-à-vis Single valued (below the cut-off)	0.0358 (0.1907)
Uniform vis-à-vis Single valued (above the cut-off)	0.0108 (0.6020)
Single valued: below cut-off vis-à-vis above the cut-off	0.0296 (0.3981)

Conclusion

- Different explanation of the source of unemployment
- Explains micro and macro findings together
- Connects inheritance (wealth) with factor market friction
- Labor market impact on long run wealth distribution