The Marriage Market, Labor Supply and Education Choice

Human Capital Formation and Family Economics Workshop

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- This paper: investigates this aspect in an explicit, theory-based model

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- This paper: estimation of a matching model of this type

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- TU context (despite strictly concave VNM utilities)

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   - ... including initial productivity (or HC) shock

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  - $\longrightarrow$ identifies the distribution of education costs

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  - ... but 'coordination failures' are possible

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$\longrightarrow$ therefore TU

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- In our context: same, plus restrictions, since
$$V_1(H_I, H_J) + V_2(H_I, H_J) = S(H_I, H_J)$$

  where $S(H_I, H_J)$ can be recovered from labor supply behavior $\longrightarrow 2 \times N$ multilogits with N^2 restrictions on the thresholds.

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- 'Long long' term: returns to education are affected; therefore possible impact on HC acquisition!

Stochastic structure

- Wage process

$$\begin{aligned} \ln w_{it} &= \ln W(\theta_i) + \delta_1 t + \delta_2 t^2 + \delta_3 t^3 + e_{it} + \epsilon_{it} \\ e_{it} &= \rho e_{it-1} + \xi_{it} \end{aligned}$$

- Preferences

$$\alpha_{it} = \alpha_0 + \alpha_1 t + \alpha_2 t^2 + \alpha_3 t^3 + \eta_i + u_{it}$$

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  - Education choices

Results: surplus

Data: 18 annual waves (1991 to 2008) of the British Household Panel Survey (BHPS)

Table 4: Economic surplus from marriage

	Women's ability and education					
Men's educ and ability	Sec (L)	HS (L)	Sec (H)	HS (H)	Univ (L)	Univ (H)
Sec (L)	85.06	148.88	189.26	189.10	197.17	245.39
HS (L)	82.61	144.33	189.53	185.97	199.87	249.21
Sec (H)	129.54	210.34	266.84	264.88	299.85	370.86
Univ (L)	101.45	176.79	241.15	232.27	268.43	338.90
HS (H)	139.01	220.91	288.21	281.00	326.74	405.43
Univ (H)	142.96	234.71	317.10	305.31	366.01	460.91

Rows and Columns ordered by male and female human capital respectively. L and H signify low and high ability respectively.

- Supermodular at the top of the distribution ... but not everywhere

Results: singles

Table 6: Proportion of singles by level of human capital.

Level of Human Capital	1	2	3	4	5	6
Women	0.11	0.08	0.14	0.39	0.07	0.21
Men	0.22	0.31	0.07	0.20	0.16	0.04

Levels of human capital in increasing order: A. Men 1: Secondary - low ability, 2: High School Low ability, 3: Secondary High ability, 4: University Low ability, 5: High School - High ability, 6: University High ability; B. Women 1: Secondary - low ability, 2: High School- Low ability, 3: Secondary High ability, 4: High School - High ability, 5: University L- Low ability, 6: University High ability.

Results: matching patterns

Table 5: Marital Matching patterns

	Women's education					
Men's educ	Sec	HS	Univ	Sec	HS	Univ
	Simulated Proportions			Data Proportions		
	Men's choices					
Sec	0.326	0.068	0.001	0.291	0.094	0.014
HS	0.158	0.124	0.027	0.156	0.126	0.032
Univ	0.007	0.048	0.049	0.019	0.044	0.053
	Simulated Proportions			Data Proportions		
	Women's choices					
Sec	0.327	0.070	0.001	0.291	0.094	0.014
HS	0.159	0.125	0.027	0.156	0.126	0.032
Univ	0.008	0.049	0.050	0.019	0.044	0.053

The numbers represent cell proportions.

Results: Sharing rule

Table 8: Sharing rule

Men's educ and ability	Women's ability and education: Sec (L)	HS (L)	Sec (H)	HS (H)	Univ (L)	Univ (H)
Sec (L)	0.833	0.365	0.523	0.164	0.248	0.163
	(0.261)	(0.114)	(0.148)	(0.080)	(0.073)	(0.040)
HS(L)	0.931	0.606	0.604	0.377	0.054	0.042
	(0.335)	(0.254)	(0.212)	(0.152)	(0.024)	(0.021)
Sec (H)	0.611	0.455	0.452	0.293	0.072	0.087
	(0.225)	(0.172)	(0.155)	(0.127)	(0.047)	(0.052)
Univ (L)	0.937	0.856	0.943	0.663	0.440	0.356
	(0.330)	(0.343)	(0.335)	(0.231)	(0.165)	(0.110)
HS (H)	0.768	0.495	0.583	0.363	0.226	0.199
	(0.252)	(0.193)	(0.188)	(0.142)	(0.037)	(0.065)
Univ (H)	0.695	0.760	0.744	0.617	0.415	0.361
	(0.330)	(0.285)	(0.262)	(0.213)	(0.136)	(0.121)

Notes: Male Share of Surplus. Asymptotic standard errors in parentheses computed using the bootstrap. Ordering of cells by male and female human capital respectively. L and H signify low and high ability respectively

Simulation: decrease in education costs

Table 9: Education distribution

	Men		women	
	baseline	low cost Univ	baseline	low cost Univ
	Distribution of education			
Sec	0.450	0.404	0.542	0.490
HS	0.400	0.368	0.331	0.309
Univ	0.150	0.227	0.128	0.202

Table 10: Changes in the matching patterns

	Women's education and ability					
Men's educ and ability	Sec (L)	HS (L)	Sec (H)	HS (H)	Univ (L)	Univ (H)
Sec (L)	-0.21	-0.21	-0.32	-0.13	-0.01	-0.01
HS (L)	-0.23	-0.07	-0.30	-0.06	0.13	0.09
Sec (H)	-0.73	-0.21	-1.10	-0.12	-0.01	0.00
Univ (L)	0.00	0.23	-0.02	0.17	0.16	0.23
HS (H)	-0.21	-0.41	-0.59	-0.32	0.20	0.27
Univ (H)	0.00	0.53	0.21	0.33	1.31	1.41

Numbers correspond to changes in the proportion of each cell. Ordering of cells by male and female human capital respectively. L and H signify low and high ability respectively

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