Social (Non-Market) Interactions

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14.663 Spring 2009

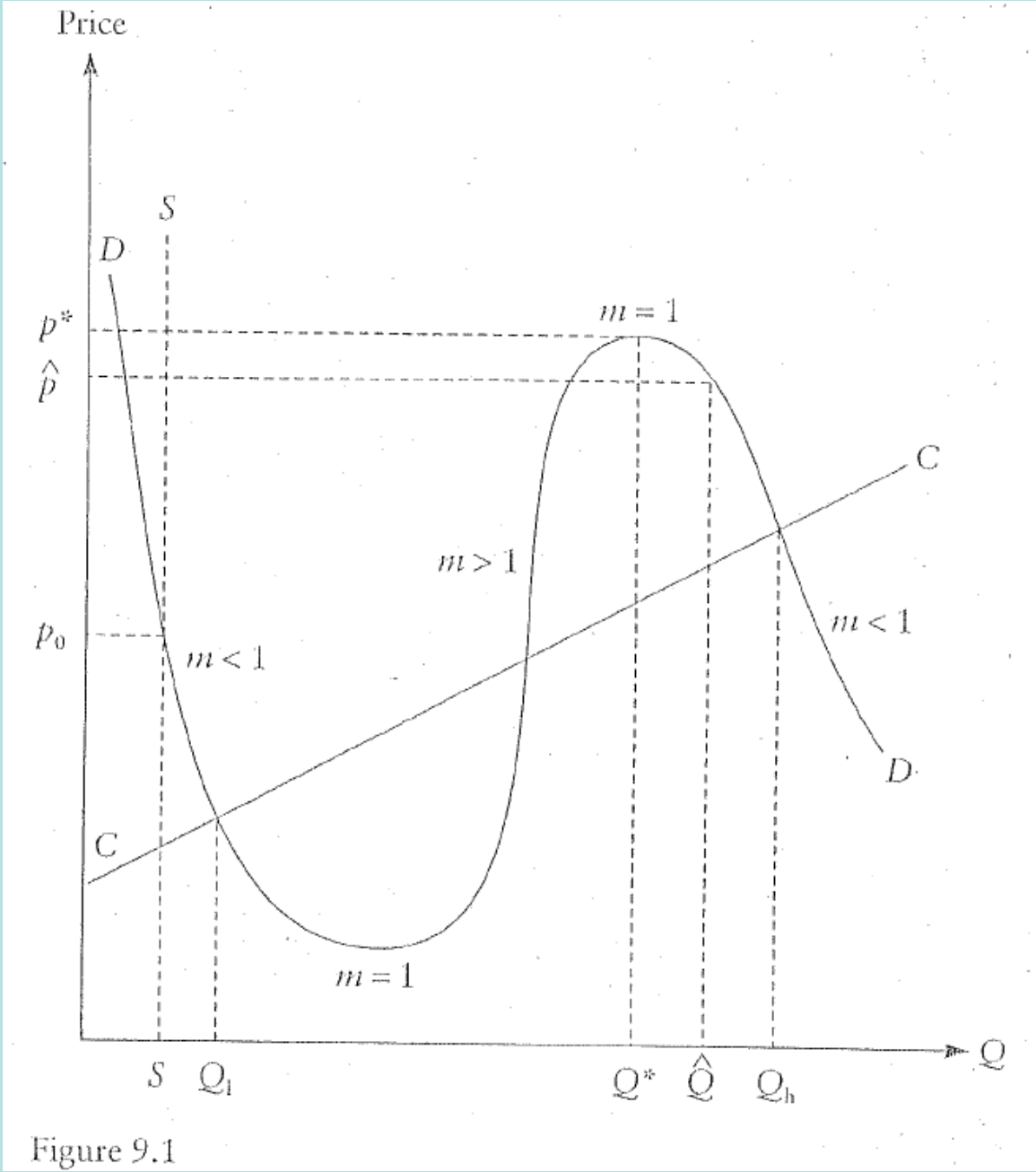


Figure 9.1

Becker and Murphy, 2000

TABLE I

DESCRIPTIVE STATISTICS, BY GROUPS

	Treated departments			
	All (group $D = 1$)	Treated (group $D = 1$, $L = 1$)	Untreated (group $D = 1$, $L = 0$)	Untreated departments (group $D = 0$)
	(1)	(2)	(3)	(4)
PANEL A: BACKGROUND CHARACTERISTICS				
TDA participation before the fair (Sept. 2000)	0.010	0.009	0.011	0.012
	(.0015)	(.0021)	(.0022)	(.0024)
Observations	4168	2039	2129	2043
Sex (fraction male)	0.398	0.400	0.396	0.418
	(.0076)	(.0109)	(.0107)	(.011)
Years of service	5.898	5.864	5.930	6.008
	(.114)	(.161)	(.16)	(.157)
Annual salary	38,547	38,807	38,297	38,213
	(304)	(438)	(422)	(416)
Age	38.3	38.4	38.2	38.7
	(.17)	(.24)	(.24)	(.24)
Observations	4126	2020	2106	2018

Duflo and Saez, 2003

TABLE I

DESCRIPTIVE STATISTICS, BY GROUPS

	Treated departments			
	All (group $D = 1$)	Treated (group $D = 1$, $L = 1$)	Untreated (group $D = 1$, $L = 0$)	Untreated departments (group $D = 0$)
	(1)	(2)	(3)	(4)
PANEL B: FAIR ATTENDANCE (REGISTRATION DATA)				
Fair attendance rate among non-TDA enrollees	0.214	0.280	0.151	0.049
	(.0064)	(.01)	(.0078)	(.0048)
Observations	4126	2020	2106	2018
Fair attendance rate for all staff employees	0.192			0.063
	(.0132)			(.0103)
Observations	6687			3311
PANEL C: TDA PARTICIPATION (ADMINISTRATIVE DATA)				
TDA participation rate after 4.5 months	0.049	0.045	0.053	0.040
	(.0035)	(.0049)	(.0051)	(.0045)
Observations	3726	1832	1894	1861
TDA participation rate after 11 months	0.088	0.089	0.088	0.075
	(.005)	(.0071)	(.007)	(.0065)
Observations	3246	1608	1638	1633

Duflo and Saez, 2003

TABLE II

REDUCED-FORM ESTIMATES (OLS)

	Dependent variable		
		TDA enrollment after	
	Fair attendance (1)	4.5 months (2)	11 months (3)
PANEL A: Average effect of department treatment			
Treated	0.166	0.0093	0.0125
Department dummy D	(.013)	(.0043)	(.0065)
Observations	6144	5587	4879
PANEL B: Effect of letter and department treatment			
Letter dummy L	0.129	−0.0066	0.0005
	(.0226)	(.0061)	(.0102)
Treated	0.102	0.0125	0.0123
Department dummy D	(.0139)	(.0054)	(.0086)
Observations	6144	5587	4879

Duflo and Saez, 2003

TABLE III

IV Estimates of Fair Attendance and Department Effects on TDA Enrollment

		Assuming no social effects			
	Assuming constant treatment effect	Effect on financial incentive compliers	Effect on social interaction compliers	OLS	Naïve IV
	(1)	(2)	(3)	(4)	(5)
PANEL A: Dependent variable: TDA participation after 4.5 months					
Fair attendance	−0.046	−0.050	0.117	0.016	−0.002
	(.0431)	(.0429)	(.0465)	(.0109)	(.0255)
Treated department	0.018				
	(.0092)				
Observations	5587	3726	3755	1832	5587
PANEL B: Dependent variable: TDA participation after 11 months					
Fair attendance	0.003	0.005	0.131	0.049	0.032
	(.0681)	(.0685)	(.0826)	(.018)	(.0397)
Treated department	0.012				
	(.0147)				
Observations	4879	3246	3271	1608	4879
Sample	Entire sample	Treated departments	No letter only	Letter only	Entire sample

Duflo and Saez, 2003

g	$\text{Prob}(s_1 = 0)$	$\text{Corr}(s_1, s_2)$	$\text{Corr}(s_1, s_3)$
	0.132	–	–
	0.083	0.041	–
	0.063	0.025	0.019
	0.050	0.025	0.025

FIGURE 2. CORRELATION AND NETWORK STRUCTURE I

- a = 0.1, b = 0.015

Calvo-Armengol and Jackson, 2004

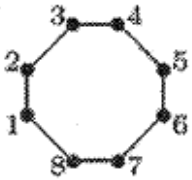
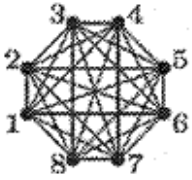
g	$\text{Prob}(s_1 = 0)$	$\text{Corr}(s_1, s_2)$	$\text{Corr}(s_1, s_3)$	$\text{Corr}(s_1, s_4)$	$\text{Corr}(s_1, s_5)$
	0.060	0.023	0.003	0.001	–
	0.030	0.014	0.014	0.014	0.014

FIGURE 3. CORRELATION AND NETWORK STRUCTURE II

- a = 0.1, b = 0.015

Calvo-Armengol and Jackson, 2004

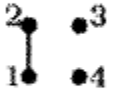
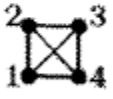
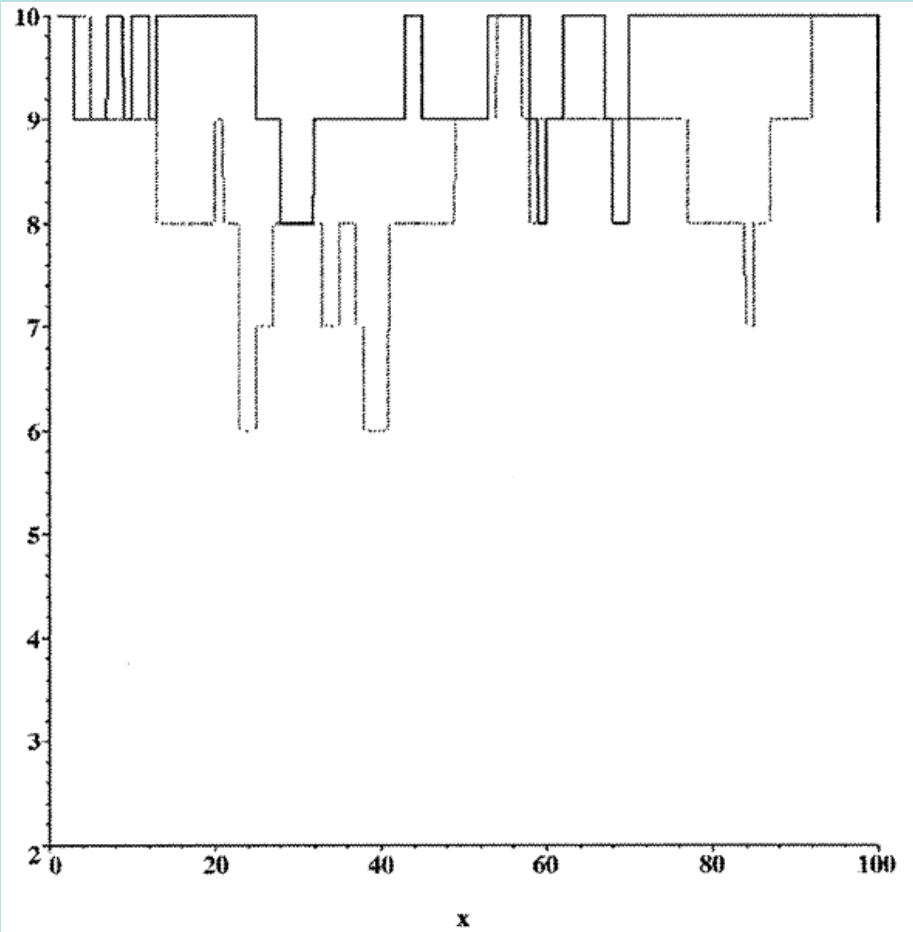
g	1 period	2 periods	10 periods	limit
	0.099	0.099	0.099	0.099
	0.176	0.175	0.170	0.099
	0.305	0.300	0.278	0.099

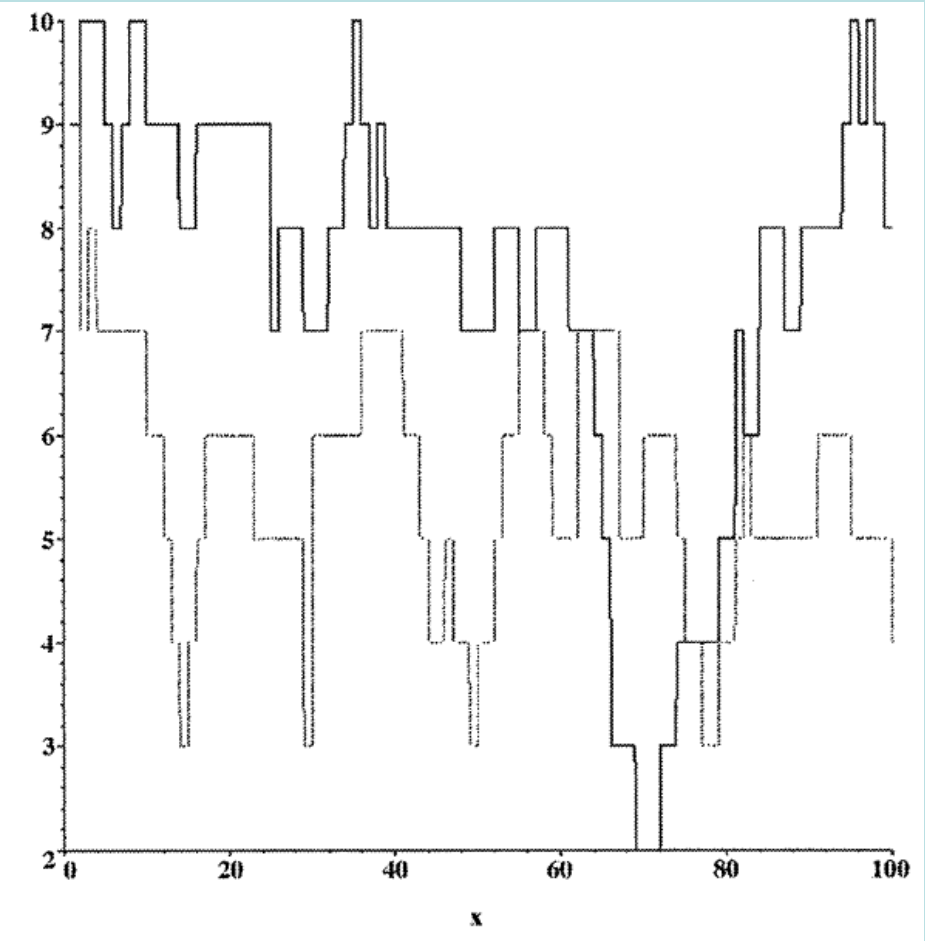
FIGURE 6. DURATION DEPENDENCE

- Probably employed in *t+1* given not employed for prior *t* periods.
- a = 0.1, b = 0.015

Calvo-Armengol and Jackson, 2004



Aggregate employment over time for a=0.100 and b=0.015



Aggregate employment over time for a=0.050 and b=0.050

- Solid line = Network with connections
- Dashed line = Empty network

Calvo-Armengol and Jackson, 2004

TABLE 2—DROPOUTS AND CONTAGION—STARTING EMPLOYED

$s_0 = (1, \ldots, 1)$	$n = 1$	$n = 2$	$n = 4$	$n = 8$	$n = 16$	$n = 32$	$n \to \infty$
Drop-out percentage	58.3	44.5	26.2	14.7	9.7	7.8	6.8
Percentage due to contagion	0	8.8	5.0	1.4	0.4	0.2	0

TABLE 3—DROPOUTS AND CONTAGION—STARTING UNEMPLOYED

$s_0 = (0, \ldots, 0)$	$n = 1$	$n = 2$	$n = 4$	$n = 8$	$n = 16$	$n = 32$	$n \to \infty$
Drop-out percentage	100	97.8	92.9	82.2	68.0	60.6	56.8
Percentage due to contagion	0	12.1	21.7	18.9	8.7	3.0	0

- $a = 0.1$, $b = 0.015$
- $w = 1$, $c_i \in U[0.8, 1]$
- Discount factor is 0.9

Calvo-Armengol and Jackson, 2004

TABLE 6—DEPENDENCE OF DROPOUTS AND CONTAGION ON ARRIVAL AND BREAKUP RATES

Scaled by a and b	1	3	5	7	9
	0.05, 0.015	0.15, 0.045	0.25, 0.075	0.35, 0.105	0.45, 0.135
$c_i \sim [0.8, 1]$	69:27	76:27	83:26	88:24	96:20
$c_i \sim [0.6, 1]$	24:3	28:3	34:5	37:5	42:5

- Top row: a, b
- Second and third rows: dropout rate and amount attributable to
- Note that a/(a+b) is constant

Calvo-Armengol and Jackson, 2004