

Entrepreneurship, Saving, and Social Mobility

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Review of Economic Dynamics

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4/03/2011

Motivation

- ▶ Empirical studies of income and wealth distribution show that household wealth is highly concentrated and substantially more concentrated than the distribution of income.
- ▶ The purpose of this paper is to explore the role of entrepreneurship with reference to this issue.
- ▶ Address 2 questions to answer it:
 - ▶ Is entrepreneurship relevant in characterizing the different accumulation behavior?
 - ▶ If it is relevant, Is it quantitatively important to generate higher concentration of wealth?
- ▶ A standard model with uninsurable idiosyncratic shocks to labor earnings and borrowing constraints, underpredicts the degree of wealth inequality specially the one in the upper tail of the distribution. This study introduce another incentive to save.

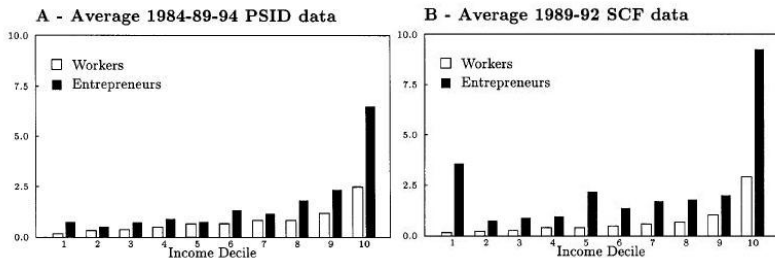
Fact I: Distribution of Wealth and Income

TABLE I
Distribution of U.S. Household Wealth and Income

	Top percentiles					Gini index	Negative and zero
	1%	5%	10%	20%	30%		
Wealth							
PSID 1984	30.0	49.2	61.7	76.6	85.8	0.76	10.6
PSID 1989	25.4	47.0	60.9	77.1	86.9	0.76	12.3
PSID 1994	22.6	44.8	59.1	75.9	85.9	0.75	12.9
SCF 1989	35.7	58.0	70.1	83.7	91.8	0.86	11.7
SCF 1992	29.5	53.5	66.1	79.5	87.6	0.78	6.9
Income							
PSID 1984	7.5	19.4	30.2	46.9	60.0	0.43	0.5
PSID 1989	8.1	20.6	31.6	48.2	61.0	0.45	0.5
PSID 1992	7.2	19.9	31.1	48.4	61.7	0.45	0.7
SCF 1988	16.9	31.7	42.3	57.2	68.8	0.54	0.7
SCF 1991	18.5	34.4	45.1	59.9	70.9	0.57	1.2

Fact I: Distribution of Wealth and Income

Entrepreneurs hold more wealth relative to income than what workers do.



Fact II: Transitions for net Family Wealth

TABLE II
Five-Year Transition Matrices for Net Family Wealth

(A) 1984–1989 transition

	Class I	Class II	Class III	Class I	Class II	Class III
	Staying workers			Switching workers		
Class I	0.81	0.17	0.02	0.52	0.31	0.17
Class II	0.22	0.65	0.13	0.12	0.51	0.37
Class III	0.02	0.22	0.76	0.00	0.20	0.80
	Switching entrepreneurs			Staying entrepreneurs		
Class I	0.81	0.14	0.05	0.25	0.49	0.26
Class II	0.23	0.58	0.19	0.17	0.37	0.46
Class III	0.01	0.21	0.78	0.02	0.09	0.89

Fact III: Entrance and Exit rates

TABLE IV
Exit Rates from Entrepreneurship (Top Section) and Entrance Rates to Entrepreneurship
(Bottom Section)

	Exit rate	No. of families ^a
(a) Business owners		
All business families	24.2	522
With one year of entrepreneurial tenure	44.7	151
With two years of entrepreneurial tenure	30.8	80
With three or more years of entr. tenure	13.4	291
(b) Self-employed		
All business families	13.6	384
With one year of entrepreneurial tenure	35.2	75
With two years of entrepreneurial tenure	19.1	48
With three or more years of entr. tenure	7.2	261
	Entrance rate	No. of families ^a
(a) Business owners		
All worker families	3.7	4722
Without entrepreneurial experience	2.6	4506
With entrepreneurial experience	23.1	216
(b) Self-employed		
All worker families	2.9	2837
Without entrepreneurial experience	2.0	2556
With entrepreneurial experience	27.2	281

Note. Annual values averaged over the sample period 1973–1992.

Literature Review

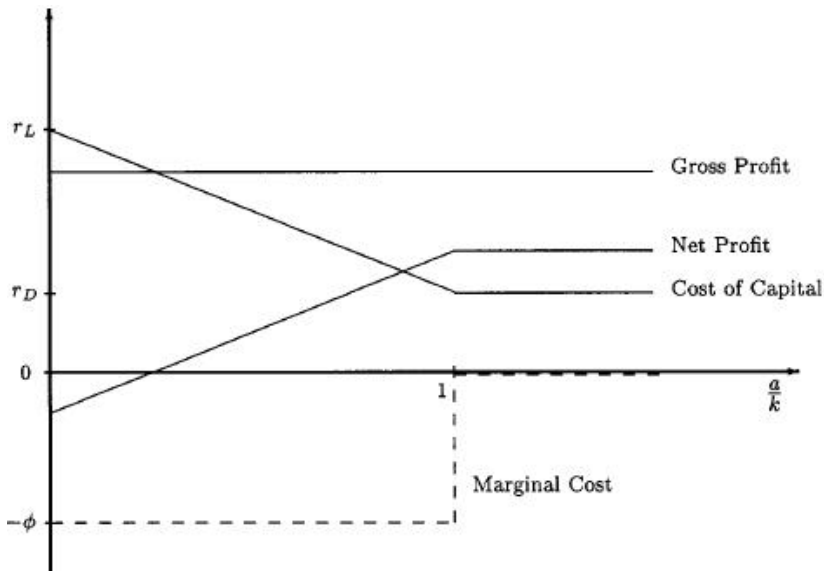
- ▶ Empirical Studies documenting intergenerational mobility: Behrman and Taubman, 1990; Solon, 1992; Zimmerman, 1992.
- ▶ Individual mobility: Duncan and Morgan, 1984; Sawhill and Condon, 1992; Hungerford, 1993.
- ▶ Theoretical approaches: Benarjee and Newman, 1991 and 1993; Aghion and Bolton, 1997. This studies examine intergenerational mobility.
- ▶ This study is interested in the mobility properties experienced by different economic agents within one generation.

Environment

- ▶ Continuum of infinitely lived households.
- ▶ Each period they decide whether to run a business or to be workers.
- ▶ There are 3 sectors: Household, production (corporate and non-corporate), and Intermediation.
- ▶ Households maximize the expected lifetime utility.
- ▶ Households are endowed with efficiency unit of labor ϵ . The transition matrix for this ability is given by $\Gamma(\epsilon'/\epsilon)$.
- ▶ Households can run a business implementing an idea κ drawn at the end of the period. The probability distribution of κ is given by $P_k(\kappa)$. The dependence of P on k formalizes the idea of a learning process. Each idea κ implies a level of capital k .

- ▶ There are 2 types of production units: Large firms ($Y_c = K_c^\theta N_c^{1-\theta}$) and small firms run by entrepreneurs ($y = \eta^\nu k^\nu n^{1-\nu}$ where n is the number of efficiency units employed and η is an idiosyncratic technology shock with transition $Q_k(\eta'/\eta)$).
- ▶ The capital should be invested in the previous period while the employment decision is made after observing η . Assume that the entrepreneur can always run the project of the previous period
- ▶ 2 things characterize the small firms: Entrepreneurial Risk and strictness of the financial constraint.
- ▶ The intermediation sector receive deposits (pay r_D) and make loans to households asking for funds ($r_l = \phi + r_D$ where ϕ is the cost of lending to households) and to the corporate sector (r_D).
- ▶ Debt level for a household is given by

$$DR_{min} = \max_n \{ \eta_{min}^\nu k^\nu n^{1-\nu} - nw \} + \epsilon w.$$
 Assume that $k > a$



Equilibrium

A Steady State competitive equilibrium for the economy consists of: (a) Value functions v and \tilde{v} and decisions functions n , a' and k' ; (b) interest rates r_D and r_L and a wage w (c) Capital and Labor demands from the non-corporate and the corporate sector; (d) a function $\Psi(\mu)$ mapping the space of households' distributions μ into the next period distribution and an invariant distribution μ^* ; such that:

- ▶ The decision rules solve the agent problem with v and \tilde{v} as associated value functions.
- ▶ Prices are competitive
- ▶ Capital and Labor market clear
- ▶ The distribution $\Psi(\mu)$ is a fixed point of the mapping Ψ

- ▶ ϵ is assumed to follow a 4 state Markov process.
- ▶ Replaced rate of the current generation is set to $1/35$
- ▶ The labor ability of a generation is a 2 state Markov process, and each generation can be of 2 types.
- ▶ The probability of being the same type as your previous generation is 0.75
- ▶ To estimate the correlation of earnings and the variance he runs a regression of current earnings in previous earnings and a cubic polynomial of age.
- ▶ To calibrate the size of businesses, he uses data on the households' distribution of business wealth and set the relative size of the different projects to $k_2/k_1 = 10$ and $k_3/k_1 = 100$.
- ▶ The technology shock is assumed to follow a 2 state markov process with the first element being an absorbing state. This is calibrated to match exit rates of businesses

Results

- ▶ Sizeable differences in the ratio of wealth to income between entrepreneurs and workers in all income groups. Consistent with the evidence for the US.
- ▶ The model also does well in replicating the proportion of workers and entrepreneurs in each wealth class.
- ▶ The model also does good in general in replicating the transitions matrices.
- ▶ The model has the ability of generating the concentration of wealth observed in the US economy.
- ▶ He runs the model without entrepreneurs and generates very little wealth concentration in the top 1% of agents meaning that the entrepreneurial channel is very important to explain this.

Wealth-to-Income Ratios for Workers and Entrepreneurs

	Workers		Entrepreneurs	
	% of housch.	Wea.-inc. ratio	% of housch.	Wea.-inc. ratio
Model economy				
Income Class I	31.0	1.32	2.3	12.51
Income Class II	30.1	2.41	3.3	2.48
Income Class III	26.9	3.04	6.4	5.36
Total	88.0	2.68	12.0	5.15
PSID data				
Income Class I	31.4	3.74	2.0	11.68
Income Class II	29.7	2.82	3.6	4.52
Income Class III	25.2	2.71	8.1	5.90
Total	86.3	2.86	13.7	5.83

Distribution of Agents among Wealth Classes

	Model economy		PSID data	
	% of workers	% of entrepr.	% of workers	% of entrepr.
Wealth Class I	31.6	1.7	31.6	1.8
Wealth Class II	29.4	3.9	29.8	3.5
Wealth Class III	27.0	6.4	24.9	8.4
Total	88.0	12.0	86.4	13.6
Neg. & zero	15.5	0.6	11.3	0.6

(A) 1984–1989 transition

	Class I	Class II	Class III	Class I	Class II	Class III
	Staying workers			Switching workers		
Class I	0.81	0.17	0.02	0.52	0.31	0.17
Class II	0.22	0.65	0.13	0.12	0.51	0.37
Class III	0.02	0.22	0.76	0.00	0.20	0.80
	Switching entrepreneurs			Staying entrepreneurs		
Class I	0.81	0.14	0.05	0.25	0.49	0.26
Class II	0.23	0.58	0.19	0.17	0.37	0.46
Class III	0.01	0.21	0.78	0.02	0.09	0.89
Model						
	Class I	Class II	Class III	Class I	Class II	Class III
	Staying workers			Switching workers		
Class I	0.81	0.19	0.00	0.61	0.38	0.01
Class II	0.22	0.64	0.14	0.13	0.71	0.16
Class III	0.00	0.18	0.82	0.00	0.15	0.85
	Switching entrepreneurs			Staying entrepreneurs		
Class I	0.77	0.23	0.00	0.40	0.58	0.02
Class II	0.23	0.66	0.11	0.03	0.64	0.33
Class III	0.00	0.15	0.85	0.00	0.02	0.98

Percentage of Total Wealth and Income Held by Percentile Groups and Gini Indexes

	Top percentiles					Gini index	Zero & neg.
	1%	5%	10%	20%	30%		
Wealth							
Model economy	24.9	45.8	57.1	73.2	84.0	0.74	15.9
PSID data	26.0	47.0	60.6	76.5	86.2	0.76	11.9
Only workers	4.2	15.3	26.2	44.5	58.3	0.55	10.1
Income							
Model economy	7.9	18.2	28.5	46.8	64.0	0.45	0.1
PSID data	7.6	19.9	30.9	47.8	60.9	0.44	0.6
Only workers	3.8	13.4	24.4	45.7	60.2	0.42	0.0

Conclusions

- ▶ Built a model with entrepreneurship to match the wealth concentration in the US
- ▶ The model does good in matching wealth concentration, transition within income and wealth classes, and percentage of people in each income and wealth classes that are workers and entrepreneurs.
- ▶ If we cut the entrepreneurial channel we can not generate the big wealth concentration observed in the US data.