Wealth Distribution: Entrepreneurship

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Introduction

The standard Huggett (1996) life-cycle model has trouble generating enough rich households.

One reason: the earnings of the rich are not high enough.

In the data, the rich are often business owners.

Can a life-cycle model with self-employment opportunities account for wealth concentration?

Data: Definitions

What is an entrepreneur?

Possible definitions:

- self employed
- owns a business
- owns and runs a business

According to either definition, about 13% of households are entrepreneurs in each year.

Many rich are entrepreneurs

TABLE 3
Fraction (%) of Entrepreneurs (According to Various Definitions) in a Given Wealth Percentile of the Overall U.S. Wealth Distribution

	Wealth Percentile, Top			
	1%	5%	10%	20%
Business owners or self-employed	81	68	54	39
All business owners	76	62	49	36
Active business owners	65	51	42	30
Self-employed	62	47	38	26
Self-employed business owners	54	39	32	22

Source: Cagetti and Nardi (2006)

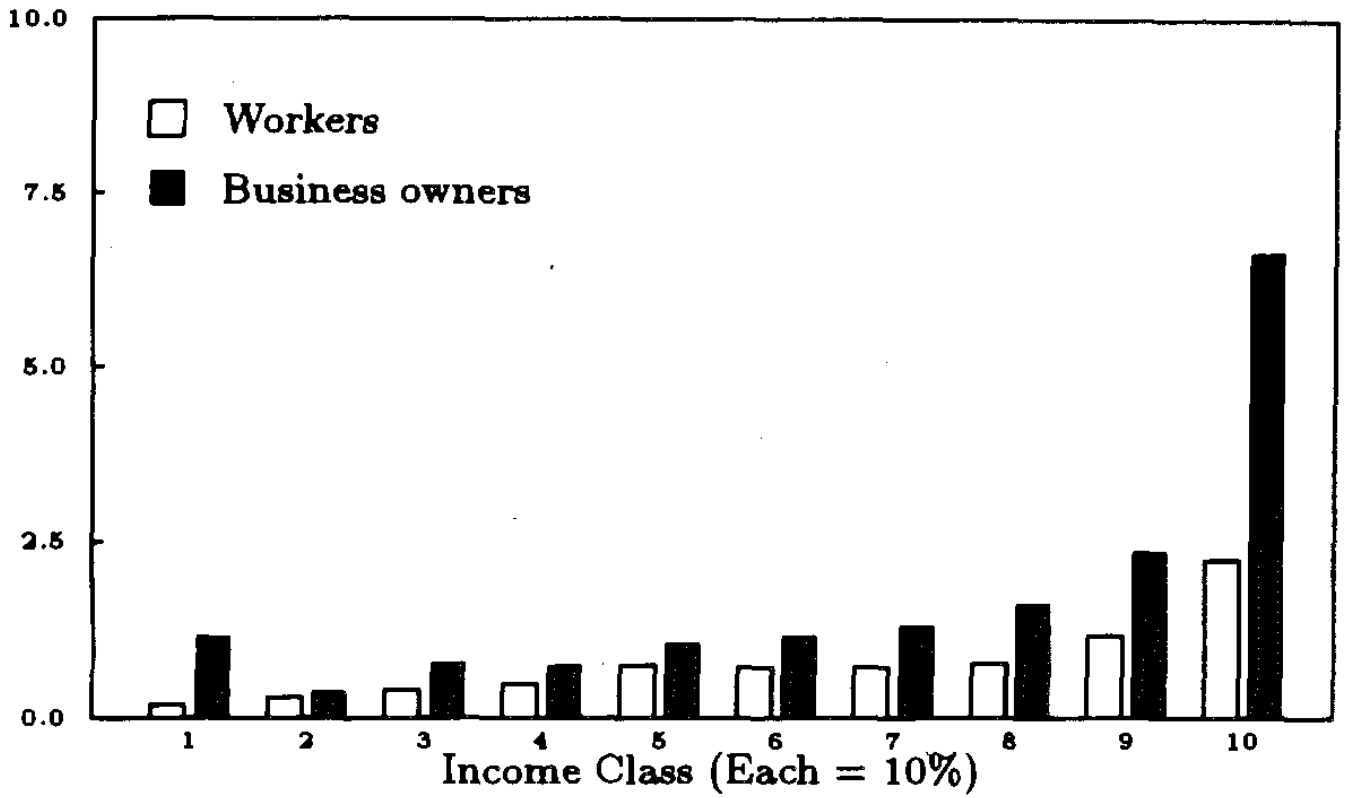
Entrepreneurs are rich on average

TABLE 4
MEDIAN AND MEAN NET WORTH (in Thousands of Dollars) FOR VARIOUS GROUPS OF PEOPLE

	Median	Mean
Whole population	47	189
Business owners or self-employed	172	599
All business owners	205	695
Business owners but not active management	293	768
Business owners not self-employed	179	470
All self-employed	169	665
Self-employed (active) business owners	265	829
Self-employed and not business owners	36	224

Source: Cagetti and Nardi (2006)

Wealth distribution among entrepreneurs



Source: Quadrini (1999)

Many entrepreneurs are not rich (though that depends to some extent on the definition of entrepreurship)

Data challenges

Lack of panel data.

Cannot answer:

- Are the rich rich because they are entrepreneurs?
- Or are the rich entrepreneurs because they are rich?
- What are the sources of lifetime income for the rich?
- Are a few people entrepreneurs most of their lives?
- Or are many people entrepreneurs for short spells?

A benchmark model

Cagetti and Nardi (2006)

- much of the literature consists of minor variations of this model
- the original model is Quadrini (1999)

Framework:

- A life-cycle model with stochastic ageing and intended bequests.
- Self-employment opportunities arrive at random.
- In each period, households decide whether to be worker or entrepreneur.
- Borrowing constraints limit investment in entrepreneurial opportunities.

Households

Two life phases: work and retirement.

- Stochastic transition between phases

Dying agents are replaced by their children.

- Likely overstates the role of inheritances.

Timing within periods

Enter the period with wealth a_t.

Draw a labor endowment y_t and a self-employment productivity θ_t.

Decide whether to be a worker or an entrepreneur.

Choose consumption c_t and saving a_{t+1}.

Workers face standard consumption / saving choice.

Entrepreneurs

Use own assets and loans to invest k.

Immediately receive output

$$g(k,\theta) = (1-\delta)k + \theta k^{\nu} \tag{1}$$

No risk.

Borrowing constraints

Entrepreneurs can run off with part of their output.

They become workers next period.

This implies:

1. entrepreneurs with more wealth can borrow more
2. high earning workers can borrow less

Entrepreneurs have an incentive to save.

Operating at efficient scale requires rich entrepreneurs.

Corporate sector

Representative firm with standard technology

$$F(K_c, L_c) = A K_c^{\alpha} L_c^{1-\alpha} \tag{2}$$

No direct interaction with startup sector (entrepreneurs).

Implication:

- Taxing entrepreneurs has little effect on most of the economy.

Calibration

Standard choices for preferences, labor productivities, etc.

Self-employment productivity is either 0 or θ.

- Implications: **all** self-employed are rich (very different from data)

Six remaining parameters: $\beta, \theta, P_\theta, \nu, f$ are chosen to match:

- fraction of population self-employed (P_θ),
- length of self-employment spells (P_θ),
- K/Y (β) and K_C/K (θ, ν)
- fraction of output earned by entrepreneurs (θ, ν)
- aggregate bequest flows (which parameter pins that down?)

Remarks

Calibration of bequests is, as usual, data free.

Entrepreneurship is "nearly exogenous."

- With only 1 value for θ and with strong persistence of θ, households will almost always choose self-employment when possible.

Households are very impatient: $\beta = 0.87$.

- Intuition: relative to the basic life-cycle model, households save more (b/c of the possibility of future self-employment).
- But workers hold less wealth than in basic life-cycle model.

Results

The model accounts for the cross-sectional wealth distribution.

TABLE 6
COMPARING DATA AND MODELS WITH AND WITHOUT ENTREPRENEURS

	CAPITAL-OUTPUT RATIO	WEALTH GINI	ENTREPRENEURS	PERCENTAGE WEALTH IN TOP			
				1%	5%	20%	40%
U.S. data	3.0	.8	7.55%	30	54	81	94
Baseline model without entrepreneurs	3.0	.6	.0%	4	20	58	95
Baseline model with entrepreneurs	3.0	.8	7.50%	31	60	83	94

Results are robust against relaxation of altruism and borrowing constraints.

Entrepreneurs have high saving rates

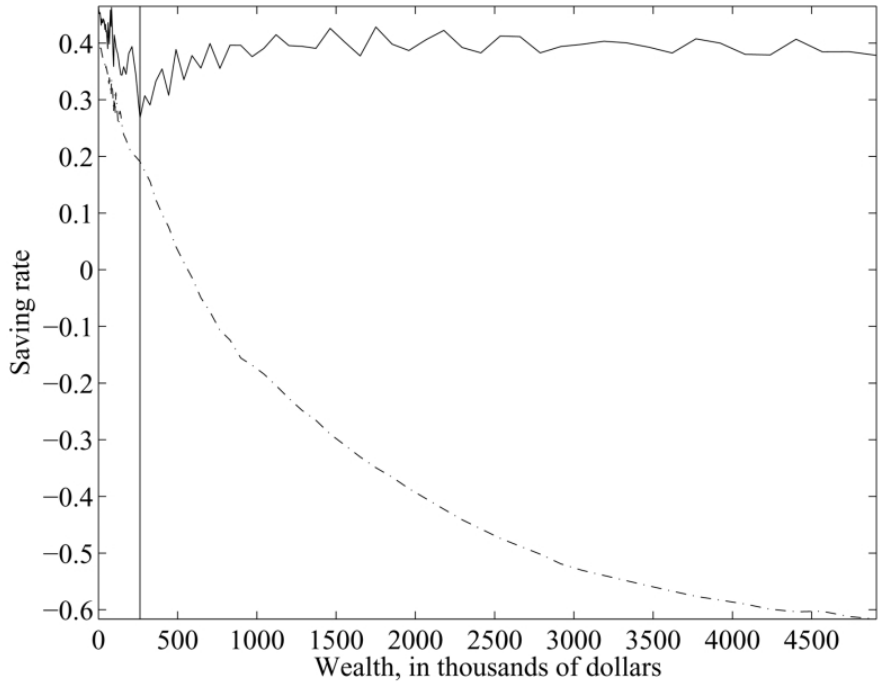


FIG. 5.—Saving rate for highest-ability workers. Solid line: those with high entrepreneurial ability; dash-dot line: those with no entrepreneurial ability; vertical line: asset level at which high–entrepreneurial ability individuals enter entrepreneurship.

This is key for generating high wealth concentration: the rich must also save a lot.

Intuition:

- Borrowing constraint raises the return to capital.
- Self-employment state is transitory.

Open Questions

1. Does the model get the wealth distribution among workers / among self-employed?
   - 1.1 It looks like all model self-employed are rich. Not true in the data.
   - 1.2 Are there any wealthy workers (managers, lawyers, ...)?
2. Is the correlation between inheritance and wealth too high?
3. What fraction of wealth is actually invested in businesses? In Herranz et al. (2015) the median is only 1/5.
4. Does the rate of return match up with data? (Moskowitz and Vissing-Jørgensen, 2002)
5. More data on the life-cycle of entrepreneurs.

Does this literature wildly overstate the role of entrepreneurs and bequests?

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