Entrepreneurship and the American dream: How far does the upward mobility ladder reach?

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March 23, 2018

National Bureau of Economic Research

Productivity Innovation and Entrepreneurship

Motivation

Insight into the correlates of household wealth and entrepreneurship is crucial to understanding:

- Sources of economic mobility in the US
- Factors that contribute to inequality in the US
- The process via which "creative destruction" has occurred and who can/ has engaged and survived?
  - "Demand side" - on the margin what policies induce more entrepreneurship (taxes, subsidized capital, bankruptcy laws)?
  - "Supply side" - how to increase broad access to long-term entrepreneurship?

Entrepreneurship correlates to current wealth

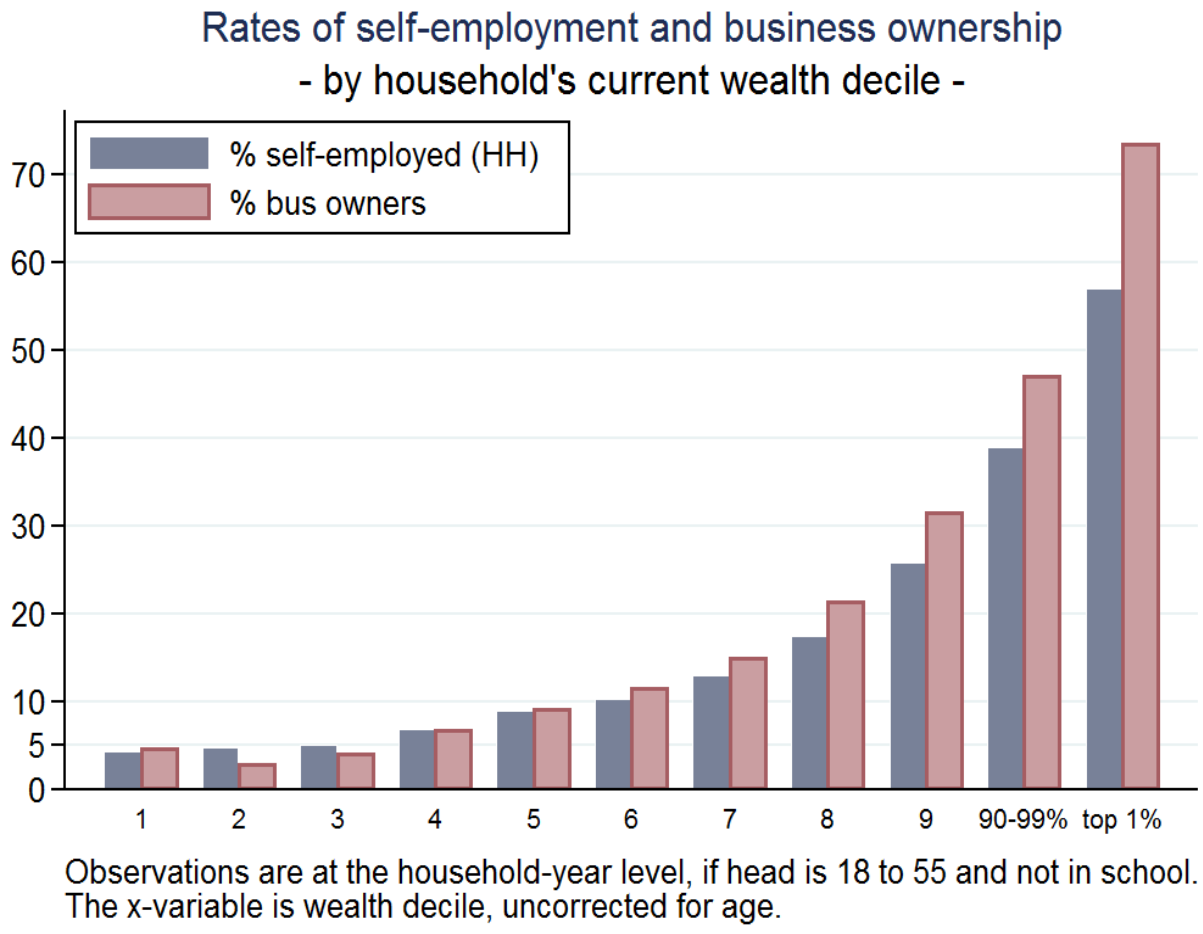


Figure: Cross-sectional snapshot of entrepreneurial activity by (current) wealth, PSID

In this paper

We present a set of stylized facts on the correlates of long term self-employment/ business ownership, and household wealth accumulation and intergenerational mobility.

Specifically we look at (in the US):

- Whether entrepreneurial households build more wealth.
- What fraction of wealth variation is explained by entrepreneurship.
- Whether this has contributed to aggregate mobility.
- The characteristics of households that engage in self-employment/ business ownership.

Related work

- Economic mobility in the US (Salon 1992; Mazumder 2005; Charles and Hurst 2003; Chetty et al 2014)
- Access - do the best and brightest access this avenue (à la invention or other high return employment)? (Bell et al 2016, Celik 2015)
- Implications for talent allocation and occupational choice models? (Roy model, Hsieh and Klenow 2009, Hsieh et al 2013, Bell et al 2016)
- Previous work documenting mobility (or inequality) through the lens of entrepreneurship is sparse (Quadrini 2000; Holtz Eakin et al 2000; Fairlie 2004)

Our primary empirical strategies

- We use data from the Panel Study of Income Dynamics PSID from 1968 - 2013, and:
  - Compare children's wealth when they are middle aged to parents at the same point - i.e. intergenerational mobility.
  - We explore transition probabilities, multivariate regressions of wealth outcomes, conduct an r-square decomposition, rank-rank and log wealth elasticities, the determinants of participation in entrepreneurship.
  - Measurement focuses on both the intensive and extensive margins of self-employment, incorporated and unincorporated business ownership.

Correlation with outcomes along both the extensive and intensive margins

Individuals in higher wealth deciles are more likely to have been self-employed or business owners, and to have done so for longer than those who amassed less wealth.

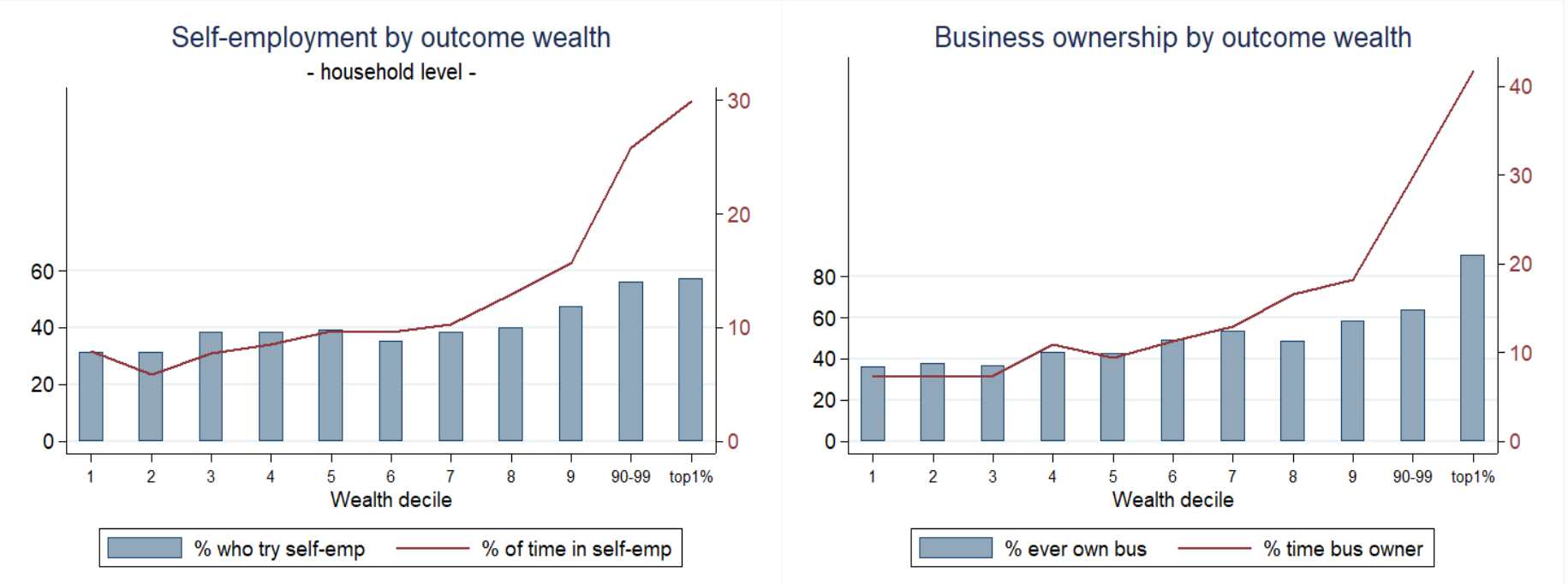


Figure: Youth self-employment and business ownership by outcome wealth

We find I

- **Do entrepreneurial households build wealth in ways that are different from others?**

  - **YES**

  - Transition probabilities as well as wealth outcome regressions (rank or log) show that entrepreneurship, especially incorporated business ownership, does indeed allow for substantial wealth accumulation. ◂ rank regs ◂ trans

We find II

- **BUT - ACCESS TO THIS CHANNEL IS FAR FROM UNIFORM.**
  - Bottom 60 percent have 1-in-6 odds of incorporated business ownership while top decile has 1-in-2 odds.
  - Households that land in the top quintile are unlikely to come from the bottom, be it through incorporated business ownership or otherwise (1 in 13 vs 1 in 14).
  - Whereas the odds of having equally wealthy parents as oneself are in fact significantly higher for the business owners (1-in-2 vs 1-in-3).
  - Implies that, even though business ownership radically increases some poor household's chances of moving up, it may play an even bigger part in keeping wealthy households at the top

◂ figure

We find III

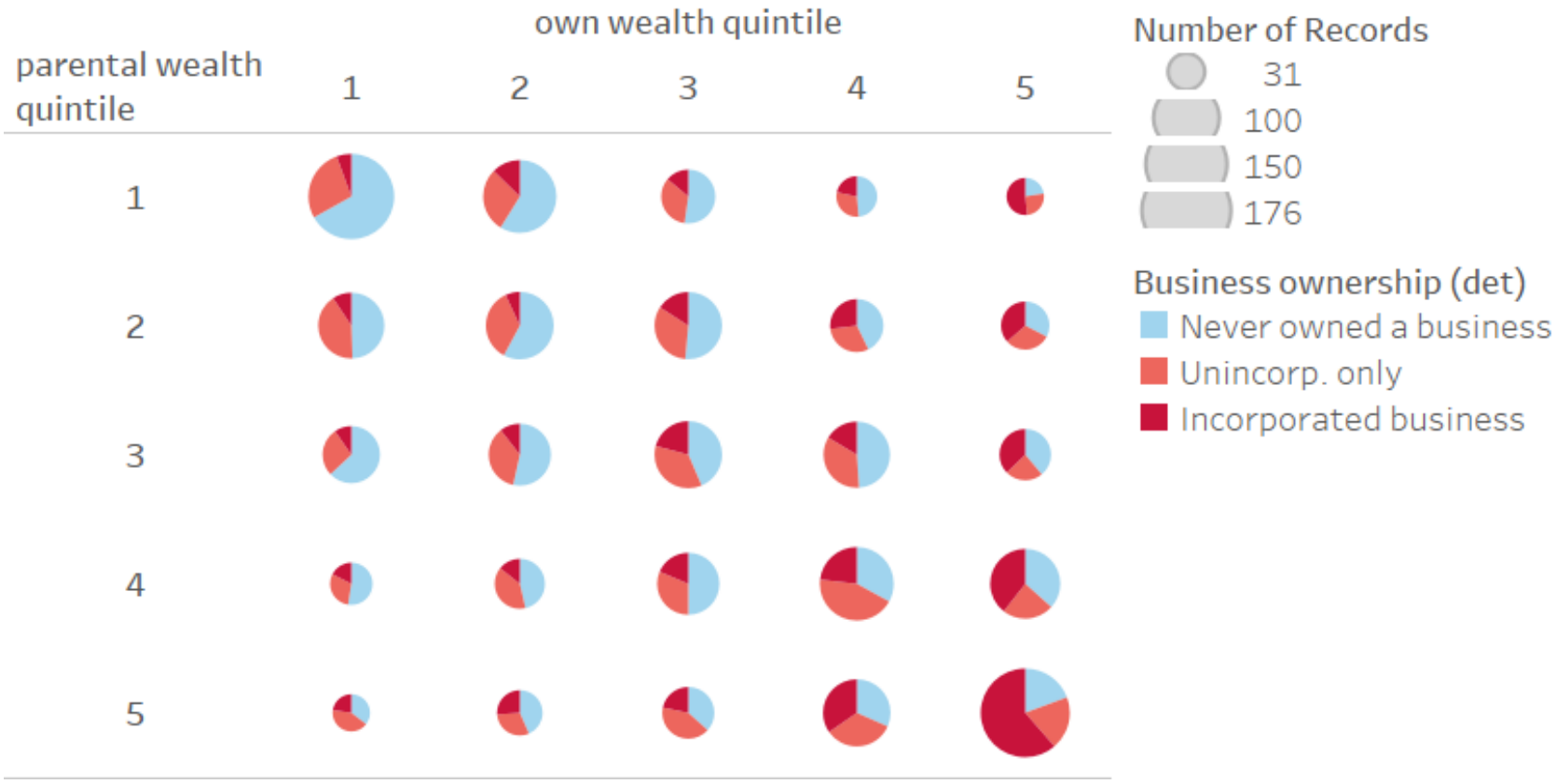


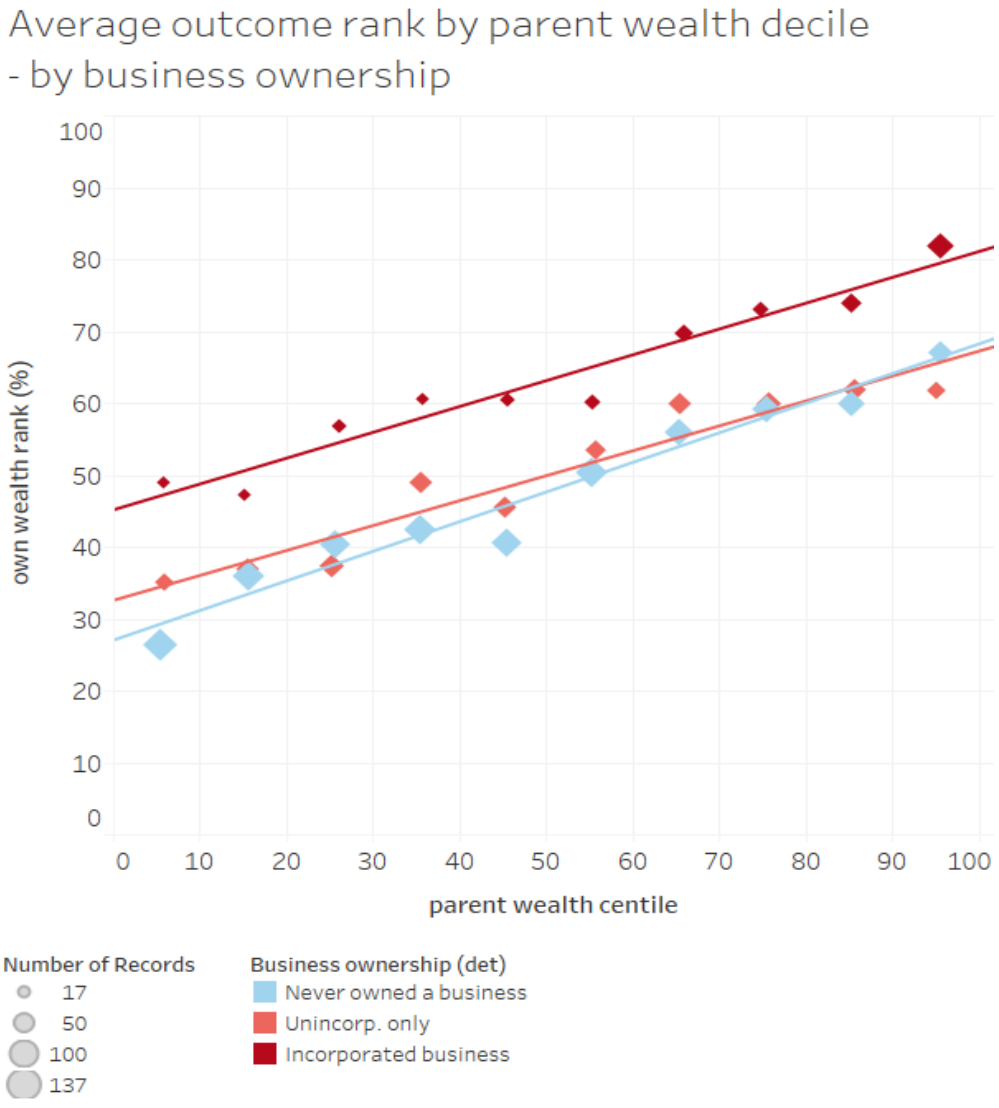
Figure: Density of business owners in the joint wealth distribution

We find IV

- **Does this make a difference in aggregate mobility and inequality?**
  - **NOT QUITE**
  - Business ownership accounts for only a very small fraction of overall variation in outcomes. reg
  - The sub-sample of business owners is better off than that of non-business owners, but not more internally mobile. reg
  - Since there is positive selection by wealth in the business owners sample and this sample has positive absolute gains, the overall implied effect is to decrease churn.

We find V

Higher absolute but not relative mobility among entrepreneurs

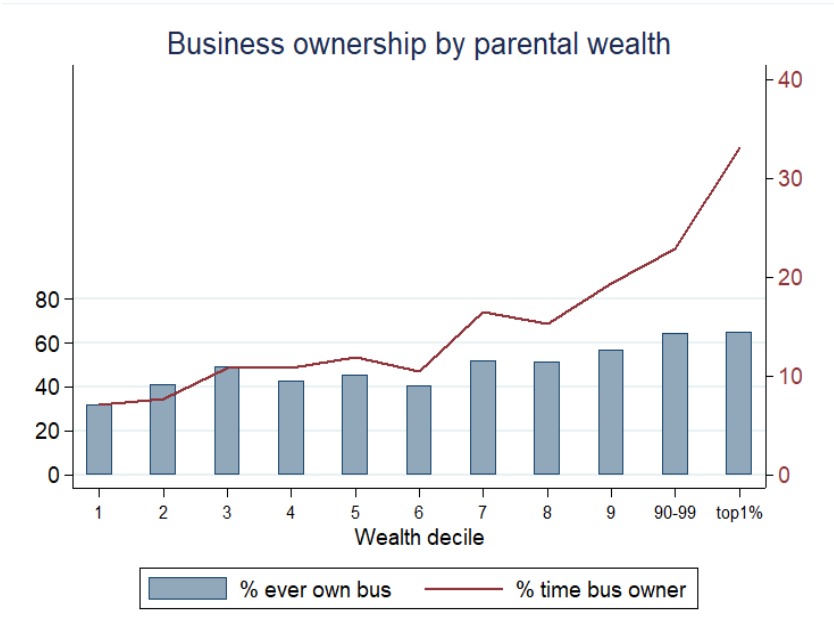


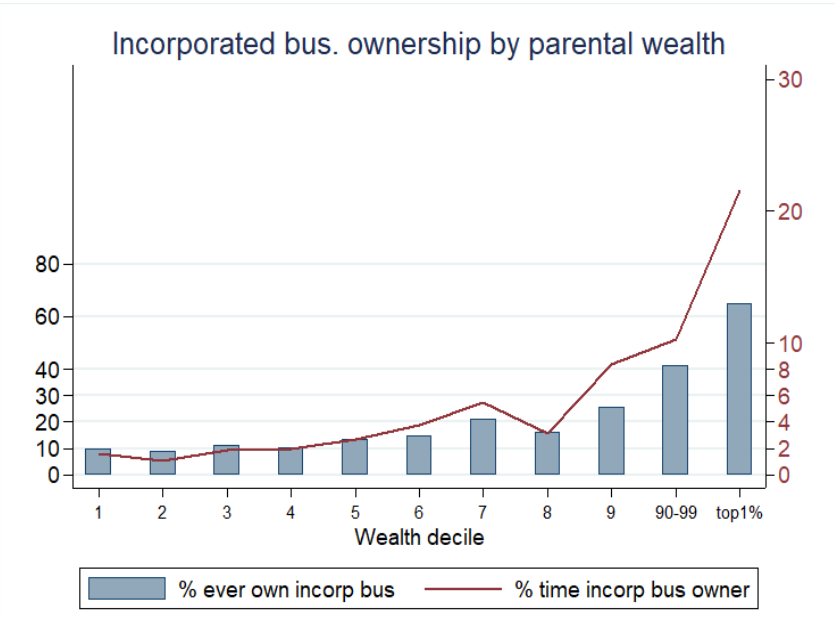
We find VI

- **Who then are those most likely to avail of this avenue of wealth building?** reg
  - Children whose parents had spent more time in entrepreneurship
  - Even controlling for observables and parental entrepreneurship, coming from very wealthy parents remains predictive of (incorporated) business ownership.
  - The magnitude of the effects of parental entrepreneurship and high wealth far exceed that of education

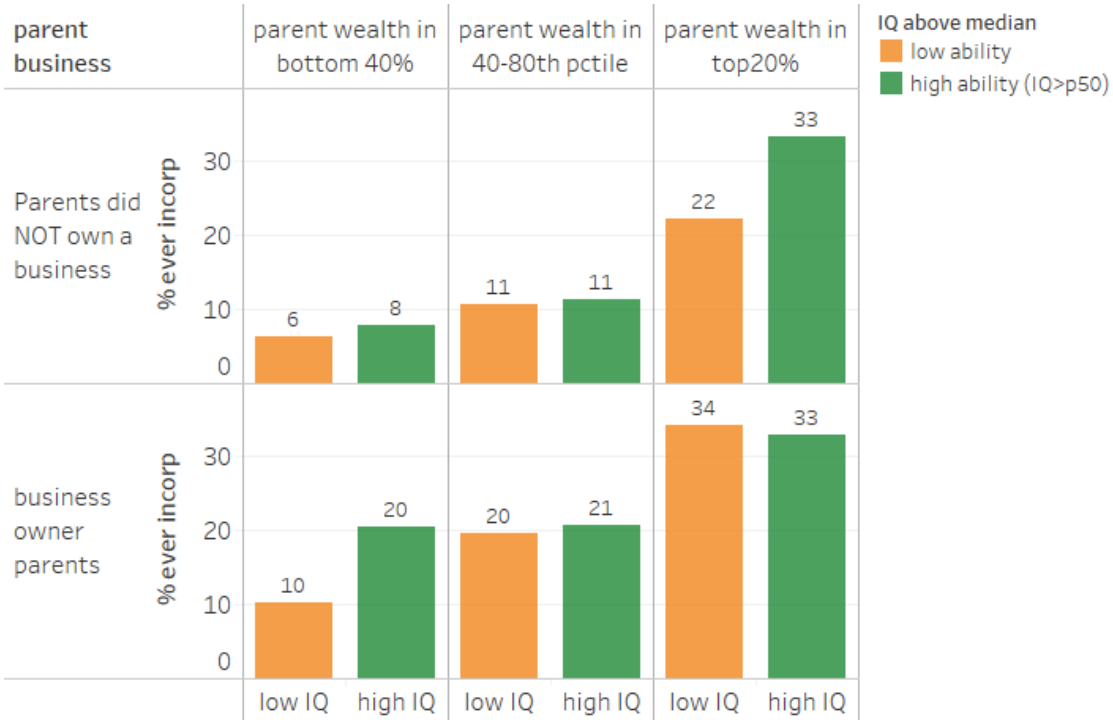
We find VII

Parental wealth and child entrepreneurship





Role of ability in becoming an entrepreneur



Ability has little to no predictive power on participation in entrepreneurship (both intensive and extensive).

Role of ability in success through entrepreneurship

- High IQ comes with a similar premium in entrepreneurship as in wage employment.
- However high IQ children from poor households achieve greater upward mobility from wage-employment than entrepreneurship.
- Some evidence that business ownership protects low ability children of entrepreneurial households from downward mobility.

Summary of main findings

1. Regardless of starting point, households that survive in entrepreneurship, especially through incorporation, build more wealth.

2. Access however, is primarily available to the already wealthy.

    - Children from less wealthy households whose parents aren't themselves business owners are less likely to access entrepreneurship, even with high educational attainment and intelligence.

3. As such, entrepreneurship does little for churn in the wealth distribution, but rather contributes to stickiness at the top.

Implications

- Why are children from wealthy households more likely to access and survive in entrepreneurship, incorporated business ownership in particular?

  Are barriers:

  - **Informational**
  - **Social** - networks
  - **Financial** - growth capital, buffer in times of losses (see intensive versus extensive margins)

Policy Relevance

"In my remarks, I will review trends in income and wealth inequality over the past several decades, then identify and discuss **four sources of economic opportunity in America** - think of them as "building blocks" for the gains in income and wealth that most Americans hope are within reach of those who strive for them. The first two are widely recognized as important sources of opportunity: **resources available for children** and **affordable higher education**. The second two may come as more of a surprise: **business ownership** and **inheritances**."

"Another reason is that a slowdown in business formation may threaten what I believe likely has been a significant source of economic opportunity for many families below the very top in income and wealth."

Janet Yellen, Oct 17, 2014

At the Conference on Economic Opportunity and Inequality, Federal Reserve Bank of Boston, Boston, Massachusetts

APPENDIX

Data source - PSID

Longitudinal study that tracks families and their offspring since 1968

- Includes a representative sample (SRC, approx 3000 initial HHs) and a lower socio-economic one (SEO, approx 2000 HHs)
- Annual until 1997, biennial after that.
- Includes a wealth supplement in '84, '89, '94, '99, then every wave
- Data on business ownership at the family unit level
  - incorporation status
  - value of the business, investments, income, etc.
- Child Development Supplement measures ability of underage children in 1997, 2002, 2007.
- We isolate individuals born between 1950 and 1973, whom we observe in at least 5 years during adulthood, and whose wealth we can measure at 40-to-55 yrs old.
  - Conditional on parent wealth data (at 40-55 or 56-65), the analysis sample consists of:
    – 2,073 individuals in the representative sub-sample
    – 1,265 in the disadvantaged (SEO) sub-sample

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Summary Statistics

outcome wealth rank	N	% ever self-emp (HH)	% yrs self-emp (HH)	% ever own bus	% yrs own bus	% ever own incorp	% yrs own incorp	% HS grads	% college grads	% Black	% other minority	Parent wealth decile
1	194	31	8	37	7	7	1.1	75	16	18.0	2.6	3.8
2	194	32	6	38	7	8	1.9	72	10	18.6	3.1	4.0
3	199	39	8	37	7	9	1.7	82	10	15.1	0.5	4.4
4	191	39	9	43	11	12	2.1	80	20	9.4	1.0	4.8
5	191	39	10	43	9	11	2.0	92	20	8.9	1.6	5.2
6	206	35	10	49	11	13	2.5	93	26	5.3	1.5	5.5
7	199	39	10	53	13	18	3.2	94	29	4.5	0.5	6.2
8	204	40	13	49	17	19	3.8	99	37	2.5	1.0	6.6
9	203	47	15	58	18	28	5.8	99	52	2.0	1.5	6.7
90-99th	181	56	26	64	30	45	14.8	97	61	1.1	4.4	7.6
top 1%	21	57	30	90	42	81	28.3	100	81	0.0	4.8	8.4
Total	1,983	40	12	47	13	17	4.1	88	28	8.4	1.8	5.5

Overlap in SE and business ownership

ever self-emp (HH)	Time in self-emp (HH)	Grand Total		Never owned a business		Unincorp. only		Incorporated business	
		N	% in row	N	% in row	N	% in row	N	% in row
Grand Total		1,983	100%	1,043	53%	595	30%	345	17%
never self-emp	Total	1,194	100%	909	76%	197	16%	88	7%
	never self-emp	1,194	100%	909	76%	197	16%	88	7%
self-employed	Total	789	100%	134	17%	398	50%	257	33%
	yrs SE $<$ 20%	406	100%	117	29%	203	50%	86	21%
	yrs SE $>=$ 20%	383	100%	17	4%	195	51%	171	45%

Overall wealth mobility - quintile change from parents

parent wealth quintile (rows)	own wealth outcome					
	Q1	Q2	Q3	Q4	Q5	Total
Q1	38.4	28.2	15.8	9.9	7.7	100
Q2	23.2	24.7	24.7	15.4	12.0	100
Q3	18.1	20.7	23.7	22.4	15.1	100
Q4	10.3	12.8	21.6	29.4	25.9	100
Q5	7.6	11.5	13.7	25.2	42.0	100
Total	20	20	20	20	20	100

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SE wealth mobility - quintile change from parents

parent wealth quintile (rows)	no-one in HH was self-emp					yrs self-emp < 20%					yrs self-emp >= 20%				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Q1	41	27	16	10	6	40	36	12	7	5	18	23	20	15	25
Q2	22	26	26	16	11	31	28	27	7	7	19	16	18	24	22
Q3	21	21	21	24	13	14	25	26	22	13	13	16	30	16	25
Q4	12	12	25	28	23	8	16	16	38	23	8	12	18	26	36
Q5	10	12	15	28	35	5	14	18	23	40	6	9	8	22	56
Total	22	20	21	21	17	20	24	20	19	18	11	14	18	21	36

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Business wealth mobility - quintile change from parents

parent wealth quintile (rows)	Never owned a business					Unincorp. only					Incorporated business				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Q1	43	28	15	10	4	36	27	19	9	9	16	35	14	8	27
Q2	22	30	25	14	9	29	20	25	13	13	10	17	24	29	21
Q3	22	23	21	23	12	15	21	28	22	14	9	12	26	23	30
Q4	13	13	26	26	22	8	15	20	38	19	8	8	14	23	47
Q5	9	15	16	26	34	9	14	21	29	27	5	5	6	21	62
Total	23	22	20	19	15	19	19	23	22	16	8	12	14	21	45

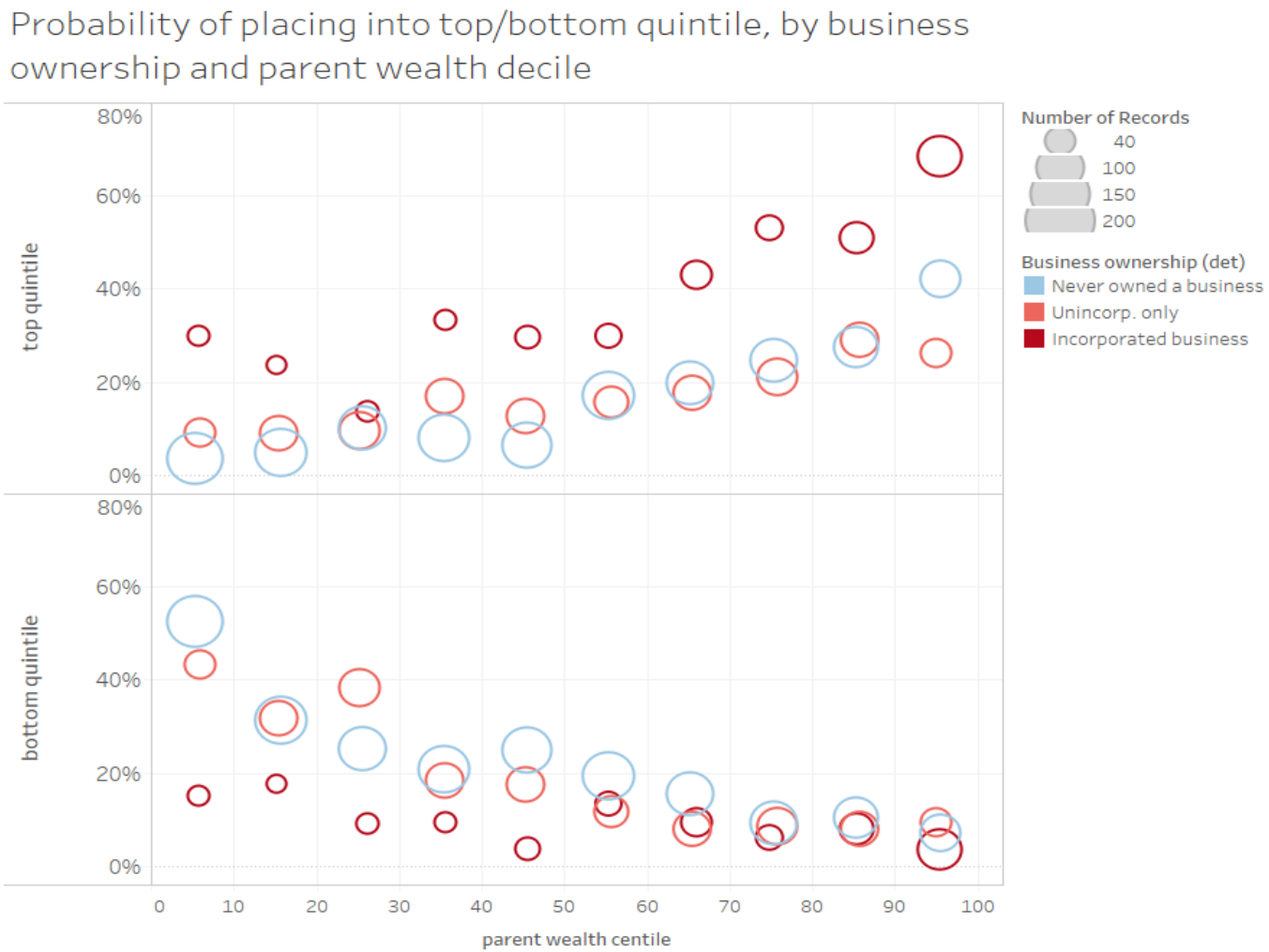
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Wealth building in entrepreneurial households

dep. var = wealth percentile	OLS				Parent FE	
	(1)	(2)	(3)	(4)	(5)	(6)
Ever self-employed (HH)	2.65**	-0.19	0.23	-1.70	-1.33	-2.88
	(1.08)	(1.26)	(1.33)	(1.43)	(1.93)	(2.04)
yrs self-emp $\geq$ 20%				4.30**		4.55*
				(1.76)		(2.71)
Ever owned a business		4.96***	4.64***	0.99	3.87*	0.99
		(1.26)	(1.36)	(1.42)	(2.03)	(2.17)
Owned incorporated bus.				9.37***		6.78**
				(1.80)		(2.84)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Mid-age state FE	Yes	Yes	Yes	Yes	Yes	Yes
Age + age sq	Yes	Yes	Yes	Yes	Yes	Yes
Birth year+gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Parents' educ+state+immig+race	Yes	Yes	Yes	Yes	-	-
Parents' wealth cent FE	-	-	Yes	Yes	-	-
Parent empl+bus+industry	-	-	Yes	Yes	-	-
Mother's marital status	-	-	Yes	Yes	-	-
Parent FE	-	-	-	-	Yes	Yes
Num observations	2198	2198	1914	1914	1595	1595
Num clusters	1033	1033	899	899	577	577
R^2	0.402	0.407	0.479	0.491	0.718	0.722
Adj R^2	0.358	0.362	0.393	0.407	0.502	0.509

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Placement in top and bottom quintiles



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What explains variation in wealth outcomes?

Point estimates versus r-squares

	benchmk	exog		+ own choices				
dep var = wealth centile	(1)	(2)	(3)	(4)	+educ (5)	+empl. (6)	+SE/bus (7)	+all (8)
Self-emp/ bus ownership							Yes	Yes
unemp/ out labor force						Yes		Yes
Education					Yes			Yes
State+industry+marital				Yes	Yes	Yes	Yes	Yes
Parent educ+bus+indus+...	-	-	Yes	Yes	Yes	Yes	Yes	Yes
Parent wealth+immig+race	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age+gender+birthplace	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	1914	1914	1914	1914	1914	1914	1914	1914
Num clusters	899	899	899	899	899	899	899	899
R^2	0.0925	0.291	0.317	**0.430**	0.454 **(+.024)**	0.456 **(+.026)**	0.452 **(+.022)**	0.491
Adj R^2	0.0575	0.220	0.239	0.340	0.366	0.370	0.364	0.407

Notes: The sample is restricted to be the same across specification for easier comparison. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

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Intergenerational wealth elasticity (rank based)

entrep=	–	bus owner	incorp	uninc only	self-emp
dep var=wealth pctile	(1)	(2)	(3)	(4)	(5)
pctile parent wealth−50	0.39***	0.37***	0.36***	0.42***	0.36***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
(pctile parent wealth−50)^2	0.00				
	(0.00)				
entrep		6.19***	13.48***	-1.81	3.53***
		(1.25)	(1.78)	(1.30)	(1.22)
(pctile par wealth−50)**entrep*		0.02	0.00	-0.10**	0.07
		(0.04)	(0.06)	(0.05)	(0.04)
Demographic vars	Yes	Yes	Yes	Yes	Yes
Num observations	1979	1979	1979	1979	1979
Num clusters	921	921	921	921	921
R^2	0.252	0.261	0.280	0.253	0.255
Adj R^2	0.221	0.231	0.250	0.222	0.225

Notes: We subtracted 50 from all instances of parental wealth percentile. *entrep* stands in for the different entrepreneurial categories: whether anyone in the individual's household was ever a business owner (col 2), an incorporated business owner (col 3), or whether they only owned unincorporated business(es) (col 4), or whether either the individual or their spouse was ever self-employed (col 5). Interactions of the category indicators (*entrep*) and the square of log wealth were attempted but dropped due to a lack of statistical significance.

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Determinants of business ownership

dep var = was anyone in HH:	a business owner			incorporated bus. owner		
	(1)	(2)	(3)	(4)	(5)	(6)
parent bus owner		0.077***			0.047**	
		(0.027)			(0.022)	
parent bus × no college deg			0.071**			0.017
			(0.032)			(0.024)
parent bus × college+			0.089**			0.118***
			(0.044)			(0.035)
educ = HS dropout	-0.033	-0.029	-0.028	-0.015	-0.018	-0.016
	(0.038)	(0.040)	(0.040)	(0.027)	(0.027)	(0.027)
educ = some college	-0.020	-0.017	-0.017	0.009	0.009	0.013
	(0.032)	(0.032)	(0.032)	(0.023)	(0.023)	(0.023)
educ = college grad	0.018	0.024	0.015	0.055*	0.056**	0.007
	(0.037)	(0.038)	(0.047)	(0.028)	(0.028)	(0.032)
educ = grad school	0.037	0.031	0.022	0.034	0.035	-0.017
	(0.048)	(0.049)	(0.057)	(0.035)	(0.035)	(0.039)
parent wealth dec = 2-7	Yes	Yes	Yes	Yes	Yes	Yes
parent wealth dec = 8	0.069	0.031	0.031	-0.022	-0.028	-0.029
	(0.055)	(0.058)	(0.058)	(0.037)	(0.038)	(0.038)
parent wealth dec = 9	0.067	0.019	0.019	0.045	0.036	0.036
	(0.057)	(0.059)	(0.059)	(0.045)	(0.046)	(0.045)
parent wealth = 90-99%	0.133**	0.057	0.057	0.193***	0.175***	0.174***
	(0.060)	(0.065)	(0.064)	(0.049)	(0.050)	(0.049)
parent wealth = Top 1%	0.133	0.059	0.059	0.343***	0.334***	0.330***
	(0.085)	(0.087)	(0.087)	(0.070)	(0.072)	(0.073)
Own+parents' education	Yes	Yes	Yes	Yes	Yes	Yes
Own+parent's industry	Yes	Yes	Yes	Yes	Yes	Yes
Childhood state	Yes	Yes	Yes	Yes	Yes	Yes
Birth year+gender+marital	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	1979	1930	1930	1933	1930	1930
Num clusters	921	905	905	906	905	905
R^2	0.128	0.134	0.134	0.162	0.165	0.168
Adj R^2	0.0775	0.0760	0.0755	0.106	0.108	0.111

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