Entrepreneurship and the American Dream: How far Does the Upward Mobility Ladder Reach?

– PRELIMINARY, PLEASE DO NOT CIRCULATE –

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Abstract

Does entrepreneurship help households build wealth? Using data from the PSID, we find that the vast majority of poor households participate solely in wage work, while almost 60 percent of the top 1% are involved in entrepreneurship – defined as either self-employment or business ownership. These empirical patterns naturally lead to questioning whether wealth causes entrepreneurship, or vice versa. To glean insight into this question, we look at the role entrepreneurship plays in facilitating inter-generational wealth mobility. Our empirical approach involves 1) the assessment of transition probabilities 2) estimations intended to capture both the average effect of entrepreneurship on shifts across the wealth distribution and the aggregate impact of entrepreneurship as a vehicle for wealth mobility and 3) inter-generational wealth elasticities. These combined approaches allow us to comment on how pervasive this mode of wealth generation is, and its impact on those who access it. Results show that across board, entrepreneurship – and in particular incorporated business ownership – is associated with the greatest upward social mobility. However, the already wealthy are much more likely to avail of this mode of wealth building than the poor, and as such, entrepreneurship does not explain an especially large fraction of overall variation in socioeconomic mobility. Entrepreneurship does indeed embody the American

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Dream, *if* one is lucky or wealthy enough to access it.

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1 Introduction

How do households build wealth? To answer this deceptively simple question, one has to understand the complex dynamics that govern pre-existing wealth, inheritances, savings and the employment choice. In this paper, we hone in on the implications of different types of employment for wealth accumulation. Specifically, we seek to understand the role of entrepreneurship in its various forms, in facilitating the creation of wealth at the household level. By virtue of the high fixed entry costs, time lags and the volatility in financial returns that are inherent to entrepreneurship, its relationship to wealth accumulation is likely intricate, especially in the presence of capital market frictions. These intricacies are well worth parsing out, especially given the disproportionate rate at which we observe business owners among the wealthiest Americans[1] and the public resources, ranging from government subsidies to tax incentives, devoted to promoting entrepreneurship.

Janet Yellen, the Chair of the Federal Reserve Board, gave a speech in October 2014 wherein she reviewed trends in income and wealth inequality in the US. In this speech, she specifically pointed to business ownership as one of the four "building blocks" of "economic opportunity in America" and expressed her conviction that it is a meaningful channel, while also admitting to the lack of strong empirical proof. That entrepreneurship defines, at least in part, the American Dream is a commonly held belief, but one with little substantive empirical backing. It is precisely this need for empirical rigor that motivates the central questions in this paper: do entrepreneurial households build wealth in ways that are different from non-entrepreneurial ones, what factors best position them to avail of this avenue, and what is the overall impact on social mobility?

Answering these questions is fundamental to our understanding of inequality and social mobility and is also acutely policy relevant. Given the resource constraints policy-makers are confronted with, it is crucial that they understand the barriers households face in accessing opportunities (i.e. resources for children, education, wealth transfers, access to employment, business ownership), and the relative magnitudes of those barriers so as to optimally target policy. To that end, our findings shed some new light.

[1] In the cross-section over 60 percent of US households in the top 1 percent report owning (part of) a business (according to our findings in the Survey of Consumer Finances (SCF) dataset, but also from a cross-sectional sampling of the Panel Study of Income Dynamics (PSID) data, extensively used here).

In this paper, we address these questions by looking at the intergenerational mobility of wealth in entrepreneurial households. We identify entrepreneurial households by two main criteria: self-employment and business ownership (incorporated and unincorporated). Using linked parent child outcomes in the PSID, we compare parents' wealth standing during middle age to that of their children at around the same age. First we find that entrepreneurship, and in particular incorporated business ownership, does indeed facilitate social mobility. The magnitude of this effect is sizable: spending a third of one's career as a business owner is associated with a one-decile gain in wealth standing as compared to an otherwise similar household. These regression results are consistent with our transition matrices which show that business owning households which started off poor (i.e. bottom wealth quintile) are much more likely to become wealthy than those relying solely on wage work.

Inter-generational elasticity (IGE) estimates provide an alternate way to assess the relative mobility of entrepreneurs. IGE estimates show, consistent with our regressions and transition matrices, that successful business ownership (both incorporated and unincorporated) does indeed lead to increased mobility for those coming from low income households. Those business owners coming from wealthy households are likely to remain wealthy, unless they are associated with less successful ventures that never reach incorporation status. Ownership of an *incorporated* business, on the other hand, is uniformly linked to better outcomes – higher odds of moving up and into the top quintile – for households from all originating wealth quintiles, without an increase in downside risk. The risk appears to all be born in the early pre-incorporation stages, or in short-term self-employment.

While point estimates from reduced form regressions, wealth elasticities, and transition probabilities all suggest that entrepreneurship does indeed allow for substantial wealth accumulation, further empirical analysis shows that access to this channel is itself highly selective by initial resources. Those born into the bottom 60 percent of the wealth distribution face low odds (about 1-in-6) of ever owning an incorporated business or a share thereof; such prospects increase with higher parental wealth, and jump disproportionately for those from the top decile (1-in-2). One implication is that, although someone with parents in the bottom wealth quintile increases their odds of reaching the top quintile six-fold by incorporating a business, this does not translate into greater diversity of backgrounds among entrepreneurs: for households who end up

in the top quintile, very modest origins are similarly unlikely whether they own an incorporated business or not (1-in-13 vs 1-in-14), whereas the odds of having equally wealthy parents are in fact significantly higher for the business owners (1-in-2 vs 1-in-3). These statistics suggest that, even though business ownership radically increases a poor household's chances of moving up, it may play an even bigger part in keeping wealthy households at the top. [2]

In addition, we find that the advantages conferred by parental resources are transmitted to a large extent through persistence in self-employment and higher probability of incorporating, rather than by just increasing the rate of entrepreneurial attempts. This is consistent with arguments that financial constraints impede not just the establishment, but also the growth of businesses – from merely sustaining a household to becoming a focal point of wealth accumulation.

To understand the broader role entrepreneurship plays in facilitating inter-generational mobility relative to other factors, we look at the explanatory power of various regression specifications, and at inter-generational elasticities. In our study of what explains variation in mobility, we distinguish between factors that an individual has influence over (employment, marital status and education) versus ones that they are "randomly" endowed with at birth (i.e. where they are born and the features of their parents). The influenceable choices are by no means entirely separable from the circumstance one is born into, but it remains informative to parse the two out. We find that about 35 percent of variation in wealth mobility is determined by observable parental characteristics including state and year of birth, parent wealth and parent race, immigration, as well as their employment and marital status. Adding the individual's own educational attainment, years of employment, and marital status adds about 15 percent and brings explanatory power up to just over half (52 percent). Next, including various aspects of entrepreneurship (self-employment, business ownership, and even industry) does little to explain additional variation, increasing explanatory power by a mere 4 percentage points. This suggests that, while entrepreneurship holds significant potential for wealth mobility, it is not in practice a pervasive mode of wealth accumulation.

Our findings in mobility then raise the question of what predicts entrepreneurial participation. A few factors enter in significant ways. First, length of self-employment is a key predictor of business ownership.

[2] It is important to note that this finding in itself does not have clear normative implications, given positive selection of parental households into high wealth ranks.

In addition, having parents who engaged in entrepreneurship themselves is also highly predictive, and more so if they worked in the same industry as the child. This suggests that the transfer of know-how and networks, not just "general" entrepreneurial talent matters.[3] Parental wealth is also predictive of incorporated business ownership, even after controlling for parental entrepreneurship and its interaction with industry. Having very wealthy parents (i.e. in the top 10 percent) predicts twice as much time spent in incorporated business ownership.

Taken together, our findings both support and cast doubt on the commonly held belief that entrepreneurship represents the American Dream. While entrepreneurship is certainly a vehicle to build wealth, it is not pervasive. Those who come from wealthy households are most likely to engage in entrepreneurship, but everyone who succeeds at it, regardless of starting point, stands to gain. Our analysis gets at some of the mystery surrounding the role of wealth in entrepreneurship: is entrepreneurship the result of wealth or does it cause it? The answer is both. But at the household level, the overwhelming majority of successful entrepreneurs were wealthy to begin with.

Our results also show variation in the impact of entrepreneurship across race, educational attainment, parent's entrepreneurial status and intrinsic ability (as measured by IQ). Consistent with the literature on race and entrepreneurship, we find that relative to white households, black households are less likely to engage in entrepreneurship of any sort, regardless of parental background or education. Black households that do access entrepreneurship are not then privy to measurably higher upward mobility, but are better shielded from downward shifts.

In addition, we find that business ownership allows for mobility primarily at the extremes of the educational spectrum: for high school dropouts, and to a lesser extent for college graduates. On the whole, entrepreneurship implies higher mobility for the offspring of non-business owners only. For those whose parents owned a business, not doing so themselves leads to *downward* mobility.

Finally, we find that intellectual ability and parental resources are complementary in business ownership (but not in wage employment): individuals with above-average IQ have similarly good outcomes in both modes of employment if they come from the bottom two wealth quintiles, but are more successful in business

[3] Some of these may be direct transfers of the business from parent to child, but we lack a clean way of identifying them in the data.

ownership if their parents are well-off.[4]

Ultimately, we cannot comment on whether or not encouraging or facilitating entrepreneurship will lead to higher mobility. We can only comment on whether or not it has overall been associated with higher or lower mobility in the US in the past 50 years, and to what extent. To that end, our findings should be interpreted as a series of correlations, albiet novel and informative ones. What barriers to accessing entrepreneurship the less wealthy face remains an open question. It is likely that access to financing that enables firm growth, and the ability to withstand risky cashflows at the household level both play a key role. Reduced access to information and industry-specific know-how, as well as household time constraints are also plausible explanations for this low level of participation in entrepreneurship amongst the less wealthy. In addition, tenable explanations for the high transfer of wealth across business owning families can relate to preferential tax, bankruptcy, and inheritance laws.

This paper relates to a sizable literature that studies income and wealth mobility in the United States (see Solon (1999) and Black and Devereux (2010) for an overview of the literature). Work in this literature focuses on the role of factors like education, child's income and employment, savings behaviors and geographic exposures in facilitating intergenerational mobility (see Charles and Hurst, 2003; Mazumder, 2005; Chetty et al., 2014a; Clark, 2014). However, there hasn't been much focus on the role of *entrepreneurship* in social mobility (see Quadrini, 2000a; Holtz-Eakin et al., 2000).[5] Papers that have looked at entrepreneurship as a mode of wealth building have either resorted to cross sectional analyses (mainly employing transition matrices), or have focused on income mobility (whereas the income of entrepreneurs faces severe mis-measurement (Sarada, 2015)). What sets our work apart is that we exploit both cross sectional and longitudinal data, focus on the inter-generational angle, and study wealth shifts rather than income. In doing so, we get around measurement issues, and inference problems that arise from transitory changes in welfare. To the best of our knowledge, this would be the first paper to comprehensively address the role of entrepreneurship in inter-generational mobility.

The rest of the paper is organized as follows. Section 2 describes our empirical objectives; section 3

[4] Lower ability individuals however, have similar outcomes in business ownership and wage-employment, regardless of initial financial advantages.

[5] Note that business ownership does enter as a factor in papers that study savings behaviors. We focus exclusively on this avenue, isolating its role in a far more comprehensive manner.

describes the data and our different definitions of entrepreneurship; section 4 summarizes cross sectional patterns; section 5 presents empirical evidence for whether entrepreneurship builds wealth; section 6 looks at the overall/ aggregate role entrepreneurship in wealth-building across all households; section 7 parses out the populations for whom entrepreneurship is the most effective and section 8 concludes.

2 Why would entrepreneurship play a differential role in wealth building?

The main premise of this paper is predicated on the presumption that entrepreneurship facilitates socioeconomic mobility. Why should we expect that entrepreneurship affords differential access to mobility as compared to wage work?

We classify plausible explanations into two categories. Explanations in the first category relate to behavioral changes that enable and are induced by business activity in the face of credit constraints, and those in the second category are the direct consequences of higher returns that stem from successful business ownership (relative to wage work). Note that in this latter category, many elements of public policy that favor business formation affect both the return and the risk profiles entrepreneurs face. In the discussion below we will focus on some of these policy provisions available to entrepreneurs but not wage workers. These include favorable tax treatment of financial gains (and losses) to businesses, and bankruptcy provisions available to incorporated firm owners.

The main behavioral argument that leads to the creation of wealth by entrepreneurs is that of an increased propensity to save. As argued in Quadrini (2000b) and Buera (2009), the sheer act of starting a business could result in an increased propensity to save in the face of constrained credit markets, higher costs of external financing, and uninsurable idiosyncratic risk. Individuals who want to start a business, especially the less wealthy who cannot easily access formal credit or pre-existing personal wealth, may increase their savings rate so as to fund their enterprise. In addition, if the risks faced in entrepreneurship are un-insurable and credit is limited, such households may engage in precautionary savings so as to secure a larger buffer of wealth to draw upon during negative shocks. This differential saving propensity enables increased wealth accumulation and consequently, mobility.

The second factor that results in increased wealth accumulation amongst entrepreneurs is that they are the residual claimants. The entrepreneur has more agency in directing their investment into their business based off private information on the outcomes. Unlike wage workers who receive a wage and then invest their savings in markets (where they lack an informational advantage and are passive in their investments), business owners can channel both financial and human capital into the most promising investments. Since they get to internalize the full returns from their venture,[6] they are more likely to double down on effort, thereby ensuring better outcomes and higher earnings.

For poorer households, entrepreneurship may be the only credible way to achieve mobility, since access to high paying wage jobs may be a rarity given the systematic barriers to access that exist from the get go. High paying jobs, at least at the entry stages, rely on signals from brand name schools, internship experience and hard to access higher degree fields (economics, finance, law etc.). In contrast, starting a business in many industries (restaurant, laundromat, services - hairdressing, automotive, food services etc.) is less dependent on these expensive signals. While labor wages in these industries are typically low and therefore don't afford much opportunity for mobility, business returns may be relatively high, especially if the entrepreneur is skilled and manages to distinguish herself to become a local monopoly.

In addition, taxes are typically favorable to the self-employed and business owners. Both have discretion in where and whether to report income, and are incentivized to use equity which is subject to lower capital gains tax rates.[7] Finally, local governments and the Small Business Administration provide subsidized loans to businesses. This cheaper avenue of financial capital cannot be accessed by the wage worker looking to invest in public stocks. Preferential tax treatment and subsidies therefore alter returns to entrepreneurs in ways that may allow them to build wealth more easily. These policies also factor in on the risk mitigation end, by increasing risk sharing with the government (see arguments in Domar and Musgrave, 1944).

While many factors point to increased wealth building for entrepreneurs, and particularly so for the poor who have less access to high paying wage work, the issue of downside risk and financial frictions that may

[6] This is of course subject to the contract terms negotiated with investors, but it is arguable that in the vast majority of cases, the entrepreneur internalizes the returns from her efforts to a higher degree than that offered in wage work – where profits are more broadly shared and where it is harder to attribute efforts entirely to any single individual.

[7] There is variation in these policies over time. See Clarke and Kopczuk (2016) for a discussion of how these tax policies have varied over time.

inhibit entry need to be factored in.

As regards downside risk, how it might affect mobility is less obvious, and is likely to vary by where on the wealth distribution we were to start looking. First, at a very basic level, losses are limited by the assets one possesses.[8] For those at the lowest end of the wealth distribution nominal losses are limited, but can be very costly to household well-being, given their low ability to absorb risk; in addition, these households may lack the capital to enter entrepreneurship in any capacity. Therefore, we shouldn't see much downward movement, but we will also see less entry amongst this group. As people get wealthier, the odds of entry should increase, but so long as personal assets are not protected (sole proprietor-ships and unincorporated firms), the downside risk of falling in wealth standing should be higher than that faced by wage workers. As people get wealthier and have the information and financial capacity to incorporate, the downside risk should fall, since bankruptcy laws now protect personal assets. In the presence of tax policy and bankruptcy laws that facilitate risk sharing with the government, only those who are not at the bottom to begin with, and who are at the same time in a non-protected form of business ownership, will experience downside. The poorest and the wealthier folks with incorporated businesses are – for different reasons – less exposed on average to entrepreneurial risk.

Between tax policy and bankruptcy laws, the downside risk of owning an incorporated businesses is shared with the government, in ways that are not available to wage workers. Unincorporated businesses and sole proprietors face the biggest downside risk - but given the lack of government oversight and flexibility in reporting, they are also the most likely to avail of the tax benefits to income under/misreporting, which feeds into the upside.

Financial frictions would imply that pre-existing wealth is the primary barrier to access to entrepreneurship. This should vary across geographies with differential credit availability. However, both equity and debt are more expensive (due to lemons and principal-agent problems) than using ones' own capital for a given risk profile. This means that all else equal, the wealthy would be more likely to start businesses and given the lower cost of capital, their businesses would likely fare better.

[8] That said, it should be noted that defualting on credit cards debt, a source of financing commonly used to start/sustain a business, can result in wages being garnished in the event of default. In addition, poorer households may access informal credit channels which can have large negative effects in the event of default. Both of these more expensive avenues are ones that are more likely to be availed of by the less wealthy – though not *the* poorest.

Overall, one should expect that for the poor, those who self-select into entrepreneurship should fare better than wage workers in enabling socioeconomic mobility. Part of this is due to the lower bound on downward mobility, and part to the fact that the entry threshold is higher and so more capable individuals will select into entrepreneurship. The likelihood of becoming a business owner should increase in wealth - and the desire to shield pre-existing wealth also increases the likelihood of incorporating amongst those with assets to shield. Tax policy and flexibility in private business valuation both act as shields to wealth, presenting business owning households an even bigger upside. Downside is limited by bankruptcy laws and risk sharing with the government and investors. So at the household level, we should expect entrepreneurship to result in a sizeable upside, with limited downside, except for sole-proprietors and unincorporated businesses.

3 Empirical Objectives

The central question in this paper is whether entrepreneurial households build wealth in ways that are different than non-entrepreneurial households?

This is a deceptively simple empirical question, but a difficult one to empirically answer for a number of reasons. There are however, sizable benefits to a thorough exploration of the empirical landscape governing entrepreneurship and household wealth building - in part because answering this policy relevant open question adds to our understanding of the role occupations play in facilitating social mobility. In addition, the empirical findings themselves reveal subtleties, demonstrating the non-linear and nuanced nature of how and for whom entrepreneurship leads to wealth mobility.

Given these many layers of interactions, we argue that it isn't sufficient to simply ask whether entrepreneurship facilitates social mobility. Rather, we begin by addressing exactly this question and then proceed to ask to what extent it matters for social mobility in the aggregate, and for which households in particular.

Addressing all three questions involves a multi-pronged empirical approach. The key to our empirical strategy, and common to the various approaches, is that we exploit *inter-generational* changes in *wealth*

standing. We first look at transition matrices, namely the probability that an individual shifts up or down the wealth distribution relative to where their parents were. In addition, to get a sense for how likely one is to actually avail of these transitions, we also look at the density of data at the various nodes. This naturally leads to asking what the odds are that a wealthy entrepreneur came from a poorer (equivalent/ richer) household? We address this by looking at a conditional transition matrix wherein we compute the probabilities of having coming from a particular wealth quintile conditional on being observed at certain point of the wealth distribution. Second, we look at not just the averages as captured in the transition probabilities, but also at the distribution of the changes in wealth decile between parents and children. Third, we employ regressions to look more formally at the effect of entrepreneurship on wealth accumulation. In these regressions, we attempt to say something more pointed by exploiting the difference in wealth accumulation across siblings that make different occupational choices. Finally, in keeping with the literature, we look at how entrepreneurship affects inter-generational wealth elasticities. All components of our analysis are run across different cuts of the data depending on what specifically we seek to learn.

We now discuss the rationale that underlies our focus on wealth, rather than income or consumption, and on inter-generational rather than inter-temporal assessments. At the core of our paper is the desire to understand welfare and what facilitates access to increased well-being.

Welfare, or at least, financial welfare can be measured using income, consumption, savings or wealth. Observed over the correct time frame and absent measurement issues, all three measures should result in the same conclusion as to the role of entrepreneurship in wealth creation. Changes in welfare can be assessed by looking at changes in any of these measures over time - either within a persons' lifetime (inter-temporally), or across generations (inter-generationally).

Our focus on wealth rather than income or consumption derives primarily from the data limitations we face. First, none of the datasets we have available to us, even long panels such as the PSID, would allow us to observe individuals over their entire lifespans. As such, a focus on income or consumption, both flow measures, are subject to transitory changes that may not be reflective of overall well being. Furthermore, if we focus solely on immediate returns we may miss or mis-attribute delayed returns from entrepreneurial

activity. Second, income is particularly biased in ways that relate systematically to occupational choice.[9] For these reasons, we focus on the only stock measure available to us, wealth.[10]

This emphasis on wealth leads us to then concentrate on inter-generational, rather than inter-temporal changes in welfare. Since wealth is a stock measure, it makes most sense to compare wealth standing at points wherein they are stable and reflect a substantial portion of the gains one can hope to amass over their lifetime. Given this, we look to comparing the wealth standing of children between the ages of 40 and 55 – when wealth is arguably stabilized – to the wealth ranking of their parents at the same stage in their lives. While defensible for a variety of reasons, it is important to bear in mind that inter-generational analyses risk conflating the role played by personal traits and non-financial resources with that of employment and investment choices, since we are not able to make use of individual fixed effects. Instead, we rely on controlling for parent and child observables and comparisons across siblings who make different employment choices. In addition, it is important to note that while the assessment of inter-generational wealth standing is one way to assess welfare changes, it is not necessarily the only or even best way to measure wealth building. One could as easily argue that wealth changes within a lifetime are as important to utility. This nuance should be kept in mind in thinking through the implications of our findings.

4 Data, Entrepreneurial Definitions and Summary Statistics

Our primary analysis employs the Panel Study of Income Dynamics (PSID) dataset – a longitudinal survey which has been tracking households and their offspring since 1968, recording family composition and status, work circumstances (including hours, pay, whether self-employed, industry, etc), education, health care, housing, consumption patterns, etc. Starting in 1984, the survey also collects detailed financial information.

Because all individuals born to households in the survey are tracked when they establish households of their own, we are able to connect employment, income, and wealth realizations across generations, comparing offspring to their parents and grandparents, as well as siblings and cousins.

[9] See Sarada (2015), Hurst et al. (2014) and Pissarides and Weber (1989)

[10] Look at footnote 3 in Charles and Hurst - "Standard life cycle models of wealth accumulation suggest that wealth depends on (1) the level of lifetime income, (2) the trajectory of lifetime income, and (3) the propensity to save out of given lifetime income levels and trajectories (see Modigliani and Brumberg (1954); Friedman (1957)). Extensions to the basic model argue that the expected future variance of income matters as well – Deaton (1989),Carroll and Weil (1994).

The survey started with two samples: one that is representative of the US population at the time (SRC sample, consisting of 2930 original families), and one that oversampled low socio-economic status families (drawn from the US Census Bureau's SEO sample, consisting of 1872 initial households). We focus primarily on the core representative (SRC) sample, but use the disadvantaged (SEO) sample in some tests.[11]

What this data lacks in number of observations, it makes up in detailed household information, thus in some ways presenting benefits even over the comprehensive IRS data.

Entrepreneurial definition

Two main variables are available in the data, by which we can classify entrepreneurs: whether the individual is self-employed, and whether they own (part of) a private business. The two criteria have imperfect overlap and it is not obvious *a priori* whether one is strictly preferable to the other. Thus, we will investigate both.

Two further dimensions are found to be helpful: the incorporation status of the private business, and duration in either self-employment or business ownership.

In table 1 we show the overlap between the main dimensions by which we define entrepreneurial activity: self-employment and business ownership. Of the 2,073 individuals for whom we have all the requisite information (including their parents' employment and wealth), in nearly half the cases either they or their spouse[12] has attempted self-employment. But in just over half of those cases, self-employment lasted less than one fifth of their adult years. Looking at the Total for the rows, see that over half (55%) of households owned a stake in a private business at some point, bit only 23% ever owned a part of an incorporated business.[13]

We also note that – while they are highly correlated – self-employment and business ownership are not equivalent. Even among households which include a self-employed adult more than 20% of the time, 3% never declare owning a business. This number is much higher (25%) among those with only brief self-employment stints. Conversely, 19% of households who declare owning an incorporated business (and 32%

[11] We do not employ the smaller samples added later (latino and immigrant waves).

[12] Throughout most of the discussion we will employ household- rather than individual-level self-employment. This is to mirror the business ownership and wealth data, which are available at the household level.

[13] Some firms become incorporated over time, and some households own both an incorporated and an unincorporated business at the same time – those households are under the "incorporated" heading.

of those with unincorporated businesses) never have a spouse state that they work primarily for themselves.

An additional fact to notice is that those who spend longer in self-employment are more likely to own a business, and this effect comes solely for incorporated businesses.[14]

5 Cross sectional link between wealth and entrepreneurship

Micro-level US data reveals a strong cross-sectional correlation between wealth and entreprenership, as illustrated by figure 1. Rates of both self-employment and business ownership rise steeply with net worth: while only around 5% of the households in the bottom quintile have a self-employed adult family member at any given time, the rate goes up to 10% for the middle quintile, and then increases even more dramatically to around 45% for the top decile.

Business ownership is also positively associated with household wealth, and the dependence is particularly striking for *incorporated* businesses: while at most 2% of households in the bottom half of the wealth distribution own a stake in a private corporation, the rate among households in the top decile is above 30%

This initially observed pattern is driven by multiple factors, some of which may simply be compositional – for instance, both wealth and entrepreneurial propensity increase with age, and age is not explicitly considered in the cross-sectional wealth ranking. It could also be that the link between self-employment or business ownership and wealth is transitory and does not result in lifetime changes in social ranking.

To investigate further, table 2 summarizes entrepreneurial activity as well as education by lifetime realized wealth ranking. In households who end up in the bottom wealth decile during middle age, there is a 36% chance that someone was self-employed at some point in their 18-55 yrs old career. However, in any given year, these households had only a 7% chance of having a self-employed member.

For households in the top wealth decile, the odds that someone tried self-employment is almost twice as high (67% compared to 36%) and furthermore, in any given year these households have a 30% chance of having a self-employed household member, which is over 4 times as high as households in the bottom decile (30% vs 7%). In other words, the association of self-employment with wealth goes along both the extensive

[14]The odds of owning only unincorporated businesses is higher (49%) for households with less time (<20% yrs) in self-employment than for those with more (42%).

and intensive margins: wealthier individuals are more likely to have been self-employed, and conditional on attempting, are likely to have persisted in self-employment longer.

The same pattern holds for business ownership, and is further amplified for businesses who achieved incorporation status: households who reach the top wealth decile are over *twenty* times more likely than bottom decile households to have owned an incorporated business in any given year. Figure 2 illustrates these correlations graphically.

The last column of table 2 reports the average parental wealth decile of these households.[15] It turns out that households who end up higher in the wealth distribution tend to come from wealthier parent families. This is hardly surprising, but it does bring into question the link we are attempting to establish from entrepreneurship to wealth accumulation. Looking only at outcomes is evidently not sufficient – we need to examine the way households *transition* along the wealth distribution.

6 Does Entrepreneurship Help Build Wealth?

6.1 Suggestive evidence

We've found that people at the top of the wealth distribution are more likely to have owned and operated their own business, and done so for longer. But on average, they also come from wealthier households. So the question remains of whether entrepreneurship itself facilitates upward mobility for those who engage in it.

We begin by examining mobility in the sample overall. Table 3 shows the proportion (in percentage points) of individuals from parental households in each of the 5 wealth quintiles (listed in rows) who end up in each of the 5 quintiles (listed in columns). Our findings are consistent in magnitude with others in the literature: for instance, we find that an individual with parents in the bottom quintile has a 7.5% chance of ending up in the top quintile, exactly the same as found by Chetty et al. (2014b) (although we estimate more stickiness to the top and bottom of the distribution than they do).

[15] In couples, this is the parental wealth of just *one* family member – whoever was born into the PSID sample. We do not restrict gender, and in informal tests we found that wealth is transmitted similarly through sons and daughters. Assortative mating likely plays a part as well, ensuring that in-laws have similar socio-economic status.

Next, we ask whether mobility differs by self-employment or business ownership. Table 4 splits the sample into individuals who were never self-employed, who did so only briefly (less than a fifth of working years), or for a longer duration.[16] Since a brief stint may indicate necessity entrepreneurship or a failed venture, we expect outcomes to be relatively poor for these individuals. Indeed, longer self-employment tenure is associated with much higher odds of moving up and lower odds of sliding down the wealth distribution. Outcomes from brief self-employment are broadly on par with those of individuals who were never self-employed, and only noticeably worse for those from the second quintile. In other words, while persistence in entrepreneurship is rewarded, limited incursions are not always penalized – at least, not for all people.

Table 5 divides the sample by business ownership and type of business. It becomes obvious that owning an incorporated business offers outcomes which are superior not just to unincorporated business ownership, but also to prolonged self-employment (the 3rd panel in table 4). It increases the odds that someone from the bottom quintile will move up to 84%, compared to the 54% of non-business owners. Unincorporated business ownership, on the other hand, appears to have a more nuanced role. For individuals from the bottom quintile it improves the odds of moving up. For those in the 3rd and 4th quintiles it reduces the risk of moving down, even though for the 4th quintile it appears to decrease the odds of moving up, as well. Those starting in quintiles 2 and 5 are more likely to slide in rankings, although the impact observed is relatively minor.

In the remainder of the analysis, we will control for time spent in both self-employment and for time spent in business ownership, without explicitly controlling for the overlap. Because in PSID questions about employment and business ownership don't always refer to the same time period, identifying the years when both conditions are met is noisy and for now we will refrain from doing so.

The graphs in figures 3 and 4 show density plots of the change in wealth rank[17] by parental wealth, for the different categories of entrepreneurs considered in the transition matrices. For all origin quintiles, extended self-employnment or incorporated business ownership lead to strictly and significantly better outcomes. However– in direct agreement with table 4 – brief self-employment is associated with somewhat worse

[16] For ease of comparison, we indicate merely the direction of the wealth shift was up or down.

[17] Rank is expressed here in decile units, but centile-level precision is used to obtain smooth density plots.

outcomes than pure wage employment for those starting in the second quintile, indicating perhaps that these households incur some risk in self-employment and failure happens early, or that they work briefly for themselves as an alternative to unemployment.[18]

Ownership of an unincorporated business predicts only small changes in wealth ranking, with a shift to the right for quintiles 1 and 3, nearly zero impact on quintiles 1 and 3, and an increase in the stickiness of quintile 4. Again, and unsurprisingly, we have direct agreement with table 5.

The wealth shift distributions shown in figures 3 and 4 are not always distinct in a statistical sense – as one might determine by running the Kolmogoroff-Smirnoff test – but such differences or their absence are in any case not conclusive, given the number of potentially relevant covariates we have not yet accounted for – such as education, industry, length of employment, etc.

To more precisely investigate the difference in outcomes across employment/business ownership modes, we turn to multivariate regression analysis.

6.2 Regression analysis

In our initial regressions, reported in tables 6, the dependent variable is outcome wealth ranking: wealth decile in the first 4 columns, then placement in the top or bottom quintiles; the main explanatory variables are time in self-employment and business ownership. OLS specifications control for a wide range of variables: in columns 1 and 2 we account for own and parental education, own industry, state of residence during middle age and during childhood, indicators for being up to a 3-rd generation immigrant, race FE[19], birth year fixed effects, gender, and age at wealth measurement.[20]

Initially (col 1) we include only self-employment to indicate entrepreneurship, and find that a household wherein there is always a self-employed adult is predicted to end up 2.4 deciles higher in the wealth distribution, as measured between 40 and 55. Once we account for business ownership, however, self-employment

[18]These factors may come into play when it comes to the poorest households as well, but by construction we are not able to measure the full extent of their negative outcomes in an analysis of wealth *rank*.

[19]Because race is recorded imprecisely until recent years, and given the low number of observations, we limit ourselves to identifying white and African American families, grouping all the rest together.

[20]Because of the way we construct wealth ranking – by comparing individuals within narrow age groups – the age and age squared variables are not significant in these regressions. We include them for consistency with later elasticity estimates, where age at wealth measurement does matter.

ceases to matter from a statistical standpoint. Years at the helm of an unincorporated business predict good wealth outcomes, but ownership of an incorporated business appears to have three times the positive impact. In column 3 we add further controls: fixed effects indicators for parental wealth *centiles*, parental time in business ownership, the main earning parent's time as self-employed, and his or her modal industry. This reduces our sample slightly and increases the number of independent variables substantially, nonetheless the estimates of the main coefficients of interest remain remarkably stable.

Finally, we run fixed effects regressions in which we control for the main earning parent, effectively comparing siblings against each other.[21] This quasi-experimental evidence – while less precisely estimated – also strengthens our findings: in families where such variation exists, the sibling with a third of adult years spent as incorporated business owner is predicted to end up one decile wealthier than the sibling who is not a business owner.

Results in columns 5 and 6 are consistent with column 4, but also yield new insights: incorporated business ownership improves one's odds of ending up in the top quintile, but many of the other factors (such as unincorporated business ownership, years of employment, having completed high school) do not. On the other hand, a college degree is not instrumental in avoiding the bottom quintile, likely because most people truly at risk of that outcome never have the chance to complete college.

In table 7 we separate the sample along the following criteria: parental wealth below or above the median, educational attainment, and ability as measured through the family unit's children IQ scores – as described in the table footnotes. These results show that even households with less education or lower wealth endowments can benefit hugely from business ownership. Ability is only available in a subset of cases, and measurement error is large for the below median ability sub-sample, but there are strong hints that relatively intelligent individuals benefit more from business ownership.

All findings strongly support the notion promoted by the Federal Reserve Board Chair that one way to escape poverty is to invest in one's own business.

[21] In an alternate specification we tried introducing fixed effects at the level of the original household, which allowed us to use a slightly larger sample – however, results were virtually the same.

7 How much does entrepreneurship contribute to overall mobility?

We found business ownership helps at all levels, which suggests that it might create measurable upward mobility. To test this, we ask how much of the variation in wealth outcomes is explained by entrepreneurial controls.

Table 8 once again reprises outcome wealth analysis, this time holding the sample fixed across specifications in order to make direct R^2 comparisons. The vast majority of outcome wealth decile is explained by exogenous factors. Adding education and marriage in adds further explanatory power. The extent to which entrepreneurship (of any vein) explains wealth accumulation is small – around 4 percent. Thus, it turns out that entrepreneurship explains very little of the variation in wealth outcomes.

Figure 6 and table 9 report cuts of the data by parental wealth, to mirror the earlier summary statistics by own wealth. As we can see, the pattern is strikingly similar.

Earlier we also reported transition matrices by entrepreneurial category, which indicated the probability of moving up or down in the wealth distribution, conditional on being self-employed or a business owner. But in a way, these numbers are deceiving, as they do not convey the relative size of the respective subsamples.

Another way to consider the issue is by reporting the transition matrix *backwards*: the bottom panel of figure 7 lists retrospective probabilities, and shows that a business-owning top quintile household has a greater than 50% probability of having parents in the top quintile as well, whereas for households who don't own an incorporated business, those who end up in the top quintile have a nearly 70% chance of having climbed up the ladder. By this metric, business ownership may stifle – rather than facilitate – mobility.

Figure 8 shows the share of households who are business owners, at each point in the transition matrix. Informally, we can verify that in order to move *up*, it helps to own a business, in particular an incorporated one. Of those who climb from the bottom to the top quintile, less than a quarter do so by wage work alone.

Figure 9 contains an expanded transition matrix, in which we distinguish by both parental and own business ownership. This is similar in spirit to the income or wealth transition matrices along an individual's career, as he/she enters/leaves/persists in entrepreneurship. We find, similarly, that households which enter

or persist in business ownership across generations have the best outcomes, and those who leave or who never entered do the worst.

Figure **??** further disaggregates by the incorporation status of the business. Here, rather than report transition probabilities explicitly, we depict the joint distribution itself: the area of each marker is proportional to the number of households.

Table 10 obtains estimates for the intergenerational elasticity of wealth, introducing interactions indicators for whether the individual was an entrepreneur, by the criteria listed in column headers: business ownership (cols 1 and 2), ownership of an incorporated business (col 3), or an unincorporated business (col 4), and finally self-employment (col 5). For each category, we introduce a simple control as well as an interaction with logged parental wealth – if negative, this interaction would suggest that individuals from lower in the wealth distribution are helped more by entrepreneurship.

First, we establish that the elasticity regressions should include a square term. This allows the correlation between own and parental wealth to increase with parental wealth, which is in agreement with empirical patterns, and also intuitively appealing – since wealthier households are able to make more effective use of bequeathments, and wealth measurement is particularly noisy at the low end. Once we introduce the square term, the interaction of parental wealth with the business owner indicator is significantly negative, thus suggesting that the business-owning sub-sample is indeed more mobile. Looking in the next columns, the effect is not signficant for incorporated businesses, but is larger and significant for unincorporated business ownership. Note however that the intercept is zero in column 4, so that the mobility is in the negative direction for households starting in the top half the wealth distribution. Figure 10 provides a graphical representation of these results in the right panel.

8 For whom is entrepreneurship the most helpful?

In this section we pose two questions: first, what categories of individuals are actually able to access self-employment and business ownership, particularly of the type that promotes wealth growth? And second, conditional on access, what categories are most likely to leverage entrepreneurial activity into wealth growth

and social mobility?

We investigate along three dimensions: parental household endowment (primarily parental wealth and relevant experience), education and ability, and finally race and socioeconomic status.

8.1 Parental resources

As we already saw in figure 6, rates of entrepreneurial activity rise steadily with parental wealth, in particular when it comes to the most lucrative form of entrepreneurship – incorporated business ownership.

We use regression analysis to investigate the channels by which well-off households confer advantages in entrepreneurship to their offspring. Table 11 regresses years in self-employment, incorporated business ownership, and unincorporated business ownership. We find that for all 3 categories considered, parental experience is a plus. Interestingly, parental wealth ceases to have a measurable effect on self-employment and unincorporated business ownership once we account for parental demographics and relevant experience. This leads us believe that – consistent with the findings in Buera (2009) – credit constraints introduce inefficiencies primarily along the *intensive* rather than the *extensive* margin: individuals are able to work for themselves or start a small-scale business, but absent family financial reserves they will typically under-invest and not be able able to reach incorporation scale.

In table 12 we split the sample by whether the individual's parents owned a business at some point or not. Interestingly, it appears that – although both categories stand to gain from business ownership – only the individuals without entrepreneurship in the family tend to see increased mobility. We will come back to this point later.

8.2 Education and ability

Tables 13 and 14 summarize the probabilities of ending up in the top or bottom quintiles, respectively, by business ownership and education. As we can see, business ownership offers similar odds of upward mobility to formal education. In fact, for bottom quintile families completing college but not owning a business is associated with only 10% odds of becoming wealthy. On the other hand, incorporated business ownership, even with no college education, predicts a 30% probability. [...]

Figures 11 and 12 outline kdensity plots of the distribution of wealth shifts by entrepreneurial category and education level. The split by self-employment duration indicates that high-school graduates and those who did not complete their college education can potentially have worse outcomes if they are only briefly self-employed, whereas high-school dropouts and college graduates are not penalized, and possibly rewarded. Alternatively, it could be that selection into brief entrepreneurial excursions is positive for those at the extremes of the educational distribution: among high school dropouts, being self-employed could signal a particularly strong entrepreneurial spirit or ability – considering the barriers they likely face in obtaining financing or certification; at the other end, the college/graduate degree itself offers good opportunities in wage-employment, so that those who choose to embark on their own ventures may again be particularly skilled or motivated.

Graph 13 (and graph 31 in the appendix) splits the sample by four categories of education and show broadly consistent results: while entrepreneurs at all levels have on average higher wealth than non-entrepreneurs, only high school dropouts and college graduates seem to experience increased mobility through entrepreneurial activities – be they defined as self-employment or business ownership. Furthermore, figure 14 separates the sample by whether the main earning parent every owned a business. With the possible exception of high-school dropouts, the offspring of business owners do *not* experience increased mobility when they engage in business ownership themselves, although they do see higher returns than in wage employment.

However, these graphs conflate the effects of several different factors, including geographic location, industry, race, etc. We run wealth elasticity estimates where we remove some of these factors, and plot the regression residuals in figures 15 and 16. Our observation from figure 13 is confirmed: high school dropouts and those with a college degree are most likely to experience wealth mobility from business ownership. Separating by parental business, we see that the increased "stickiness" in wealth for business owners who did not complete their college degree is due exclusively to the children of business owners.

Table 15 reports results from intergenerational wealth elasticity analysis in which we introduce controls for education and ability, and interact them with business ownership and parental wealth. (Since we determined that self-employment itself does not lead to social mobility in our sample, we focus on the potential of business ownership.) Column 1 introduces indicators for broad educational level, with the excluded cat-

egory being high school graduates who never attended college. Relative to them, high school dropouts are predicted to have 80% lower net worth. Individuals with a college degree and those with at least some post-graduate schooling are nearly indistinguishable in terms of wealth outcomes in our data. Those with some college experience but no college degree, on the other hand, look very similar to high school graduates: with the coefficient going to zero in the last two specifications. In terms of wealth level, therefore, the five educational categories can be grouped into 3: high school dropouts, high school graduates (including college dropouts), and college graduates (including post graduate education). In the specifications that follow, we keep high school graduates as the excluded category and introduce indicators for high school dropouts and college graduates. Interestingly, column 1 indicates that overall mobility is not statistically different across these 3 education levels, although the sign of the interaction coefficients indicates possibly higher mobility for high school dropouts and college graduates.

In column 2 we introduce the business ownership indicator, as well as its interaction with logged parental wealth. We find that business owning households are on average 60% wealthier, and may be slightly more mobile (the coefficient meets the 10% threshold of statistical significance), which is consistent with earlier analysis. Going further, we investigate possible interactions between business ownership and education: in column 3, we note that business ownership has a significantly larger positive impact for high school dropouts than for those better educated. In column 4 we further interact with parental wealth, and find that business ownership increases the *mobility* of high school drop outs by a large margin.[22]

The coefficient on the interaction between parental wealth and business ownership in col 4 is a rather precise zero, indicating that for the excluded educational category (high school – but not college – diploma holders) business ownership is not associated with either higher or lower wealth mobility. The interaction with the college indicator is negative but not significant, giving a hint that college graduates who are at the bottom of the wealth distribution may indeed be helped by business ownership.

In the final three columns of table 15 we introduce an indicator for whether the family's children tested above average within the sample. Note that this information is only available for a subset of the observa-

[22] In interpreting these coefficients, recall that parental wealth "ln(par $)" is de-meaned within the core sample, so that for instance a coefficient of zero on "Bus * HS drop" in column 4 implies that in the middle of the distribution high school dropouts are not preferentially helped by business ownership – and in the upper half they are hurt.

tions, hence the drop-off in sample size. Column 5 estimates indicate that, even after accounting for broad educational category and for business ownership, having above-average ability predicts a 56% higher net worth.[23] The interaction with parental wealth is negative – indicating possibly increased mobility – but not significant.

Column 6 introduces the interactions high ability × business ownership and high ability × business ownership × parental wealth. Now the interaction between high IQ and parental wealth is negative and strongly significant (-.33), almost completely canceling out the elasticity estimate (.42). This coefficients refer to households who are non-business owners: once we control for education, high ability individuals are almost perfectly mobile in wage employment. Adding to this elasticity the coefficient on the three-way interaction "ln(par $)*Bus*high IQ" we conclude that in business ownership high ability individuals *don't* enjoy increased mobility – rather they experience the same (log) boost to wealth, regardless of initial starting wealth. Adding all the appropriate coefficients, and also using figure **??** as guide, we conclude that:

1) Looking within occupational category, we find that in wage employment high ability is well rewarded at low levels of initial wealth, much less so (perhaps not at all) with wealthy parents. In business ownership, on the other hand, high ability yields the same (log) boost regardless of initial starting point.

2) If we consider different employment choices for otherwise comparable individuals, we find that for those of low ability business ownership implies a small boost that does not vary noticeably with initial wealth (i.e. it confers no increased mobility). For high ability individuals who start at the bottom of the wealth distribution, entrepreneurship and wage employment yield comparable outcomes. For those with high ability and high initial wealth, business ownership is much more lucrative, implying a complementarity between ability and family resources. We can interpret this as saying that high IQ wage workers are more mobile than high IQ business owners, but this is due entirely to more *downward* mobility.

3) Business ownership confers tangible mobility within the sub-sample for which we do not measure IQ – these are family units who did not have children in the right age group

Finally, column 7 of table 15 re-introduces the interactions of educational categories and business ownership. This doesn't bring any notable changes in the measured effect of ability and business ownership on

[23] Note: the apparent decrease in the coefficients on "educ = HS dropout" and "business owner" is due to a sample composition effect.

wealth outcomes. We conclude that:

1. More education is associated with significantly better wealth outcomes, but the gains are in proportion to each individual's original wealth, thus not creating more mobility.

2. Business ownership predicts higher wealth, and is also associated with higher wealth mobility for high school drop-outs and possibly college graduates (but not high school grads).

3. A crude indicator of ability – as measured through the relative performance of the household's children on a Woodcock Johnson applied problems test – also predicts higher wealth. Furthermore, high ability individuals are predicted to more easily climb the wealth distribution, but *without* business ownership. One way to interpret this finding is that private ability and internal financing are strong complements in private production.

A graphical representation of this analysis is portrayed in figures 13 through **??** in the hope that it provides further intuition.

As we interpret these results, a word of caution is in order: because of the limited size of the sample, we have limited ability to accurately estimate the separate effects of categories in multiple dimensions, especially once we consider possible overlaps. Our findings are thus only tentative.

8.3 Race

Comparisons across race are difficult in the PSID sample, due to the almost complete overlap between race and socioeconomic status, as shown in figure 23 and summary statistics table 16. There are very few blacks in the representative sample, and they are more similar in terms of wealth distribution to families in the disadvantaged sample than whites in either sample. Our conclusions will therefore necessarily confound the two dimensions to some extent.

Thus we consider both the representative and the disadvantaged samples in this sub-section, excluding races other other than White or African American.[24] An immediate observation is the vastly different

[24] We assign the race of the in-sample individual to the entire family unit, and do not distinguish between inter-racial and mono-racial families.

rates of entrepreneurship: For both races, more educated individuals and those from wealthier families are more likely to engage in either business ownership or self-employment, but even within the same wealth or educational category, cross-racial differences are large.

As table 17 shows, for African Americans education is a stronger determinant than parental wealth (with the exception perhaps of high-school dropouts from the bottom decile), therefore we classify business ownership by education in the summary statistics that follow.

Figure 24 shows that 57% of White family units owned a business at some point, whereas only 28% of African American families did. For Blacks, business ownership rates increase more dramatically with education, however they remain below those of the ethnic majority even for college graduates. Has this entrepreneurship gap closed over time? Figure 25 presents the same statistics for the parents' generation. It appears that racial differences were even more pronounced, with only 15% of black parents having owned a business at any point. For both races, business ownership rates have increased slightly over time, mainly driven by the less educated.

Since we know entrepreneurship is often passed along in families, we may wonder whether cross-racial differences in entrepreneurial involvement of the current generation are simply due to the differing entrepreneurial experience of their parents. Figure 26 distinguishes by this dimension. Again, we find that cross-racial differences persist: for Blacks with a parent who owned a business, only 37% do so themselves, significantly lower than even Whites with non-business-owning parents.

We begin by assessing the effect of entrepreneurial activities in the lower socio-economic status sample overall, regardless of race. The k-density plots in figure 27 show the smoothed wealth rank differentials between children and their parents in the two samples combined, for the bottom two quintiles only, and distinguishing by race. We see that upward movement in wealth rank is significantly more likely for Whites, both in and out of business ownership, The (positive) effect of unincorporated business ownership is somewhat more pronounced for Blacks, although it still does not erase racial differences.

As always, however, plotting outcomes against individual explanatory factors is potentially misleading, given the many omitted and potentially correlated variables. Table 21 shows intergenerational wealth regression results where we add race information and interactions. Given the sparse representation of other races,

we focus solely on African American families. We now also appeal to the disadvantaged sample, since it accounts for far more minority families than the core sample.

Before distinguishing between entrepreneurial and wage-employed households, black families don't appear to have either higher or lower mobility – although they are significantly poorer on average, even after accounting for parental wealth. However, results in column 3 indicate that black families enjoy greater mobility than whites *outside* of business ownership. Among business owners, the coefficients add up to be about even.[25] The negative intercept on race, however, indicates that this higher mobility of not-entrepreneurial black households is due to *downward* mobility for those with relatively better-off parents, as figure 29 illustrates graphically.

In column 4 of table 21 we reduce the sample to just the bottom 4 deciles of parental wealth. The reason for this is that this interval captures essentially the entire SEO sample, and we want to more directly assess differences by race, rather than differences in race *and* socio-economic status. Results are consistent with our observations from col 3: the coefficient on the interaction ln(parent wealth)*Black*Bus completely cancels out the increased mobility implied by the ln(parent wealth)*Bus coefficient. Blacks therefore appear to experience the same level of mobility in both wage employment and business ownership (as indicated by the coefficient on ln(par wealth)*Black). However, since the intercept on the Race=Black indicator is -0.7, the net effect of being black is negative or at best zero even at very low parental wealth.

Within the disadvantaged sample – which is overwhelmingly made up of African American families – standard errors are large if we control for race, therefore we run our estimations without race indicators, and find that business ownership has *no* apparent effect on mobility. Given the very low rates of entrepreneurship in this sample, our suspicion is the barriers to entrepreneurial entry are simply too large for lower socioeconomic status households to be able to make practical use of business ownership in social advancement.

By graphing residuals from a wealth elasticity regression, figure 29 illustrates the very low mobility that business ownership introduces for African Americans high school dropouts and college graduates in the disadvantaged sample. For individuals with at least some college, business ownership seems to be associated with *decreased* mobility.

[25]The table focuses on the relationship to business ownership, ignoring self-employment, since – as before – we did not find a significant link between self-employment and mobility for either race.

9 Conclusion

In this paper we ask what role entrepreneurship plays in facilitating inter-generational wealth mobility. The empirics show that there isn't a single over-arching theme that directs the relationship between wealth and entrepreneurship. Entrepreneurship both causes and is caused by wealth. As suggested by Janet Yellen, it is indeed a vehicle for wealth building, and perhaps the most effective one for the least affluent of households.

The breakdown of entrepreneurship into self-employment and business ownership shows that self-employment in itself is not predictive of better outcomes – only insofar as it captures business ownership. In addition, the legal form of the business itself is strongly associated with outcomes. Gains from incorporated business ownership outweigh that from wage work across board. However, unincorporated business ownership is a vehicle for upward mobility only for the lower half of the wealth distribution and in fact penalises those from the top 50%.

Access to business ownership, and in particular ownership of a corporation, is highly dependent on parental social status, so that the vast majority of households that avail of the entrepreneurial ideal come from wealthy backgrounds. Multiple mechanisms could lead to this strong association between parental wealth and child's propensity to avail of entrepreneurship. These include factors such as credit constraints, inability to bear financial risk, or informational asymmetries. While we do not to isolate these factors in this paper, the data does show us that both industry-specific family experience and financial resources play a significant role. Therefore, although entrepreneurs from modest families experience much better outcomes than their childhood peers who followed more standard employment tracts, unequal access makes it so that the pool of successful entrepreneurs does *not* have more diversity of backgrounds than similarly well-off wage employees.

Overall, our findings suggest that entrepreneurship plays a complex role in the fabric of American society, and that any discussion of inequality or social mobility needs to take this into account. Enabling more equal access to business ownership opportunities may be no less important than doing the same for education.

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10 Tables and figures

Table 1: Business ownership vs. self-employment – category overlap

	Business ownership (type)															
	Grand Total				Never owned a business				Unincorp. only				Incorporated business			
Time in self-emp (HH)	N	% in row	% in col	% of total	N	% in row	% in col	% of total	N	% in row	% in col	% of total	N	% in row	% in col	% of total
Grand Total	2,073	100%	100%	100%	937	45%	100%	45%	659	32%	100%	32%	477	23%	100%	23%
never self-employed	1,099	100%	53%	53%	794	72%	85%	38%	212	19%	32%	10%	93	8%	19%	4%
yrs SE < 20%	510	100%	25%	25%	128	25%	14%	6%	251	49%	38%	12%	131	26%	27%	6%
yrs SE >= 20%	464	100%	22%	22%	15	3%	2%	1%	196	42%	30%	9%	253	55%	53%	12%

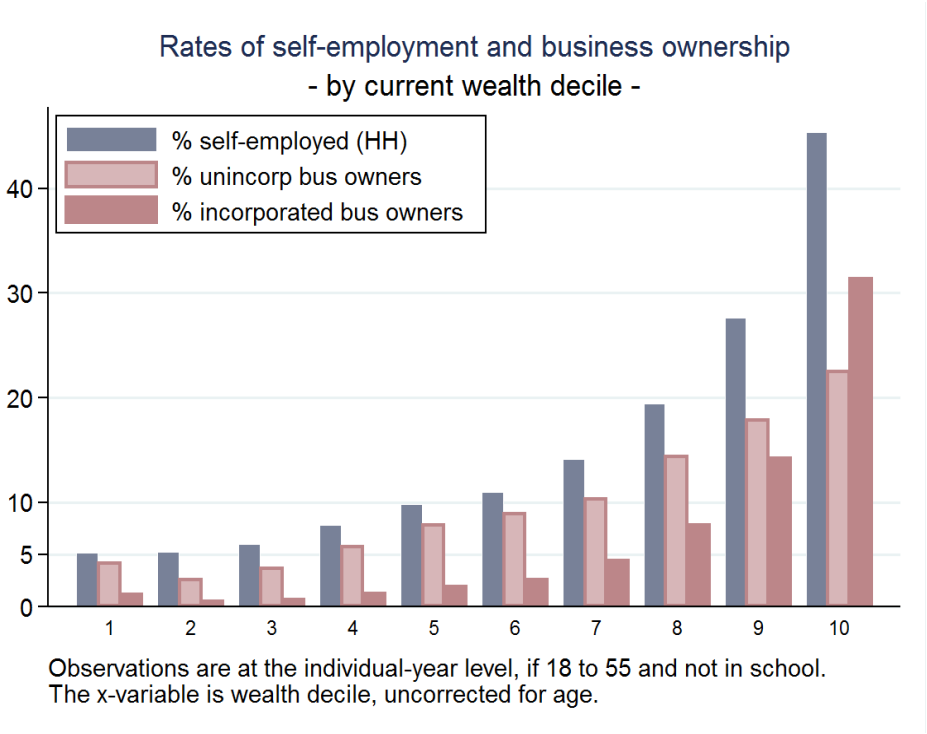


Figure 1: Cross-sectional snapshot of entrepreneurial activity by (current) wealth. (All tables and figures make use of only the representative PSID sample, unless noted otherwise.)

Table 2: Lifetime entrepreneurial pursuits by realized wealth ranking

wealth decile (outcome)	N	% ever self-emp (HH)	% ever own bus	% ever own incorp	Prop Yrs Self-Emp (Indiv)	Prop Yrs Self-Emp (HH)	Prop Yrs Own Bus	Prop Yrs Incorp	Prop Yrs Work	% HS grads	% college grads	Parent wealth decile
1	198	36	39	9	6%	7%	7%	0.9%	67%	73	15	3.8
2	206	37	44	11	4%	6%	7%	2.0%	72%	73	10	3.8
3	208	42	45	10	6%	8%	8%	1.6%	80%	81	11	4.4
4	201	44	47	15	5%	8%	11%	2.1%	82%	82	18	4.7
5	200	47	50	16	6%	11%	11%	2.3%	85%	91	20	5.2
6	213	45	56	21	7%	10%	13%	3.1%	86%	92	24	5.5
7	207	44	63	22	6%	11%	15%	3.9%	90%	94	29	6.3
8	213	50	59	27	10%	14%	17%	4.0%	86%	99	35	6.5
9	215	55	67	40	12%	20%	22%	8.2%	87%	99	52	6.7
10	212	67	77	58	20%	30%	36%	20.4%	88%	97	62	7.7
Grand Total	2,073	47	55	23	8%	13%	15%	4.9%	82%	88	28	5.5

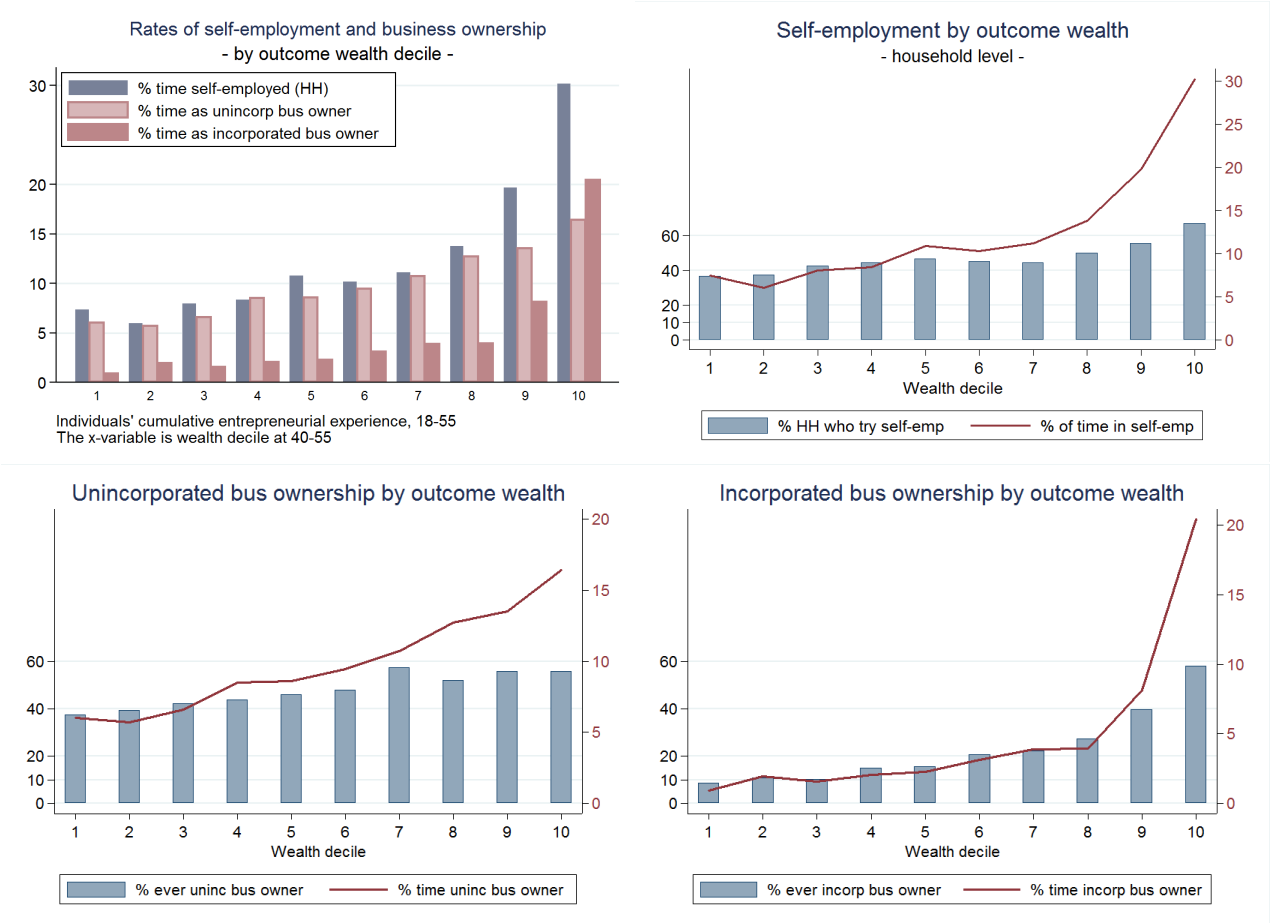


Figure 2: Self-employment and business ownership by wealth

Table 3: Wealth mobility, all individuals

Parental wealth quintile:	Outcome wealth quintile: Q1	Q2	Q3	Q4	Q5	Total
Q1	39.3	28.7	15.7	8.9	7.5	100
Q2	23.4	24.6	24.3	15.2	12.5	100
Q3	17.5	20.6	24.2	23.5	14.2	100
Q4	9.7	13.6	20.9	29.4	26.5	100
Q5	7.5	11.1	14.5	24.4	42.5	100
Total	19.5	19.7	19.9	20.3	20.6	

Table 4: Wealth mobility, by self-employment attempt and duration (household level)

	If never self-emp: Quintile change			If years SE $<$ 20% : Quintile change			If years SE $\geq$ 20% : Quintile change		
Parental wealth:	down	same	*up*	down	same	*up*	down	same	*up*
Q1	0	43	*57*	0	40	*60*	0	19	*81*
Q2	23	26	*52*	28	29	*42*	18	15	*67*
Q3	40	23	*37*	39	26	*35*	30	26	*44*
Q4	48	30	*22*	48	29	*23*	33	29	*38*
Q5	67	33	*0*	63	37	*0*	42	58	*0*
Total	33	31	*36*	35	32	*32*	29	34	*37*

Table 5: Wealth mobility, by business ownership

	If never owned a business: Quintile change			If unincorporated only: Quintile change			If incorporated: Quintile change		
Parental wealth:	down	same	*up*	down	same	*up*	down	same	*up*
Q1	0	46	*54*	0	37	*63*	0	16	*84*
Q2	24	29	*47*	28	25	*47*	13	10	*76*
Q3	44	21	*34*	38	26	*36*	21	28	*51*
Q4	53	24	*24*	43	38	*19*	30	27	*42*
Q5	71	29	*0*	72	28	*0*	38	62	*0*
Total	34	31	*36*	36	31	*33*	26	36	*38*

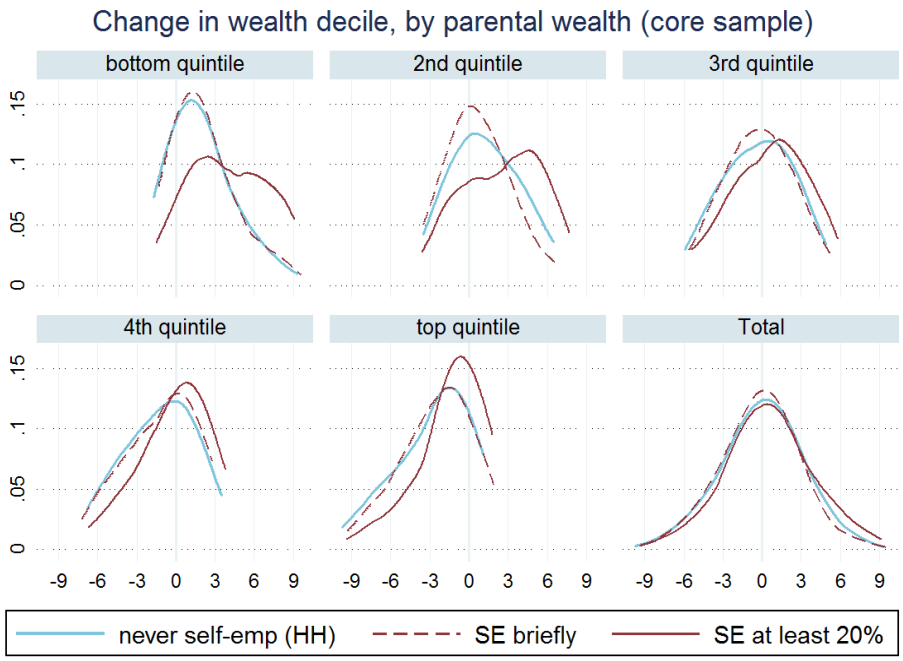


Figure 3: Wealth mobility by wealth and self-employment

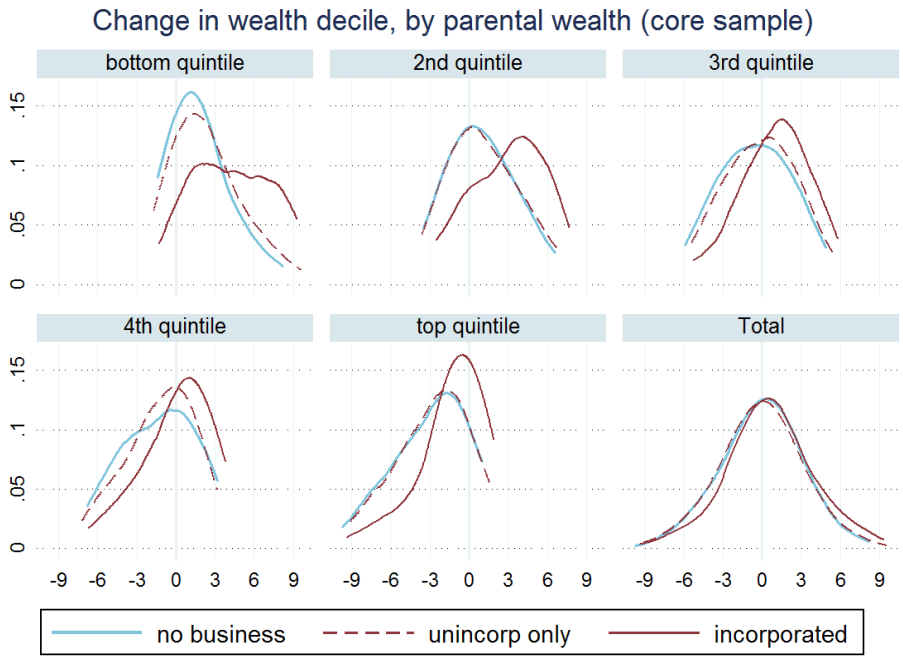


Figure 4: Wealth mobility by wealth and business ownership

Table 6: Explaining wealth outcomes

dep var =	outcome wealth decile				top Q	bottom Q
specification =	OLS (1)	OLS (2)	OLS (3)	FE (4)	FE (5)	FE (6)
share yrs: self employed, HH	2.39***	0.40	0.17	-0.37	0.06	0.18*
	(0.26)	(0.45)	(0.48)	(0.69)	(0.13)	(0.09)
share yrs: incorp bus owner		4.06***	3.64***	3.15***	0.47***	-0.24**
		(0.52)	(0.56)	(0.83)	(0.17)	(0.11)
share yrs: unincorp owner		1.19***	1.28***	1.81***	0.10	-0.33***
		(0.44)	(0.48)	(0.69)	(0.15)	(0.11)
share yrs: employed (any)	1.47***	1.46***	1.54***	0.95**	-0.02	-0.26***
	(0.27)	(0.26)	(0.29)	(0.47)	(0.07)	(0.08)
educ = 1, HS dropout	-0.78***	-0.79***	-0.70***	-0.93***	-0.01	0.13**
	(0.16)	(0.16)	(0.18)	(0.30)	(0.04)	(0.06)
educ = 2, some college	0.24	0.21	-0.03	0.12	0.06	0.03
	(0.14)	(0.14)	(0.16)	(0.24)	(0.04)	(0.04)
educ = 3, college grad	1.29***	1.20***	0.84***	0.61**	0.12**	0.00
	(0.17)	(0.17)	(0.19)	(0.28)	(0.06)	(0.04)
educ = 4, grad school	1.25***	1.17***	0.88***	0.77**	0.19***	-0.00
	(0.22)	(0.21)	(0.23)	(0.34)	(0.07)	(0.05)
share yrs (40-55): married	1.87***	1.87***	1.92***	2.15***	0.14***	-0.28***
	(0.14)	(0.13)	(0.14)	(0.23)	(0.03)	(0.04)
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	Yes	Yes	Yes	-	-	-
Immig background+race	Yes	Yes	Yes	-	-	-
Parents' wealth cent FE			Yes			
Parent empl+bus+industry			Yes			
Mother's marital status			Yes			
Parent FE	-	-	-	Yes	Yes	Yes
Num observations	2291	2291	1998	1674	1674	1674
Num clusters	1063	1063	924	598	598	598
R^2	0.414	0.431	0.492	0.724	0.624	0.566
Adj R^2	0.372	0.390	0.412	0.519	0.343	0.242

Notes: Each observation represents an individual in the PSID sample, with wealth taken as the median decile over the individual's appearances in PSID while between 40 and 55 years old. Only individuals born between 1950 and 1973 and whom we can observe during at least 5 years between 18 and 5) are included. Parents' wealth is computed as the wealth rank of the mother's household during middle age (40-55), supplemented with the info from the mother's late-middle age (56-65) when needed. The last 3 columns introduce fixed effects at the level of the original (1968) household in PSID. While in columns 1 through 4 the dependent variable is outcome wealth decile, column 5 seeks to explain the probability of ending up in the top quintile, whereas column 6 does the same for the *bottom* quintile.

* "Parent's" employment, industry, and fixed effects (col 3) refers to the main earner in the family unit (usually the father, unless a father is not present or the mother works more years). Education is usually available for both parents and therefore reported for both. Business ownership is separated by incorporation status and is computed as the maximum value across years 5 and up. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

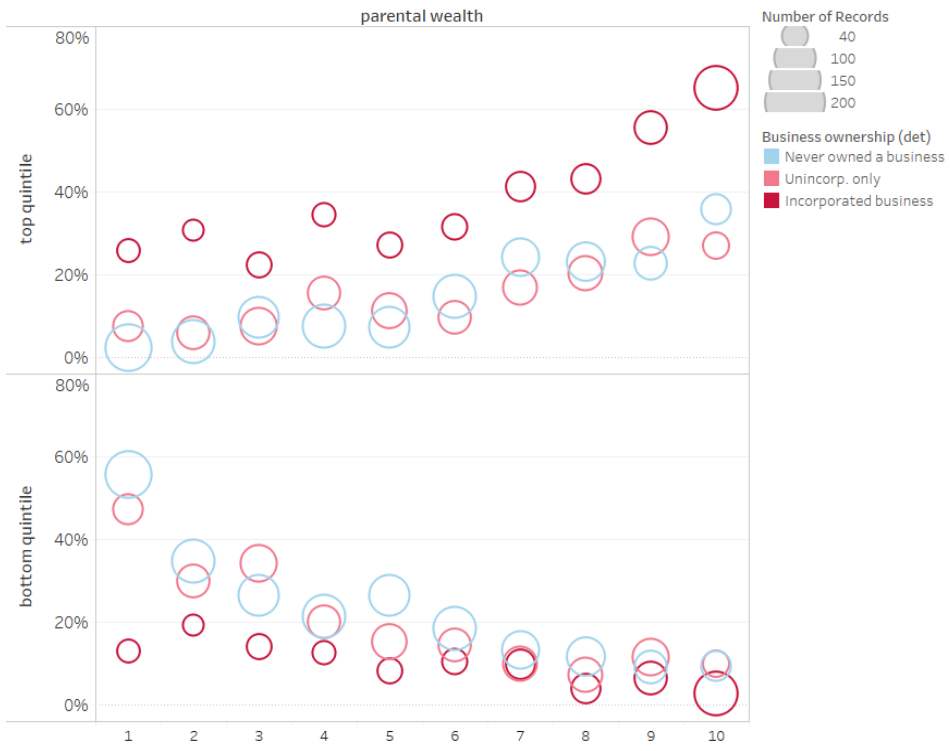


Figure 5: Placement in top/bottom wealth quintiles, by business ownership and parental wealth decile

Table 7: Wealth decile outcome, for different categories

dep var = wealth decile	by parent wealth		by education			by ability	
	bottom 50% (1)	top 50% (2)	HS or less (3)	some college (4)	college or more (5)	bottom 50% (6)	top 50% (7)
share yrs: self employed, HH	-0.24	0.41	0.29	2.11	-0.61	1.23	-0.49
	(0.94)	(0.59)	(1.11)	(1.33)	(0.88)	(1.76)	(1.22)
share yrs: incorp bus owner	5.66***	2.93***	3.68**	3.35**	3.81***	0.17	3.23**
	(1.34)	(0.65)	(1.65)	(1.58)	(1.01)	(3.02)	(1.45)
share yrs: unincorp owner	2.52***	0.77	1.93*	-0.26	0.89	1.11	2.72**
	(0.89)	(0.62)	(1.08)	(1.36)	(0.98)	(1.98)	(1.30)
share yrs: employed (any)	1.70***	1.25**	1.78***	2.29***	0.35	1.97*	0.37
	(0.42)	(0.48)	(0.41)	(0.80)	(0.97)	(1.18)	(1.07)
educ = 1, HS dropout	-0.37*	-1.32***	-0.81***			-0.14	-0.10
	(0.22)	(0.41)	(0.20)			(0.67)	(0.82)
educ = 2, some college	0.14	-0.23				0.73	-0.41
	(0.23)	(0.24)				(0.65)	(0.50)
educ = 3, college grad	0.93***	0.62**				1.25	0.19
	(0.29)	(0.26)				(0.79)	(0.58)
educ = 4, grad school	0.74*	0.76***			-0.00	2.15*	0.98
	(0.41)	(0.29)			(0.29)	(1.13)	(0.74)
share yrs (40-55): married	1.74***	2.13***	1.64***	1.54***	2.10***	1.70**	2.24***
	(0.20)	(0.23)	(0.19)	(0.39)	(0.41)	(0.66)	(0.71)
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	979	1019	911	518	569	359	384
Num clusters	462	485	506	415	379	283	293
R^2	0.477	0.453	0.570	0.621	0.599	0.811	0.809
Adj R^2	0.333	0.307	0.397	0.263	0.286	0.379	0.458

Notes: This table applies the specification from col 3 of table 6 to different categories of individuals: those with parental wealth in the bottom or top 50% (cols 1 and 2); those with high-school degree or less, with some college education (no degree), or finally those with at least a college degree. In columns 6 and 7 we distinguish households by ability. This is measured through the scores achieved by the family's children in the Child Development Survey supplement. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

Table 8: Outcome wealth decile, breakdown of explanatory power

	benchmk	exog		+endog		Parent FE	
dep var = wealth decile	(1)	(2)	(3)	(4)	(5)	(6)	(7)
share yrs: self employed, HH					0.42		-0.58
					(0.50)		(0.75)
share yrs: incorp bus owner					3.08***		3.33***
					(0.59)		(0.88)
share yrs: unincorp owner					1.45***		1.88***
					(0.50)		(0.72)
share yrs: employed (any)				1.64***	1.48***		1.16**
				(0.31)	(0.31)		(0.48)
educ_level = 1, HS dropout				-0.96***	-0.84***		-1.07***
				(0.20)	(0.20)		(0.31)
educ_level = 2, some college				0.10	0.09		0.06
				(0.18)	(0.17)		(0.25)
educ_level = 3, college grad				0.85***	0.80***		0.50*
				(0.21)	(0.21)		(0.30)
educ_level = 4, grad school				0.91***	0.80***		0.71**
				(0.25)	(0.25)		(0.36)
Industry					Yes		Yes
Mid-age state				Yes	Yes		Yes
share yrs (40-55): married				2.38***	2.18***		2.22***
				(0.17)	(0.16)		(0.24)
Parent FE						Yes	Yes
Parents' wealth cent FE		Yes	Yes	Yes	Yes		
Immig background+race		Yes	Yes	Yes	Yes		
Parents' educ+bus own			Yes	Yes	Yes		
Parent's emp+industry			Yes	Yes	Yes		
Mother's marital status			Yes	Yes	Yes		
Age + age sq	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year+gender FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Childhood state	Yes	Yes	Yes	Yes	Yes		
Num observations	1525	1525	1525	1525	1525	1525	1525
Num clusters	539	539	539	539	539	539	539
R^2	0.123	0.324	0.353	**0.519**	**0.556**	0.623	0.717
Adj R^2	0.0822	0.240	0.258	0.425	0.462	0.357	0.505

Notes: To allow for easy comparison across specification, the sample is further restricted to individuals with at least one sibling in the data. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

Figure 6: Entrepreneurial activity by *parental* wealth

Table 9: Lifetime entrepreneurial pursuits by *parental* wealth ranking

parental wealth	N	% ever self-emp	% ever own bus	% ever incorp	Prop Yrs Work	Prop Yrs Self-Emp	Prop Yrs Self-Emp (HH)	Prop Yrs Own Bus	Prop Yrs Incorp	% HS grads	% college grads
1	212	27	40	15	71%	5%	8%	8%	2%	64	11
2	203	22	46	13	79%	5%	7%	9%	2%	78	9
3	210	30	55	17	82%	7%	11%	12%	3%	84	16
4	205	33	47	16	86%	8%	11%	13%	3%	88	18
5	207	29	53	18	85%	7%	10%	12%	3%	92	24
6	210	29	48	18	85%	6%	11%	11%	4%	94	33
7	205	37	60	25	85%	9%	15%	17%	6%	94	29
8	207	36	58	25	85%	7%	13%	16%	4%	96	41
9	208	38	68	30	82%	11%	18%	21%	9%	95	46
10	206	49	74	54	84%	18%	23%	28%	14%	98	51
Grand Total	2,073	33	55	23	82%	8%	13%	15%	5%	88	28

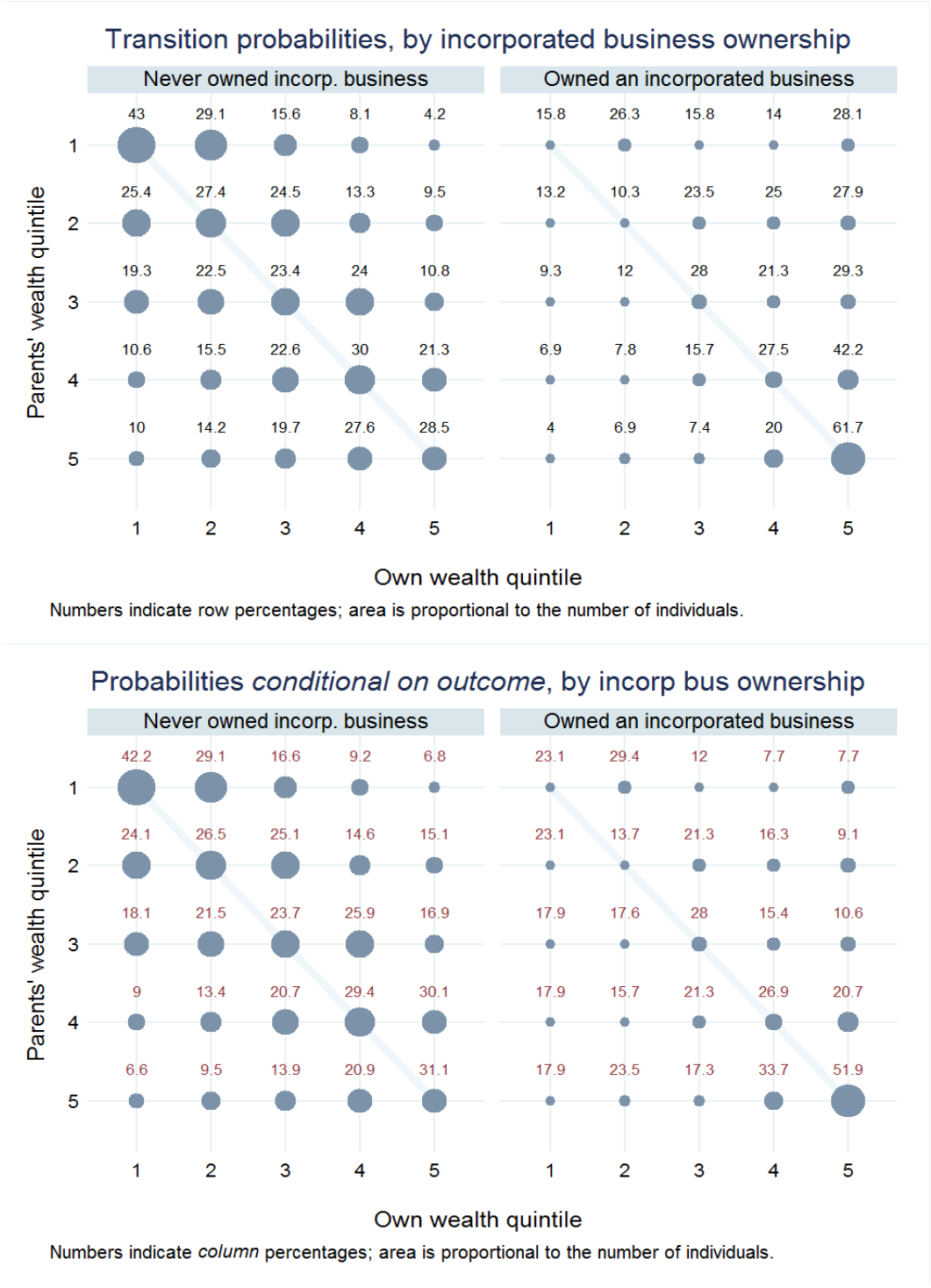


Figure 7: Prospective and retrospective transition probabilities

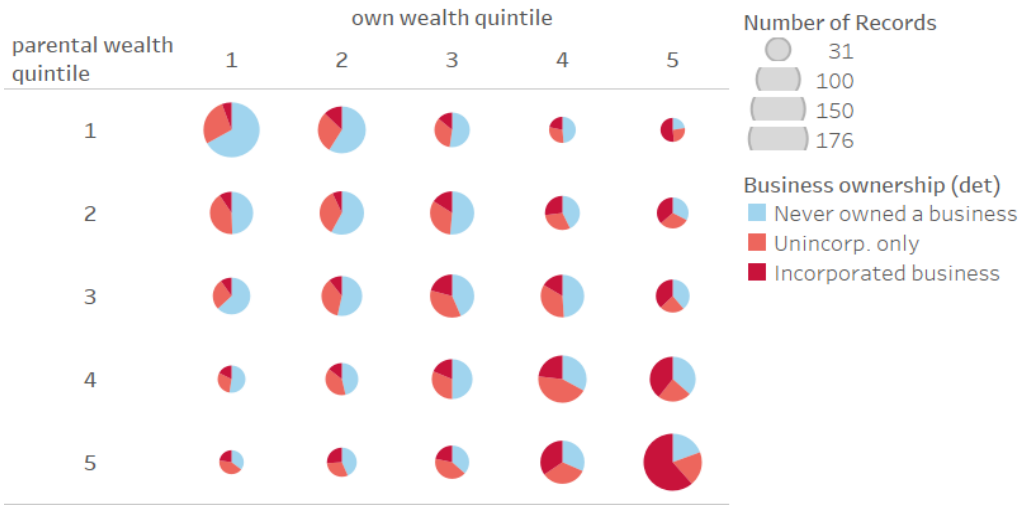


Figure 8: Density of business owners in the joint wealth distribution

Cross-generational entry and exit from business ownership - transition probabilities

Business ownership (det) / own wealth quintile

Parent business?	parental wealth (quintile)	Never owned a business					Unincorp. only					Incorporated business				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
No	Q1	47	28	14	9	2	31	30	20	9	9	11	15	22	22	30
	Q2	23	32	25	13	7	31	25	23	14	7	19	14	19	31	17
	Q3	19	21	20	29	12	6	22	40	25	6	5	10	35	23	28
	Q4	6	16	21	30	27	5	16	21	39	19	11	4	27	27	31
	Q5	15	10	20	34	22	6	9	29	21	35	5	15	7	17	56
Owned unincorp. only	Q1	44	33	16	2	5	49	24	16	8	3	14	41	14	9	23
	Q2	29	29	18	13	11	28	22	31	8	11	7		20	27	47
	Q3	35	23	21	10	11	20	28	13	20	20	22	17	9	22	30
	Q4	18	8	29	22	24	9	15	15	47	15	6	9	3	28	53
	Q5	4	28	24	12	32	13	20	13	33	22	9	5	14	21	51
Owned incorporated bus	Q1	40	33	13	7	7	38	38	13	13		38	25			38
	Q2	16	19	39	16	10	13	30	13	17	26	6	13	38	13	31
	Q3	7	26	30	30	7	27	15	19	35	4		8	42	17	33
	Q4	21	24	30	9	15	14	17	22	25	22		12	12	28	48
	Q5	8	17	15	28	32	13	5	21	32	29	1	4	4	21	69

Number of Records
1
20
40
60
84

Figure 9: Transition matrix for families who enter/stay/leave business ownership

Table 10: Intergenerational elasticity of wealth, interactions

entrep=	bus owner		incorp	uninc only	self-emp
dep var=ln(wealth)	(1)	(2)	(3)	(4)	(5)
ln(parent wealth)-ave	0.39***	0.50***	0.42***	0.51***	0.44***
	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
ln(parent wealth)^2		0.04***	0.03***	0.04***	0.04***
		(0.01)	(0.01)	(0.01)	(0.01)
ln(par $)**entrep*	-0.07	-0.12**	-0.10	-0.19***	0.02
	(0.06)	(0.06)	(0.06)	(0.07)	(0.06)
entrep	0.68***	0.65***	1.02***	-0.06	0.35***
	(0.08)	(0.08)	(0.09)	(0.09)	(0.07)
Mid-age state FE	Yes	Yes	Yes	Yes	Yes
own+parent age+age sq	Yes	Yes	Yes	Yes	Yes
Race + gender FE	Yes	Yes	Yes	Yes	Yes
Childhood state FE	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes
Num observations	1914	1914	1914	1914	1914
Num clusters	897	897	897	897	897
R^2	0.300	0.312	0.329	0.286	0.289
Adj R^2	0.249	0.262	0.280	0.235	0.238

Notes: $entrep$ stands in for the different entrepreneurial categories: whether anyone in the individual's household was ever a business owner (cols 1 and 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.

Figure 10: Cross-generational mobility by the type of business owned - residuals from elasticity regression

Table 11: Determinants of self-employment and business ownership

dep var = % years as *entrep*:	bus owner			incorp	uninc only	self-emp	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
share yrs: self employed			77.24***	27.55***	51.55***		
			(2.51)	(3.11)	(3.17)		
Parent[a] share yrs *entrep*		5.24**	3.93*	0.86	3.31*		3.49
		(2.46)	(2.03)	(2.67)	(1.96)		(2.16)
* (same industry)		9.40*	2.18	15.58**	5.13		16.39***
		(4.95)	(3.64)	(6.92)	(5.51)		(4.12)
share yrs: employed (any)	5.40**	4.57*	-1.39	-1.27	-0.28	7.89***	7.55***
	(2.41)	(2.47)	(2.09)	(1.37)	(1.69)	(1.60)	(1.66)
share yrs (40-55): married	4.83***	4.62***	4.54***	1.90***	2.86***	0.34	0.27
	(1.09)	(1.10)	(0.86)	(0.67)	(0.76)	(0.98)	(0.97)
educ_level = 1, HS dropout	-1.85	-1.75	-0.51	-0.25	-0.10	-1.56	-1.62
	(1.38)	(1.40)	(1.05)	(0.63)	(1.00)	(1.06)	(1.10)
educ_level = 2, some college	2.21*	2.27*	1.34	0.31	0.64	1.12	1.64
	(1.30)	(1.32)	(1.05)	(0.74)	(0.89)	(1.01)	(1.01)
educ_level = 3, college grad	1.56	1.54	2.31*	1.62*	0.84	-0.95	-0.72
	(1.58)	(1.59)	(1.30)	(0.85)	(1.04)	(1.26)	(1.25)
educ_level = 4, grad school	2.70	2.14	-0.26	1.39	-0.92	3.14*	3.48**
	(2.01)	(1.97)	(1.51)	(1.18)	(1.33)	(1.76)	(1.74)
Parent wealth dec = 2-6							
Parent wealth dec = 7	3.54	2.38	3.13*	2.01	0.87	0.13	-1.52
	(2.38)	(2.43)	(1.81)	(1.29)	(1.47)	(1.99)	(2.00)
Parent wealth dec = 8	4.43**	3.18	3.45**	1.07	1.87	0.70	-1.03
	(2.17)	(2.26)	(1.67)	(1.05)	(1.48)	(1.88)	(1.92)
Parent wealth dec = 9	7.32***	5.80**	4.90**	3.74***	0.60	2.49	0.06
	(2.71)	(2.70)	(1.96)	(1.43)	(1.73)	(2.23)	(2.28)
Parent wealth dec = 10	11.56***	7.66***	3.12	5.98***	-2.90*	8.26***	3.47
	(2.69)	(2.85)	(2.04)	(1.47)	(1.70)	(2.55)	(2.60)
Parents wealth decile FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Own+parents' education	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Own+parent's industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Childhood state	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year and gender	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Immig background+race	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	2047	2024	2024	2024	2024	2047	2013
Num clusters	940	930	930	930	930	940	926
R^2	0.189	0.202	0.507	0.282	0.388	0.205	0.235
Adj R^2	0.143	0.150	0.475	0.235	0.348	0.160	0.185

Notes: The dependent variable is the share of adult years spent in self-employment, in percentage points (max 100). Standard errors are robust and clustered at the level of the original (1968) household. Significance indicated is at 10%(*), 5%(**), and 1%(***).
[a] parent years in self-employment refers to the main earner, defined as the parent with more years in the workforce. Similarly, "same industry" compares the mode industry of the main earning parent with the mode industry over the individual.

Table 12: Wealth decile outcome, by parental business ownership

	Parents not bus owners		Parents owned a business	
	(1)	(2)	(3)	(4)
share yrs: self employed (HH)	0.24	0.12	-0.21	-0.19
	(0.81)	(0.81)	(0.69)	(0.69)
share yrs: incorp bus owner	2.81**	3.32***	4.34***	4.73***
	(1.16)	(1.16)	(0.75)	(0.81)
share yrs: unincorp owner	1.04	1.08	1.77**	1.93***
	(0.78)	(0.78)	(0.73)	(0.73)
yrs bus owner * (parent quint-3)		-0.83**		-0.33
		(0.35)		(0.30)
share yrs: employed	1.42***	1.13***	1.47**	1.42**
	(0.39)	(0.42)	(0.59)	(0.60)
yrs employed * (parent quint-3)		-0.54**		0.09
		(0.25)		(0.31)
educ = 1, HS dropout	-0.88***	-0.76***	-0.53	-0.54*
	(0.27)	(0.27)	(0.32)	(0.32)
educ = 2, some college	0.11	0.18	-0.24	-0.23
	(0.22)	(0.22)	(0.24)	(0.24)
educ = 3, college grad	0.80***	0.84***	0.84***	0.84***
	(0.27)	(0.27)	(0.28)	(0.28)
educ = 4, grad school	0.95***	1.02***	0.97***	0.96***
	(0.35)	(0.35)	(0.34)	(0.34)
share yrs (40-55): married	1.97***	1.93***	1.82***	1.81***
	(0.20)	(0.20)	(0.25)	(0.25)
2nd gen immigrant	0.89*	0.84*	0.46	0.51
	(0.47)	(0.48)	(0.71)	(0.71)
3rd gen immigrant	0.68***	0.64**	0.38	0.38
	(0.25)	(0.25)	(0.31)	(0.31)
Full controls...	Yes	Yes	Yes	Yes
Num observations	1094	1094	904	904
Num clusters	519	519	443	443
R^2	0.535	0.542	0.598	0.599
Adj R^2	0.391	0.399	0.432	0.431

Notes: This table applies the specification from col 3 of table 6 to different categories of individuals.
[a] *parent* refers to the main earning parent, defined as the one with more years in the labor market when observed. We introduce tne following two interaction terms: time spent as business owner * parental wealth, and time spent employed * parental wealth. Parental wealth is de-meaned and scaled so that it ranges from -2.5 to 2.5. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

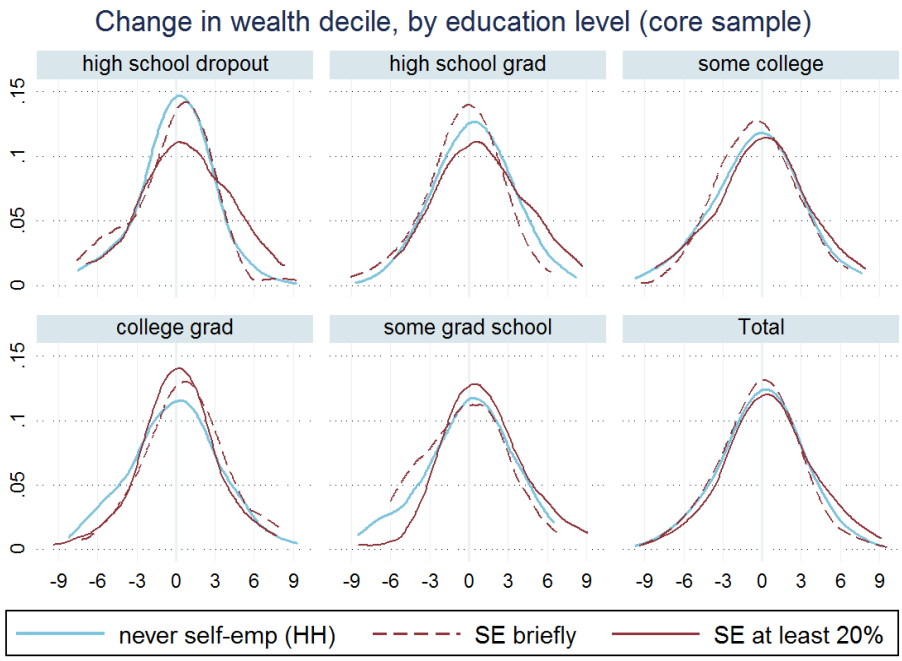


Figure 11: Wealth mobility by education category and self-employment

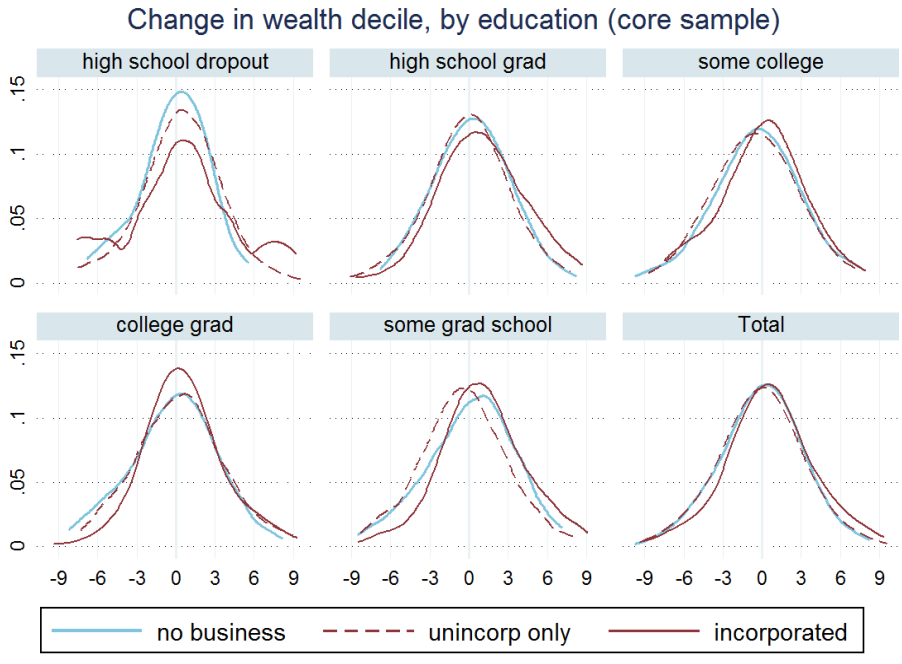


Figure 12: Wealth mobility by education category and business ownership

Table 13: Probability of ending up in the top wealth quintile, by parental wealth, education, and business ownership – representative (SRC) sample

parent wealth quintile	Ever own a business?	HS dropout	HS grad	some college	college	post-grad
1	No	0%	2%	7%	15%	0%
	Unincorp only	3%	3%	11%	29%	33%
	Incorporated	27%	32%	8%	22%	100%
2	No	0%	6%	8%	16%	50%
	Unincorp only	4%	5%	18%	31%	17%
	Incorporated	0%	13%	36%	36%	67%
3	No	0%	4%	7%	29%	24%
	Unincorp only	8%	7%	3%	33%	17%
	Incorporated	0%	30%	25%	29%	38%
4	No	7%	12%	17%	39%	48%
	Unincorp only	0%	9%	16%	28%	46%
	Incorporated	67%	27%	26%	62%	63%
5	No	0%	23%	18%	31%	56%
	Unincorp only	0%	15%	22%	45%	38%
	Incorporated	0%	56%	54%	69%	77%

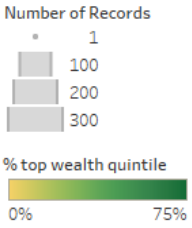
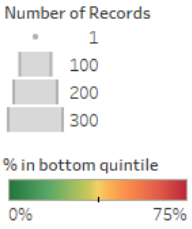


Table 14: Probability of ending up in the *bottom* quintile, by parental wealth, education, and business ownership

parent wealth quintile	Ever own a business?	HS dropout	HS grad	some college	college	post-grad
1	No	63%	38%	38%	38%	25%
	Unincorp only	39%	36%	42%	29%	33%
	Incorporated	27%	9%	8%	33%	0%
2	No	37%	21%	25%	11%	25%
	Unincorp only	36%	25%	33%	6%	50%
	Incorporated	33%	23%	0%	0%	11%
3	No	38%	31%	23%	7%	6%
	Unincorp only	17%	14%	16%	11%	17%
	Incorporated	0%	5%	13%	12%	8%
4	No	50%	6%	8%	12%	12%
	Unincorp only	25%	11%	11%	0%	8%
	Incorporated	33%	4%	13%	0%	6%
5	No	0%	4%	18%	5%	11%
	Unincorp only	60%	12%	11%	3%	10%
	Incorporated	50%	4%	2%	2%	3%



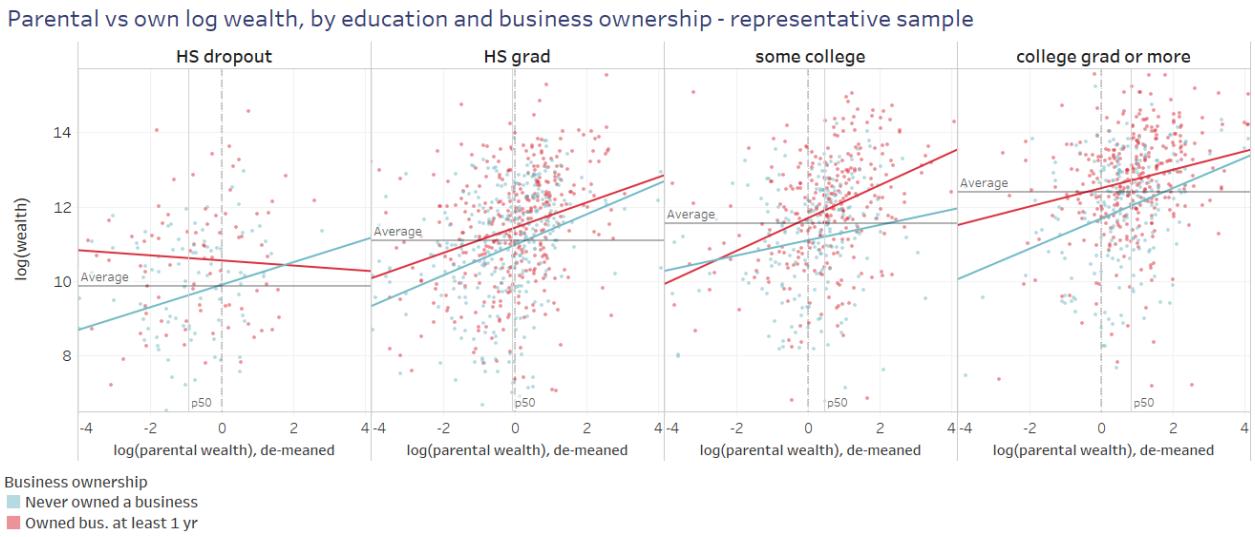


Figure 13: Mobility by education category and business ownership

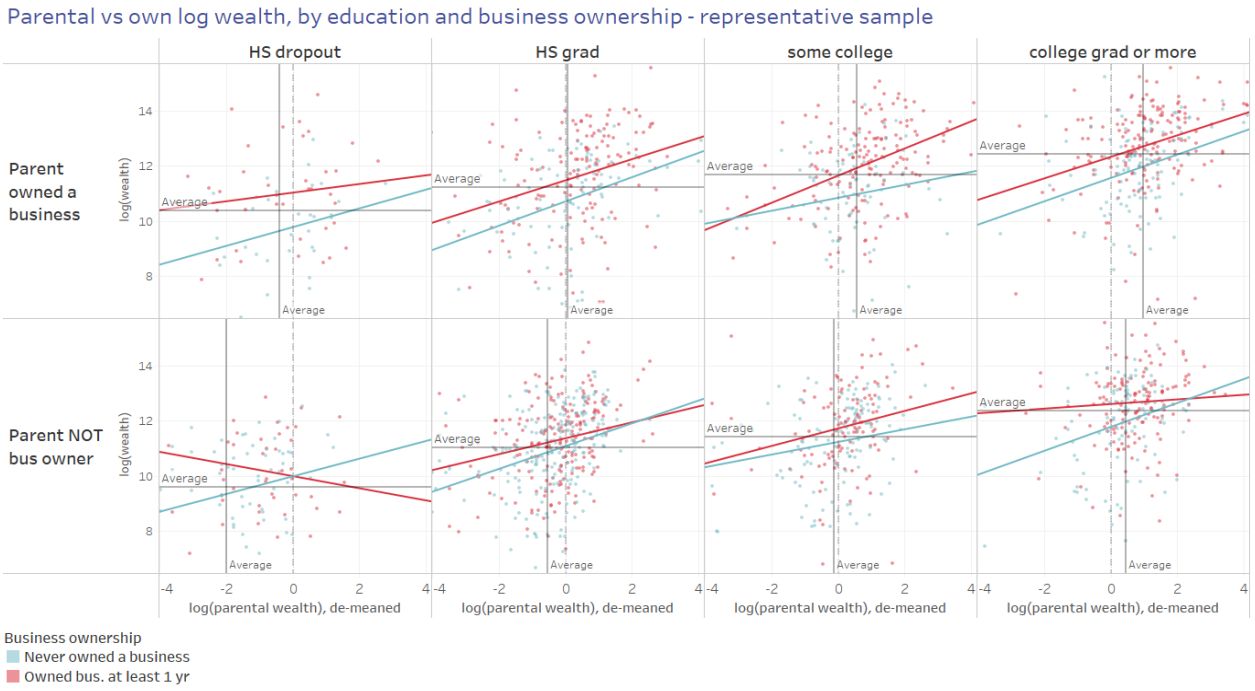


Figure 14: Mobility by education category and business ownership, and by parental business ownership

Figure 15: Mobility by education category and business ownership - log wealth residuals

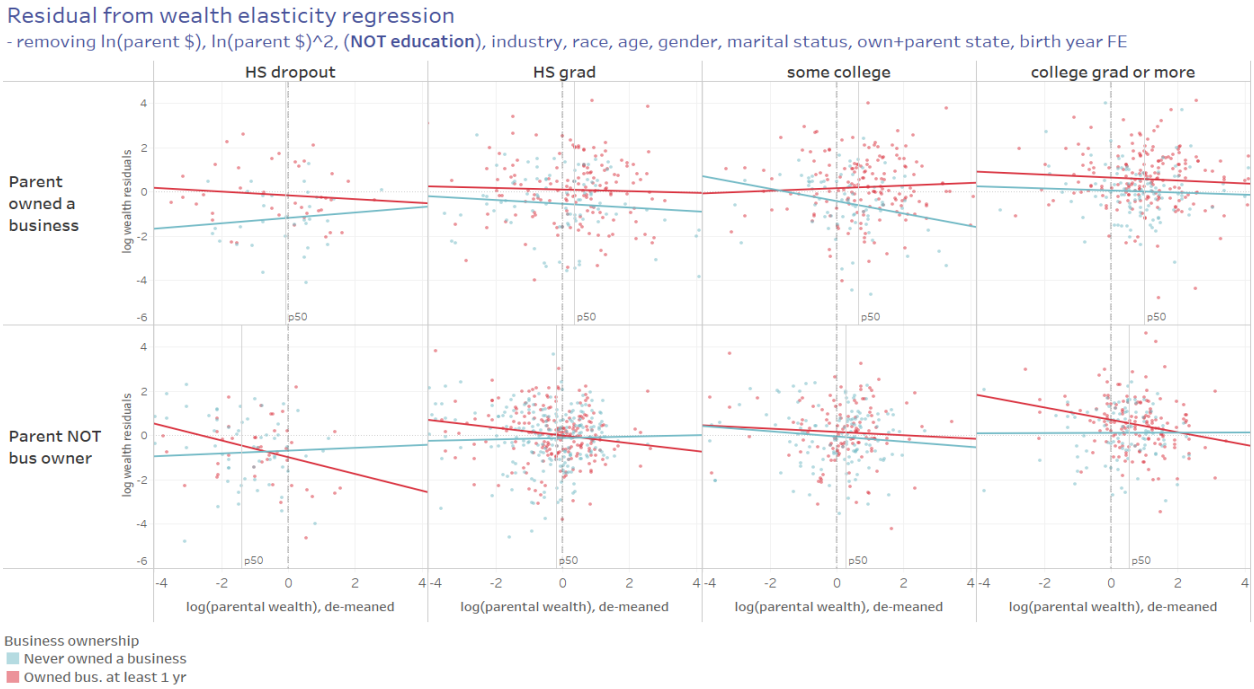


Figure 16: Mobility by education category and business ownership, distinguishing by parental business ownership

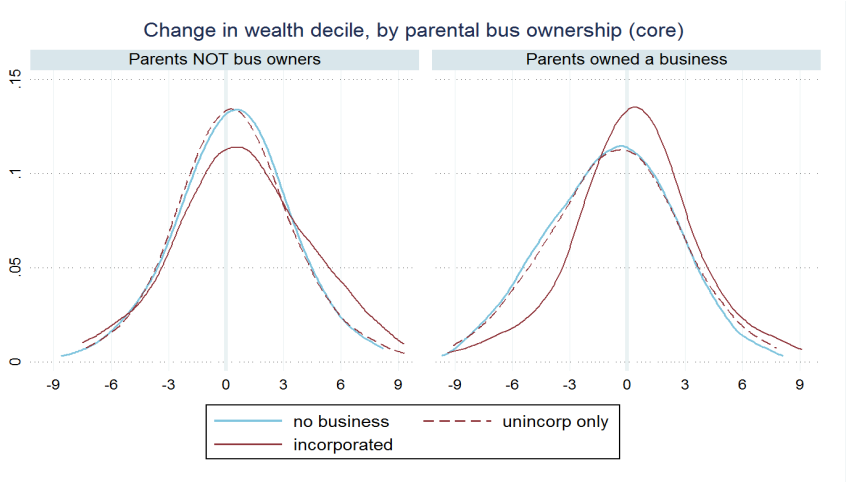


Figure 17: Wealth mobility in the core sample, by parental business ownership

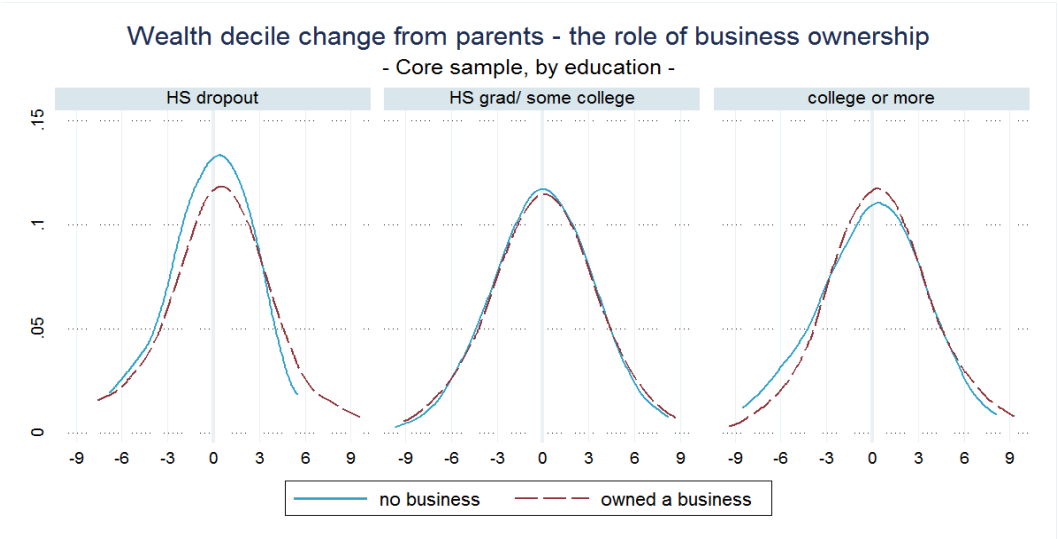


Figure 18: Wealth mobility in the core sample, by education

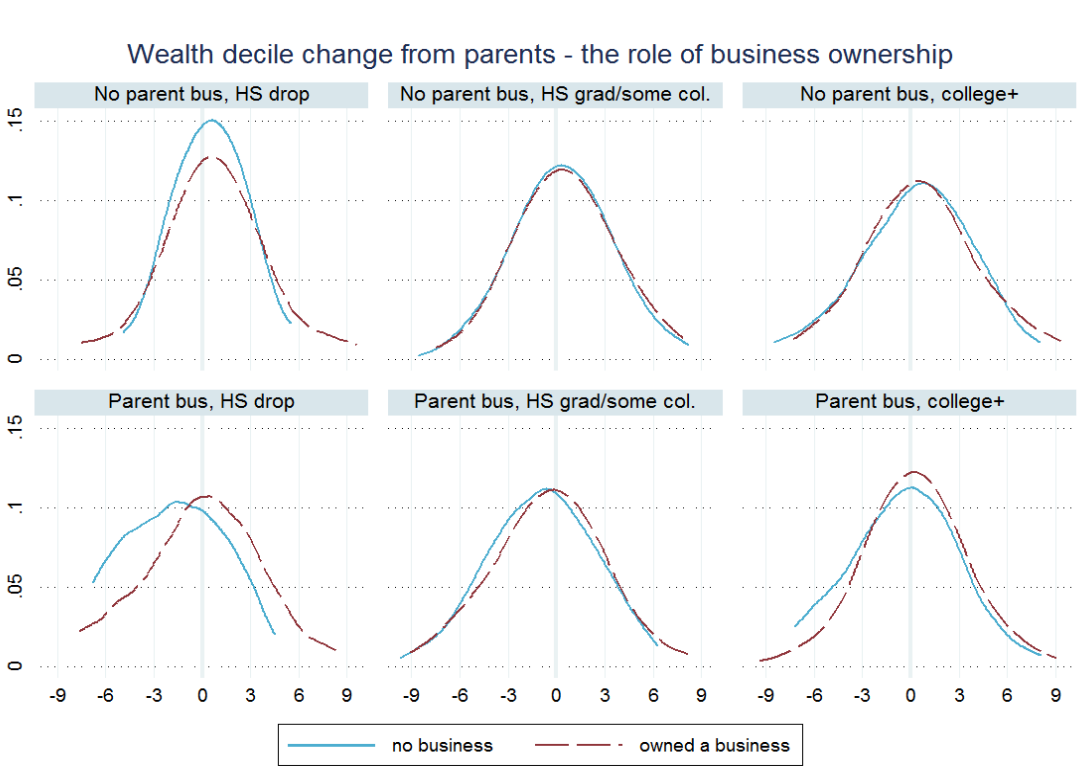


Figure 19: Wealth mobility in the core sample, by parental business ownership

Figure 20: Placement in top/bottom wealth quintiles, by business ownership, parental wealth, and ability

Figure 21: Mobility by ability and business ownership

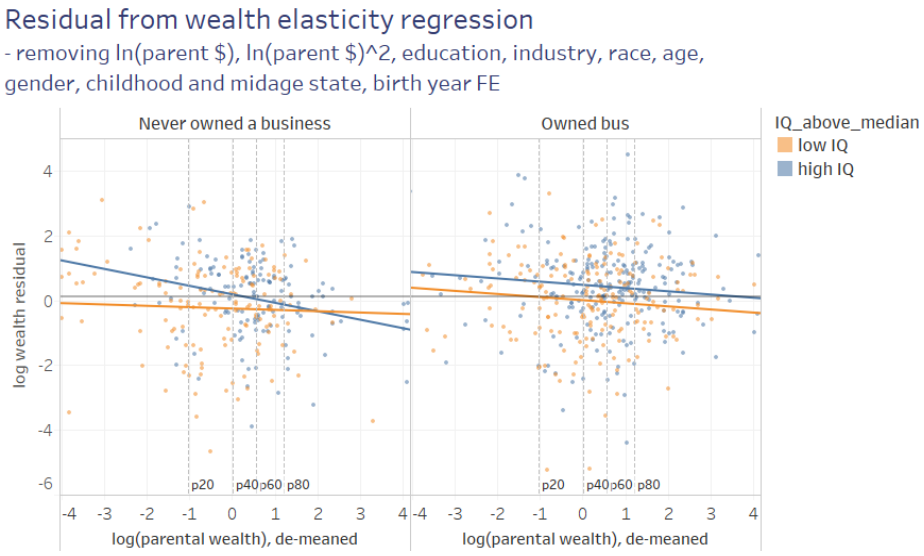


Figure 22: Mobility by business ownership and ability

Table 15: Intergenerational elasticity of wealth, education vs ability

dep var=ln(wealth)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln(parent wealth)-ave	0.33***	0.36***	0.30***	0.30***	0.29***	0.40***	0.37***
	(0.04)	(0.05)	(0.03)	(0.05)	(0.07)	(0.09)	(0.10)
ln(parent wealth)^2	0.03***	0.03***	0.03***	0.03***	0.04***	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Educ = HS dropout	-0.73***	-0.69***	-0.88***	-0.65***	-0.48*	-0.55**	-0.63*
	(0.16)	(0.15)	(0.22)	(0.21)	(0.25)	(0.26)	(0.34)
Educ = some college	0.26***	0.26**	0.26***	0.25**	0.07	0.02	0.01
	(0.10)	(0.10)	(0.10)	(0.10)	(0.15)	(0.15)	(0.15)
Educ = college deg only	0.79***	0.74***	0.69***	0.66***	0.70***	0.69***	0.69***
	(0.12)	(0.11)	(0.15)	(0.15)	(0.18)	(0.18)	(0.26)
Educ = post-graduate	0.78***	0.74***	0.68***	0.65***	0.83***	0.81***	0.81***
	(0.15)	(0.15)	(0.17)	(0.17)	(0.21)	(0.21)	(0.26)
Business owner		0.55***	0.47***	0.47***	0.34***	0.16	0.14
		(0.07)	(0.10)	(0.10)	(0.11)	(0.17)	(0.19)
IQ above median					0.54***	0.39**	0.38**
					(0.12)	(0.18)	(0.18)
ln(par $)*HS dropout	-0.07	-0.07		0.15	-0.00	-0.05	0.01
	(0.08)	(0.08)		(0.10)	(0.10)	(0.10)	(0.12)
ln(par $)*college grad	-0.03	-0.02		0.05	-0.03	-0.05	-0.02
	(0.07)	(0.06)		(0.08)	(0.07)	(0.08)	(0.12)
ln(par $)*Bus		-0.09		0.05	0.07	-0.09	-0.03
		(0.06)		(0.07)	(0.08)	(0.11)	(0.14)
ln(par $)*high IQ					-0.14*	-0.34***	-0.33***
					(0.08)	(0.11)	(0.12)
Bus * HS dropout			0.51*	-0.04			0.12
			(0.29)	(0.26)			(0.45)
ln(par $)*Bus*HS drop				-0.50***			-0.19
				(0.15)			(0.22)
Bus * college			0.09	0.16			0.01
			(0.16)	(0.17)			(0.28)
ln(par $)*Bus*college+				-0.15			-0.07
				(0.12)			(0.16)
Bus * high IQ						0.21	0.22
						(0.24)	(0.24)
ln(par $)*Bus*high IQ						0.33**	0.31**
						(0.15)	(0.16)
Industry+state FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Own+parent age+age^2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year+gender	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mother's educ+state	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Immig+race	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	1892	1892	1892	1892	704	704	704
Num clusters	890	890	890	890	487	487	487
R^2	0.354	0.375	0.375	0.382	0.519	0.524	0.526
Adj R^2	0.298	0.320	0.320	0.326	0.393	0.398	0.395

Notes: log parental wealth ln(par $) is de-meaned

Figure 23: Parental and own wealth distribution, by sample and race (excluding "Other")

Table 16: Summary statistics over the two main subsamples and race classification

PSID sample	race	N	Parent wealth decile	Own wealth decile	% ever self-emp (HH)	% ever own bus	% ever own incorp	% HS grads	college grads (%)
Representative (SRC)	White	1,861	5.8	5.7	49	57	24	89	29
	Black	175	2.6	3.5	21	29	11	83	13
	Other races	37	5.1	5.9	51	46	27	81	41
	Total	**2,073**	**5.5**	**5.6**	**47**	**55**	**23**	**88**	**28**
Disadvantaged (SEO)	White	96	3.9	5.0	48	57	27	82	11
	Black	1,151	2.4	3.2	27	27	7	75	8
	Other races	18	3.1	4.3	17	28	6	67	6
	Total	**1,265**	**2.5**	**3.4**	**28**	**30**	**9**	**75**	**8**
Grand Total		3,338	4.4	4.7	40	45	18	83	20

Table 17: Business ownership and self-employment by education, parental wealth decile, and race

		Educ attainment							
		% who ever own a business				% who are ever self-emp (HH)			
race	parental wealth	HS dropout	HS grad	some college	college+	HS dropout	HS grad	some college	college+
Grand Total		**28%**	**35%**	**39%**	**52%**	**31%**	**34%**	**34%**	**37%**
White	Total	**50%**	**52%**	**49%**	**60%**	**47%**	**45%**	**44%**	**49%**
	1	49%	54%	39%	67%	51%	49%	30%	50%
	2	47%	50%	47%	50%	33%	41%	43%	31%
	3	65%	57%	52%	69%	61%	46%	46%	63%
	4	38%	48%	51%	53%	42%	46%	49%	43%
Black	Total	**17%**	**24%**	**35%**	**43%**	**23%**	**26%**	**30%**	**26%**
	1	11%	22%	38%	34%	22%	28%	36%	24%
	2	30%	25%	30%	54%	21%	21%	24%	38%
	3	22%	23%	34%	35%	16%	23%	22%	22%
	4	28%	31%	36%	50%	44%	34%	31%	15%

We show only the bottom 4 parental wealth deciles, since above that we have too few African American families.

Table 18: Probability of ending up in the *top* wealth quintile (shown in both the shading and labels), by parental wealth, education, and business ownership – including both SRC and SEO samples, by race

parent wealth quintile	Ever own a business?	White				Black			
		HS dropout	HS grad	some college	college & post-grad	HS dropout	HS grad	some college	college & post-grad
1	No	0%	1%	7%	7%	0%	1%	2%	10%
	Unincorp only	3%	4%	13%	44%	3%	2%	0%	0%
	Incorporated	33%	35%	14%	45%	0%	0%	0%	22%
2	No	0%	7%	7%	29%	0%	0%	3%	4%
	Unincorp only	4%	5%	22%	30%	0%	6%	0%	25%
	Incorporated	0%	13%	36%	56%		8%	7%	0%
3	No	0%	5%	7%	26%	0%	4%	12%	0%
	Unincorp only	8%	7%	3%	27%	0%	13%	0%	20%
	Incorporated	0%	29%	36%	35%	0%	33%	25%	0%
4	No	7%	11%	16%	42%	0%	0%	0%	0%
	Unincorp only	0%	8%	16%	33%		0%	0%	0%
	Incorporated	67%	30%	23%	60%		100%		
5	No	0%	22%	18%	37%	0%	100%	0%	
	Unincorp only	0%	19%	22%	42%		0%	0%	
	Incorporated	0%	58%	55%	70%			0%	100%

Number of Records: 1, 100, 200, 300

% in top quintile: 0% – 75%

Table 19: Probability of ending up in the *bottom* quintile (shown in both the shading and labels), by parental wealth, education, and business ownership – including both SRC and SEO samples, by race

parent wealth quintile	Ever own a business?	White				Black			
		HS dropout	HS grad	some college	college & post-grad	HS dropout	HS grad	some college	college & post-grad
1	No	63%	37%	37%	21%	67%	49%	45%	32%
	Unincorp only	42%	33%	44%	22%	52%	39%	44%	40%
	Incorporated	25%	13%	14%	27%	50%	22%	27%	11%
2	No	38%	22%	21%	13%	65%	41%	37%	28%
	Unincorp only	28%	26%	28%	20%	50%	39%	30%	13%
	Incorporated	25%	20%	0%	0%		8%	13%	40%
3	No	33%	23%	21%	7%	50%	56%	18%	50%
	Unincorp only	17%	14%	17%	13%	100%	13%	17%	0%
	Incorporated	0%	5%	12%	10%	0%	0%	0%	50%
4	No	50%	6%	8%	13%	100%	23%	0%	50%
	Unincorp only	25%	12%	12%	2%		0%	20%	0%
	Incorporated	33%	7%	10%	2%		0%		
5	No	0%	4%	18%	7%	100%	0%	0%	
	Unincorp only	60%	11%	11%	6%		50%	33%	
	Incorporated	50%	0%	2%	2%			100%	0%

Number of Records: 1, 100, 200, 300

% in bottom quint: 0% – 75%

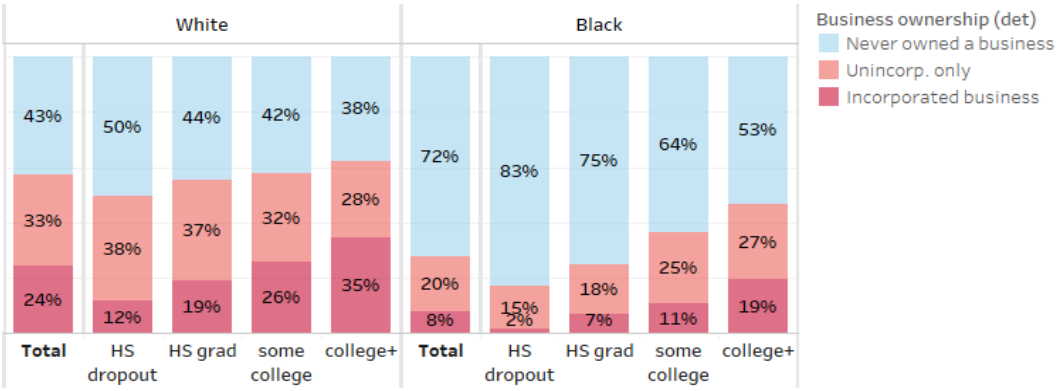


Figure 24: Business ownership by race and education

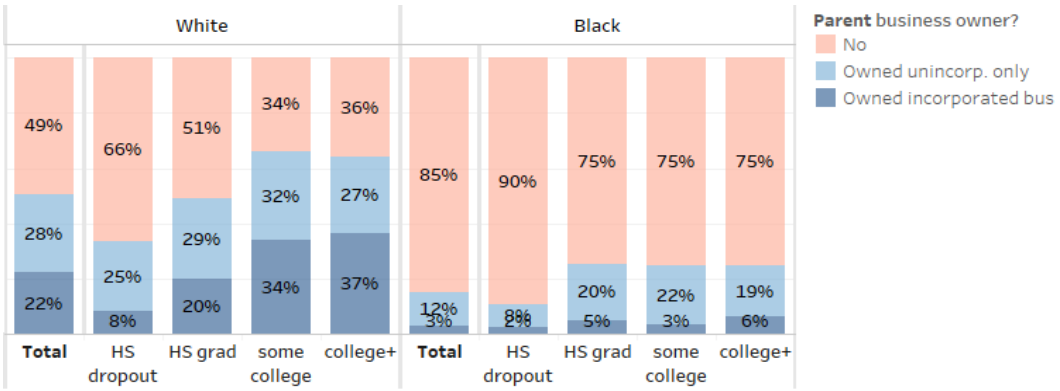


Figure 25: *Parental* business ownership by race and *parental* education

Figure 26: Business ownership by race, education, and parental experience

Table 20: Determinants of self-employment and business ownership, both samples combined

	% years bus owner						% SE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
share yrs: self employed						77.11***	
						(2.23)	
Parent[a] share yrs *entrep*					5.04**	3.48**	2.94
					(2.11)	(1.75)	(1.90)
* (same industry)					10.64**	2.94	16.13***
					(4.46)	(3.28)	(3.77)
share yrs: employed			3.65***	4.10***	3.96***	-0.26	5.31***
			(1.40)	(1.41)	(1.47)	(1.27)	(1.00)
share yrs (40-55): married			4.55***	4.43***	4.41***	3.96***	0.62
			(0.73)	(0.73)	(0.75)	(0.59)	(0.63)
educ = 1, HS dropout			-1.54**	-1.03	-0.71	-0.50	-0.21
			(0.77)	(0.77)	(0.79)	(0.59)	(0.65)
educ = 2, some college			4.00***	3.11***	3.01***	1.90***	1.78**
			(0.87)	(0.86)	(0.90)	(0.72)	(0.69)
educ = 3, college grad			5.41***	3.18**	2.73**	2.96***	-0.08
			(1.26)	(1.26)	(1.32)	(1.11)	(0.95)
educ = 4, grad school			7.56***	5.23***	4.12**	1.52	3.65**
			(1.77)	(1.76)	(1.77)	(1.40)	(1.42)
Race = Black	-9.82***	-5.98***	-6.34***	-4.07***	-3.24***	-1.57**	-2.26***
	(0.88)	(0.91)	(0.88)	(0.89)	(0.93)	(0.75)	(0.75)
Race = Other	-5.19	-2.89	-4.51	-2.95	-2.87	-2.88	-0.55
	(3.63)	(3.38)	(3.40)	(3.24)	(3.23)	(1.81)	(2.71)
Parent wealth dec = 2		0.43		-0.40	-0.30	-0.09	-0.42
Parent wealth dec = 3		2.12*		1.20	1.11	1.30	-0.30
Parent wealth dec = 4		2.13**		0.56	0.50	0.77	-0.46
Parent wealth dec = 5		2.31*		0.56	-0.15	0.57	-1.12
Parent wealth dec = 6		1.42		-0.48	-1.13	0.05	-1.75
Parent wealth dec = 7		6.98***		4.64**	3.98**	3.45**	0.31
Parent wealth dec = 8		6.47***		4.73***	3.75**	3.45**	-0.03
Parent wealth dec = 9		11.29***		8.55***	7.00***	5.34***	1.43
Parent wealth dec = 10		17.50***		13.03***	8.91***	3.45*	5.25**
Parents wealth decile FE	-	Yes	Yes	Yes	Yes	Yes	Yes
Own educ+industry	-	-	Yes	Yes	Yes	Yes	Yes
Parent educ+industry	-	-	-	-	Yes	Yes	Yes
Own+parents' state	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Birth year and gender	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Immig background+race	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	3338	3338	3303	3303	3191	3191	3177
Num clusters	1467	1467	1456	1456	1419	1419	1414
R^2	0.114	0.156	0.195	0.220	0.236	0.528	0.228
Adj R^2	0.0796	0.121	0.159	0.183	0.193	0.501	0.185

Notes: The dependent variable is the share of adult years spent in self-employment, in percentage points (max 100). Standard errors are robust and clustered at the level of the original (1968) household. Significance indicated is at 10%(*), 5%(**), and 1%(***).
[a] parent years in self-employment refers to the main earner, defined as the parent with more years in the sample. Similarly, "same industry" compares the mode industry of the main earning parent with the mode industry over the individual.

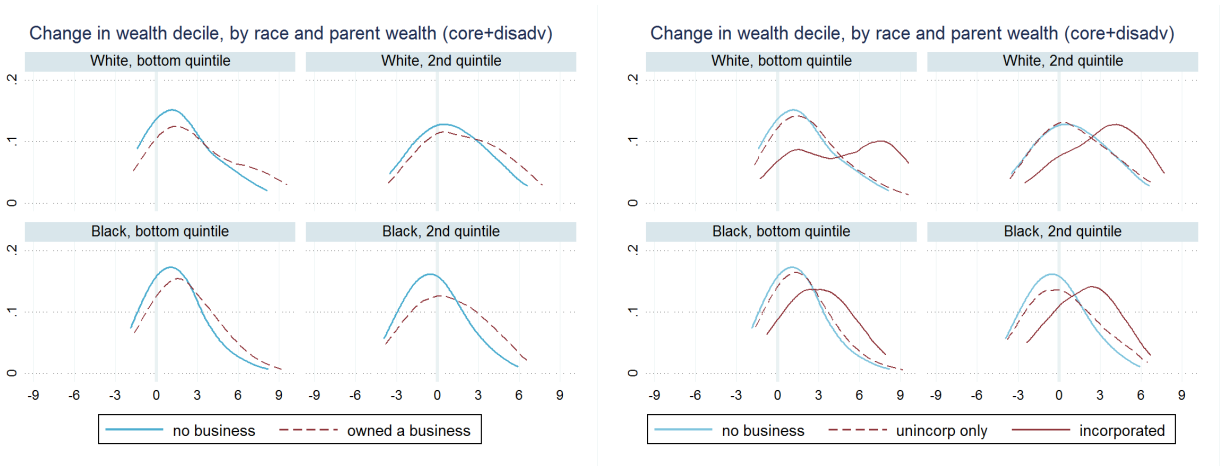


Figure 27: Wealth mobility in the two samples combined, by race

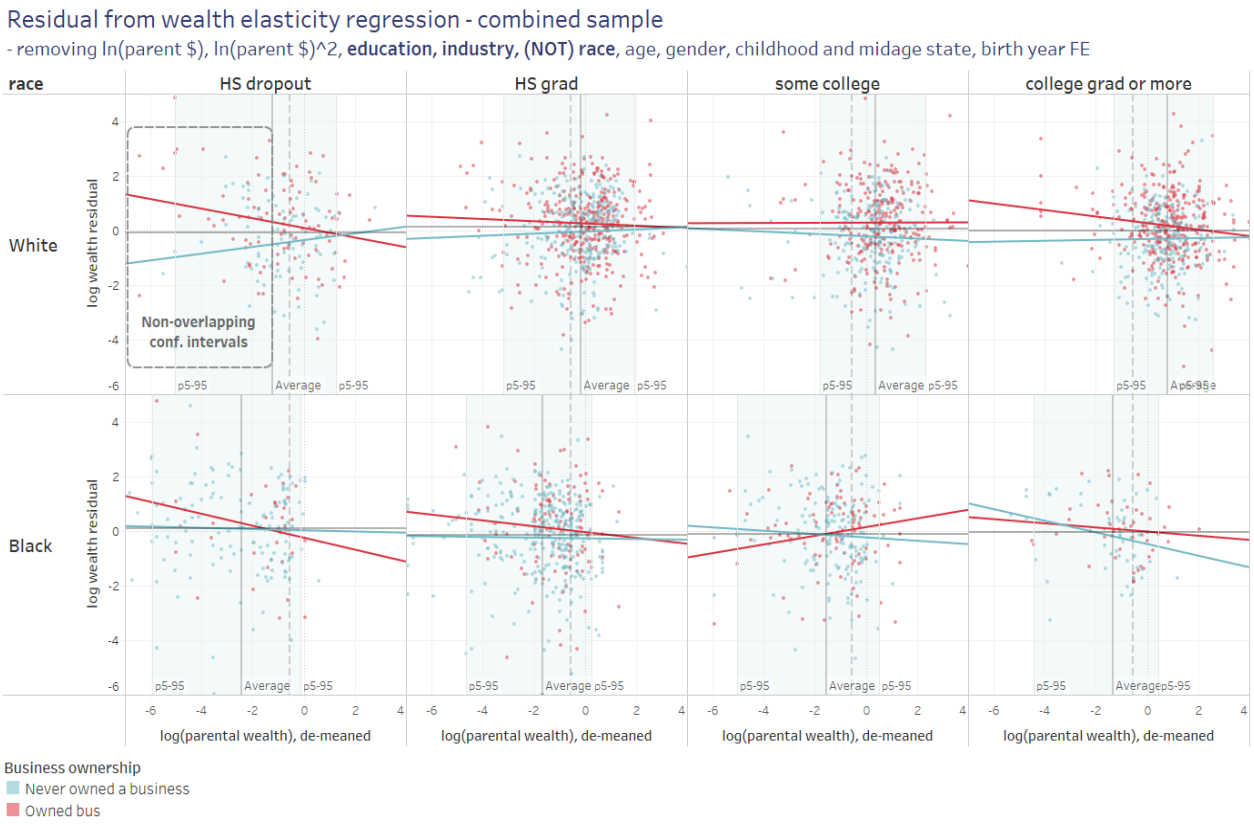


Figure 28: Mobility by education category and business ownership, log wealth residuals – by race

Table 21: Wealth mobility - racial differences

	Core + disadvantaged samples			bottom 40%	Disadv sample
dep var = ln(wealth)	(1)	(2)	(3)	(4)	(5)
ln(parent wealth)-ave	0.47***	0.46***	0.53***	0.48***	0.39***
	(0.03)	(0.04)	(0.05)	(0.11)	(0.10)
ln(parent wealth)^2	0.04***	0.04***	0.03***	0.02*	0.04**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
ln(par $)*Black	-0.07		-0.17**	-0.19**	
	(0.06)		(0.07)	(0.10)	
ln(par $)*Bus		-0.07	-0.16**	-0.35***	-0.02
		(0.04)	(0.06)	(0.12)	(0.09)
ln(par $)*Black*Bus			0.14	0.34**	
			(0.10)	(0.15)	
Black*Bus			-0.07	0.28	
			(0.19)	(0.28)	
Business owner		0.61***	0.66***	0.33*	0.64***
		(0.07)	(0.08)	(0.19)	(0.17)
Race = Black	-0.82***	-0.60***	-0.70***	-0.73***	-0.68**
	(0.12)	(0.11)	(0.14)	(0.21)	(0.33)
Race = Other	0.15	0.24	0.28	-0.41	-0.40
	(0.37)	(0.36)	(0.35)	(0.41)	(0.60)
Parent+own state FE	Yes	Yes	Yes	Yes	Yes
Own+parent age+age^2	Yes	Yes	Yes	Yes	Yes
Race+gender+birth yr	Yes	Yes	Yes	Yes	Yes
Num observations	2812	2812	2812	1486	898
Num clusters	1302	1302	1302	678	405
R^2	0.293	0.318	0.321	0.222	0.204
Adj R^2	0.259	0.285	0.287	0.152	0.105

Notes: While earlier regressions considered only the representative (core) sample, here we use both the core and the low SES (disadvantaged) samples in columns 1 through 3. In column 4 we keep only the bottom 4 deciles of the combined sample, and in column 5 we employ only the disadvantaged (SEO) sample. Significance indicated is at 10%(*), 5%(**), and 1%(***).

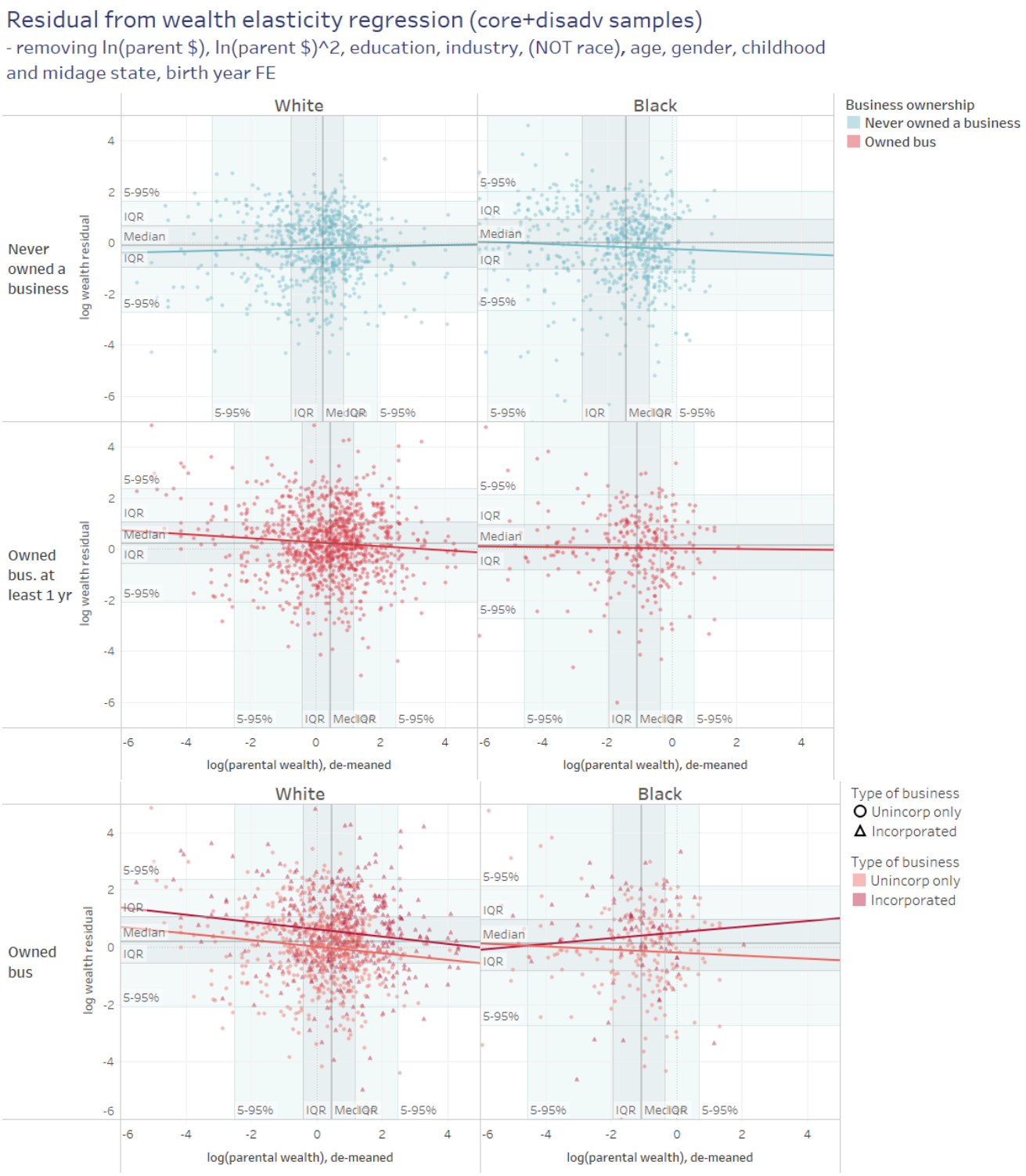


Figure 29: Mobility by business ownership and race in the combined sample, log wealth residuals

Appendix

Table 22: Wealth decile outcome, for different categories

dep var = wealth decile	all (1)	by education: HS or less (2)	by education: some college (3)	by education: college or more (4)	by ability: bottom 50% (5)	by ability: top 50% (6)
share yrs: self employed (HH,any)	0.21	0.45	1.56	-0.36	0.99	-1.05
	(0.48)	(1.04)	(1.29)	(0.83)	(1.64)	(1.20)
share yrs: incorp bus owner	4.27***	4.66***	2.21	4.47***	0.19	5.42***
	(0.71)	(1.68)	(1.63)	(1.31)	(2.98)	(1.81)
incorp.*(parent quint-3)	-0.62*	-1.46*	1.16	-0.86	0.62	-1.03
	(0.36)	(0.87)	(0.89)	(0.68)	(1.99)	(1.10)
share yrs: unincorp owner	1.38***	1.75*	0.43	1.37	1.94	1.97
	(0.49)	(1.01)	(1.32)	(1.09)	(1.80)	(1.30)
unincorp.*(parent quint-3)	-0.39	-0.09	-0.17	-0.52	-0.62	0.50
	(0.25)	(0.43)	(0.59)	(0.61)	(0.84)	(0.70)
share yrs: employed	1.48***	1.78***	2.82***	0.65	2.95***	0.85
	(0.29)	(0.44)	(0.78)	(1.17)	(1.07)	(1.06)
yrs work*(parent quint-3)	-0.21	-0.06	-1.52***	-0.08	0.88*	-0.76
	(0.16)	(0.24)	(0.48)	(0.78)	(0.51)	(0.63)
Education						
Parents' wealth cent FE	Yes	Yes	Yes	Yes	Yes	Yes
Parents' educ+bus own	Yes	Yes	Yes	Yes	Yes	Yes
Parent's emp+industry	Yes	Yes	Yes	Yes	Yes	Yes
Mother's marital status	Yes	Yes	Yes	Yes	Yes	Yes
Mid-age state	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Childhood state	-	-	-	-	-	-
Age + age sq	Yes	Yes	Yes	Yes	Yes	Yes
Birth year+gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Immig background+race	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	1998	911	518	569	359	384
Num clusters	924	506	415	379	283	293
R^2	0.479	0.553	0.584	0.568	0.774	0.733
Adj R^2	0.412	0.407	0.282	0.306	0.418	0.379

Notes: This table applies the specification from col 3 of table 6 to different categories of individuals: those with parental wealth in the bottom or top 50% (cols 1 and 2); those with high-school degree or less, with some college education (no degree), or finally those with at least a college degree. In columns 6 and 7 we distinguish households by ability. This is measured through the scores achieved by the family's children in the Child Development Survey supplement. Standard errors are robust and clustered at the level of the original (1968) household, and significance indicated is at 10%(*), 5%(**), and 1%(***).

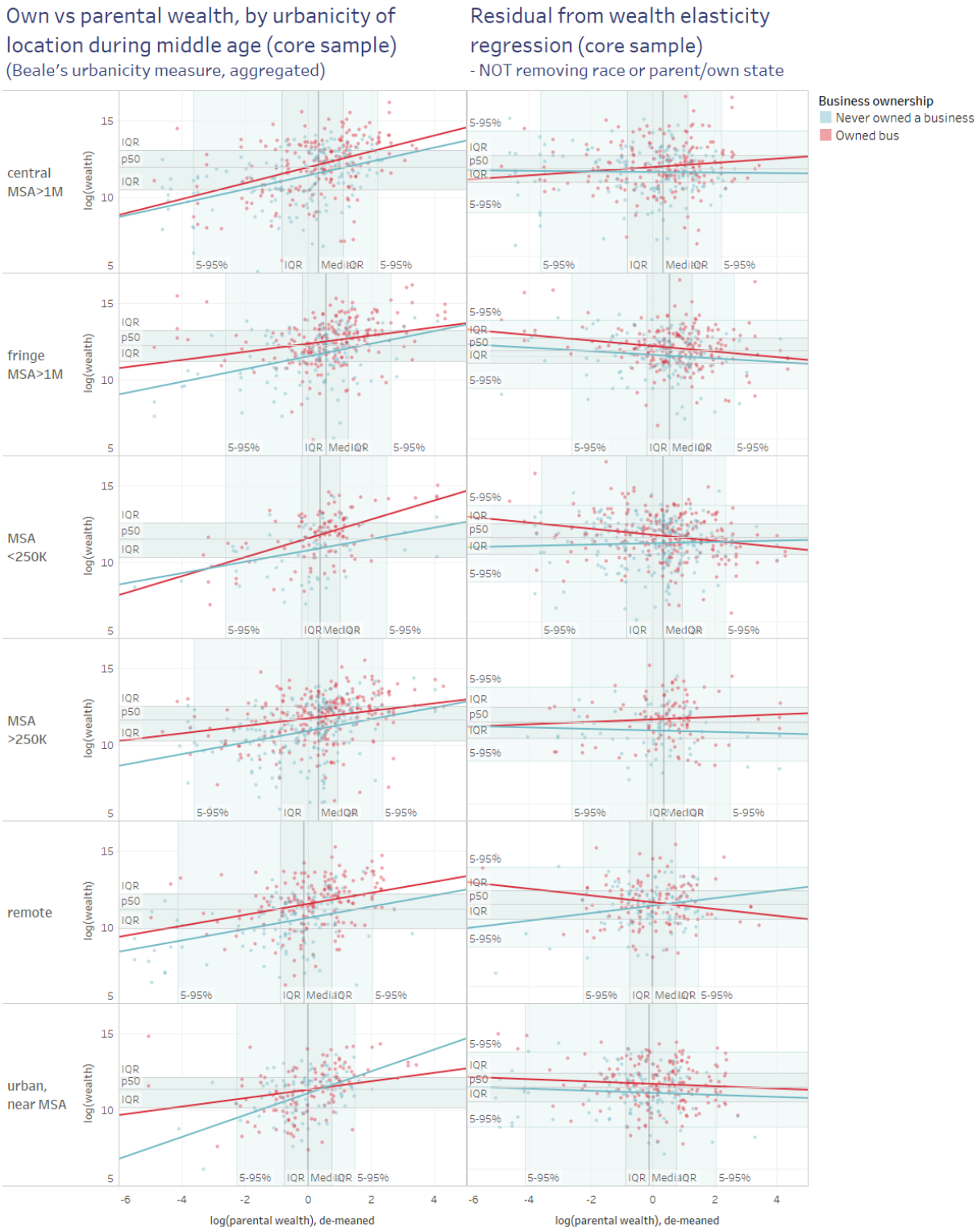


Figure 30: Cross-generational mobility by business ownership and the degree of urbanicity

Table 23: Intergenerational elasticity of wealth: interaction of ability and entrepreneurship

	IQ (1)	IQ*SE (2)	IQ*bus (3)	se+bus (4)	subsample (5)	full samp (6)
ln(parent wealth)-ave	0.37***	0.36***	0.41***	0.31***	0.29***	0.42***
	(0.06)	(0.08)	(0.09)	(0.07)	(0.07)	(0.05)
ln(parent wealth)^2	0.05***	0.04***	0.05***	0.04***	0.04***	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
ln(par $) * high IQ	-0.16**	-0.27**	-0.34***	-0.15*		
	(0.08)	(0.11)	(0.11)	(0.08)		
ln(par $)*self-emp(HH)*highIQ		0.22				
		(0.16)				
self-emp(HH) * high IQ		-0.10				
		(0.25)				
ln(par $)*self-emp (HH)		-0.00		0.09	0.06	0.09
		(0.11)		(0.10)	(0.10)	(0.07)
ln(par $)*Bus*highIQ			0.31**			
			(0.15)			
Bus * high IQ			0.10			
			(0.24)			
ln(par $)*Bus			-0.09	-0.01	-0.01	-0.17**
			(0.11)	(0.10)	(0.10)	(0.07)
high IQ	0.56***	0.62***	0.48***	0.58***		
	(0.13)	(0.17)	(0.19)	(0.13)		
college graduate	0.80***	0.80***	0.77***	0.77***	0.85***	0.78***
	(0.14)	(0.14)	(0.14)	(0.14)	(0.14)	(0.08)
Ever self-emp (HH)		0.27		0.12	0.11	0.18**
		(0.18)		(0.14)	(0.14)	(0.09)
Business owner			0.22	0.27*	0.28**	0.50***
			(0.17)	(0.14)	(0.14)	(0.09)
Mid-age state FE	Yes	Yes	Yes	Yes	Yes	Yes
Own+parent age+age^2	Yes	Yes	Yes	Yes	Yes	Yes
Race + gender FE	Yes	Yes	Yes	Yes	Yes	Yes
Childhood state FE	Yes	Yes	Yes	Yes	Yes	Yes
Birth year FE	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	708	708	708	708	708	1914
Num clusters	489	489	489	489	489	897
R^2	0.463	0.471	0.476	0.473	0.450	0.338
Adj R^2	0.352	0.358	0.363	0.360	0.334	0.290

Notes: "High IQ" indicates IQ above the median in the core sample, where IQ is the average of the applied problems score of the family unit's children (the tests were administrated as part of the Child Development Supplement in 1997, 2002, 2007). Log parental wealth ln(par $) is de-meaned; all standard errors are robust to heteroskedasticity and correlation within the initial households.

Table 24: Extended version of table 21: Wealth mobility - racial differences

	Core + disadvantaged samples					Disadv sample	
dep var = ln(wealth)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln(parent wealth)-ave	0.47***	0.44***	0.46***	0.46***	0.53***	0.45***	0.39***
	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)	(0.10)	(0.10)
ln(parent wealth)^2	0.04***	0.04***	0.03***	0.04***	0.03***	0.04***	0.04**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
ln(par $)*Black	-0.07		-0.06		-0.17**		
	(0.06)		(0.07)		(0.07)		
ln(par $)*SE (HH)		-0.01	-0.01			-0.04	
		(0.04)	(0.05)			(0.09)	
ln(par $)*Black*SE (HH)			-0.05				
			(0.10)				
Black*SE (HH)			-0.17				
			(0.20)				
Ever self-emp (HH)		0.35***	0.38***			0.28	
		(0.06)	(0.07)			(0.19)	
ln(par $)*Bus				-0.07	-0.16**		-0.02
				(0.04)	(0.06)		(0.09)
ln(par $)*Black*Bus					0.14		
					(0.10)		
Black*Bus					-0.07		
					(0.19)		
Business owner				0.61***	0.66***		0.64***
				(0.07)	(0.08)		(0.17)
Race = 2, Black	-0.82***	-0.66***	-0.70***	-0.60***	-0.70***	-0.71**	-0.68**
	(0.12)	(0.11)	(0.14)	(0.11)	(0.14)	(0.33)	(0.33)
Race = 3, Other	0.15	0.20	0.21	0.24	0.28	-0.31	-0.40
	(0.37)	(0.36)	(0.36)	(0.36)	(0.35)	(0.62)	(0.60)
Parent+own state FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Own+parent age+age^2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Race+gender+birth yr	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Num observations	2812	2812	2812	2812	2812	898	898
Num clusters	1302	1302	1302	1302	1302	405	405
R^2	0.293	0.300	0.301	0.318	0.321	0.186	0.204
Adj R^2	0.259	0.267	0.267	0.285	0.287	0.0845	0.105

Notes: While earlier regressions considered only the representative (core) sample, here we use both the core and the low SES (disadvantaged) samples in columns 1 through 5. In columns 6 and 7 we employ only the low SES sample. Significance indicated is at 10%(*), 5%(**), and 1%(***).

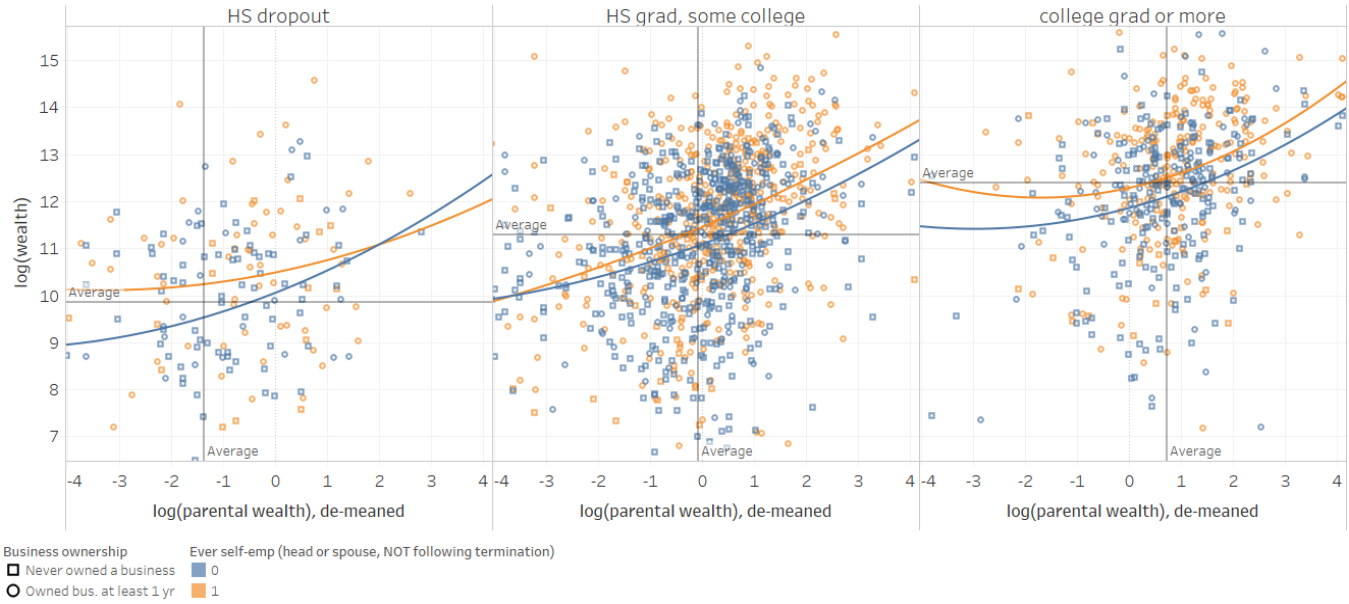


Figure 31: Mobility by education category and self-employment