The Role of Entrepreneurship on the Racial Wealth Gap:

Entrepreneurial Success or Failure and the Wealth Mobility of Black and White Families

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Author Note

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Past research has repeatedly argued that increasing the rate at which blacks start businesses could reduce the racial wealth gap between black and white families. However, this work has not sufficiently accounted for the possibility that entrepreneurship may actually exacerbate the racial wealth gap, due to the economic cost associated with business closure. In this paper we analyze longitudinal data from the Panel Survey of Income Dynamics (PSID) to illustrate both the opportunities and dangers that business success and failure offers for black and white entrepreneurs. We first find that, as past work suggests, black owned businesses are less likely to remain open four years later, compared to white owned businesses. We then show that black and white entrepreneurs have a similar likelihood of experiencing upward economic mobility when their businesses succeed, and similar likelihoods of experiencing downward mobility when their businesses fail. We then show that, as predicted by these two findings, blacks who own a business in a given year are more likely to experience downward economic mobility over the next four years, and less likely to experience upward mobility, compared to their white counterparts. In sum, these results suggest that improving the rate at which black entrepreneurs succeed, rather than increasing the rate at which blacks become entrepreneurs, should be the target of efforts to leverage business ownership to reduce the racial wealth gap.

Background

There is a persistent and growing "wealth gap" between black and white families in America (Oliver & Shapiro, 2004; Shapiro, Meschede, & Osoro, 2013). As scholars have begun to appreciate the centrality of wealth, as opposed to income, in the challenge of economic inequality (Piketty, 2014; Sherraden, 1991), substantial effort has been devoted to identifying policies that might reduce this "racial wealth gap." Some popularly debated policies include tax

credits to help first time homebuyers afford a down payment (Shapiro, 2004), progressive child development accounts (Darrick Hamilton & William Darity Jr., 2010), and elimination of the mortgage interest tax credit (Sullivan, Meschede, Shapiro, & Escobar, 2017). At the same time, research also shows that some policies aimed at reducing economic inequality, such as eliminating student debt for all Americans, would actually *exacerbate* the racial wealth gap (Sullivan et al., 2015). The full economic implications of a policy are not always obvious at first glance.

Even before the racial wealth gap was explicitly theorized and documented, researchers and advocates have pointed to entrepreneurship as a mechanism for reducing economic disparities between black and white households. This work argues that promoting entrepreneurship and business formation among the black community will lead to increased opportunities for upward economic mobility, and greater integration into the American economy (Boston, 1999; John Sibley Butler, 1991). In the abstract, this idea has merit, since research has found that entrepreneurs experience greater upward wealth mobility compared to workers (Quadrini, 1999). In regard to the racial wealth gap however, the critical question is whether or not entrepreneurship produces the same economic benefits for both black and white entrepreneurs.

Using data from the Panel Study of Income Dynamics (PSID), Bradford (2014) directly investigates this question, by looking at the impact of entrepreneurship on the wealth mobility of black and white families over two four-year periods: 2001-2005 and 2005-2009. After controlling for pre-existing differences in education, family composition, homeownership, and other salient factors, Bradford finds that:

The upward wealth mobility of Black entrepreneurs is also equivalent to that of White

entrepreneurs, while the wealth mobility of White entrepreneurs is greater than that of

White workers. These relationships are consistent with the existence of Black

entrepreneurs reducing the wealth gap between Black and White families. (p. 267)

Consequently, Bradford argues that, as long as new black entrepreneurs achieve the same

economic benefits as those in his sample, "increasing the rate of Black entrepreneurship will

reduce the wealth disparity between Black and White families" (p. 255). Especially in

combination with earlier work on the benefits of entrepreneurship, Bradford's results certainly

offer cause for optimism about the role of entrepreneurship in reducing the racial wealth gap. At

the same time, there are many reasons to be cautious about the claim that simply *increasing*

black entrepreneurship will lead to beneficial economic outcomes.

Business Success and Failure.

Starting a business is an inherently risky activity. Although the popular myth that "nine

out of ten businesses fail in their first year" is an exaggeration (Phillips & Kirchhoff, 1989),

Headd (2003) finds that around a third of new firms fail after four years. Business failure

obviously has costs. These include financial costs, including high levels of personal debt that

may hold back wealth creation for years (Cope, 2011), as well as psychological and social costs

that may harm well-being in other ways (Ucbasaran, Shepherd, Lockett, & Lyon, 2013). It is

intuitively obvious that, while starting a *successful* business may lead to upward economic

mobility, starting a business that *fails* may lead to *downward* economic mobility. This fact has

clear but thus far unappreciated implications for debates over the relationship between

entrepreneurship and the racial wealth gap, because it is well documented that black and

minority-owned businesses fail at higher rates than those owned by their white peers.

Researchers have long been aware of an apparent anomaly in regard to black entrepreneurship. Although blacks appear to start new businesses at higher rates than whites (Köllinger & Minniti, 2006), they are less likely to remain business owners over their life course (Ahn, 2011). Subsequent research has confirmed what these two findings imply: businesses owned by minorities tend to be less successful than those owned by whites (Bates, 1989; Fairlie & Robb, 2008; Headd, 2003). The causes of this disparity have been the subject of much investigation. Fairlie and Robb (2008) flag a number of issues driving lower success rates among black entrepreneurs, including a lack of familiar experience in business ownership, but see the biggest contributor as a greater difficulty in acquiring startup capital. A robust body of research confirms that black entrepreneurs face severe racial discrimination in attempting to secure financing for their business, making the prospect of starting a successful business even harder than it is for their white counterparts. Statistical analyses find that race remains a negative predictor of loan acceptance and loan quality, even after controlling for salient economic characteristics (Asiedu, Freeman, & Nti-Addae, 2012; Blanchard, Zhao, & Yinger, 2008; Blanchflower, Levine, & Zimmerman, 2003). Other work has confirmed that these disparities are not merely due to location-based "redlining" but are primarily a function of the entrepreneur's own race (Bates & Robb, 2015, 2016). This discrimination can be clearly observed in "mystery shopper" studies that document severe disparities in the way bank employees treat equally-qualified black and white entrepreneurs asking for identical loans (Bone, Christensen, & Williams, 2014; Bone et al., 2017; Lubin, 2011; Turner et al., 2002). This strand of research has troubling implications for attempts to reduce the racial wealth gap by promoting black entrepreneurship.

It may be true that successful black entrepreneurs achieve upward wealth mobility at the same rate as white entrepreneurs. However, if black entrepreneurs are more likely to see their businesses fail, and business failure leads to downward wealth mobility, then it is eminently plausible that increasing the rates at which blacks start businesses might still exacerbate the racial wealth gap. Furthermore, insofar as black entrepreneurs are offered credit on worse terms (e.g. higher interest rates) than white entrepreneurs, it is possible that the economic consequences of business failure may be more severe for blacks.

The relationship between entrepreneurship and racial wealth disparities in the US may also have been impacted by the Great Recession, which appears to have had large but somewhat contradictory effects on the dynamics of business ownership and self-employment in the US. On one hand, the recession led to higher rates of self-employment as workers who were laid off were forced to work for themselves instead (Fairlie, 2013). On the other hand, many pre-existing small businesses failed during the slowdown, leading to an overall decline in the number of firms that employ workers (Shane, 2011). At the same time, the decade-long recovery since the Great Recession may have boosted the overall prospects for self-employment, although these gains may not have been equally felt by black and white entrepreneurs.

In this paper we use the PSID to extend earlier work and study the implications of entrepreneurship on the racial wealth gap. We expand upon Bradford's earlier approach in a number of ways. Firstly, we include new PSID data from 2009-2013. This not only increases our statistical power, but allows us to account for the effects of the Great Recession and subsequent recovery. Secondly, we analyze racial disparities in both entrepreneurial success and failure, and explicitly test for racial disparities in the *impact* (vis a vis wealth mobility) of success and failure. Finally, we make use of new measures of entrepreneurship and wealth that more clearly

correspond to the constructs in question. Using this paradigm, we explore the following research questions. Firstly, we examine whether the racial disparities in business success documented by previous literature are evident in the PSID data from 2001 to 2013. Secondly, we separately analyze the impact of successful and unsuccessful entrepreneurship on upward and downward wealth mobility, and test whether the magnitude of these impacts differ by race. Finally, in light of the results above, we analyze the net impact of *becoming* an entrepreneur on wealth mobility for black and white families.

Data and Methods

Using data from the PSID we analyze how a family's wealth and employment status change over a four-year period. Because our focus is on the disparity between black and white families, we limit our analyses to families where the PSID denoted "head" of the family is either black non-Hispanic or white non-Hispanic. The central limitation in this analysis is the relatively small number of black entrepreneurs that exist in any given year of the PSID. Following Bradford (2014) we mitigate this issue by combining three distinct "cohorts" of PSID respondents, with each cohort representing a different four-year period: 2001-2005, 2005-2009, and 2009-2013. Within each of these cohorts we look at how wealth and employment status has changed between the first and second time point.[1] As a consequence of this approach, the same family may exist in multiple cohorts (e.g. if they have data for 2001, 2005, and 2009), and as such robust standard errors are used to account for the clustering of observations within families.

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[1] Because the "head" of a PSID family can change from one wave to the next, we include only families where the head represents the same individual in both time points.

Table 1. Number of Families in Combined Periods 2001-2005, 2005-2009, and 2009-2013

	All families	White families	Black families
Period			
2001-2005	5,117	3,420	1,697
2005-2009	5,692	3,648	2,044
2009-2013	6,006	3,668	2,338
Total	16,815	10,736	6,079

Source: Panel Study of Income Dynamics (PSID) data

This approach provides us with a dataset of 16,815 observations across the three cohorts (see *Table 1*). All analyses are run using PSID calculated weights.

Variables.

In analyzing the relationship between entrepreneurship and wealth, we operationalize these two concepts in a slightly different way from earlier work (viz. Bradford, 2014; Quadrini, 1999), to more accurately reflect the underlying constructs. Firstly, while earlier work tended to analyze changes in total wealth, we limit our analyses to wealth excluding home equity. This decision helps to disentangle the economic effects of entrepreneurship with the dramatic changes in housing prices that occurred before, during, and after the 2009 housing crash and Great Recession. Of course, business ownership can also impact home equity in various ways, but in the time frame we analyze, ignoring these effects seems preferable to potentially confounding the wealth effects of entrepreneurship with dramatic swings in home prices that have little to do with a family's personal financial situation.

Secondly, past work operationalized entrepreneurship as "self-employment." That is, individuals were considered to be entrepreneurs if they reported that they were working partly or entirely for themselves, as opposed to working for someone else (or not working for any reason).

This definition does not, however, align particularly well with the way in which entrepreneurship is usually conceptualized by researchers, policymakers and the public at large, where it is usually treated as a synonym for *business ownership.*[2] Use of self-employment as a proxy for entrepreneurship may be especially problematic given the rise of the "gig economy," since independent contractors (e.g. drivers for ride-sharing services) may classify themselves as "self-employed," despite not being "entrepreneurs" by any reasonable definition. Indeed, Abraham et al. (2018) find that about half of their respondents who said they were primarily self-employed classified themselves as independent contractors, independent consultants, or freelance workers. To avoid this issue, we define entrepreneurs as those respondents who indicated that the head of the household owned a business or had financial interest in a business enterprise in the previous year.

We then define entrepreneurial "success" and "failure" by examining changes in business ownership and employment status over the four years between the two time points in each cohort. Individuals who were entrepreneurs in the first time point and were still entrepreneurs four years later are considered "successful entrepreneurs." Unsuccessful entrepreneurs are those who owned a business in the first time point and did not own a business, but were either working or unemployed in the second time point.[3] Individuals who were workers at both time points are considered "stayed workers" and are treated as a control group in assessing the impact of

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[2] See e.g. Fairlie and Robb (2008), "Relatively low levels of wealth among blacks and the existence of liquidity constraints in U.S. financial markets may limit the ability of black entrepreneurs to raise the optimal levels of capital needed to start businesses," (p. 107) and Boston (1999), "Atlanta's experience proves that entrepreneurship is not dependent upon the culture of a people, and developing black owned businesses can be accelerated if racial barriers are reduced" (p. 3).

[3] Individuals who were retired in the second time point were not considered "unsuccessful entrepreneurs" but were excluded from the analysis. We adopt these definitions to align our research with previous studies; however, we acknowledge the limitations of referring to this group as "unsuccessful entrepreneurs." Individuals who transition from entrepreneurship to working or to unemployment may have a variety of reasons for which they do so. Nonetheless, this shorthand remains a convenient and probable description of the employment transition.

entrepreneurship in general.[4] We therefore define a head's "transition status" as whether, over the course of four years, they were successful entrepreneurs, unsuccessful entrepreneurs, or stayed workers. This variable is used as the key independent variable in models estimating the economic impact of entrepreneurial success or failure. To determine whether there are racial disparities in entrepreneurial success, we use a binary logit model to predict the likelihood that entrepreneurs at the first time point were "successful entrepreneurs" four years later, controlling for the race of the family head and other potential confounding variables, as discussed below.

Following earlier analyses, we define wealth mobility as change in wealth tercile over the four-year period in question. Families are assigned to a position in the top, middle, or bottom tercile with respect to net, non-equity wealth relative to the entire sample at each time point. Binary logistic regression models are used to predict the probability of a family rising into the top tercile from below the top, or falling into the bottom tercile from above the bottom, as a function of entrepreneurship status and other factors. Because wealth terciles are calculated separately for every year, the dependent variable for these analyses represents *relative*, rather than absolute, wealth mobility.

We estimate the impact of entrepreneurship on wealth mobility using two different types of binary logit models. The first type of model predicts the likelihood of a family rising into the top wealth tercile from below the top, thereby estimating *upward* wealth mobility. The second type of model predicts the likelihood of a family falling into the bottom tercile from above the bottom, thereby estimating *downward* wealth mobility. We first deploy these models to determine the impact of transition status (i.e. being a successful or unsuccessful entrepreneur, vs being a worker), and again to determine the impact of being an entrepreneur in the first time

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[4] The category "other" captures all other employment transitions between working, unemployed, retired, and being an entrepreneur.

point (as opposed to being a worker). In these models we interact transition status or entrepreneurship with race to estimate whether any of the effects of entrepreneurship are significantly different for black and white families.

In addition to entrepreneurship status and race, all models control for a number of potential confounding variables. These include education, age, household type (married, single male head, single female head), number of children, home ownership, health status, reception of gift or inheritance over $10,000 in the past 5 years, initial wealth tercile, and cohort. *Table 2* shows descriptive statistics for all key variables included in these models, separately by the race of the head of the household.

Although the small number of entrepreneurs (especially black entrepreneurs) in the PSID make finer grained mobility analyses (e.g. using deciles or quartiles) infeasible, the limitations of this approach should nevertheless be acknowledged. Firstly, our approach can only detect fairly large changes in wealth and is blind to changes that may be economically consequential, but which are not large enough to change a family's tercile. Secondly, by mathematical necessity, families who start at either the top or bottom tercile must be excluded from analyses of upward or downward mobility, respectively. This has particular implications for our ability to detect downward economic mobility as a result of unsuccessful entrepreneurship. Because entrepreneurs who start at the lowest tercile cannot, by definition, fall any further, they must be excluded from analyses of downward mobility. This implies that our analysis will likely underestimate the true impact of entrepreneurship on downward wealth mobility. In our data approximately 25% of black entrepreneurs were in the lowest tercile at time 1 (versus 10% of white entrepreneurs). The exclusion of these observations further limits our power to detect downward mobility among black entrepreneurs. Finally, it should be noted that an association

Table 2. Family Traits in Combined Periods 2001-2005, 2005-2009, and 2009-2013

	All families	White families	Black families	
Status at start				
Entrepreneur	0.103	0.115	0.036	***
Worker	0.588	0.586	0.596	
Retired	0.194	0.206	0.129	***
Unemployed	0.116	0.093	0.240	***
Education				
Less than high school	0.135	0.117	0.233	***
High school	0.306	0.296	0.359	***
Some college	0.247	0.242	0.273	*
Bachelor's degree	0.183	0.200	0.084	***
More than bachelor's degree	0.130	0.144	0.052	***
Age (in years)				
Under 35	0.205	0.196	0.254	***
35 to 54	0.416	0.403	0.486	***
Over 54	0.379	0.401	0.260	***
Head of household				
Single male	0.212	0.201	0.273	***
Single female	0.279	0.240	0.494	***
Married couple	0.510	0.560	0.233	***
Average no. of children under 18 years old	0.541	0.511	0.708	***
Standard deviation	*0.970*	*0.937*	*1.119*	
Own home	0.676	0.724	0.411	***
Health good or better	0.850	0.866	0.759	***
Received gift or inheritance	0.097	0.109	0.031	***
Middle third wealth at start	0.296	0.287	0.346	***
Top two thirds at start	0.739	0.783	0.494	***
Top two thirds at end	0.738	0.781	0.500	***
Average wealth at start ($)	253,363	287,611	63,713	***
Standard deviation	*1,744,249*	*1,882,890*	*464,765*	
Average wealth at end ($)	300,524	343,726	61,293	***
Standard deviation	*1,954,762*	*2,111,595*	*472,174*	
N	16,815	10,736	6,079	

✝p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Note: Significance values are from design-adjusted chi-square and t-tests. Wealth is in nominal dollars.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

between transition status and economic mobility does not definitively indicate the direction of

the causal relationship. In particular, for many entrepreneurs, an exogenous shock to wealth may

have led to business failure, as opposed to business failure leading to a decline in wealth. These

methods can nonetheless shed light on the association between large shocks to wealth and

entrepreneurship.

<p align="center">**Results**</p>

We first analyze racial disparities in business success over a four-year period. *Table 3*

shows that, after controlling for other socioeconomic factors, black heads who are entrepreneurs

at a given time point are significantly less likely to still be entrepreneurs four years later,

compared to whites. This is in line with past work and suggests that, whatever the benefits of

successful entrepreneurship are, black entrepreneurs are less likely to receive those benefits,

compared to white entrepreneurs. In contrast, black entrepreneurs are more likely to experience

whatever penalties are associated with unsuccessful entrepreneurship.

We now estimate the economic effects of successful and unsuccessful entrepreneurship,

and test for the existence of racial disparities with respect to these effects. For each analysis we

present two logit models, one (Model 1) without any interaction terms and a second interacting

the race of head with entrepreneurship status (Model 2). *Table 4* shows these two models

predicting upward wealth mobility—the probability that a family will move into the upper

wealth tercile from below the top third. Model 1 shows that, as expected, *successful*

entrepreneurs are significantly more likely to experience upward mobility compared to those

who stayed workers. Regardless of their transition status, black heads are less likely to

experience upward mobility compared to white heads. In Model 2 however, the interaction terms

between race and transition status are non-significant, indicating that the relationship between

Table 3: Logit Regression Predicting Successful Entrepreneurship. Dependent Variable: Entrepreneur at the Start and End of the Period

	Model 1		
	Coefficient	Z score	
Black head of household	-0.8863	-2.9	**
Education			
Less than high school	-0.3649	-1.3	
Some college	-0.2265	-1.1	
Bachelor's degree	0.0619	0.3	
More than bachelor's degree	0.2540	1.0	
Age (in years)			
Under 35	-0.2149	-1.1	
Over 54	-0.0895	-0.5	
Head of household			
Single male	0.1228	0.5	
Single female	-0.1468	-0.5	
Number of children under 18	-0.0528	-0.7	
Own home	0.3617	1.6	
Health good or better	0.5708	1.8	†
Received gift or inheritance	-0.1448	-0.7	
Wealth tercile			
Bottom third wealth at start	-0.9189	-3.7	***
Middle third wealth at start	-0.5880	-3.0	**
Period			
2001-2005	-0.0898	-0.6	
2005-2009	0.0060	0.0	
Constant	0.2506	0.6	

†p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Note: N=1,381. Regression includes only entrepreneurs at the start of the period. Robust standard errors clustered by family are used. Reference categories are, respectively, white head of household, high school degree, ages 35 to 54, married, no children under 18, does not own home, health worse than "good", did not receive gift or inheritance, top or bottom third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

Table 4: Logit Regressions Predicting Family Transitions in the Wealth Distribution Based on Employment Transition. Dependent Variable: Family Rises Into the Top Third from Below the Top Third

|	Model 1			Model 2		
	Coefficient	Z score		Coefficient	Z score	
Employment transition						
Successful entrepreneur	0.8523	4.1	***	0.8165	3.8	***
Unsuccessful entrepreneur	-0.1845	-0.7		-0.1907	-0.7	
Other[a]	0.1456	1.5		0.1578	1.5	
Black head of household	-0.4879	-3.9	***	-0.4660	-2.7	**
Employment transition x Race						
Black successful entrepreneur				0.7924	1.3	
Black unsuccessful entrepreneur				0.0799	0.1	
Black other				-0.0762	-0.3	
Education						
Less than high school	-0.4703	-3.2	**	-0.4687	-3.2	**
Some college	0.3631	3.4	***	0.3641	3.4	***
Bachelor's degree	0.6124	5.2	***	0.6114	5.2	***
More than bachelor's degree	0.8478	6.2	***	0.8478	6.2	***
Age (in years)						
Under 35	-0.3355	-3.5	***	-0.3369	-3.5	***
Over 54	0.0584	0.5		0.0549	0.5	
Head of household						
Single male	-0.2217	-1.9	†	-0.2226	-2.0	†
Single female	-0.6258	-5.3	***	-0.6258	-5.3	***
Number of children under 18	-0.1248	-3.1	**	-0.1259	-3.1	**
Own home	0.7746	7.6	***	0.7767	7.6	***
Health good or better	0.3185	2.4	*	0.3186	2.4	*
Received gift or inheritance	0.6729	4.6	***	0.6735	4.6	***
Middle third wealth at start	0.9303	9.6	***	0.9306	9.6	***
Period						
2001-2005	-0.1780	-1.8	†	-0.1785	-1.8	†
2005-2009	0.0185	0.2		0.0166	0.2	
Constant	-2.9035	-14.8	***	-2.9053	-14.8	***

†p<0.1, * p<0.05, ** p<0.01, *** p<0.001

[a] Excludes stayed worker

Note: N=10,650. Robust standard errors clustered by family are used. Reference categories are, respectively, stayed worker, white head of household, black stayed worker, high school degree, ages 35 to 54, married, no children under 18, does not own home, health worse than "good", did not receive gift or inheritance, top or bottom third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

Figure A: Predicted Probability of Rising Into the Top Wealth Tercile from Below the Top Wealth Tercile, by Race and Employment Transition
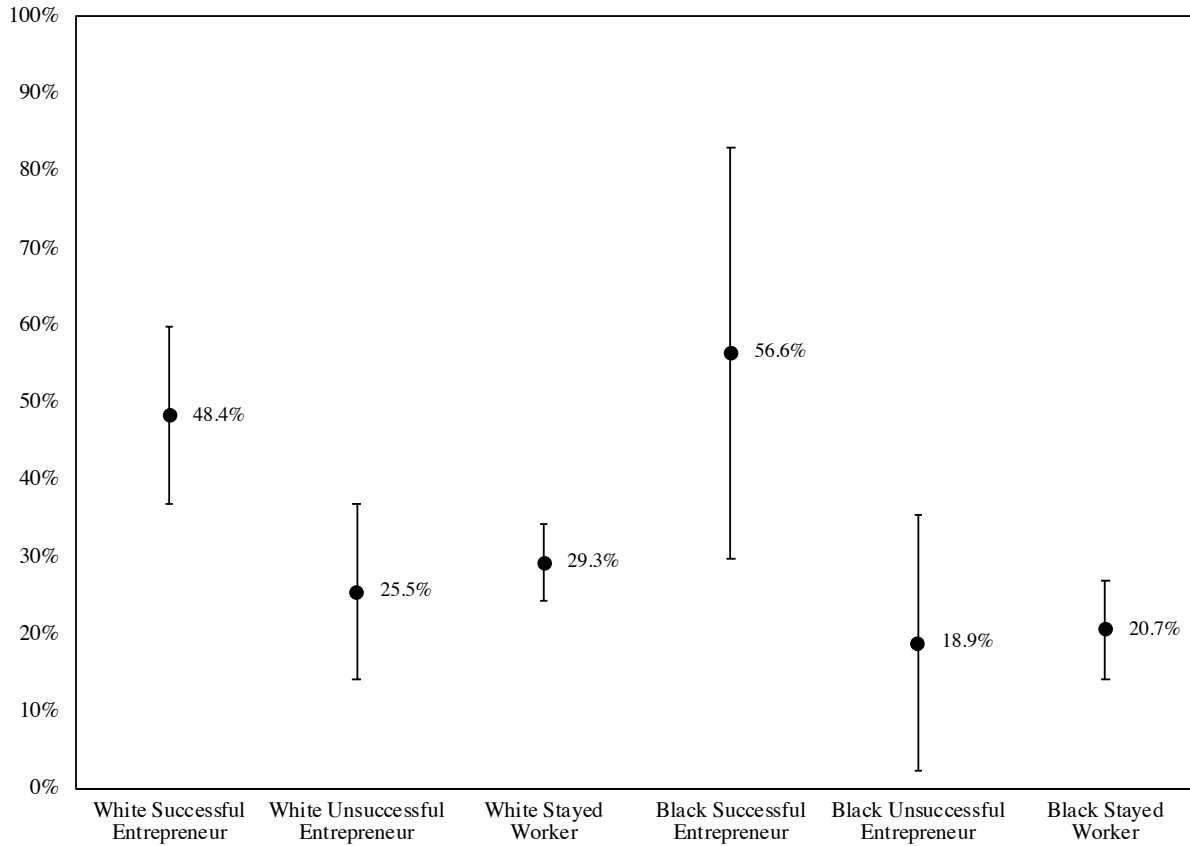
Note: Predictions derived from Model 2 in *Table 4*. Other variables held at the following values: high school degree, aged 35 to 54, married, no children under 18, owns home, health better than "good", did not receive gift or inheritance, middle third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

successful entrepreneurship and upward mobility is not significantly different for black and white families.

To illustrate the magnitude of these effects, we use Model 2 to predict the probability of experiencing upward mobility for comparable black and white families with different transition statuses. *Figure* A shows that, for both black and white families, successful entrepreneurs are far

more likely to experience upward mobility compared to either workers or unsuccessful

entrepreneurs and this effect is at least as large, if not even larger, for black families.

We now turn to the effects of transition status on downward wealth mobility, presented in

Table 5. Model 1 shows that, compared to those who stayed workers, successful entrepreneurs

are significantly less likely to experience downward mobility, while unsuccessful entrepreneurs

and those with an "other" transition status (viz. worker to entrepreneur, unemployed to

entrepreneur, worker to retired, or entrepreneur to retired) are significantly more likely to

experience downward wealth mobility. After controlling for transition status and other factors,

black-headed families are also more likely to experience downward economic mobility

compared to white-headed families. Once again, in Model 2, interaction terms between race and

transition status are not significant, implying that the relationship between transition status and

downward mobility are not significantly different for black and white families.

As above, *Figure* B presents predicted probabilities for experiencing downward wealth

mobility derived from Model 2 of *Table 5*. It is clear that for both black- and white-headed

families, unsuccessful entrepreneurs are far more likely to experience downward economic

mobility compared to successful entrepreneurs. However, although the interaction terms in

Model 2 are not significant, it is clear that, from a substantive perspective, unsuccessful

entrepreneurship poses a much more serious threat to black entrepreneurs compared to their

white counterparts. An unsuccessful black entrepreneur who started in the middle wealth tercile

has around a 50% chance of falling into the bottom tercile, while an unsuccessful white

entrepreneur in a similar position has less than a 20% chance of falling into the bottom tercile

(*Figure* B).

Table 5: Logit Regressions Predicting Family Transitions in the Wealth Distribution Based on Employment Transition. Dependent Variable: Family Falls Into the Bottom Third from Above the Bottom Third

|	Model 1			Model 2		
	Coefficient	Z score		Coefficient	Z score	
Employment transition						
Successful entrepreneur	-0.4640	-2.2	*	-0.5211	-2.4	*
Unsuccessful entrepreneur	0.7586	3.8	***	0.6670	3.0	**
Other[a]	0.2469	2.6	**	0.1915	1.8	†
Black head of household	0.3768	3.5	***	0.2324	1.6	
Employment transition x Race						
Black successful entrepreneur				0.6667	1.0	
Black unsuccessful entrepreneur				0.6337	1.0	
Black other				0.2509	1.3	
Education						
Less than high school	0.3248	2.7	**	0.3231	2.7	**
Some college	-0.0913	-0.9		-0.0938	-0.9	
Bachelor's degree	-0.4935	-3.8	***	-0.4987	-3.8	***
More than bachelor's degree	-0.4625	-3.0	**	-0.4719	-3.0	**
Age (in years)						
Under 35	0.2347	2.4	*	0.2345	2.4	*
Over 54	-0.5668	-4.8	***	-0.5576	-4.7	***
Head of household						
Single male	0.2238	2.1	*	0.2220	2.1	*
Single female	0.6274	6.0	***	0.6306	6.1	***
Number of children under 18	0.1365	3.6	***	0.1339	3.5	***
Own home	-0.7428	-7.8	***	-0.7466	-7.9	***
Health good or better	-0.4633	-4.1	***	-0.4618	-4.1	***
Received gift or inheritance	-0.7352	-4.5	***	-0.7326	-4.5	***
Middle third wealth at start	1.2811	13.1	***	1.2765	13.0	***
Period						
2001-2005	0.1565	1.7	†	0.1563	1.7	†
2005-2009	0.1668	1.8	†	0.1651	1.8	†
Constant	-1.9952	-10.4	***	-1.9603	-10.2	***

†p<0.1, * p<0.05, ** p<0.01, *** p<0.001

[a] Excludes stayed worker

Note: N=10,909. Robust standard errors clustered by family are used. Reference categories are, respectively, stayed worker, white head of household, black stayed worker, high school degree, ages 35 to 54, married, no children under 18, does not own home, health worse than "good", did not receive gift or inheritance, top or bottom third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

Figure B: Predicted Probability of Falling Into the Bottom Wealth Tercile from Above the Bottom Wealth Tercile, by Race and Employment Transition
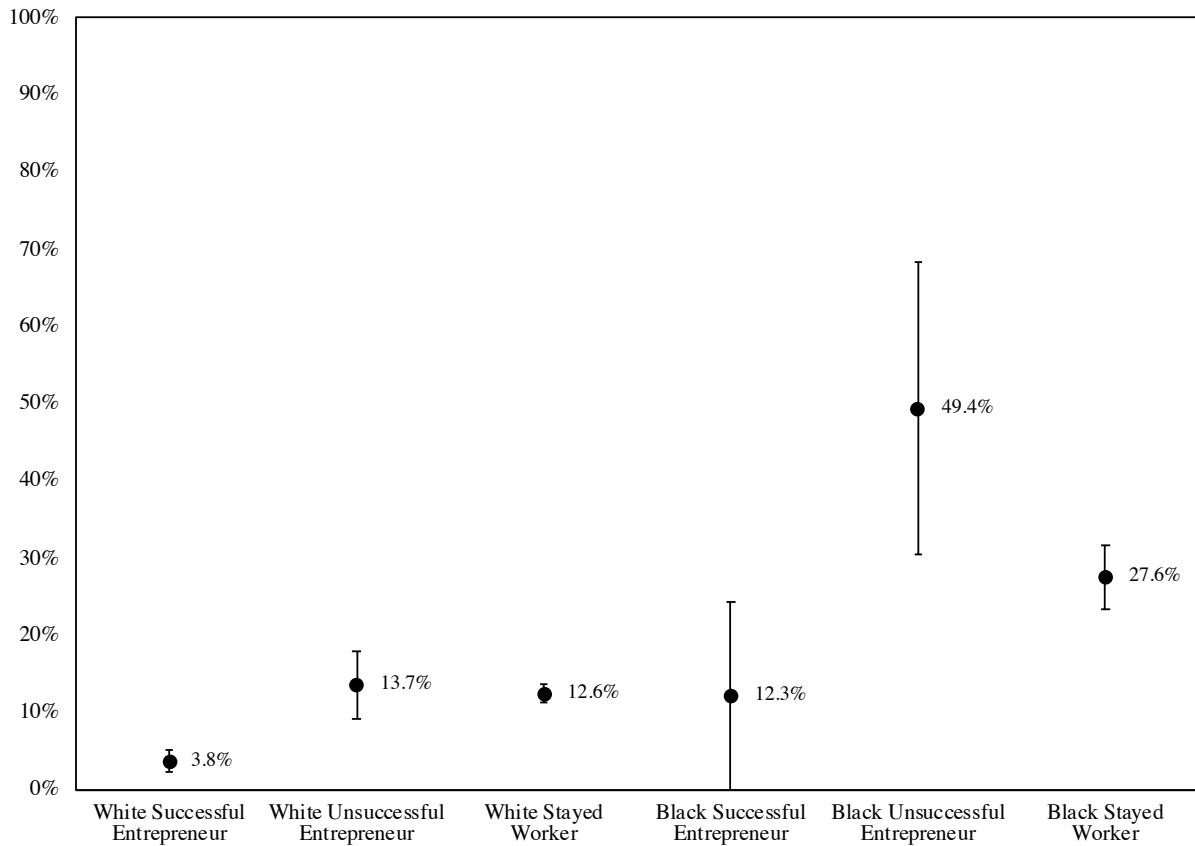
Note: Predictions derived from Model 2 in *Table 5*. Other variables held at the following values: high school degree, age 35 to 54, married, no children under 18, owns home, health better than "good", did not receive gift or inheritance, middle third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Although the confidence intervals around estimates for black entrepreneurs are large, the above analyses suggest that, with respect to economic mobility, the economic payoffs for entrepreneurial success and failure are roughly similar for black and white entrepreneurs. Yet the analysis in *Table 5* finds that white entrepreneurs are more likely to receive the benefits of success, and less likely to pay the penalty of failure, compared to their black counterparts. In combination, these two findings suggest that the decision to become an entrepreneur is a better "bet" for whites than for blacks. But how much better? To answer this question, and to estimate

the impact of becoming an entrepreneur (i.e. starting a new venture without knowing whether it will succeed or fail), we specify new models estimating the relationship between wealth mobility and being an entrepreneur (versus a worker) at the first time point (time 1), regardless of entrepreneurship status at the end of the four-year period (time 2). *Table* 6 shows the analysis with respect to upward economic mobility. Model 1 shows that heads who were entrepreneurs at time 1 were, overall, more likely to experience upward wealth mobility during the next four years. In Model 2 the interaction between race and entrepreneurship status is positive but non-significant, indicating that, despite their lower likelihood of success, blacks who were entrepreneurs at a given time point were not significantly less likely to experience upward mobility over the next four years. *Figure* C estimates predicted probabilities from Model 2 to estimate the overall likelihood of experiencing upward wealth mobility for black and white families, based on their initial employment status. It can be seen that for both blacks and whites, entrepreneurship is associated with a higher likelihood of experiencing upward mobility.

Table 7 shows comparable models predicting downward economic mobility. In Model 1 the coefficient for entrepreneurship is positive, but not significant, indicating that heads who are entrepreneurs at a given time point are not significantly more likely to experience downward wealth mobility over the next four years, compared to workers. In Model 2 the interaction term between race and entrepreneurship is positive, but only significant at the 90% level. This coefficient provides some evidence that being an entrepreneur (versus being a worker) is associated with a significantly higher risk of downward mobility for blacks than for whites with similar socio-economic characteristics.

Table 6: Logit Regressions Predicting Family Transitions in the Wealth Distribution Based on Employment Status at the Start of Each 4-Year Period, Entrepreneurs and Workers Only. Dependent Variable: Family Rises Into the Top Third from Below the Top Third

	Model 1			Model 2		
	Coefficient	Z score		Coefficient	Z score	
Status at start						
Entrepreneur	0.4113	2.6	**	0.3991	2.4	*
Black head of household	-0.4247	-3.1	**	-0.4343	-3.0	**
Status at start x Race						
Black entrepreneur				0.1634	0.4	
Education						
Less than high school	-0.4398	-2.6	**	-0.4399	-2.6	**
Some college	0.3948	3.5	***	0.3945	3.5	***
Bachelor's degree	0.6380	5.1	***	0.6376	5.1	***
More than bachelor's degree	0.8237	5.6	***	0.8239	5.6	***
Age (in years)						
Under 35	-0.3430	-3.4	***	-0.3436	-3.4	***
Over 54	0.1338	1.0		0.1333	1.0	
Head of household						
Single male	-0.1628	-1.3		-0.1633	-1.3	
Single female	-0.6850	-4.9	***	-0.6852	-4.9	***
Number of children under 18	-0.1340	-3.1	**	-0.1346	-3.1	**
Own home	0.8095	7.4	***	0.8096	7.4	***
Health good or better	0.3613	2.1	*	0.3614	2.1	*
Received gift or inheritance	0.6917	4.4	***	0.6919	4.4	***
Middle third wealth at start	0.8956	9.0	***	0.8957	9.0	***
Period						
2001-2005	-0.2277	-2.2	*	-0.2275	-2.2	*
2005-2009	-0.1111	-1.1		-0.1118	-1.1	
Constant	-2.8251	-12.5	***	-2.8230	-12.5	***

†p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Note: N=7,705. Regressions include only entrepreneurs and workers at the start of the period. Robust standard errors clustered by family are used. Reference categories are, respectively, worker, white head of household, black worker, high school degree, ages 35 to 54, married, no children under 18, does not own home, health worse than "good", did not receive gift or inheritance, top or bottom third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

Figure C: Predicted Probability of Rising Into the Top Wealth Tercile from Below the Top Wealth Tercile, by Race and Status at Start
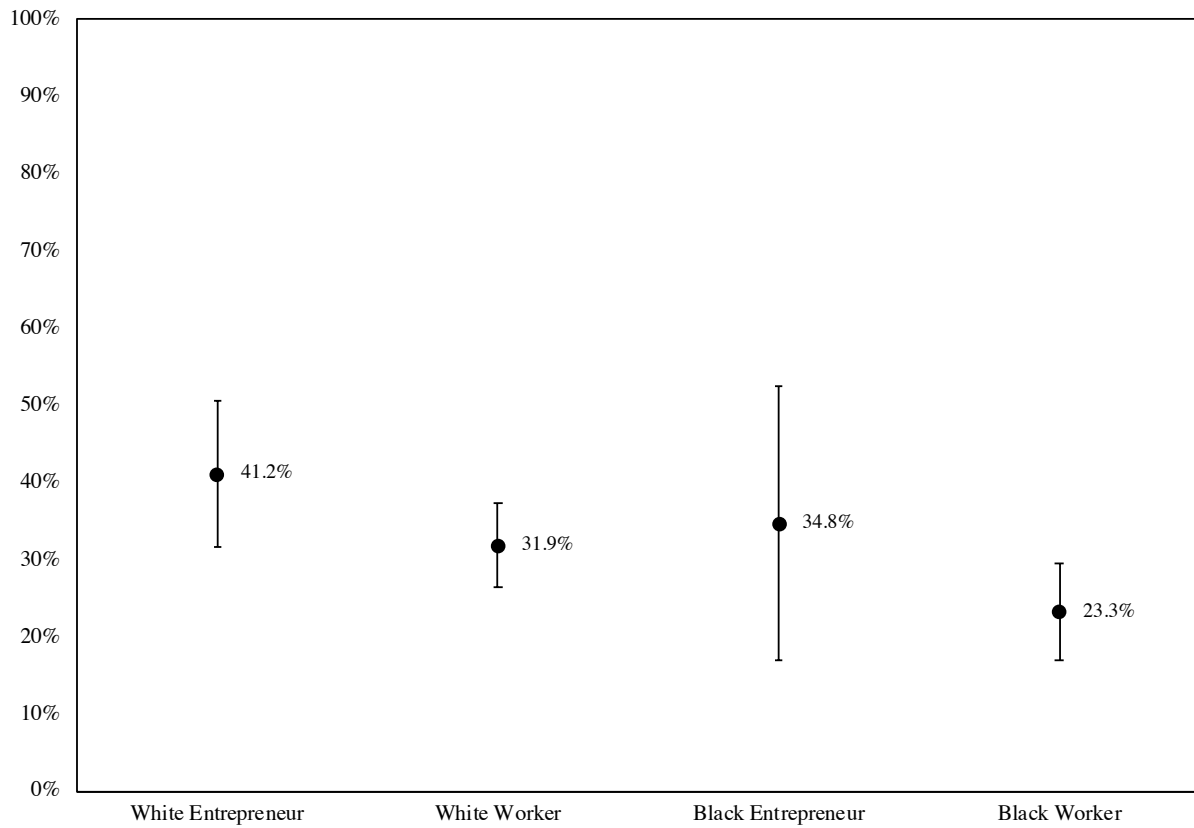
Note: Predictions derived from Model 2 in *Table 6*. Other variables held at the following values: high school degree, age 35 to 54, married, no children under 18, owns home, health better than "good", did not receive gift or inheritance, middle third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Table 7: Logit Regressions Predicting Family Transitions in the Wealth Distribution Based on Employment Status at the Start of Each 4-Year Period, Entrepreneurs and Workers Only. Dependent Variable: Family Falls Into the Bottom Third from Above the Bottom Third

	Model 1			Model 2		
	Coefficient	Z score		Coefficient	Z score	
Status at start						
Entrepreneur	0.0732	0.5		-0.0109	-0.1	
Black head of household	0.4194	3.5	***	0.3631	2.9	**
Status at start x Race						
Black entrepreneur				0.7753	1.8	†
Education						
Less than high school	0.3434	2.4	*	0.3436	2.4	*
Some college	0.0307	0.3		0.0283	0.3	
Bachelor's degree	-0.4239	-3.1	**	-0.4303	-3.1	**
More than bachelor's degree	-0.4570	-2.6	**	-0.4641	-2.7	**
Age (in years)						
Under 35	0.2989	2.9	**	0.2998	2.9	**
Over 54	-0.4325	-3.0	**	-0.4268	-3.0	**
Head of household						
Single male	0.2142	1.8	†	0.2072	1.7	†
Single female	0.4897	4.0	***	0.4894	4.0	***
Number of children under 18	0.1493	3.7	***	0.1467	3.6	***
Own home	-0.6965	-6.4	***	-0.6985	-6.4	***
Health good or better	-0.3206	-2.0	*	-0.3150	-2.0	†
Received gift or inheritance	-0.5352	-3.1	**	-0.5301	-3.1	**
Middle third wealth at start	1.2134	10.8	***	1.2095	10.7	***
Period						
2001-2005	0.2932	2.7	**	0.2946	2.8	**
2005-2009	0.2578	2.4	*	0.2535	2.4	*
Constant	-2.2310	-9.5	***	-2.2152	-9.4	***

†$p<0.1$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Note: N=8,313. Regressions include only entrepreneurs and workers at the start of the period. Robust standard errors clustered by family are used. Reference categories are, respectively, worker, white head of household, black worker, high school degree, ages 35 to 54, married, no children under 18, does not own home, health worse than "good", did not receive gift or inheritance, top or bottom third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

Source: Authors' analysis of Panel Study of Income Dynamics (PSID) data

Figure D: Predicted Probability of Falling Into the Bottom Wealth Tercile from Above the Bottom Wealth Tercile, by Race and Status at Start
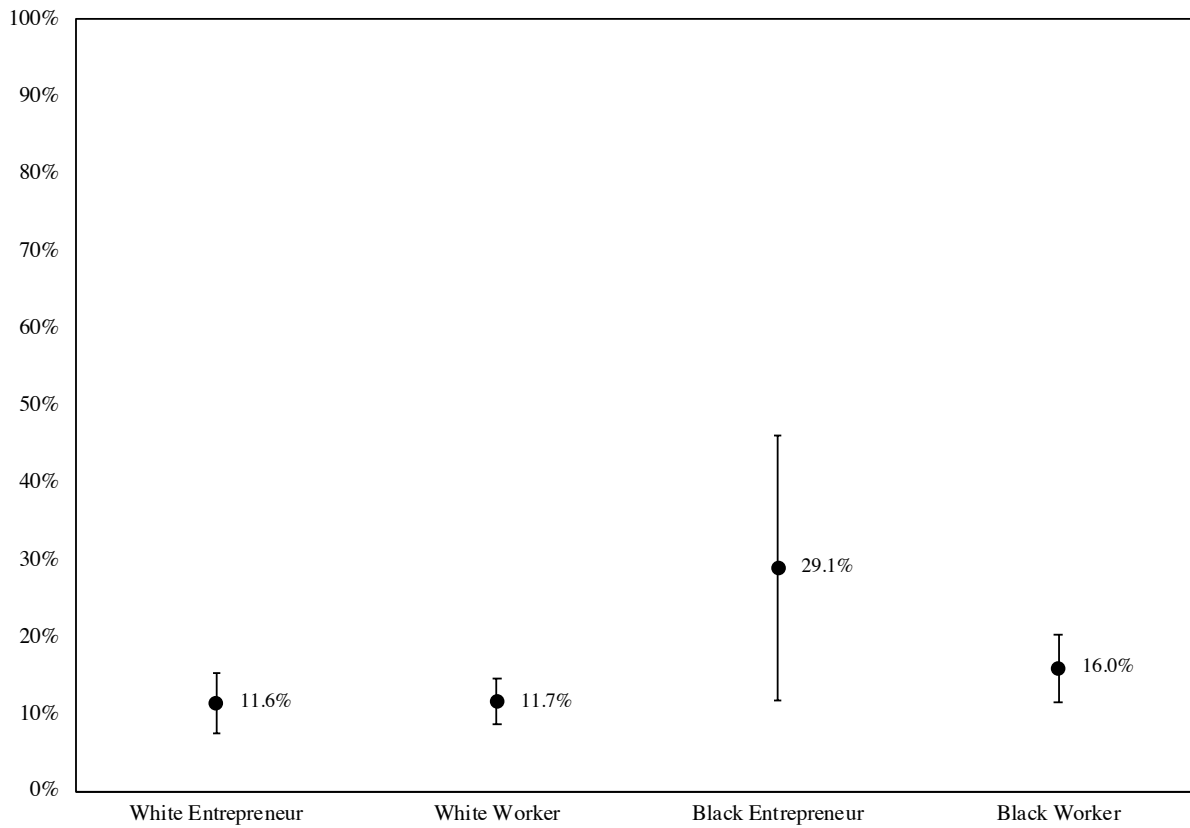
Note: Predictions derived from Model 2 in *Table* 7. Margins are held constant at high school degree, age 35 to 54, married, no children under 18, owns home, health better than "good", did not receive gift or inheritance, middle third wealth at start, and 2009-2013. Transitions are measured across 4-year periods from 2001-2013.

The magnitude of this effect is shown in *Figure D*. Among whites, entrepreneurs have a similar likelihood of experiencing downward mobility over the next four years as those who were working the entire time. Among blacks however, entrepreneurs appear far more likely to experience downward wealth mobility than workers, although the confidence intervals around these estimates are large. Although tentative, these findings comport with the other results presented in Tables 3 and 5, showing that unsuccessful entrepreneurs are more likely to

experience downward wealth mobility and that black entrepreneurs are more likely to be unsuccessful.

Discussion

Despite the limitations noted above, these results have implications for research and policy on the racial wealth gap. Firstly, our results echo earlier findings that black-owned businesses tend to end sooner than their white-owned counterparts. Secondly, our analyses make clear that entrepreneurship is not a sure ticket to upward economic mobility. As long as a business continues to operate, entrepreneurs are indeed more likely to experience upward wealth mobility compared to comparable workers. However, when a business closes, entrepreneurs face a higher likelihood of experiencing downward wealth mobility compared to workers, suggesting that business failure poses a serious risk to the wealth position of aspiring entrepreneurs.

Neither of these two findings should be controversial, or even particularly surprising, but in combination they have important, but thus far unappreciated, implications for debates about the role of entrepreneurship in the racial wealth gap. In particular, they suggest that merely increasing the rate at which blacks start businesses may actually *exacerbate* the racial wealth gap. Because black-owned businesses have a lower likelihood of succeeding, the negative economic impact of business failure, as opposed to the positive impact of business success, may be the more important factor driving the economic impact of becoming an entrepreneur in the first place. This is the dynamic suggested by *Figure* C and *Figure* D, which show that a black entrepreneur who begins in the middle wealth tercile has roughly a 35% probability of rising into the top tercile over the next four years, and a 29% probability of falling into the bottom tercile. In contrast, a comparable white entrepreneur who begins in the middle tercile has a 41% probability of rising into the top tercile over the next four years, and only a 12% probability of falling into

the bottom tercile. Our analyses strongly imply that these dramatic differences are primarily due to the differences in success rates for black and white entrepreneurs.

Indeed, the overall claim that racial economic disparities could be reduced by simply increasing the rate at which blacks start businesses are belied by the fact that, during the past few decades, minority group members were *already* more likely to start businesses compared to whites (Fairlie, 2012; Köllinger & Minniti, 2006). The racial wealth gap, however, has continued to increase during this period (Shapiro et al., 2013), and our analyses suggests that the failure of many of these businesses may actually be contributing to widening of racial wealth disparities in the US. Rather, this work suggests that the rate at which black-owned businesses succeed is the most important factor for determining the effect of entrepreneurship on the racial wealth gap. Increasing this rate would both increase the proportion of black entrepreneurs who experience the upward wealth mobility shown in Figure C as well as decrease the proportion who experience the downward mobility as shown in *Figure* D, and thus have a profound impact on the overall wealth position of current and aspiring black entrepreneurs.

Fortunately, research has already identified many of the key drivers of business failure among black entrepreneurs. Chief among these, as noted above, is a lack of access to quality credit and financing (Fairlie & Robb, 2008). Thus, increasing the opportunities for black entrepreneurs to access financing has great potential to substantially reduce the racial wealth gap. This approach avoids the potential negative consequences associated with promoting higher rates of black entrepreneurship, which are already fairly high in any case. Indeed, some recent policy proposals have already promoted this approach. Democratic Presidential candidate Elizabeth Warren, for example, has proposed a plan that would offer $7 billion in grants to entrepreneurs who are eligible for the Small Business Administration's existing 8(a) business development

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program and have less than $100,000 in household wealth (Warren, 2019). Warren explicitly

frames this program as targeting the racial wealth gap, and because it targets existing

entrepreneurs, and addresses one of the biggest barriers to black entrepreneurs, it is broadly in

line with past and current research.

Conclusion

Entrepreneurship is sometimes framed as a ticket to economic prosperity, but it should

perhaps be thought of as a highly leveraged bet. Those who win the bet may reap a huge

economic payoff, but those who lose may face financial ruin. Our findings suggest that, when

playing this game, white and black entrepreneurs do not have the same odds of winning. This

simple fact implies that convincing more blacks to make a dangerous bet when they have lower

odds of winning than whites is not a promising approach to reducing the racial wealth gap.

Changing the odds for black entrepreneurs who have already placed their bet, however, appears

to be a much more attractive option.

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