

The role of past institutions and information transfer in understanding the Black-White gap in self-employment*

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Abstract

It has been well documented in the literature that ethnicity matters significantly in the determination of self-employment rates. In particular, African-American self-employment rates lag far behind those of other racial groups in the U.S. Similarly, the literature also provides evidence of the long-lived nature of institutions and the relationship between institutions and decision-making. After controlling for the appropriate factors that can lead to self-employment differentials, we note that the Black-White self-employment gap persists. We provide an explanation for this gap, focusing on the important role of repeated negative institutional shocks and how such shocks could have influenced individuals perception of success in self-employment and deterred entry. We provide evidence in support of this hypothesis by comparing African-American exposed to shocks to those who were not. We find that African-Americans, who were less likely to be influenced by negative institutional shocks and the information transmission from these experiences, have similar self-employment probabilities to comparably situated White-Americans.

Key Words: Self-employment; information; past institutions; perception, Black-White gap

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1 Introduction

It has been well documented in the literature that ethnicity matters in the determination of self-employment rates.¹ In particular, African-American self-employment rates lag far behind those of other ethnic groups as White-Americans are three times more likely to be self-employed. The documented causes of low African-American self-employment includes significant differences in demographic factors such as education, discrimination in lending, differences in financial capital, and disparities in generational transfers of human capital i.e., having parents who were self-employed.² However, even when controls for all these factors are included in a regression analysis, the gap in self-employment still remains.

Understanding the causes and consequences of the Black-White self-employment gap is important for a number of reasons. First, policy-makers care about the gap because historically, patterns of business ownership seem to exacerbate racial tensions. For example, racial tension between Asians and African-Americans in many American cities is due, in part, to the presence of Asian-owned businesses located in the heart of the African-American community. Second, self-employment/entrepreneurship has been suggested to pose the best opportunity for under-represented groups to raise themselves out of poverty and realize the American dream. Finally, the growth of the U.S. economy during the late 1990s, the impact of government instituted affirmative actions programs, and the scope of “emerging” lines of Black-owned business has led many to argue that there has been a significant increase in business opportunities for African-Americans.³ Hence, some have questioned the continued need for government sponsored affirmative action programs which have been responsible for significantly increasing African-American self-employment rates.

In this paper we provide an additional explanation for the gap in self-employment. First, using data from the 1994-2002 March Consumer Population survey (CPS) from IPUMS (see King et al 2004), we estimate the probability of self-employment for various ethnic groups relative to that of White-Americans with U.S. born parents (WAUBP). Controlling for demographic factors and other explanatory variables suggested in the literature, we initially provide evidence of the well documented Black-White self-employment gap. We find that the Blacks self-employment probability is 5.5% less than that of Whites. We then further partition the sample with respect to ethnicity and citizenship

¹Bates (1987); Borjas and Bronars (1989); Meyer (1990); Fairlie (1999); Fairlie and Meyer (1996)

²Fairlie (1999) and Bogan and Darity (2008)

³Bates(1997 and 2006), Boston and Ross (1997)

in an effort to eliminate the possibility that the Black-White gap is driven by differences in self-employment based on immigration status. We find that even after separating Americans from the Non-American citizen, the gap persists. In effect, we show that this gap cannot be explained by the inclusion of White immigrants with high self-employment probabilities in the sample. We then provide a socio-political and economic explanation for the persistent gap.

U.S. history provides important components of a natural experiment, as a subset of the current U.S. Black population has been either directly or indirectly exposed to social and political institutions that Bogan and Darity (2008) argues provide a disincentive for self-employment pursuit. We concur with the Bogan and Darity (2008) argument and further suggest that not only have African-Americans been exposed to particular institutions that discourage self-employment, but at the same time, African-Americans have experienced various shocks that has led to large scale failure of Black businesses over time. These failures could impact the past, current, and future expectations of self-employment success. In effect, past business failures could lead African-Americans to form rational expectations of business failure leading to less future self-employment success and more importantly, fewer attempts by African-Americans to pursue self-employment currently and in the future. Consistent with North (1973) and Acemoglu, Robinson and Johnson (2002), we argue that institutional changes may having long-lasting impacts and through social learning the transfer of information through time could influence self-employment behavior across generations. It is well documented that values, preference, and perceptions can be transferred from one generation to another through the family unit and community.⁴ If the African-American community is similar to other communities with respect to transmission of preferences to younger generations, then greater apprehension towards self-employment for children of those who passed through these experiences of the past is expected. In summary, African-Americans exposure to institutional shocks directly or indirectly through transmission of information, can lead to lower expectations of success in self employment or greater aversion to self employment which could explain the persistent Black-White self-employment gap.

If our above arguments are true and current discrimination does not affect Blacks self-employment entry, then we predict that self-employment probabilities for the subset of African-Americans who were not exposed to the aforementioned shocks, should be no different than that of White-Americans. In addition, we predict that self-employment probability of exposed African-Americans will be lower

⁴For example see Cavalli-Sforza and Feldman (1981) or Ute Schönplflug (2001)

than that of the unexposed African-Americans. In this research, we test these hypotheses using a novel decomposition, where we identify a group of African-Americans (Blacks born in the U.S) who were not exposed to the institutional shocks or the information created from these experiences, and label this the control group. We also identify a second group of African-Americans who were most likely exposed directly or indirectly to the institutional shocks and/or information created from these shocks and label this the treatment group. The remaining sample data is partitioned into 16 subgroups. Controlling for factors suggested by the recent literature to impact self-employment, we estimate the probability of self-employment for all groups using probit and logit models. However, to test the aforementioned predictions, we focus primarily on the probabilities for our treatment and control groups. The criteria for separating African-Americans (Blacks born in the U.S) into control and treatment groups is their parent's place of birth. African-Americans with parents who are foreign born, even if these parents are current American citizens, are our control group. While African-Americans whose parents are U.S born are our treatment group. Restricting the control group to U.S. born African-Americans of immigrant parents, we avoid inadvertently including in this group African-Americans who could have been directly or indirectly exposed, though generational transmission of information, to historical business failures and institutional shocks that impacted the treatment group. We also exclude from our treatment and control groups all non U.S. born Blacks (Naturalized Blacks and Immigrant Black). This exclusion allows our research to avoid the immigrant uniqueness argument which suggests that those who immigrate show significant or unusual drive, determination, desire for risk, and independence that is evidenced by the very act of immigration. Also, since both the treatment and control groups share the same race, place of birth and citizenship status, differences in estimated self-employment probabilities for these two groups cannot be attributed to current discrimination on the bases of race or place of birth. Supporting both hypotheses, we find that our treatment group (exposed African-Americans) has a lower self-employment probability than does our control group (not exposed). In contrast, our control group, which is similar to our treatment group in every way, apart from the direct or indirect exposure to the specific socio-political institutions mentioned above, has a similar probability of self-employment to that of White-Americans.

To further support results, we provide arguments and empirical evidence including a pseudo experiment to show that our results are not driven by selectivity or other confounding factors that could be peculiar to our control group. For example, we provide an empirical argument which shows

that our identification strategy is not simply capturing the possibility that U.S born children of immigrants are more likely to be entrepreneurs because immigrants may have better entrepreneurship skills. Finally, as a check of robustness of our estimates we take a “kitchen sink” approach to our empirical analysis including additional controls. We find that the inclusion of other variables does not change our results. The treatment group continues to have a lower self-employment probability than does the control group where as the control group has a similar self-employment probability to that of White-Americans. We conclude based on this result that the specific exposure of African-Americans and the information created from this exposure can help to explain the estimated lower African-Americans self-employment probability. However, we are not able to isolate in this analysis the impact on self-employment of exposure to each specific shocks and/or experience separately. We argue that the direct exposure to self-employment altering incentives does not provide the complete picture as information and information transfer plays a vital role in the persistence of the self-employment gap over time. We show empirically that information transmission is important by highlighting the persistent of the gap, though to a lesser degree, in the younger cohorts of African-Americans who were not directly exposed to incentive altering institutions and experiences.

This paper contributes to the literature in three ways: First, we offer an explanation for the persistent White Black self-employment gap and provide evidence for this thesis. We highlight why repeated institutional shocks and business failures may have created an expectation and/or perception in the African-American community that self-employment is significantly more risky than actual current conditions dictate. This perception or expectation could lead to lower self-employment probabilities for African-Americans relative to other ethnic/racial group. Second, this paper provides evidence of information transmission over time, which explains the persistence of the Black-White self-employment gap even among younger African-Americans who were not directly exposed to institutional shocks. Third, our paper is the first to highlight the fact that not all native born African-Americans have lower self-employment probabilities relative to White-Americans. In addition, we highlight the importance of decomposing the population into more unique categories when trying to understand and make statements regarding the probability of self-employment.

The remaining sections of the paper is organized as follows: The second section of this paper provides a detailed review of the literature related to self-employment and race. In section 3 we highlight the data used in this analysis. Sections 4 and 5 describes the econometric approach in detail,

our own explanation for the persistent gap in Black-White self-employment and our identification strategy. Section 6 provides econometric results, and also offer robustness checks of key results. The final section contains a discussion of inferences, provides conclusions, and offers recommendations.

2 Literature Review

Past research on the causes of low African-American self-employment rates have fallen into five areas; demographic disparities, liquidity disparities, entry into and exit out of high verses low entry barrier industries, generational transfer of human and financial capital disparities, and cultural disparities. Fairlie (1999) examining self-employment entry decision finds that graduation from college relative to dropping out of high school does increase the probability of self-employment more for Whites than for Blacks. However, the small size of the education coefficient in the logit regression indicates that education has a weak relationship with the self-employment entry decision. Looking across time, Fairlie and Meyer (2000), using the Smith and Welch (1989) decomposition method, examined the influence of demographic factors on racial trends in self-employment. They calculate the separate contribution of age, family, education, and region. They find that the Great Black migration, racial convergence in education levels, family background, and regional locations did not explain the constancy of the racial gap in self-employment during the 1960 to 1990 time frame.

Bates (1987) shows that racial difference in financial capital has a significant impact on the racial patterns of business failure. In complementary research examining self-employment entry rates, Blau and Graham (1990) and Fairlie (1999) demonstrate that racial differences in financial asset levels provide an important contribution to the Black-White gap in entry rates to self-employment. More recently, Blanchflower, Levine and Zimmerman (2003) show that lending practices by financial institutions appear to exacerbate Black-White differences in access to financial capital. They argue that in the case of start-up as well as existing small businesses, banks are the primary source of debt capital and this capital is more readily available to White entrepreneurs than to similarly situated Blacks. Evans and Leighton (1989) show that all else remain equal, people with greater family assets are more likely to switch to self-employment. Though Evans and his collaborators conclude that capital and liquidity constraints bind, there are other alternative explanations that could produce the same results. For example, individuals could forgo leisure and start their own business to build up family assets producing a correlation between family assets and movements in self-employment even if capital constraints do not exist. Blanchflower and Oswald (1998) also provide evidence of

the role of wealth-transfers on self-employment. Using British data, they find that the probability of self-employment depends positively upon whether the individual ever received an inheritance or gift.

Lofstrom and Bates (2007) criticize the self-employment literature in its use of a one size fit all econometric approach to modeling the self-employment decision. They argue that industry context heavily shapes the impact of owner resource endowments on small firm entry and exit i.e., differences in entry barriers typify different industry subgroups. They find that Blacks are more likely to exit low-barrier lines of business than similarly situated Whites. However, among highly educated Blacks, the link between exit rates and race is weak for high barrier lines of small business. Fairlie and Myer (2007) find that Black firms and White firms concentrate in different industries. Black firms tend to be under represented in construction, manufacturing, whole sale trade, agricultural services, finance, insurance, and real estate but, are more concentrated in transportation, communications, public utilities, and personal services. These industry differences are associated with worse outcomes among Black-owned firms.

Generational transfer of human capital is another factor highlighted in the literature. Theoretically, one would expect a strong intergenerational link in self-employment given the transmission of informal business and/or managerial knowledge as well as the transfer of financial and real capital assets from one generation to the next. Lentz and Laband (1990) finds that 53% of a sample of self-employed proprietors from the National Federation of Independent Business had a self-employed parent. Fairlie and Robb (2007) finds that Black business owners are much less likely to have a self-employed family member than are White business owner. This difference however, is important in explaining disparities in Black-White self-employment rates, but is unimportant in explaining racial disparities in profits, sales and employment between Black- and White-owned businesses.

Frazier (1957, 1965) was one of the first to hypothesize that the lack of business tradition as a result of slavery was partially responsible for the failure of African-Americans to achieve entrepreneurial success. Sowell (1991, 1994), Light (1980), Light and Gold (2000) and others have focused on the African-American culture as one of the important factors in limiting entrepreneurial success. Light (1980) asserted that Black cultural values do not foster entrepreneurial activity. Light and Gold (2000) soften their original claim by acknowledging that Blacks have indeed experienced severe discrimination. Feagan and Imani (1994) argue that most immigrant groups endured formidable obstacles with respect to entrepreneurship, however, these challenges do not compare in

kind or degree to the sweeping exclusionary practices that historically kept African-Americans out of many business areas. Butler (2005) argues that when examining historical practices of African-Americans in the context of the sociology of entrepreneurship, African-American traditions suggest a strong entrepreneurial culture.

3 Description of Data

To examine the self-employment behavior of our treatment and control groups relative to U.S. born White-Americans we make use of the March Current Population Survey (CPS). The CPS is a monthly U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics. The CPS samples are multi-stage stratified samples. We derive the data information from IPUMS-CPS, which is microdata that provides information about individual persons and households (see King et al 2004 for details on this data). The IPUMS-CPS data is available for 46 years (1962-2007). However, we make use of data from 1994-2002 for two reasons: The nature of our identification strategy requires the existence of particular variables in the data set which were, in many cases, not surveyed until 1992. For example, parent's birth place is used as a control variable in our analysis but was not available in the CPS before 1992. Similarly, post-2002 the coding for race changed significantly as the variable that captures race was broken down into several subcategories making it more difficult to easily identify groups of interest. Specifically, prior to 2003, the number of race categories ranged from 3 (White, Negro, and other) to 5 (white, black, American Indian/Eskimo/Aleut, Asian or Pacific Islander, and other). The three category breakdown of race was thought to be too simplistic and was abandoned in 1988 for the more empirically useful five category breakdown. Beginning in 2003, respondents could report more than one race, and the number of codes rose to 21 making it more difficult to compare data prior to 2003 with data post-2003 with respect to race. Individuals who classed themselves as Black previously could now identify themselves as biracial and similarly others who identified themselves as White prior to this change could also claim multiracial. One of the advantages of using the CPS via IPUMS is that it makes cross-time comparisons using the March CPS data more feasible as variables in IPUMS-CPS are coded identically or "harmonized" for 1962 to 2007. Table (1) is a summary of the data used broken down by race and citizenship. Also highlighted in the Table (1) are the estimated probabilities of self-employment for each category. These simple descriptive statistics without any controls reveal a gap in self-employment across race and group.

Table 1: Breakdown of Data by Race/Native subgroups

Variable	Observations	%	Probability of Self Employment
Black US born	127,617	9.77	0.043
White US born	998,205	76.40	0.119
Black Naturalized	3,374	0.26	0.068
White Naturalized LDC	22936	1.76	0.115
White Naturalized DC	8491	0.64	0.198
Black Foreign	6,163	0.47	0.051
White Foreign LDC	61,327	4.69	0.063
White Foreign DC	7,059	0.54	0.148
American Indian/Aleut/Eskimo	18,368	1.41	0.073
Asian or Pacific Islander US born	47,487	3.63	0.105
Other (single) race	5,579	0.43	0.057

4 Empirical Strategy and Results

4.1 General Econometric Model

To verify the existence of the much researched self-employment gap between African-Americans and White-Americans, we estimate equation (1). This equation is a simple self-employment probability model, where X is a matrix of all the possible factors impacting the probability of self-employment. If $Y=1$, an individual is self-employed, whereas $Y=0$ indicates that an individual is a wage-earner. For the purpose of estimation we rewrite this function as shown in equations (2), (3) and (4) and employ probit, logit, and linear modeling strategies. We initially estimate a parsimonious form of equations (2)-(4) with minimal controls. We then extend the model using additional control variables including race related dummy variables that allows testing of our hypotheses.

$$Prob(Y = 1) = F(\beta' X) \tag{1}$$

$$Y = \theta_0 + \theta_1\Omega + \theta_2Z + \theta_3W + \sum_i \mu_i R_i + \epsilon \tag{2}$$

$$Prob(Y = 1) = \Phi(\alpha_0 + \alpha_1\Omega + \alpha_2Z + \alpha_3W + \sum_i \psi_i R_i + \epsilon) \tag{3}$$

$$Prob(Y = 1) = \Lambda(\delta_0 + \delta_1\Omega + \delta_2Z + \delta_3W + \sum_i \chi_i R_i + \epsilon) \quad (4)$$

As in equation (1), the dependent variable in equations (2), (3), and (4) is a binary indicator which takes on a value of 1 if an individual is self-employed and a value of 0 if the individual is a wage-earner. $\Phi(\cdot)$ in equation (3), indicates the standard normal distribution. We estimate and present both the coefficients and the marginal effects of each variable from this estimation. The marginal effects represent the impact of an infinitesimal change in each independent continuous variable on the probability of self-employment, providing the most straight forward interpretation of estimated results from the probit models.⁵ $\Lambda(\cdot)$ in equation (4), indicates the logistic cumulative distribution function. For ease of interpretations of our logit model estimates, we focus on the odds ratio. The odds ratio are the exponentiated coefficients in an ordinary logistic regression. Our estimated coefficients from the linear probability specifications of the binary regression model in equation (2) also have straight-forward interpretations. However, we do not focus on these estimates because estimated coefficients using linear probability models can take on a value outside the unit interval if appropriate restrictions are not applied.

Variables included in the Ω matrix are demographic variables that could potentially impact the probability of choosing self-employment including sex, education, number of children in the family, size of the family, and marital status. Z is a matrix of dummy variables including year dummies, region, and state fixed effects. The vector W captures the proxy for wealth. In this paper, we make use of two proxies for wealth; interest income and dividend income. As defined in the CPS, interest income captures how much pre-tax income (if any) the respondent received from interest on saving accounts, certificates of deposit, money market funds, bonds, treasury notes, IRAs, and/or other investments which paid interest. In contrast, dividend income captures what respondents received from stocks and mutual funds during the previous calendar year. Interest income clearly provides a broad proxy of wealth, however, using dividend income as a wealth proxy allows examination of the robustness of our results. We estimate models using both wealth proxies and get similar results, however, we focus primarily on results obtained using interest income.⁶ Moreover, we focus on the interest income proxy because fewer people have dividend income reducing the sample size by almost

⁵For race dummy variables, the interpretations of marginal effects are slightly different. Estimates capture the change in the probability self-employment for a particular racial group relative to the baseline group.

⁶In Belton and Uwaifo (2008) arguments for why interest income makes a good proxy for saving/wealth are highlighted. Including both proxies in the regression does not change the results significantly.

Table 2: Evidence of the Racial Self-Employment Gap

Variable:	Panel A: Wealth Proxy A				Panel B: Wealth Proxy B			
	Odds ratio	Linear	Probit	Probit Marg.Effect	Odds ratio	Linear	Probit	Probit Marg.Effect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log saving	1.1* (0.003)	0.01* (0.0003)	0.05* (0.002)	0.009* (0.0003)				
log divided					1.055* (0.005)	0.007* (0.001)	0.029* (0.003)	0.006* (0.001)
Black	0.443* (0.016)	-0.057* (0.001)	-0.404* (0.018)	-0.061* (0.002)	0.431* (0.032)	-0.067* (0.004)	-0.423* (0.036)	-0.074* (0.005)
A/A/E	0.820* (0.08)	-0.017* (0.008)	-0.095* (0.048)	-0.017* (0.008)	0.808 (0.129)	-0.022 (0.015)	-0.11 (0.084)	-0.022 (0.016)
Asian	0.95 (0.032)	-0.005 (0.003)	-0.025 (0.018)	-0.005 (0.003)	0.956 (0.053)	-0.006 (0.006)	-0.024 (0.03)	-0.005 (0.006)
Other	0.6* (0.088)	-0.044* (0.01)	-0.263* (0.074)	-0.042* (0.01)	0.581 (0.2)	-0.051** (0.026)	-0.302** (0.174)	-0.056** (0.026)
Schooling	1.011* (0.003)	0.002* (0.0003)	0.006* (0.001)	0.001* (0.0003)	1.04* (0.005)	0.005* (0.001)	0.019* (0.002)	0.004* (0.001)
Age	1.033* (0.003)	-0.003* (0.0003)	0.014* (0.002)	0.003* (0.0003)	1.021* (0.005)	-0.006* (0.0007)	0.006** (0.003)	0.001** (0.001)
Sex	0.621* (0.008)	-0.049* (0.001)	-0.253* (0.007)	-0.048* (0.001)	0.672* (0.014)	-0.048* (0.002)	-0.216* (0.011)	-0.047* (0.002)
Child	1.1* (0.007)	0.011* (0.001)	0.053* (0.003)	0.01* (0.001)	1.06* (0.011)	0.008* (0.001)	0.035* (0.006)	0.008* (0.001)
Constant		0.123* (0.007)	-1.75* (0.04)			0.141* (0.015)	-1.73* (0.077)	

Other Controls: Marital status, year dummies, Age squared.

A/A/E: American Indian/Aleut/Eskimo

* 5% significance

**10% significance

50%. Using the small sample of those with dividend income could lead to serious selectivity issues reducing the possibility of generalizing our results. The R matrix contains race related variables and our unique race decomposition strategy which allows estimation of vectors of coefficients ψ , χ and μ . Unless explicitly stated otherwise, the baseline comparison group for the racial dummy variables is U.S. born White-Americans. Finally, ϵ is a vector of error terms.

4.2 Confirming the Evidence of a Black-White Entrepreneurship Gap

Table (2) provides initial results of estimating equation (1) using probit, logit and linear probability models. Using the pre-2002 standard approach we partition the data by race into five categories;

White, Black, Asian/Pacific Islander, American Indian/Eskimo/Aleut and Others. Table (2) is also partitioned by wealth indicators; columns (1) - (4) use interest income as the wealth proxy and columns (5) - (8) use dividend income as the wealth proxy. Bearse (1984) argues that ownership of financial assets is positively correlated with the probability of entrepreneurship, therefore, a measure of wealth must be included in self-employment models. As mentioned earlier, using interest income as the wealth proxy provides a larger data sample and encompasses more dimension of wealth. However, for the purpose of robustness and examining the impact of employing more narrow definitions of wealth on self-employment probabilities, we present results in Table (2) using both dividend income and interest income. We acknowledge that both proxies are imperfect measures of wealth but represent the best choices for the data set that we are using.

Table (2) provides evidence that our results are generally consistent with the self-employment literature. The marginal effects estimates of the probit model in column (4) suggests that the probability of Black self-employment is 6.1% less than that of Whites. We also find that there is no difference in the probability of self-employment for Whites and Asians. If we use the more restrictive proxy for wealth, dividend income, we find that the Black-White gap widens. The change in the size of the gap highlights the importance of wealth proxies in adequately controlling for the impact of wealth on the likelihood of self-employment.

4.3 Do Foreign Blacks and Black Citizens have Similar Probabilities of Self-employment?

Results above confirm those found in the literature highlighting the Black-White self-employment gap. However, the literature suggests that immigrants pursue self-employment at a much higher rate than do Americans and in particular, have a much higher probability of self employment than do African-Americans (see Bogan and Darity 2008 and Fairlie and Robb 2008). Bogan and Darity (2007) using census data from 1910 to 2000 were the first to document statistically that foreigners whether White, Asian, or Black have a higher probability of self-employment than do African-Americans. They argue that foreigners generally have more access to resources than do African-Americans. While this may be true for immigrants from newly developed countries such as South Korea and Taiwan, it is however, difficult to make such a claim for foreign Blacks, who generally immigrated from Africa and/or the Caribbean.⁷ There is little evidence pointing to significant

⁷Yoon (1997) highlights evidence for the Korean case

resource accessibility for these groups. In Africa and the Caribbean, levels of development and missing markets make wealth transfer and access to resources limited relative to that of countries with well developed capital markets.⁸ The literature provides no empirical evidence which suggest that significant number of wealthy Africans immigrate to the developed world. However, the brain drain literature finds that educated Africans are more likely to immigrate to the developed world where markets for the sale of their educational skills are more developed. Also Uwaifo Oyelere and Belton (2009) show that home country economic status matters in the probability of self-employment for immigrants to the U.S. They find that immigrants from developing countries have lower self-employment probabilities than do both U.S. born White-Americans and immigrants from developed countries, while foreigners from developed countries have higher self-employment rates than do U.S born White-Americans.

Given, that a significant share of White immigrants are from developed countries whereas most Black immigrants are from developing countries, then if the trends identified by Bogan and Darity (2008) and the results of Uwaifo Oyelere and Belton (2009) are valid, it is possible to argue that the gap in self-employment could be driven largely by the White immigrant population. To investigate this possibility we decompose Black and White racial groups into seven subgroups defining the R matrix in equation (2), (3) and (4) to include foreign Blacks (FB), Foreign Whites (FW), African-Americans, Whites-Americans, Asian, A/A/E, and Others. Using data from 1994-2002 we then re-estimate equations (2), (3) and (4) with our newly defined R matrix and provide results in Table (3). Using American Whites as the baseline group we focus on the marginal effects estimates summarized in columns (5) and (10). We find that even if we exclude immigrants, the gap in self-employment persists. African-American are 6.1% less likely to be self-employed than are White American citizens.

Surprisingly, we find that the estimated probability of self-employment for FB is slightly higher than African-Americans, but the two estimated coefficients are not statistically different. Similarly, the probability of self-employment for foreign Whites and White-American citizens are similar when interest income is used as a wealth proxy. However, using dividend income as a wealth proxy, results

⁸We cannot make the argument that these immigrants are well-to-do urban middle class. A large number of African immigrants come in as refugees and are typically classify as urban middle class because of educational attainment. In effect, many well educated African immigrants come to the U.S. but are generally economically poor. Given the level of poverty in many of these African countries, immigrants are more likely to have been close to or below the poverty line before immigrating. Nigeria one of the countries in Africa with a sizeable number of immigrants to the U.S. has over 60% of its population below a \$1 poverty line in the 90s and over 75% if a \$2 poverty line is used. Many of these immigrants are classify as urban middle class given their education levels.

in Table (3) suggests that foreign Whites have a higher probability of self-employment than do White-Americans. This difference in results again reveals the upward biased in estimated coefficients when using dividend income as a proxy for wealth. In addition, the results of Table (3) do not confirm those of Bogan and Darity (2008) with regards to foreign Blacks having a higher self-employment probability than do African-American. We find that foreign Blacks and African-American have similar probability of self-employment. This could reflect recent changes in the choices to enter the ranks of the self-employed for these groups. However, the persistence of the Black-White gap even after controlling for immigration status raises an important question as to what explains this gap.⁹

Given that African-Americans and foreign Blacks have significantly lower self-employment probabilities than do White-Americans and White foreigners, it appears that the inability to directly control for discrimination in our estimated models could account for the self-employment gap. Conversely, discrimination might not explain this gap as other factors unrelated to discrimination could impact the probability of self-employment for each group.¹⁰ For example, Uwaifo Oyelere and Belton (2009) show that immigrants from developing countries have lower self-employment probabilities than do immigrants from developed countries. These authors result could explain the low self-employment probability for foreign Blacks but does not provide an explanation for low African-American self-employment. Below, we provide our explanation for the well documented Black-White self-employment gap among U.S born Americans.

5 The Role of Information and Institutions in Black Reluctance in Self-employment

5.1 The Role of Past Institutions

Bogan and Darity (2008) argues that any examination of the evolution of African-American entrepreneurship, must include consideration of the long, arduous and diverse road of the African-American entrepreneur which includes exposure to slavery, “Jim Crow” laws, and institutional racism. Early Black entrepreneurs were freed slaves functioning in personal services and trades that Whites perceived to be too menial. By 1890 an estimated 5000 Blacks operated businesses (Higgs 1977). Bogan and Darity (2008) argue that the Great Migration in the early 1900s fundamentally

⁹To examine the robustness of our result we take “a kitchen sink” approach including all variable available through the CPS that could remotely impact self-employment. We find that the estimated probabilities of self-employment changes somewhat with the barrage of variables, however, differences are minimal and the gap persists.

¹⁰These include language and legal barriers and difficult of transition into self-employment because of difference in institutions in home country in comparison to the US.

Table 3: Can White Foreigners be driving the Black White gap in self-employment?

Variable:	Panel A: Wealth Proxy A				Panel B: Wealth Proxy B			
	Odds ratio	Linear	Probit	Probit Marg.Effect	Odds ratio	Linear	Probit	Probit Marg.Effect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log saving	1.1*	0.010*	0.05*	0.009*				
	(0.003)	(0.0003)	(0.002)	(0.0003)				
log dividend					1.055*	0.006*	0.029*	0.007*
					(0.005)	(0.001)	(0.003)	(0.001)
Foreign Black	0.548*	-0.042*	-0.304*	-0.047*	0.448*	-0.057*	-0.439*	-0.074*
	(0.081)	(0.008)	(0.072)	(0.009)	(0.161)	(0.019)	(0.171)	(0.021)
Foreign White	1.056	0.004	0.027	0.005	1.24*	0.026*	0.114*	0.026*
	(0.04)	(0.004)	(0.020)	(0.004)	(0.097)	(0.01)	(0.043)	(0.011)
Black Citizens	0.439*	-0.056*	-0.408*	-0.061*	0.433*	-0.066*	-0.42*	-0.074*
	(0.017)	(0.002)	(0.018)	(0.002)	(0.033)	(0.004)	(0.037)	(0.005)
A/A/E	0.821*	-0.017*	-0.094*	-0.017*	0.81	-0.022	-0.10	-0.022
	(0.076)	(0.008)	(0.048)	(0.008)	(0.129)	(0.015)	(0.084)	(0.016)
Asian	0.956	-0.005	-0.025	-0.005	0.96	-0.005	-0.022	-0.005
	(0.032)	(0.003)	(0.018)	(0.003)	(0.053)	(0.006)	(0.03)	(0.006)
Other	0.602*	-0.044*	-0.262*	-0.042*	0.583	-0.051**	-0.3**	-0.055**
	(0.088)	(0.01)	(0.074)	(0.01)	(0.2)	(0.026)	(0.174)	(0.026)
Schooling	1.011*	0.002*	0.006*	0.001*	1.037*	0.005*	0.019*	0.004*
	(0.003)	(0.0003)	(0.001)	(0.0002)	(0.005)	(0.001)	(0.002)	(0.001)
Age	1.03*	-0.003*	0.014*	0.003*	1.02*	-0.006*	0.006**	0.001**
	(0.003)	(0.0003)	(0.002)	(0.0003)	(0.005)	(0.007)	(0.003)	(0.001)
Sex	0.621*	-0.049*	-0.253*	-0.048*	0.673*	-0.048*	-0.215*	-0.047*
	(0.008)	(0.001)	(0.007)	(0.001)	(0.014)	(0.002)	(0.011)	(0.002)
Child	1.099*	0.011*	0.053*	0.01*	1.06*	0.008*	0.035*	0.008*
	(0.007)	(0.001)	(0.003)	(0.001)	(0.01)	(0.001)	(0.006)	(0.001)
Constant		0.123*	-1.76*			0.14*	-1.74*	
		(0.007)	(0.04)			(0.015)	(0.077)	

Notes: Estimates in bold are marginal effects from the probit model using the first savings proxy. Other

Controls: Marital status, year dummies, Age sq. A/A/E American Indian/Aleut/Eskimo

* 5% significance

**10% significance

M.E Marginal Effects

changed the landscape for Black enterprise. African-American entrepreneurs faced increased racial hostility and increased competition from other immigrant groups as Black populations increased in Northern cities. Racial tension severely damaged the relationship between Black service providers and affluent Whites (Boyd 1990b). In the South between 1880 and 1930 there was a substantial decumulation of property ownership by Blacks as Jim Crow laws supported White terrorism and ultimate land seizure (Darity and Frank 2003). The Southern Homestead Act which was intended to provide freedmen the first opportunity to acquire public lands in Alabama, Arkansas, Florida, Louisiana, and Mississippi was hugely unsuccessful and de facto transferred land to Whites (McPherson, 1964). Conversely, the Homestead Act of 1862 parceled out farmland to German and Scandinavian immigrants facilitating entrepreneurial activity and social mobility of many European groups. Further, the National Labor Relations act of 1937 institutionalized collective bargaining which provided Italian, Polish, and Jewish immigrants with both job and income security (Boyd, 1990b).

Black entrepreneurs found that legal and social barriers made it impossible to compete in the general market place and sought to focus their efforts on servicing their own community within the walls created by discrimination and segregation. Brimmer (1966) argues that segregation did have positive effects on the earnings of self-employed Blacks as social and demographic changes led to the collapse of Black businesses serving affluent Whites but created a protected market for Black entrepreneurs providing services to Blacks. The 1960s brought increased social awareness, civil rights legislation, and profit seeking large corporations made White-owned businesses increasingly available to Black consumers. Given Black businesses were generally smaller and under capitalized, Black entrepreneurs found themselves unable to compete in terms of price and quality with more well established White-owned firms. In effect, the desegregation of the 1960s despite its numerous benefits implicitly provided a significant negative shock to the Black entrepreneur.

From the events highlighted above, it is easy to conclude that shifts in the formal and informal institutional landscape could have, over time, adversely impacted African-American entrepreneurial development. Douglas North (1973) and (2005) defines institutions as the formal and informal rules which govern societal interactions. These rules represent the institutional scaffolding on which communities move through time and provide context for understanding the basic legal, political, economic, and social paths of societal outcomes. When formal rules and processes are reinforced over time through the realization of predicted outcomes, they tend to become a part of the soci-

etal fiber leading to more entrenched informal methodologies that impact future outcomes in the community. These entrenched methodologies tend to be long-lived as perspectives and perceptions of established outcomes become self-reinforcing and are passed from one generation to the next through word of mouth and/or perceived fundamental truism. Acemoglu, Johnson, and Robinson (2001a) and (2002) using North's definition of institutions have examined empirically the impact of institutions on downstream outcomes in terms of economic growth across nation states. They show that the established colonial institutions of the 14th century helps to explain divergent growth paths of former European colonies during the 1980s and 1990s. This research shows that not only do institutions matter but their impacts are long-lived. If colonial institutions implanted during the 14th century have been shown to impact the growth of former colonies some 300 to 400 years later, then examining African-American entrepreneurship in the context of the many formal and informal institutional changes to which it has been exposed, can provide insight as to why African-American entrepreneurship lags significantly behind that of White-Americans and other immigrant groups. Providing evidence for the role of these past experiences/institutions in explaining the self-employment gap, is the focus of our paper. Figure (1) is a simple depiction of some of historical shocks and events experienced by African-Americans over time that provided perverse incentives and may have impacted African-American expectations of self-employment success.

Even if one is skeptical about the long-term influence of institutional change on African-American entrepreneurial activity, it is clear that the Black entrepreneur has experienced a number of significant set backs over the last 100 years in terms of formal and informal, legal and illegal activities that may have negatively impacted the actual and perceived probability of entrepreneurial success.¹¹ Whatever the reason for business failures across time there has been spells of significant African-American business failure as well as significant reduction in African-Americans entry into self-employment in the periods following institutional shocks.

The institutional shocks to which African-American entrepreneurship has been exposed occurred more than 30 years ago and many would argue, should not impact the current behaviors of those exposed to the shocks. Similarly, one could also argue that African-Americans born after imposition of these institutional changes did not directly experience these shocks and therefore should not possess low expectations of entrepreneurial success. If we ignore the research of North (1973) and

¹¹There is ample anecdotal evidence within the Black community that support the pessimistic outlook to self-employment.

Time Line

Specific Shocks

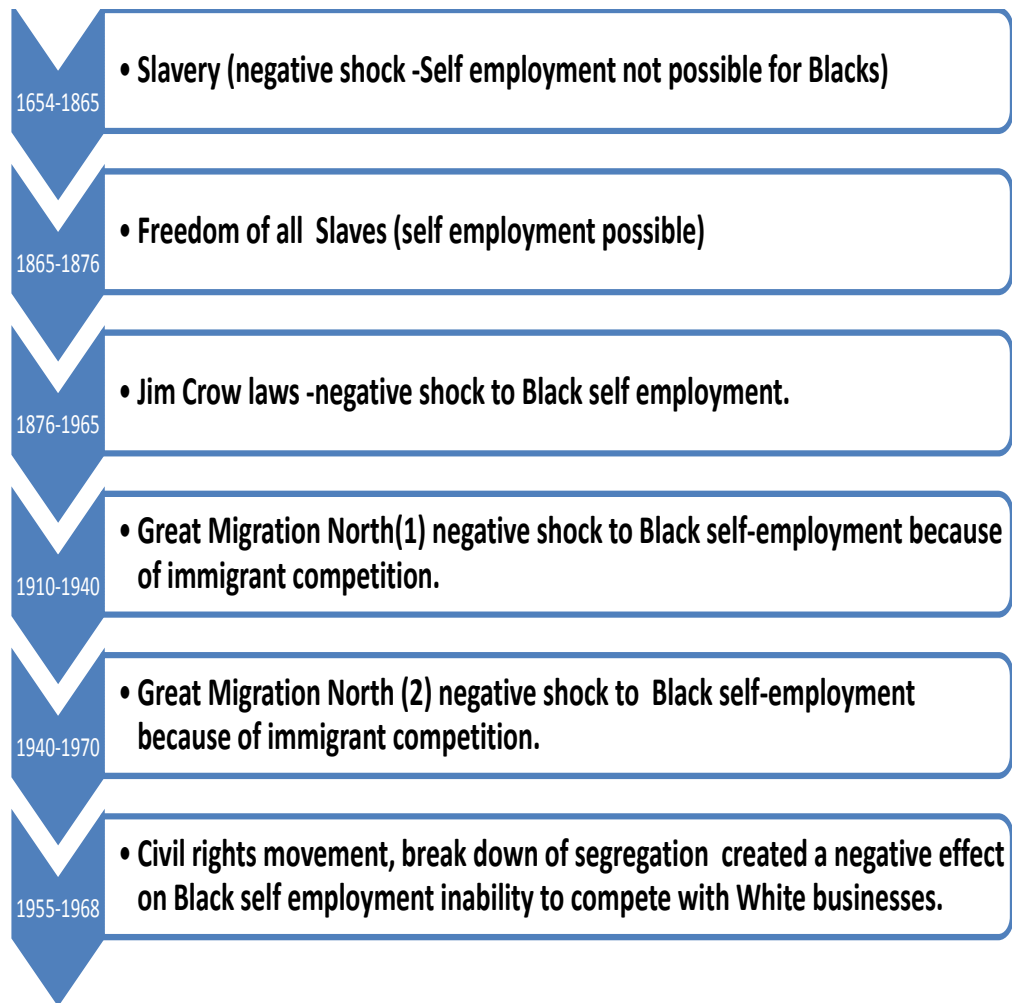


Figure 1: Institutional Changes and Shocks to African-Americans overtime

(2005) and Acemoglu, Johnson and Robinson (2001a) and (2002) which show empirically the long-lasting impact of institutions on down stream outcomes, then we should expect similar outcomes with regard to self-employment for younger African-Americans and White-Americans. However, if this literature and the literature on culture, norms and generational transfer (see Cavalli-Sforza and Feldman (1973) (1981),) and the economic literature that documents the dependence of children's preferences on those of their parents, community heritage and society, is valid,¹² then we should expect that children born to the individuals exposed to institutional shocks will also be impacted though to a lesser degree, and exhibit similar preferences. In the next section, we provide arguments as to why we believe that the self-employment gap is not only related to exposure to the aforementioned shocks but also to information transmission to the younger generation African-Americans by exposed/treated individuals through word of mouth and other informal channels.

5.2 Understanding the Information-Self-employment Channel

Jackson and Armengol (2009) provides a model which shows that there are higher returns to adopting the behavior of neighbors as increasing number of neighbors choose a given behaviors. More importantly, they show that overlap in the state of a parent and child neighborhoods can lead to correlation in parent-child behavior independent of any parent-child interaction. In effect, this correlation suggests that individuals make decisions based not only on current conditions but on personal experiences and the experiences of those in their information neighborhoods, including parents and communities. Given, the Jackson and Armengol (2009) model, current behavior in the African-American community relative to self-employment could represent an aggregation of individual historical experiences as well as the historical experiences of the community at large.

We construct a simple model to buttress the inference from the Jackson-Armengol model and highlight the role of information. We suggests that negative institutional shocks faced by the African-American entrepreneur can have long-term impacts on perception and/or expectation of self-employment success over time and generations.

Assuming a world where an individual's decision to pursue self-employment or preference for self-employment, is based on expectations and perceptions of success in self-employment. More formally, this expectation is based on an individual's information set, **(IS)**. As **IS** becomes more

¹²For example see Bisin and Verdier (2001) or Fernandez, Fogli and Olivetti (2004) and Fernandez and Fogli (2005) who show that the work and fertility choices of second-generation American women are influenced by the female labor force participation and fertility rates in their historical country of origin.

positive the individual has higher expectations and perception of self-employment success implying that an individual's perception of success in self-employment, (**POSS**), is a positive function of his/her **IS**; $\mathbf{POSS} = \mathbf{F}(\mathbf{IS})$. Individual i 's **IS** is based on current conditions (**c**), experience (**e**) and self-employment information from ones information neighborhood (**IN**).

Hence, $\mathbf{IS}_i = \mathbf{F}(\mathbf{c}, \mathbf{e}, \mathbf{IN})$. We also assumes a persons information neighborhood consists of ones family members and community. Therefore, an individuals information sets is such that

$\mathbf{IN} = \sum_{j=1}^n \mathbf{IS}_{j \neq i}$. Where $j= 1$ to n are all individuals in ones information neighborhood. Assuming the distribution of perception of **c** are equal across race and **e** can take on a value **0**, **1**, **-1** for individual i , where **0** implies neutral self-employment experience, **1** implies a positive self-employment experience, and **-1** implies a negative experience with self-employment. Given the past experiences of older African-Americans who were exposed to institutional shocks that provided negative incentives for self-employment pursuit, we can assume that the distribution of experience for this group has a mean of **-1**, ($\bar{\mathbf{e}}=-\mathbf{1}$) while for all other groups (not exposed to these experiences), we assume a mean of 0 ($\bar{\mathbf{e}}=\mathbf{0}$) .

Using this simple model, it is easy to show mathematically that if **IS** is an increasing function of **e**, **c** and **IN**, and the information neighborhood of individuals is mostly through their group or community, then the mean perception of success, $\overline{\mathbf{POSS}}$ of exposed African-American will always be lower than that of any other group/community ceteris paribus.¹³

A significant inference from this simple model is that if the older African-American community have on average a negative **e**, and if **e**'s gets transmitted to younger generations, then younger African-Americans are on average more likely to receive negative impressions of self-employment in their **IN**'s relative to comparable members of other communities. This information could reduce the average perception of self-employment success among younger African-Americans, discouraging self-employment pursuit and reducing the average self-employment probability for younger African-Americans relative to other groups. However, given that present conditions also impact individuals information sets, **IS**, and perception of self-employment success, **POSS**, then as more African-Americans have **e=0** or **1**, the impact of the negative past experiences should decay over time. Implying that the self-employment gap between younger African-Americans and White-Americans should become smaller over time.

¹³By groups or communities I mean treated African-Americans, White U.S born Americans, Asians, Naturalized American Whites, Naturalized American Black,.. etc)

If we assume that an individual’s **IS**, which affects **POSS** and the decision to enter self-employment, is based on current condition, **c** and experience, **e** only and not on information neighborhood, **IN**, then on average, comparable young White- and African-Americans should have similar self-employment probabilities.¹⁴ In contrast, for older White- and African-Americans who lived through historical institutional shocks, even if one assumes **IN** does not affect **IS**, there will still be a gap in average probability of self-employment because $\bar{e} = -1$ for older African-Americans who actually had the experience and $\bar{e} = 0$ for White-Americans, assuming $\bar{c} = 0$ for all. However in our model, we follow the literature that emphasizes intergenerational transmission. We argue that individuals make decision based on current conditions, experience, and information from their information neighborhood. Our model inference is supported by a prediction from the Jackson and Armengol (2009) model which shows that in overlapping generations, there can be a correlation in parent-child response independent of any parent-child interaction. In our case, this correlation in **POSS** is driven by the **IN** of the next generation which includes individuals from the affected generation.

In summary, our explanation for the persist gap in self-employment found in the literature is related to the impact of past institutional changes and information transfer across time and generations on the African-Americans entrepreneurial experience. The expectation of higher business failure is not unfounded but is an expected outcome given the information set to which African-Americans have been exposed. In what follows we provide empirical evidence for the role of direct and indirect exposure to the treatment highlighted above.

5.3 Testing the Institution and Information Thesis: Outlining our Testable Hypothesis

The previous section put forward the thesis that past institutions and the transfer of information from one generation to the next play a significant role in framing the African-American perception or view of the likelihood of self-employment success and ultimate self-employment entry. We argue that these two factors can help to explain the self-employment gap that we highlight in Tables (2) and (3). We provide evidence of our thesis through testing two hypotheses: First, given that not all African-Americans were exposed to the treatment which is hypothesized to explain low self-employment probabilities, if we can identify a group of African-Americans (control group) which

¹⁴This is because in this case both groups will have similar **IS** and **POSS**.

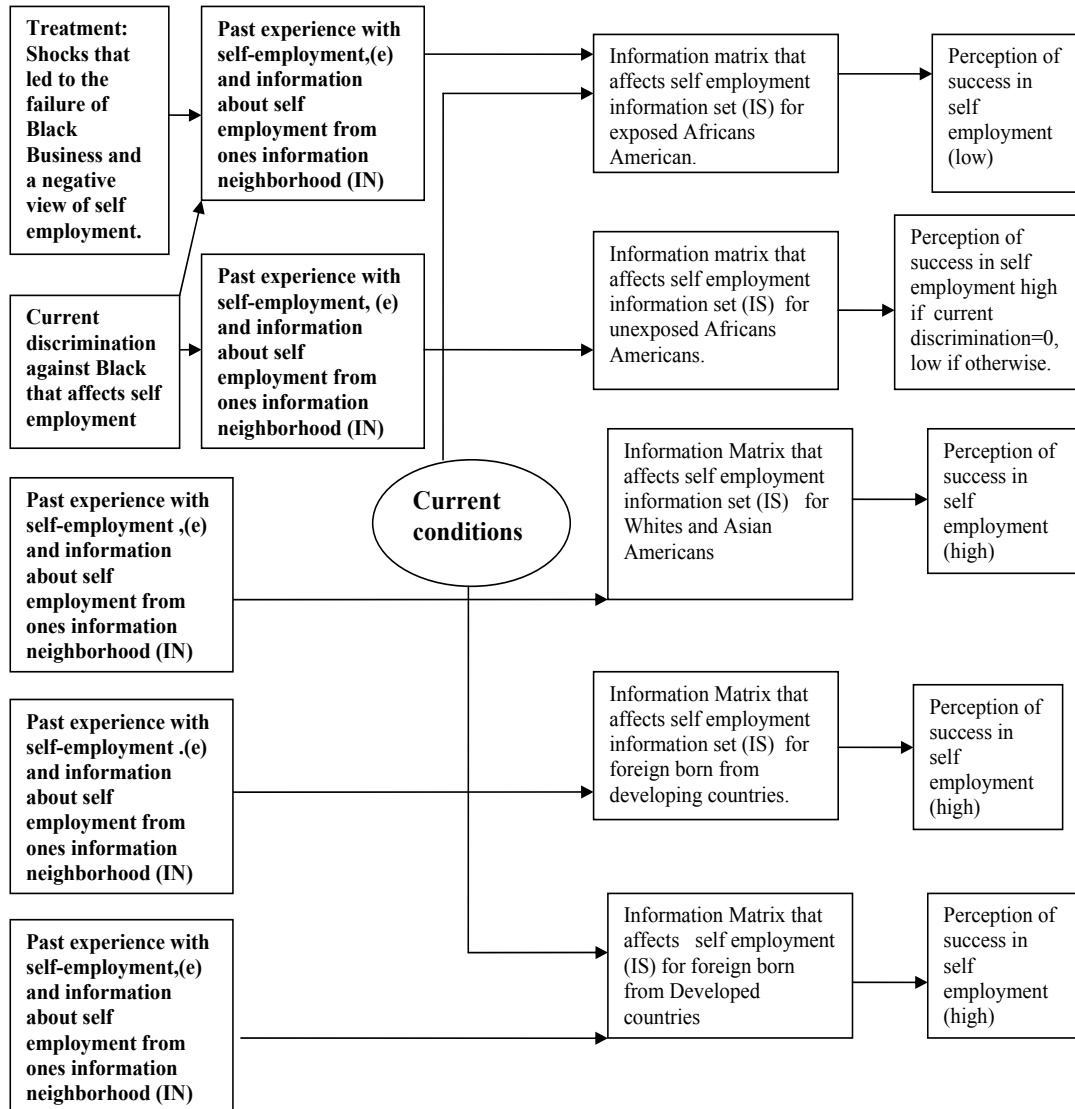


Figure 2: Determination of the Information Matrix for self-employment decision across groups

was not exposed to these institutional shocks directly or indirectly through their information neighborhood, we predict that this control group should have a higher self-employment probability than exposed African-Americans (treatment group), *ceteris paribus*. Second, we hypothesize that if the Black-White gap in self-employment is explained by the treatment highlighted above, and assuming that current discrimination does not play a significant role in the current self-employment choice, then unexposed African-Americans (control group) will have a similar self-employment probability to that of White-Americans, *ceteris paribus*.

5.3.1 Why the Identification Strategy

To test the two hypotheses above we must first identify control and treatment groups. It is important to mention that the comparability of characteristics of the treatment and control groups is critical for the validity of inferences drawn from our model. If the potential control group possesses unique characteristics in terms of language, race or institutional exposure relative to the treatment group then, it will be difficult to attribute self-employment differences to differences in institutional and/or informational exposure. For example, both foreign Blacks (FB) and naturalized American Blacks (NAB) are Black and not exposed to the treatment, but they differ across other dimensions such as language, access to resources, and institutional and historical exposure which make their use as a control group problematic. Moreover, foreign Blacks are particularly problematic because of our inability to account for resource availability in our data set. There is ample evidence of transfers/remittances to home countries by these individuals which anecdotal evidence suggests are partly for saving. Hence, we must carefully identify two groups that are both African-American facing similar discriminatory practices, but do not differ in other respect apart from the treatment.

To identify our control and treatment groups we partition the U.S. born African-Americans data set by parent's birth place. We restrict our control group to African-Americans (born in the U.S) whose parents are foreign born, (AAFBP). In contrast, our treatment group is restricted to African-Americans (born in the U.S) with U.S born parents (AAUBP).¹⁵ Although there are other African-Americans (born in the U.S) in our sample, AAFBP and AAUBP are the only ideal groups for testing our hypotheses. These groups are both American born but are unlikely to share information neighbors. For example, African-Americans with foreign born mothers, (AAFBM), and African-American with foreign born fathers, (AAFBF) are not ideal control groups because they

¹⁵The treatment group AAUBP includes those whose grandparents are foreign born.

are likely to share historical information sets with the treatment group. Exposure of AAFBM could come through their U.S. born fathers, while AAFBF exposure could come through their U.S. born mothers. The impact of the influence of the exposed parent depends on the relative influence of each parent in the household.¹⁶ We avoid the influence problem by considering only AAUBP and AAFBP. AAFBP are unlikely to share information sets with AAUBP given the timing of the waves of Black immigrants to the U.S in the 20th century. Hence, the likelihood of the control group experiencing the institutional shocks highlighted above is extremely low.¹⁷ Figure (2) is a simplified explanation of our identification strategy and provides a simple illustration of why exposed African-Americans have a lower self-employment probability. Figure (2) also reveals how and why the selected control group helps to identify the impact of past institutions. The model of Figure (2) also reveals why the control group could have lower self-employment probability than do White-Americans if discrimination is persistent across time and continues to impact self-employment success currently.

5.3.2 In Defence of using AAFBP as a Control Group- Issue of Selectivity

In comparing the control and treatment groups, it is possible to argue that issues of immigrant selectivity could confound results. Given that all individuals that make up the control group are U.S born the issue of immigrant selection does not arise. However, it is possible to argue, as is the case in the self-employment literature, that immigrants are predisposed to self-employment. In addition, there is anecdotal evidence which suggests that immigrants have higher ability, motivation, and skills necessary for the pursuit of self-employment. If parents transfer this ability, motivation and entrepreneurship skill and exposure to their off-spring, then immigrant children may be more likely to pursue self-employment¹⁸ leading to a higher probability of self-employment for children

¹⁶The literature on household bargaining behavior such as Bourguignon and Chiappori (1994) predicts the parent with the most bargaining power is likely to be the dominant player in providing information to their offsprings. In many traditional homes across many cultures, men have more bargaining power in the family in terms of external choices such as employment choices, religious beliefs, and education. More specifically, a portion of the self-employment literature does emphasize the role of fathers in self-employment decisions (Hout and Ronsen(2000) Colombier and Masclat (2006) and Farlie (1999) are a few examples). These papers provide evidence that having a father who was self-employed significantly increases the chances of a child pursuing a similar path. Given the literature on bargaining power, and the role of fathers, we hypothesize AAFBF are more likely to share a similar self-employment information matrix to that of AAFBP, while AAFBM are more likely to share a similar information matrix to that of AAUBP.

¹⁷The parents of AAFBP are immigrants and should have information stocks which are similar to those of their fellow immigrants. They are not likely to base their success in self-employment on events they never experienced or the past happenings to African-American businesses but rather the experiences of other immigrants especially from their home country and continent. Hence their children born in the U.S will make self-employment decisions based on current conditions, experience, and experience of information neighbors who are more likely to be first or second generation Americans from Africa or the Caribbeans.

¹⁸We refer to the argument highlighted above as an "immigrant parent effect".

with immigrant parents (our control group) relative to children of U.S. born parents (our treatment group).

The “immigrant parent effect” argument above is problematic for three reasons: First, (Uwaifo Oyelere and Belton (2009) show that Black immigrants (parents of the control group) have lower self-employment probability relative to Americans and immigrants from developed countries. Hence, the argument that immigrants are more likely to pursue entrepreneurship and that their children will also have higher entrepreneurship rates is not applicable to Black immigrants (parents of our control group) and their U.S born children (our control group). Second, though it is true that immigrants select to come to the U.S, it is not true that all immigrants are highly motivated and of high ability and as such their children will inherit these traits. For example, it is difficult to argue that immigrants from Mexico who illegally immigrate to the U.S. and Caribbeans who come across the sea in make-shift boats are of higher than average ability relative to others in their respective countries. Though one can argue that the motivation to immigrate may be very strong, however, motivation does not always suggest high ability, entrepreneurship skills, nor does it predict the likelihood of entrepreneurship. Third, the view that immigrants are of high ability may only apply to immigrants from select countries and cannot be assumed for African immigrants (parents of a large part of the control group) in general. In the last two decades, a significant share of recent immigrants from Africa are refugees of war. These immigrants come to the U.S in response to the shock of war versus simply self-selecting to immigrate to U.S. because of ability (see David W. Haines for a detail analysis of refugees to American in the 90s). In addition, after the inception of the diversity visa lottery in the early 90s, it is difficult to make the claim that those who immigrated to the U.S. from Africa are only those of high ability or self-selected given the randomness of the lottery process. Though diversity visa applicants select to apply to the process, the ultimate choice of who is selected to immigrate is randomly determined. The only eligibility criteria for application is high school completion or two years work experience which are not indicators of high ability (see Uwaifo 2007 for more on the diversity visa lottery and the likely outcome of low ability immigrants through it).

Even if one believes that despite the heterogeneity of immigrants to the U.S, immigrants are of high ability and transfer this high ability to their children, we are not concerned about an ability bias creating statistical differences between self-employment probabilities for AAUBP and AAFBP because we control for education which is correlated with ability. The education coefficient captures

both the effect of education and ability on the probability of self-employment. More importantly, there is no empirical evidence that higher ability individuals are on average more likely to be self-employed.

To provide further justification for the adequacy of our control group selection and to show empirically that our results are not driven by any potential “immigrant parent effects”, we conduct a pseudo analysis. If African-Americans with foreign born parents are predisposed to self-employment through the “immigrant parent effect” we should observe the same trend among White-Americans with foreign born parents relative to White-Americans with U.S born parents. If a similar trend is not observed, we can infer that there is no “immigrant parent effects” that impacts self-employment for the control group. We decompose the sample data of White-Americans with foreign born parents into three groups; those whose parents are from developing countries (WAFBPLDC), White-Americans with foreign born parents from Developed countries (WAFBPDC) and White-Americans with foreign born parents with one from a developed country and one from a developing country (WAFBPmix). We chose this decomposition in light of the Uwaifo Oyelere and Belton (2009) result which finds that immigrants from developed countries have a higher probability of self-employment relative to those from developing countries. Since the parents of the control group are generally from developing countries, to provide the appropriate comparison group when using the sample data for Whites, we select White-Americans with foreign born parents from developing countries. Comparing White-Americans with foreign born parents from developing countries (WAFBPLDC) to White-Americans with U.S. born parents (WAUPB) provides the best comparison for our control group.

6 Results

This section presents results of estimating the probability model of self-employment using a linear, logistic and probit models. We focus primarily on results for our treatment and control groups. Recall that we test two hypotheses: (1) *Ceteris paribus*, AAFBP will have higher self-employment probability than do AAUBP. (2) Assuming no current discrimination impacting self-employment entry and outcomes, AAFBP will have similar self-employment probabilities to that of WAUBP. If we reject the first hypothesis then our institution and information explanation is not valid. However, failure to reject both hypotheses provides statistical support for our institution/information argument. We include standard controls including savings, marital status education year dummies

in our estimated model but do not present these results in our tables.¹⁹

The results of Table (4) provides direct evidence in support of both hypotheses. Using interest income as a wealth proxy, focusing on column (4) the marginal effects from the probit model, we find that AAUBP (the treatment group) maintains the lowest probability of self-employment relative to the base group, WAUBP, while AAFBP (the control group) shares a similar self-employment probability to that of the base group. Comparing AAUBP and AAFBP, we find that the probability of self-employment for AAFBP is more than 6 percent higher than that of AAUBP. As discussed above, we provide empirical evidence using our pseudo analysis that the our results are not driven by “immigrant parent effects”. From Table (4) we find that White-Americans with foreign born parents from less developed countries, (WAFBPLDC), have a similar self-employment probability to that of White-Americans with U.S. born parents (WAUBP). If immigrant parents are indeed more motivated and provide more and better information to their off-spring then, WAFPLDC should have a higher self-employment probability than do WAUBP. This result is not obtained. The results of the pseudo analysis provides significant support for the validity of our control group, as well as provides evidence that the gap between self-employment probabilities for AAFBP and AAUBP is related to the treatment i.e, exposure of AAUBP to significant disincentives provided by institutional changes and historical business failure over time.²⁰ It is also worth noting that because our results provides evidence in support of the second hypothesis, we can infer that it is unlikely that current racial discrimination plays an important role for self-employment choices.

The basic inference from Table (4) is that after accounting for the important factors impacting the self-employment decision such as martial status, education, age, sex, number of children and wealth, we find that comparable AAUPB and AAFBP have different probabilities of self-employment although they face similar racial challenges in the labor market. Our explanation for this gap is the treatment of AAUBP based on the differential institutional experiences faced by this group. We show that this difference is not driven by “immigrant parent effects” or selectivity as comparable WAFBPLDC and WAUBP do not display any immigrant parent effects.²¹

¹⁹We present all the estimates of the probability of self-employment for all the racial sub categories (18) making it difficult to present estimates of the other controls used in the regression in the same table.

²⁰Notice that it seems that WAFBPDC have lower self-employment probabilities than WAUBP which again is against the immigrant effect story. However, this result is not robust and the inclusion of other explanatory variables shows that they share similar self-employment probabilities (see table 5).

²¹Notice that the results using the second wealth indicator seems to show that AAUBP and AAFBP share similar probability of self-employment. However, this result is not robust and disappears when further controls are included. Also, as mentioned previously, the sample of those with dividend income is small and suffers from a selection bias

Table 4: Identifying the Impact of Past Institutions on Self-Employment Gap

Variable:	Panel A: Wealth Proxy A				Panel B: Wealth Proxy B			
	Odds ratio	Linear	Probit	Probit Marg.Effect	Odds ratio	Linear	Probit	Probit Marg.Effect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log savings	1.099*	0.010*	0.050*	0.009*				
	(0.003)	(0.000)	(0.002)	(0.000)				
log dividend				1.055*	0.006*	0.029*	0.006*	
					(0.005)	(0.001)	(0.003)	(0.001)
AAFMB	0.448*	-0.044*	-0.386*	-0.056*	0.390*	-0.060*	-0.511*	-0.082*
	(0.184)	(0.017)	(0.195)	(0.021)	(0.284)	(0.031)	(0.333)	(0.037)
AAFBF	0.949	-0.005	-0.010	-0.002	1.157	0.015	0.109	0.025
	(0.330)	(0.029)	(0.176)	(0.033)	(0.748)	(0.067)	(0.334)	(0.082)
AAFBP	0.786	-0.017	-0.114	-0.020	0.231*	-0.083*	-0.649*	-0.096*
	(0.189)	(0.015)	(0.118)	(0.019)	(0.158)	(0.024)	(0.321)	(0.028)
AAUBP	0.421*	-0.059*	-0.428*	-0.063*	0.419*	-0.068*	-0.437*	-0.076*
	(0.017)	(0.002)	(0.019)	(0.002)	(0.034)	(0.005)	(0.039)	(0.005)
WAFBPLDC	0.916	-0.008	-0.045	-0.008	1.022	0.007	0.015	0.003
	(0.049)	(0.006)	(0.029)	(0.005)	(0.088)	(0.013)	(0.049)	(0.011)
WAFPBDC	0.883*	-0.014*	-0.065*	-0.012*	0.892	-0.016	-0.058	-0.012
	(0.040)	(0.005)	(0.025)	(0.004)	(0.066)	(0.010)	(0.042)	(0.009)
WAFBPMix	1.249*	0.032*	0.135*	0.027*	1.420*	0.056*	0.212*	0.052*
	(0.123)	(0.014)	(0.055)	(0.012)	(0.213)	(0.025)	(0.086)	(0.023)
WAFBM	0.976	-0.002	-0.015	-0.003	1.005	0.001	0.001	0.000
	(0.038)	(0.004)	(0.021)	(0.004)	(0.061)	(0.008)	(0.033)	(0.007)
WAFBD	1.030	0.005	0.017	0.003	1.096	0.014	0.056	0.013
	(0.036)	(0.004)	(0.019)	(0.004)	(0.058)	(0.008)	(0.030)	(0.007)
FB	0.548*	-0.042*	-0.303*	-0.047*	0.451*	-0.056*	-0.435*	-0.074*
	(0.081)	(0.008)	(0.072)	(0.009)	(0.162)	(0.019)	(0.171)	(0.021)
FWLDC	0.904*	-0.009*	-0.051*	-0.009*	1.049	0.006	0.028	0.006
	(0.043)	(0.004)	(0.024)	(0.004)	(0.124)	(0.013)	(0.063)	(0.014)
FWDC	1.357*	0.036*	0.164*	0.034*	1.404*	0.045*	0.185*	0.045*
	(0.083)	(0.008)	(0.034)	(0.008)	(0.146)	(0.015)	(0.059)	(0.015)
NAW	1.162*	0.021*	0.085*	0.017*	1.194*	0.027*	0.106*	0.025*
	(0.038)	(0.004)	(0.018)	(0.004)	(0.069)	(0.009)	(0.033)	(0.008)
NAB	0.618*	-0.043*	-0.252*	-0.040*	0.694	-0.036	-0.176	-0.035
	(0.082)	(0.010)	(0.068)	(0.009)	(0.179)	(0.023)	(0.135)	(0.024)
A/A/E	0.823*	-0.017*	-0.093*	-0.017*	0.816	-0.021	-0.100	-0.021
	(0.076)	(0.008)	(0.048)	(0.008)	(0.130)	(0.015)	(0.084)	(0.016)
Asian	0.959	-0.004	-0.023	-0.004	0.968	-0.004	-0.017	-0.004
	(0.032)	(0.003)	(0.018)	(0.003)	(0.054)	(0.006)	(0.030)	(0.006)
Other	0.601*	-0.043*	-0.262*	-0.042*	0.587	-0.050	-0.296	-0.055
	(0.088)	(0.010)	(0.074)	(0.010)	(0.202)	(0.026)	(0.174)	(0.026)

Other Controls: marital status, year dummies, age, no of children, agesq, intercept. A/A/E American Indian/Aleut/Eskimo

* 5% significance **10% significance

6.1 Robustness Checks

In attempting to examine the robustness of our results, we make use of a “kitchen sink” approach. We estimate all the probability models controlling for additional factors that could be relevant in the self-employment decision. These factors include cohort of birth, region, whether an individual lives in a metro area, if observation is a male with child, if observation is male and married, family size, if the individual owns a home and the number of children. The results of this analysis are in Table (5), as with all other tables, we focus on marginal estimates in columns (4) and (5). In column (5) we combine both wealth indicators as a robustness check to show that our results are not dependent on using a particular indicator. However, as noted previously, the sample using both indicators is smaller because of the select number of people with dividend income. These results with further controls confirm the validity of our two hypothesis. The treatment group, AAUBP continue to have a lower self-employment probability than the control group, AAFBP, (5.5-6.5% lower probability). In contrast, AAFBP have a similar self-employment probability to that of the base group and all the other comparable White racial groups.²² Furthermore, adding more controls does not change the results of our pseudo analysis; both WAFBPLDC and WAFBPDC still have similar self-employment probabilities to that of U.S. born White-Americans.²³

Given that the results in Table (5) confirm our earlier results, we conclude that our explanation for the self-employment gap is valid. Exposure of African-Americans to institutional changes and historical episodes of business failures has created a higher aversion to self-employment and helps to explain the noted lower self-employment probability. However, not all AAUBP were directly exposed to these experiences. We argue that the younger generations of African-Americans who are also included in the treatment group were indirectly exposed through information transfer across generations. Nevertheless, given that the younger generations of African-Americans with U.S born

because individuals select into owning stocks while most adults own a bank account. Given the selectivity issue with this indicator, we are more apprehensive about results with this control and our preferred result uses the interest income indicator.

²²Interestingly, we find evidence in support of AAFPF having similar self-employment probabilities as other non-treated groups. From table 5 column 4, AAFBF have a similar self-employment probability to that of the base group, WAUBP while AAFBM have a 4.7% lower probability of self-employment relative to the base group. This result may provide further support for the literature which suggest that the role of the father is most important in the self-employment decisions.

²³Comparing all the 18 subgroups, AAUBP have the lowest self-employment probabilities across all groups. They have a 5.5% point lower probability of self-employment, than WAUBP. FB and NAB are the only other groups with lower probabilities of self-employment than that of the base group at 2.7% and 2.8%, respectively but are even higher than AAUBP. The addition of more controls variables, though useful, only led to a slight reduction in most probabilities.

Table 5: Robustness Checks on Results: Adding on all the controls

Variable:	Saving Indicator			Savings and Dividend	
	Odds Ratio (1)	Linear (2)	Probit (3)	Marginal Effects (4)	Marginal Effects (5)
log interest income	1.096*	0.010*	0.049*	0.009*	0.011*
	(0.004)	(0.0003)	(0.002)	(0.0003)	(0.001)
log dividend					0.004*
					(0.001)
AA with U.S. born parent	0.470*	-0.049*	-0.369*	-0.055*	-0.069*
	(0.019)	(0.002)	(0.02)	(0.002)	(0.006)
Foreign Black	0.708	-0.019	-0.173	-0.028	-0.048
	(0.105)	(0.008)	(0.072)	(0.011)	(0.029)
AA with foreign born parents	0.995	0.003	0.001	0.0003	-0.082
	(0.238)	(0.015)	(0.118)	(0.022)	(0.037)
A/Aleut/Eskimo	0.768*	-0.025*	-0.129*	-0.022*	-0.016
	(0.071)	(0.008)	(0.048)	(0.008)	(0.021)
Asian/Pacific Islander	0.984	-0.003	-0.011	-0.002	-0.0042
	(0.034)	(0.003)	(0.018)	(0.003)	(0.007)
Other	0.635*	-0.039*	-0.229*	-0.036*	-0.048
	(0.094)	(0.01)	(0.075)	(0.01)	(0.030)
Naturalized White	1.266*	0.029*	0.129*	0.025*	0.029*
	(0.042)	(0.005)	(0.018)	(0.004)	(0.008)
Naturalized Black	0.735*	-0.027*	-0.162*	-0.027*	-0.022
	(0.098)	(0.01)	(0.068)	(0.01)	(0.028)
Foreign White LDC	1.024	0.001	0.012	0.002	0.017
	(0.049)	(0.004)	(0.025)	(0.005)	(0.017)
Foreign White from DC	1.426*	0.041*	0.191*	0.039*	0.046*
	(0.087)	(0.008)	(0.034)	(0.008)	(0.016)
WA foreign born parents LDC	0.949	-0.006	-0.03	-0.005	0.006
	(0.051)	(0.006)	(0.029)	(0.005)	(0.012)
WA foreign born parents DC	0.962	-0.005	-0.021	-0.004	-0.007
	(0.044)	(0.005)	(0.025)	(0.004)	(0.009)
WA foreign born parents mix	1.365*	0.040*	0.177*	0.036*	0.056*
	(0.135)	(0.014)	(0.055)	(0.012)	(0.024)
WA foreign born mother	0.987	-0.001	-0.011	-0.002	0.002
	(0.039)	(0.004)	(0.021)	(0.004)	(0.008)
WA foreign born father	1.075*	0.009*	0.038*	0.007*	0.020*
	(0.038)	(0.004)	(0.019)	(0.004)	(0.007)
AA foreign born mother	0.501	-0.035*	-0.326	-0.048*	-0.061
	(0.209)	(0.017)	(0.201)	(0.023)	(0.052)
AA foreign born father	1.086	0.006	0.052	0.01	0.078
	(0.379)	(0.029)	(0.178)	(0.035)	(0.103)

Note AA- African-American, WA- White American Other Controls: Marital Status, sex, age, year, Agesq, cohort, region, metro area, male with child, male married, head, family size, own home, child. A/A/E American Indian/Aleut/Eskimo, constant.

* 5% significance **10% significance

parents were only indirectly exposed to the treatment, the results from our information model suggests that though young AAUBP may be more averse to self-employment than their White peers, the self-employment gap for this group relative to Whites should become smaller over time. More specifically, we hypothesize that as the impact of institutional shocks and business failure become a more distant memory, aversion to self-employment will subside in the African-American community. We provide evidence for this thesis by estimating a self-employment model using only survey participants born post-1970 and using the same racial sub-groups as in Tables (4) and (5). We chose those born post-1970 because African-Americans born during this period to U.S born parents were not directly exposed to the experiences we highlighted earlier and are included in the treatment group because of the role of information. Table (6), which summarizes probability estimates for the sub-sample, provides results that are consistent with our two original hypotheses. The post-1970 treatment group (AAUBP) has a lower self-employment probability than do the post 1970 control group (AAFBP) whereas the post-1970 control group has a similar probability of self-employment to that of White-Americans with U.S born parents (WAUBP), born post 1970. The results in Table (6) confirm our thesis on the role of information transfer of experiences across generations as the self-employment gap for the post 1970 AAUBP relative to post 1970 WAUBP is much smaller than the gap when the entire sample is used. This result is consistent with our view of the decaying effects of the treatment on future generations of AAUBP.

7 Inferences, Recommendations and Conclusions

In this paper, after controlling for typical factors that impact self-employment we try to explain empirically the gap between Black- and White-American self-employment. We first summarize the literature carefully discussing different explanations provided by recent research for this persistent gap. However, most research attempt to control for demographic, financial, and other reasons for the lower self-employment of African-Americans but still unexplained differences remain. In this paper we focus solely on recent data, avoiding complications that make empirical research problematic prior to the 80's recession and the break down of segregation. We show that all important factors cited previously in the self-employment literature remain important in the data set used in this research. We then go a step further to describe what we believe to be the missing link in understanding African-American self-employment decisions. Research has generally referred to the persistent gap in self-employment even after employing appropriate controls as the discrimination proxy for Blacks.

Table 6: Robustness Check:Evidence for the role of information

Variable:	Saving Indicator
	Marginal Effects
AA with U.S. born parent	-0.015*
	(0.003)
Foreign Black	-0.024*
	(0.005)
AA with foreign born parents	-0.02
	(0.008)
A/Aleut/Eskimo	-0.001*
	(0.011)
Asian/Pacific Islander	-0.001
	(0.004)
Other	-0.013
	(0.02)
Naturalized White	0.012
	(0.011)
Naturalized Black	0.03
	(0.038)
Foreign White LDC	-0.004
	(0.005)
Foreign White from DC	0.008*
	(0.011)
WA foreign born parents LDC	-0.001
	(0.006)
WA foreign born parents DC	0.004
	(0.008)
WA foreign born parents mix	0.007
	(0.023)
WA foreign born mother	0.009
	(0.005)
WA foreign born father	-0.001
	(0.006)
AA foreign born father	0.05
	(0.055)

Note AA- African-American, WA- White American Other Controls: saving proxy, marital status, sex, age, year, Agesq, cohort, region, metro area, male with child, male married, head, family size, own home, child. A/A/E American Indian/Aleut/Eskimo, constant.

* 5% significance **10% significance

We argue that the institutional history of African-American as it relates to self-employment as well as the information set derived from institutional experiences, interact in building an information stock which provides the foundation for African-American self-employment decisions. African-Americans have experienced several shocks that have impeded Black entrepreneurship and led to the failure of Black business. Hence, African-Americans share a unique information set unlike any other U.S. ethnic/racial group. When societal groups experience many negative shocks from institutional failures that seem to lead to more difficult entry into self-employment and/or a higher probability of failure upon entry, then over time this information becomes embedded in the information stock that is transmitted from one generation to the next. Even when the actual institutions that lead to self-employment failure and low success probabilities have disappeared, the stock of information remains and tends to impact perception, expectation of success, and self-employment entry decisions over the long-run.

We provide evidence for the validity of our explanations for this gap by isolating treatment and control groups within the population of U.S born African-American. The treatment group were directly or indirectly exposed to the experiences that can lead to a greater aversion to self-employment while the control group was not. We hypothesized that if our explanation is valid the control group, *ceteris paribus*, will have higher self-employment probability than does the treatment group and second, the control group will have a similar self-employment probability to that of White-Americans if there is no present discrimination that significantly impacts self-employment. We are able to provide this inferences given that both our treatment and control groups share the same race, citizenship status, language, and the treatment provides the only significant factor that can lead to differences in the self-employment behavior across these two groups of African-Americans.²⁴

We isolate the treatment and control groups by using African-Americans (U.S born) parent's place of birth. We provide arguments and evidence as to why the choice of our control group does not lead to selectivity issues that could confound our inferences. Recall our control group does not include immigrants, therefore, are not subject to the standard selectivity argument when immigrants are included in the analysis. Our empirical analysis confirms our two hypothesis. We find that AAUBP (treatment) have a 5.5 percentage points lower self-employment probability than

²⁴There may be slight differences in culture among these two groups linked with the cultural influences of the immigrant parent on AAFBP. However, there is no reason to expect such differences to affect self-employment independent of the effect of past institutions on culture. Recall that WAFBP and WAUBP though also with slight differences in culture, have similar self-employment probabilities.

do AAFBP (control). In addition, we show that the control group of African-Americans tend to select self-employment at the same rate as U.S. born White-Americans. We also provide evidence for the role of information by showing that AAUBP who were born after 1970 and are in all likelihood only indirectly impacted by historical experiences through information transfer, tend to select self-employment at a rate lower than that of U.S. born White-Americans but much higher than did their more heavily impacted ancestors. Given our results, we conclude that the lower African-American self-employment probability can be explained in part by a response to past institutional experiences and the transmission of these experiences through information channels over time.

The results found in this paper provides new information on African-American self-employment and it is our hope that these results will create a dialogue among economists. If African-Americans are overtly careful in their decision to enter self-employment because of past information and business failures that are no longer relevant, then given the successes of their “brothers” AAFBP, there may be need for corrective policy action. Policy-makers must find a way to celebrate African-American business success providing positive images of self-employment success. In effect, we suggest that programs that create awareness and incentivize African-Americans to try self-employment may prove useful in closing this gap.

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