Do Attitudes Toward Risk Taking Affect Entrepreneurship? Evidence from Second-generation Americans*

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Abstract

This paper empirically investigates the impact of willingness to take risks on entrepreneurship. We use a quarter century of data on second-generation Americans from Current Population Surveys in conjunction with country level measures of willingness to take risks from the Global Preference Survey. The average level of risk taking in the country of origin is found to have a positive and significant impact on the likelihood of being an entrepreneur. A one-standard deviation increase in risk taking increases the probability of being an entrepreneur by 16 percent. We find that risk taking is also robust to other preference and cultural factors such as trust, patience, and individualism, as well as several deep-root determinants of development.

JEL Classification: J20, J24, J61, L26, Z10

Keywords: Entrepreneurship, risk attitudes, immigrants, second-generation Americans, preference measures, occupational choice, comparative development, cultural transmission

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1 Introduction

In the study of economic growth, entrepreneurs occupy center stage due to their role in creating firms, spurring innovations, and reducing poverty. Entrepreneurship inherently involves bearing risk. Risk aversion, in turn, is one of the deep parameters in economic theory. A large amount of research is devoted to both the measurement of attitudes towards risk, and understanding the relationship between them and entrepreneurial activity. Many conduct their own surveys, lab or field experiments which elicit responses to measure risk tolerance. The studies then go on to show a strong association between these and various risky choices made by the subjects, including the choice of being entrepreneur. While this literature has made important strides, particularly in the measurement of risk preferences, identifying its exogenous effects on choosing to be an entrepreneur remains a challenge due to issues of selection bias, small samples, and reverse causation.

This paper assesses the importance of attitudes toward risk taking for entrepreneurship. Specifically, using country-level measures of the willingness to take risks from the recently published Global Preference Survey (GPS) by Falk et al. (2018) in conjunction with twenty five years (1995 to 2019) of individual level occupation data from U.S. Current Population Surveys (CPS), we examine the extent to which variation in the willingness to take risks in the country of origin can explain the likelihood of being an entrepreneur among second-generation Americans.

Before summarizing our findings, we highlight the distinguishing features of our approach. Compared to the existing literature, our strategy of using the GPS measure of risk preferences in conjunction with CPS data has several advantages. First, by looking at a single large country (where all respondents are exposed to the same broader set of markets and institutions), we already control for a large number of confounding factors that can contaminate the relationship between risk preferences and occupational choice. Second, in our analysis, we focus on the sample of second generation Americans, which further factors out unobserved differences that might be present among first generation immigrants. Third, by using entirely separate data sources for our risk tolerance measure and individual occupational choices, we are able to avoid the pitfalls of other studies that rely on the same survey to examine the link between the two variables. Fourth, the CPS data affords us the luxury of considerably larger samples and an extensive set of individual-level controls. Fifth, the GPS itself is a culmination of a long research project with numerous prior peer reviewed studies and validation exercises (e.g Dohmen et al., 2011a,b, Falk et al., 2016, Vieider et al., 2015), thus carrying far more credibility than previous survey based questions. It also has the distinct advantage that it covers 76 countries, thus allowing for considerable global variation.

We find that the average level of risk taking in the country of origin has a positive and significant impact on the likelihood of being an entrepreneur. Specifically, a one-standard deviation increase in risk taking increases the probability of being an entrepreneur by 16 percent among the second-generation Americans (relative to the sample mean). This finding highlight the importance of attitudes towards risk in entrepreneurship, thus reinforcing a large literature documenting the same for other measures of preferences or cultural factors (e.g., patience, trust, etc) in different contexts (such as growth, labor market participation, etc).[1]

Our empirical strategy rests on the assumption that risk attitudes are transmitted across generations.[2] Risk taking, however, is not the only preference parameter or cultural factor that can affect the decision to be an entrepreneur. Indeed, the literature has often foregrounded other factors such as the role of patience (or "long term orientation"), the importance of individualism (or "internal locus of control"), as well as social capital measures such as trust. Apart from being important in their own right, these too have been documented to persist across generations. Therefore, it is necessary to investigate the importance of these variables. They are also captured either by the GPS, or the widely used cultural dimensions of Hofstede et al. (2010). To summarize our results, when entered jointly in our baseline specification, surprisingly, none of them have significant effects. Risk taking continues to be robust and significant. On their own, we find some evidence that time preference measures (patience and long-term orientation) have positive effects while trust has a negative effect, but the findings are not robust.[3] We find no effect of Hofstede's individualism and uncertainty avoidance variables.

Since we use variations in risk tolerance of the ancestral country, there is the question of robustness to other country of origin variables. First, it is well documented that risk tolerance varies more with individual demographic factors than across countries. To address this, we use an adjusted measure of risk-taking that accounts for demographic differences. Our baseline regression also controls for a range of geo-climatic variables that are common in the literature, continent dummies, and religious composition. Building on the persistence literature, we also consider a host of genetic, geographic, agricultural, and historical variables that have been attributed to long term development, institutional capacity, preference formation, and cultural norms. However, our results are not too

[1]We are cognizant that the GPS was conducted in respective countries during 2012, while our sample consists of second generation population who were born earlier in the US. As long as the cross-country variation in preferences is persistent over a few decades, this should not pose a challenge.

[2]Dohmen et al. (2011a) provides evidence that risk attitudes persist between generations. We do not directly measure risk attitudes of individuals in the sample.

[3]Falk et al. (2018) show that the GPS measure of patience is not only strongly correlated with per capita income and other aggregate outcomes, but also dominates other preference measures in this respect.

sensitive to these additional controls.

Our measure of entrepreneurship, like much of the literature, is that of self-employment. Levine and Rubinstein (2017) note that most self-employment is not the kind of entrepreneurship normally associated with innovation and job creation. Our research highlights the fact that attitudes towards risk taking can indeed separate entrepreneurs, broadly defined, from wage earners. It would still be of interest to know whether risk-taking not only separates the self-employed from workers, but also the innovative and job creating entrepreneur from the rest. Being a repeated cross-section, the CPS data is less insightful in this regard. However, it provides information on whether the self-employed are incorporated. Levine and Rubinstein highlight the important differences between the incorporated vs unincorporated self employed, and argue that the former is a better proxy for entrepreneurship. They are more likely to be managers, more educated, and have higher earnings. Even though the incorporated is a very small fraction of our sample, we show that our results continue to support the main hypothesis.

The paper is organized as follows. The next section provides a review of the related studies, and puts the contribution of this paper in perspective. Section 3 discusses data and presents statistics about key variables, and Section 4 presents the empirical methodology. Section 5 presents and discusses baseline findings, and investigates their robustness. Section 6 extends the analysis examining alternative preference/cultural measures. Section 7 concludes the paper.

2 Related Literature

This paper lies at the intersection of two growing bodies of research: (i) the transmission of beliefs and preferences and their implications for various outcomes, and (ii) entrepreneurship. Notable examples in the former are Fernandez and Fogli (2009), Alesina et al. (2013), Galor and Özak (2016), and Figlio et al. (2019). Fernandez and Fogli (2009) use cultural proxies such as female labor force participation rates and fertility rates in ancestral countries to examine decisions regarding work and fertility rates of second generation American women. Alesina et al. (2013) dig deeper into the past, and argue that the historical prevalence of plow agriculture shaped gender norms. Exploiting CPS data, they show that second generation American women from countries that traditionally used the plow are less likely to participate in the labor force. Galor and Özak (2016) show that second generation populations in Europe and the US tend to exhibit greater long term orientation and lower smoking rates if the returns to pre-industrial agricultural investments were higher in their ancestral countries. Figlio et al. (2019) show that immigrant

school children from countries which have higher values of long term orientation tend to perform better in schools in Florida. While these papers rely entirely or partly on US Data, a number of others have used second generation data from European countries. These include Alesina and Giuliano (2011) on family ties, Luttmer and Singhal (2011) on preferences for redistribution, and Mocan (2019) for leisure preferences. Our findings reinforce the broader message regarding persistence of preferences, values, and beliefs.[4]

Our paper makes a contribution to the large body of work on entrepreneurship. While acknowledging its risky nature, papers in this literature argue that changes in economic conditions that individuals face can also affect their decision to become entrepreneur. Researchers have investigated several factors affecting entrepreneurship, including financial constraints (Cagetti and De Nardi, 2006, Evans and Jovanovic, 1989, Hurst and Lusardi, 2004), family background and inheritance (Fairlie and Robb, 2008, Hurst and Pugsley, 2012), discrimination in financial markets (Asiedu et al., 2012, Blanchard et al., 2008), tax policies and politics (Beland and Unel, 2019, Cullen and Gordon, 2007), immigration (Fairlie and Meyer, 2003, Kerr and Kerr, 2020), and globalization (Eren et al., 2019, Grossman, 1984, Unel, 2018).

Our paper is more closely related to the literature that focuses on the interplay between preferences and entrepreneurship. Studies emphasize that individuals who become entrepreneurs are more tolerant of risk, as well as other motives such as placing a greater value on non-pecuniary benefits (e.g., being their own boss).[5] Among theoretical papers, Kihlstrom and Laffont (1979) explicitly model Knightian risk in a general equilibrium model where the distribution of risk aversion in the population emerges as a key determinant of entrepreneurship. Galor and Michalopoulos (2012) also consider a long run model of growth and entrepreneurship. The presence of entrepreneurial traits is conducive to economic growth. However, as incomes rise, societies tend to become less entrepreneurial as risk tolerant households reduce their fertility rates. Doepke and Zilibotti (2014) construct a model where parents invest in their children's preferences. Their core model centers around the role of patience in innovation, though they later consider a variation where risk preferences matter. The long-run growth depends on the initial distribution of patient vs impatient, or risk tolerant vs risk averse households. Hurst and Pugsley (2016) develop a general equilibrium model of occupational choice to study how preference heterogeneity with respect to non-pecuniary benefits and wealth affect entrepreneurship. They show

[4]This is in contrast to some of the research that shows risk tolerance can change dramatically due to individual experiences (Jakiela and Ozier, 2019) or beliefs and values, more generally, might converge towards those of the host country (Giavazzi et al., 2019).

[5]For a comprehensive discussion of the various economic theories of entrepreneurship, we refer the reader to Parker (2018).

that non-pecuniary entrepreneurs self select into small scale firms, and subsidies designed to stimulate more business entry reduce welfare.

Despite the theoretical research emphasizing risk tolerance, the large body of empirical work has produced mixed results. One of the earliest studies, Blanchflower and Oswald (1998) show that the main barrier to self-employment is liquidity and financial constraints, whereas childhood psychological factors do not play a role. However, a number of subsequent papers correlate risk tolerance with self employment. Ekelund et al. (2005) look at Finnish data and find that individuals who had low values of a measure of fear of uncertainty are more likely to be self employed later in life. Using the 2004 wave of German Socio-economic panel, Dohmen et al. (2011b) show that the willingness to take risks is significantly associated with the choice to be self-employed.[6] Caliendo et al. (2014), also using the German Socio-Economic Panel for 2000-2009, shows that risk tolerance is significantly associated with self employment, and also entry into self employment. Skriabikova et al. (2014) provide evidence from Ukraine that attitudes towards risk is correlated with self-employment. In a recent paper, Levine and Rubinstein (2017), using data from the CPS and National Longitudinal Survey of Youth (NLSY), show that although education and family background are important in decision to become entrepreneur, other traits are also important. Individuals who become entrepreneurs (the incorporated self-employed in their sample) score higher on learning aptitude tests, exhibit greater self-esteem, and engage in more illicit/risky activities as youth than others.[7]

In contrast to these papers, Holm et al. (2013) is an example of a large scale experimental study that finds entrepreneurs do not differ in their attitudes towards risk (non-strategic uncertainty) compared to the rest of the population. Koudstaal et al. (2016) also conduct lab-in-the field experiments on entrepreneurs and managers, and note that the two groups differ in their aversion to losses, and not to risk aversion in general. More generally, Astebro et al. (2014) survey the literature on risk preferences and entrepreneurship and conclude that the importance of risk taking is as best suggestive and certainly not the primary driver. They also consider other behavioral factors such as overconfidence, overprecision, and also, as we mentioned earlier, non-pecuniary benefits. Thus, while research has advanced considerably, providing a causal interpretation remains fertile ground.

To our knowledge, other than the exploratory regressions in Falk et al. (2018), Bouchouicha and Vieider (2019) is the only empirical study that relates worldwide variation in

[6]Dohmen et al. (2011a) document the transmission of attitudes towards risk and trust between generations, but indicate that regional variations can also affect these attitudes.

[7]Hsieh et al. (2017) argue that the inconclusive evidence of risk on entrepreneurship may reflect the likelihood of risk averse individuals compensating by investing in "balanced skills", and in the process might even be more entrepreneurial.

risk tolerance to entrepreneurial outcomes. However, the latter look at the reverse effect, i.e. impact of per capita income on risk tolerance. One would hardly doubt that over time as economies develop, population compositions evolve (a factor we control from the beginning in our empirical work), and institutions change, attitudes towards risk as well as other cultural beliefs will change (Alesina and Giuliano, 2015). By looking at second generation Americans, we are able to bypass the thorny issue of reverse causality.

3 Data

We first discuss the sources and construction of our sample of immigrant and second generation entrepreneurs and workers, followed by the variables connected to their country of origin.

3.1 Individual-level Data

The individual level data used to examine occupational choices are drawn from the Annual Social and Economic (ASEC) files of the Current Population Survey (CPS), conducted by the U.S. Census Bureau for the Bureau of Labor Statistics. Surveys are publicly available at the Integrated Public Use Micro Samples (IPUMS) website (Ruggles et al., 2019). Our analysis uses repeated cross-section data that cover 50 states and D.C. from 1995 to 2019.[8] The ASEC survey includes information about individuals' gender, race, age, education, nativity (including their parents) as well as their current and prior year worker class for their major job, industry where they work/worked, etc.[9] The survey classifies individuals as wage and salary workers or self-employed, and the latter are further classified as incorporated and unincorporated.

As discussed, our analysis uses second-generation Americans (i.e., U.S.-born individuals whose parents are foreign-born). We only consider U.S.-born individuals whose parents are from the same foreign country, and thus exclude second-generation Americans whose

[8]This is a repeated cross-section as individuals are not interviewed over the years. The sample period begins in 1995 because the CPS underwent a substantial change in 1994. Additionally, data on birthplace and parents' birthplace are not available for years prior to 1994. The Bureau of Labor Statistics has also conducted the American Community Surveys annually since 2001. However, these surveys do not have information about the birthplace of parents.

[9]The General Social Survey (GSS) is another US based survey that contains data on various topics (such as demography, work, civil liberties, crime and violence, social mobility, etc.) since 1972. The survey includes information about the birth places of the ancestors of second or higher generation Americans. However, for our purpose, the GSS is not as comprehensive and consistent as the CPS-ASEC surveys. For example, the number of observations in each year is substantially smaller than that in the CPS. In addition, the number of country-of-origin is around 40, and most of them are European countries.

parents are from different countries. We impose this restriction on our samples to ensure that our regressions results are not affected by the mixture of different cultures. In addition, our sample excludes all source countries with less than 25 observations. In a separate exercise, we also consider immigrants. However, as with existing research, we do not emphasize it for well known reasons - issues of selection bias, discrimination, language barriers, etc.

In constructing our sample, we stay consistent with the empirical literature on entrepreneurship, and more specifically, that of immigration and entrepreneurship. Following Fairlie and Meyer (2003), the sample includes individuals between 20 and 64 years old, who worked at least 20 weeks in the previous year and usually at least 20 hours per week in that year. Thus, we consider only individuals with strong labor force attachment. We exclude anyone with imputed or missing worker class, birthplace status, and inconsistent reports (Fairlie and Meyer, 2003, Levine and Rubinstein, 2017). We reclassify industry worked last year into 12 broadly defined sectors, and our analysis consider only individuals working in the non-agricultural private sector. In line with many previous studies (Borjas and Bronars, 1989, Fairlie, 2014), we identify self-employed business owners as entrepreneurs. However, we also present results based on samples in which only incorporated self-employed individuals are identified as entrepreneurs, following Levine and Rubinstein (2017).

Table 1 reports summary statistics for certain characteristics of entrepreneurs (i.e., self-employed business owners) and wage workers. The samples used in this table are the same as that in our main regression analyses. Columns 1 and 2 provide, respectively, statistics for self-employed and wage workers among the second generation. The sample has 38,673 observations, about 7.3% of them are self-employed business owners. Column 1 reports that about 29% of all self-employed individuals are female, 79% white, 68% married, and 64% has some college education. They mostly work full-time, and the average number of weeks that they were unemployed was less than one. About 4% of self-employed individuals are in the manufacturing sector and 79% in services. Thus, majority of self-employed among second-generation Americans are educated, white, married males, and mostly working in the service sector. Column 2 presents summary statistics for wage workers, and a comparison with those in column 1 reveals that about 48 percent of workers are females, they are younger, and their share in manufacturing sector is higher. Comparing the two columns, entrepreneurs are likely to be male, older, and married. Interestingly education does not seem to be a key distinguishing characteristic between entrepreneurs and wage workers.

As a comparison, we also report the same statistics for immigrants in columns 3 and 4.[10] The sample of immigrants include 166,124 observations, and 10% of them are self-employed business owners. According to Column 3, the majority of self-employed immigrants are educated, white, married males, and mostly working in the service sector. Comparing columns 1 and 3, second generation entrepreneurs are less likely to be female, but more likely to be younger, white, and have some college education. Most of these are not surprising given that they were children of immigrants who came before our sample period, i.e they pick up some general trends in the labor force and immigration. However, others such as being less likely to be female, might reflect labor market conditions specific to immigrants or other factors that we leave for future research. The last column presents summary statistics for wage workers, and a comparison with those in column 3 reveals that about 42 percent of workers are females, they are (slightly) younger and less educated, and their share in manufacturing sector is higher. Not surprisingly, the average years that they spent in the U.S. was about three years shorter than immigrant entrepreneurs. While our focus is on the effect of risk taking, we are unaware of pre-existing research that has compared first and second generation entrepreneurs, or compared the latter with second generation wage workers.

3.2 Country of Origin Variables

Variables related to the country of origin are taken from multiple sources. Our main variable of interest, the average willingness to take risks in the country of origin is taken from the Global Preference Survey (GPS) conducted by Falk et al. (2018, 2016) within the framework of the 2012 Gallup poll. Based on elicited responses from more than 80,000 Gallup poll participants worldwide, they constructed six different preference measures for nationally representative samples of 76 countries. These include patience, risk taking, positive reciprocity, negative reciprocity, altruism, and trust. Risk taking is constructed from a series of quantitative questions and one qualitative question. Quantitative questions are designed to obtain respondents' certainty equivalence, whereas the qualitative one asks for their willingness to take risks on an 11-point scale. Each respondent's overall risk taking is a weighted average of the quantitative measure and the qualitative item. Preference measures are standardized at the individual level so that each measure has a mean of zero and a standard deviation of one in the individual-level world sample. The country level average values are then calculated using sample weights from the 2012 Gallup polls.

Values for average risk taking range between -1 and 1, where higher values represent a

[10] As with the second generation sample, we only consider immigrants with parents from the same foreign country.

greater willingness to take risk. Even though Falk et al. (2018) standardize their measures at the individual level, this does not translate to a standard deviation of 1 at the country level. In fact, the standard deviation is 0.30 for their 76 country level observations. The mean remains close to 0 (it is 0.01).

Although the average value of risk taking shows considerable variation across countries, Falk et al. (2018) show that the within-country variation in preferences is an order of magnitude larger. Between country variation only accounts for 9 percent of the total variation in the individual survey.[11] They show that the willingness to take risks is lower for females and decreases with age. Since demographic composition varies considerably across countries, one might worry that using the average value of risk taking may not fully reflect its underlying true value. To account for demographic heterogeneity in the GPS, we first estimate the following equation:

$$\text{GPS\_Risk}_{ic} = \beta_c D_{ic} + R_c + \nu_{ic}, \tag{1}$$

where GPS_Risk_{ic} is the risk level of individual i living in country c, the set D_{ic} include gender, age, and age-squared, R_c is country fixed effect, and ν_{ic} is the error term. Here, GPS_Risk_{ic} and D_{ic} are taken from the individual-level GPS. We use the estimated values of country fixed-effects, $\hat{R}_c$, as our measure of risk taking in country c.[12]

Figure 1 plots the average risk taking from the GPS against our adjusted risk taking, which refer to estimated fixed effects $\hat{R}_c$ from equation (1). The scatter-plot includes all 76 countries from the GPS, and dark blue ones represent 51 countries that we use in the second-generation sample. The sample mean and standard deviation for the GPS is 0.01 and 0.30, while that of adjusted risk is 0.42 and 0.40, respectively. There is a clear positive correlation between these two measures ($\rho = 0.34$), and the coefficient associated with the fitted line is about 0.45 (0.13). Despite the positive correlation, many countries' positions change. For example, Germany and the U.S. both have average values close to the mean. However, their adjusted risk measures are substantially different.

We also use several time-invariant geographic and socioeconomic variables to control for confounding factors that vary across countries. Our proximate sources for most of these variables are Galor and Özak (2016). Data on religion is taken from La Porta et al.

[11] They also conduct additional tests to show that measurement error cannot be the driving force behind the large variation within countries.

[12] We allow the vector of coefficients, β, to vary across countries because attitudes towards risk taking might change heterogenously across countries as people age, or between genders. We also estimated equation (1) by imposing β to be the same across all countries. In this case, it turns out that the correlation between estimated fixed effects $\hat{R}_c$ and the average value of risk taking from the GPS is 0.97. Thus, results based on the latter approach are similar to those using the average risk value from the GPS that we report later.

(2008), and GDP per capita from the Penn World Tables version 9 (Feenstra et al., 2015).

4 Model

We investigate the impact of risk taking on the likelihood of being an entrepreneur by estimating the following model:

$$E_{ict} = \beta \hat{R}_c + Z_c + X_{it} + \eta_{st} + \varepsilon_{ict}, \tag{2}$$

where E_{ict} is an indicator variable that equals one if individual i's parents are from country c in year t is an entrepreneur (i.e., self-employed business owner), and zero otherwise. The individual's state of residence is represented by s, and for notational simplicity, we drop it from E_{ict}. The variable $\hat{R}_c$ represents the adjusted value of risk taking in country of origin c, as estimated from equation (1).[13] The coefficient of interest is β.

The set of time-invariant variables that control for geographic variation across countries is denoted by Z_c. First, we include four continental dummies (Africa, Asia, Europe, and Rest of America) and a border dummy (for Mexico and Canada). Next, we include a set of confounding geographic factors - absolute latitude, landlocked dummy, island dummy, average elevation (meters), roughness of terrain and distance to the sea or navigable rivers (1,000s km). These controls are motivated by the large literature on the persistent role of geographical factors in explaining cross-country development outcomes. Given the proliferation of geographic variables, we adopt the set used in Galor and Özak (2016), which is also our primary source for the data. Finally, we also include three controls for religion - the fraction of population that is Protestant, Catholic, and Muslim.

Individual characteristics are represented by X_{it}, which includes dummies for gender interacted with marital status, two race dummies (black and others), three education dummies (high school, some college, college and above), and age (quadratic). In later exercises when we consider immigrants only, X_{it} also includes the number of years each immigrant has lived in the United States.[14]

State-year fixed effects η_{st} are included to control for any other state-level, time-varying

[13] Unless mentioned otherwise, for the rest of the paper, when we refer to risk taking, it will imply the adjusted value. We will continue to refer to the un-adjusted country level values available from (Falk et al., 2018, 2016) as the average level of risk taking .

[14] The CPS data provides additional information about individuals' work, including part-time/full-time status, number of weeks (un)employed, industry worked, etc. We do not include these variable into equation (2), because they pose a reverse-causality problem. For example, an individual may choose to work in an industry because of high entrepreneurial activity there. Further, some industries, might for various reasons tend to have a larger share of entrepreneurs than others leading to a problem of over-controlling. However, in robustness tests, we show that our results are not too sensitive to including these variables.

confounding factors that can affect estimates. Finally, ε_{ist} is the error term, and we use robust standard errors clustered at the country-of-origin level.

5 Results

This section presents the main results of our empirical analysis. First, we report and discuss baseline results based on equation (2) using individual-level data on the second-generation, but we also present results using data on immigrants. We then investigate the robustness of our results to the choice of control variables and samples.

5.1 Baseline Results

Table 2 reports the impact of risk taking in the country-of-origin on the likelihood of being an entrepreneur among the second generation population. Regressions include state-year fixed effects as specified in equation (2), and robust standard errors clustered at the country-of-origin level. Each regression uses 38,673 second-generation Americans, whose parents are from 51 different countries. For brevity, we present only the estimated coefficient on risk taking. Column 1 reports results without including any controls for country of origin and individual characteristics. The estimate for risk taking is positive and statistically highly significant.

In column 2, we include continental fixed effects. The estimate for risk is positive and statistically significant, and magnitude is smaller (cf. column 1). While not reported here, the estimated coefficients on Africa and Asia are statistically insignificant (the rest of America is the omitted category), while that on Europe is positive and highly significant. The border effect is positive and significant at 10%. We also replaced the border variable with two separate dummy variables for Canada and Mexico. The estimate on the Canada dummy is positive and highly significant, but for Mexico dummy is small, positive and insignificant.

Column 3 reports the results when we include only geographic controls. Specifically, we include latitude (absolute value), a dummy variable for landlocked, a dummy variable if the country is an island, average elevation, average roughness of terrain, and distance to coast and navigable rivers. While many of these capture pure (dis)advantages of physical geography and early agriculture, some such as distance to coast also capture advantages with respect to market access (Henderson et al., 2018). The estimated coefficient on risk taking is the same as that in column 2. The estimated coefficient on absolute latitude is positive and highly significant, while that on island and elevation are negative and highly significant. Estimates for other geographic variables are positive but statistically

insignificant.[15]

Column 4 reports the results when we include only the fraction of population in the country-of-origin that is Protestant, Catholic, or Muslim (three separate variables). The inclusion of three religion variables is driven by two concerns. First, we need to account for the potential confounding role of Weber's influential views on the Protestant ethic in shaping the spirit of capitalism. While he underscored the virtues of patience and hard work, and not risk taking directly, the first is often also considered as a desirable attribute for an entrepreneur. Second, even though the simple correlation between risk taking and Muslim population shares is low, the GPS clearly accords higher values to many countries that have substantial shares of Islamic population such as Algeria, Saudi Arabia, Morocco, and Iran. Both of these reasons suggest that risk taking might be picking up more complex confounding effects of religious beliefs on entrepreneurship. The estimated coefficient on risk taking, however, remains almost the same as in the previous two columns. The estimated coefficient on Protestant share is positive and significant at 5%, that on Catholic share is negative and insignificant, and that on Muslim share is positive but insignificant.

In column 5, we include only individual characteristics. The impact of risk taking becomes smaller, but is still highly significant. Estimated coefficients on individual characteristics (available upon request) are consistent with statistics reported in Table 1. For example, the estimates on male, age, marital status are all positive and highly significant, whereas that on being Black is negative and significant. Estimates on education categories are insignificant.[16]

The last column reports the results when we include all controls in our regression model. The estimated coefficient on risk taking becomes smaller, but still highly significant. The estimate implies that a one standard deviation (0.471) increase in risk taking raises the probability of being an entrepreneur by 18 percent relative to the sample mean (0.073). Going forward, we use column 6 as our baseline specification.

Before moving to the next section, we conduct three additional analyses. First, as mentioned earlier, Levine and Rubinstein (2017) argue that incorporated self-employment is a better proxy for entrepreneurship. Table 3 reports the results when we define only incorporated self-employed as entrepreneurs. One reason our paper focuses on self-employment more broadly, and not incorporated, is the latter's small share in the sample (2.9%). In-

[15]We should note that the set here is less extensive compared to that of Falk et al. (2018), who also include temperature, precipitation and fraction of land area in tropics. Adding more geography controls has little effect on the risk-taking coefficient.

[16]Educational attainment may be influenced by the level of risk taking in the country-of-origin. However, excluding educational categories from our regressions does not have a substantial impact on the result.

deed, incorporation among second-generation Americans from several countries-of-origin is zero or close to zero. Despite this limitation, the estimated coefficient on risk taking is always positive and highly significant. The estimate in the last column implies that a one standard deviation (which is 0.471) increase in risk taking value increases the likelihood of being an incorporated entrepreneurship by 21 percent relative to the sample mean.

Second, Table A.1 in the appendix reports results when we use the average value of risk taking in country-of-origin from the GPS. We report results for all self-employed (Panel A) and incorporated self-employed (Panel B). In column 1, where we do not include any controls, the effect is positive but statistically insignificant. This is not surprising given our earlier observations regarding within country variation being greater than between country. To address this indirectly, we use the respondent level information in the GPS to construct country specific survey weighted measures of female population share and median age. These GPS controls are added in columns 2 to 6.[17] We see the impact of un-adjusted risk taking on entrepreneurship is positive and statistically significant in all these specifications. Column 7 is similar to our baseline specification (column 6 in Table 2). In column 8, we again add back the GPS controls. From these regressions it is clear that once other country of origin variables are accounted for, the demographic factors do not matter. As far as risk taking is concerned, a one standard deviation (0.184) increase raises the likelihood of becoming an entrepreneur by 16 percent relative to the sample mean (0.073), which is very close to our benchmark finding.

Finally, we investigate the impact of risk taking only among immigrants. Table A.2 reports regression results based on equation (2). A quick comparison with results in Table 2 shows that estimated effect of risk taking is substantially lower, and insignificant in our preferred specification (see column 6). It may seem puzzling that the correlation between risk taking and entrepreneurship is stronger among second generation Americans. However, this concern ignores the difficulties and discrimination that immigrants face both while entering and participating in US labor markets. Even if immigrants self select from the origin country, issues related to language, travel distance, country-specific immigration rules, quotas, legality, and (in)compatibility of education qualifications, create additional complications. Once in the US labor market, creating a business requires access to credit and familiarity with American culture and institutions, which takes considerable time to learn and adapt, and varies by country of origin.[18]

[17] We should note that this strategy is vulnerable to Robinson's (1950) ecological fallacy.

[18] See Fairlie and Lofstrom (2015), Kerr and Kerr (2020) for more on immigrant entrepreneurs. If we use average risk, as in columns 7 or 8 of Table A.1, we get a significant coefficient though the economic effects remain lower than that for second generation.

5.2 Robustness

This section presents an extensive set of sensitivity checks to investigate the robustness of our finding. We conduct our analysis along two lines. First, we look deeper into confounding effects of country level variables, and second, we consider additional dimensions such as more individual controls, weighted estimation, sample issues, etc. All regressions include control variables specified in equation (2), and as reflected in our baseline specification in column 6 of Table 2. As with the earlier tables, we do not list the coefficient of each and every additional variable, but discuss estimates as and when necessary. [19]

5.2.1 Robustness to Country of Origin Variables

The extensive literature on the deep roots of economic development has emphasized a variety of evolutionary factors, time-varying as well as fixed geo-climatic factors, historical events, and agricultural practices, that have shaped preferences, cultural traits, social norms, and institutional capacity in present day societies. Here, we focus on some that have received more attention in the literature, and could potentially have a bearing on our measure of risk-taking. In particular, we consider measures of predicted genetic diversity (Ashraf and Galor, 2013), genetic distance to the US (Spolaore and Wacziarg, 2009), state antiquity (Bockstette et al., 2002), legal origins (La Porta et al., 2008), measures of caloric suitability and crop yield (Galor and Özak, 2016), and a measure of labor intensity in farming (Ang, 2019). We use ancestry adjusted versions if available. A key difference between these variables and the survey based measure of risk-taking is the timing. The former are either long run historical forces or persistent geographical differences. Risk taking, on the other hand, is a contemporary survey based measure. Thus while robustness to the inclusion of these variables would reassure us that risk taking does not indirectly reflect some other preference or cultural measure shaped by deeper forces, there is nothing *a priori* to suggest that these factors cannot also simultaneously shape attitudes towards risk tolerance.

In column 1 of Table 4, we include ancestry adjusted predicted genetic diversity within a population, and its square. Ashraf and Galor (2013) hypothesize that genetic diversity has a hump shaped effect on long term development. Higher genetic diversity within a population is likely to result in a greater variety of ideas and thus more innovation, and also more specialization and higher productivity. At the same time, higher genetic diversity within the population may lead to greater mistrust, and thus have a detrimental effect. To the extent that genetic diversity within a population fosters innovation, it might be

[19] We also repeated these exercises while restricting the definition of entrepreneurship to the incorporated self-employed. Corresponding results are provided in Tables A.3 and A.5 in the appendix.

correlated with risk taking behavior. However, as the estimates indicate, the inclusion of these variables have no effect on the risk-taking coefficient. While not listed here, genetic diversity variables are statistically significant at 10%. More interestingly, unlike what has been found for long term development, when it comes to self-employment, genetic diversity exhibits a convex shape. This seems to reinforce the innovation channel of genetic diversity.

Whereas Ashraf and Galor (2013) foreground genetic diversity within a population, Spolaore and Wacziarg (2009) emphasize the role of genetic distance between populations. They take an agnostic approach arguing that "...it is an excellent summary statistic capturing divergence in the whole set of implicit beliefs, customs, habits, biases, conventions, etc. that are transmitted across generations -biologically and/or culturally- with high persistence" (p. 471). In column 2, we add their measure of weighted genetic distance from the US. Specifically, we use the updated measure of weighted FST genetic distance between a country and the US in Spolaore and Wacziarg (2018). As the results indicate, the inclusion of genetic distance has no effect on risk-taking. Also, the variable itself is positive but insignificant.

Next, we consider historical variables that are correlated with state capacity and institutions. First, we consider the measure of state antiquity developed in Bockstette et al. (2002), and further revised and expanded in Borcan et al. (2018). State antiquity measures the accumulated historical experience that polities have with supra-tribal level administrations, and thus captures social complexity and technological advancements. Borcan et al. (2018) argue that state antiquity has a non-linear effect on development. Older states, while having an initial advantage might also be over-centralized, while younger states which have less experience are likely to have learned from the mistakes of older states, but not necessarily reached the accumulated experience of the older states. There is no obvious mono-causal link between state antiquity and risk-taking. Well established states might have an advantage in providing some of the institutional stability that can foster risk taking. On the other hand, younger states, by definition, might be ones more open to risk taking. Following Borcan et al. (2018), we use the ancestry adjusted state antiquity measure from 6 millennia to 1950 with a 1% discount, as well as its squared value. As column 3 indicates, the magnitude of the risk taking coefficient is virtually unchanged and continues to be significant. State history and its square are insignificant.

In column 4, we consider the legal origin of countries as additional controls. La Porta et al. (2008), summarizing an extensive literature, show that differences in legal origins influence a variety of economic outcomes such as property rights, government ownership of media, entry regulations, contract enforcement, dispute resolutions, etc. It is reasonable to think that by shaping these outcomes, differences in legal origins can affect attitudes

towards risk. In that case, our risk taking variable is just a proxy for legal origins.[20] We report results when we include four legal origin dummies, British, French, German, and Scandinavian, to our baseline specification with the socialist legal system as the omitted category. The estimated coefficient on risk taking is still positive and highly significant. As far as the legal origins variables are concerned, the estimated coefficients of British, French and German dummies are positive and significant, while the Scandinavian system is negative and significant.

Next, we consider variables that measure deep roots of preferences and social norms. In particular, we consider agricultural origins of patience and individualism - two factors that are also potentially important for entrepreneurship. For the former, we use measures of caloric suitability and the growth cycle of crops introduced by Galor and Özak (2016). They hypothesize that "...pre-industrial agro-climatic characteristics that were conducive to higher return to agricultural investment-triggered selection, adaptation, and learning processes that have had a persistent positive effect on the prevalence of long-term orientation in the contemporary era" (p. 3065). Specifically, they show that caloric value of potential crop yields, after conditioning for growth cycle of crops, is associated with greater long term orientation, as well as savings, and a lower inclination to smoke. Since investment in entrepreneurial activities inevitably involves some delayed gratification, it is important to check that our measure of risk-taking does not pick up these effects. In column 5 we control for the ancestry adjusted measures of the two aforementioned variables - caloric measure of potential crop yield and crop growth cycle.[21] The coefficient for risk-taking remains largely unchanged. The estimate on crop is positive and significant at 10%, and that on crop-cycle is negative and insignificant.

In column 6, we consider the labor intensity of farming developed by Ang (2019) which is tied to the evolution of individualistic vs collectivist norms. The rationale is that certain crops, such as rice, require more labor coordination and thus foster interdependence, leading to the evolution of more collectivist norms. Crops such as wheat on the other hand, require less interdependence. In his analysis, Ang shows this dichotomy holds at the national, and also individual level. It is important to check that our measure of risk-

[20] In many countries, legal traditions were typically introduced through conquest and colonization, and thus can be considered largely exogenous. However, La Porta et al. (2008) also observe that several countries adopted their laws voluntarily. For example, while Japan adopted the German legal system, Turkey and several Latin American countries adopted the French legal system voluntarily. The decision to adopt a certain legal system is likely to be driven a number of factors such as religious or political ideology, culture, or even preferences (including attitudes towards risk). In these cases, the relationship may not be truly exogenous, and legal origins itself proxies other deeper determinants.

[21] These are the same variables used in Table 1 of Galor and Özak (2016). We also considered the expanded set used in Table 2 of their paper, which differentiates between pre-1500 and post-1500 measures. This does not affect our results.

taking does not proxy for this deep determinant of individualism, especially since it is routinely considered an important entrepreneurial trait. In this exercise, the number of country-of-origin drops to 45. To minimize any potential problems in inference that may stem from a small number of clusters, we use a procedure developed by Cameron et al. (2008). The p-values associated with a test of significance for each coefficient is obtained from the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). Column 6 reports results when ancestry adjusted measure of farming labor intensity is included as an additional control. The estimated coefficient on risk taking is positive, but insignificant. Farming labor intensity is negative and significant: -0.026 [0.011]. One cannot rule out the possibility that even though farming labor intensity is intended to capture individualism, it might play a role in promoting risk tolerance. Later on in the paper, we show that risk taking is robust to a direct survey based measure of individualism.[22]

We also considered a number of additional variables such as the average agricultural land suitability and its deviation (Michalopoulos, 2012), ancestral agricultural land suitability (Litina, 2016), plow use in traditional agriculture (Alesina et al., 2013), the malaria ecological index, and ancestral timing of the neolithic revolution. They do not affect our results. A separate concern might be that we are over-controlling. For example, religion controls are contemporaneous, and might be affected by many deep-root variables. Similarly, some of the geographic factors might also be correlated with these measures (though the original research contributions usually document robustness to geographic controls). In appendix Table A.4, we re-estimate these regressions but drop our geography controls, continent effects, and religion variables. In other words, we use the specification in column (5) of Table 2. While the size of the risk coefficient, is lower in magnitude, and significance is usually at the 5% or 10% level, the overall pattern indicates that risk taking continues to have significant effects on self employment. Among the deep roots variables, we should note that genetic diversity continues to exhibit a convex shape (and is now significant), while among legal origin indicators, only the Scandinavian dummy has a negative and significant effect.

Finally, distinct from historical and geographical variables, we round out Table 4 by adding the logarithm of GDP per capita in the country of origin (in 2012) to our baseline specification. Variations in income per capita across countries show strong persistence over time. As theorized by Galor and Michalopoulos (2012), and empirically supported by Bouchouicha and Vieider (2019), there might be a negative effect of economic development on risk taking. In that case, risk-taking may not reflect an exogenous component of

[22]The fact that risk-taking is insignificant is not a consequence of the reduced sample size. In the absence of the farming labor intensity variable, risk taking is significant.

preferences but might be correlated with other factors that affect per capita incomes (e.g. fertility rates, demographics). Beyond any direct relationship between risk taking and per capita income, the latter also serves as useful catch-all control for other unknown country specific omitted variables that might be correlated with both risk taking and GDP per capita. When we add GDP per capita as a control in column 7, the estimated coefficient on risk remains mostly the same. The estimated coefficient on log GDP per capita is 0.025 (0.009), i.e. it is positive and significant at the 1-percent level. As with the deep roots variables, we also re-estimated the model without geography controls. The estimated coefficient for risk-taking continues to be significant (column 7, Table A.4). In lieu of GDP per capita, we also considered several contemporaneous variables such as average years of schooling in the country of origin, rule of law, and controls for corruption. Our results remain mostly the same. This is not surprising given that correlation between these variables and per capita income is very high.

5.2.2 Additional Robustness Checks

In Table 5, we undertake a variety of robustness checks that involve adding individual level controls, sample size, estimation methods, etc. Column 1 report results when we extend our baseline specification by including additional controls for individuals. Specifically, we include home ownership status, the number of weeks unemployed last year, and the industry worked. We include home-ownership status because individuals often use their property as collateral when they wish to start their own businesses. Since industries may experience different productivity shocks over time, which may affect individuals' decision to become an entrepreneur, we also include industry-by-year fixed effects. The estimated coefficient on risk taking and its significance do not change much. While not reported in the table, the estimated coefficients on the number of weeks unemployed and home ownership are negative and highly significant.[23]

In column 2, we include the country-of-origin population share at the state-year level to control for the possible impact of population differences across countries. In particular, it addresses the possibility that existing social networks among immigrants from a country might affect their decision to become an entrepreneur. However, its inclusion does not have any impact on risk taking. The estimate on immigrant share is negative and statistically insignificant.

[23]In our baseline specification, we considered only individuals working in the non-agricultural private sectors. We also ran regressions that included agricultural and public sectors. The estimated coefficient on risk taking was 0.057 (0.010). Thus, including the two sectors in our sample does not have any substantial effects on our findings.

In our sample, some countries have fewer observations. We now restrict our sample by considering only countries with at least 100 observations. In this case, the number of country-of-origin drops to 30, and thus we report the p-value obtained form a bootstrapped procedure developed by Cameron et al. (2008). Column 3 reports the result from this exercise, and the number in square brackets represents the p-value, not the standard deviation. The estimated coefficient is positive and statistically highly significant. The impact is economically substantial as well. A one standard deviation (which is about 0.471) increase in risk taking increases the likelihood of becoming an entrepreneur by 18 percent.

Next, we tackle the opposite problem - some countries being over-represented. For example, about half of the second-generation Americans have parents originally from Mexico. This uneven distribution of countries might affect the estimate. To address this issue, we run a regression where each individual observation is weighted by the inverse of the country-of-origin population share in the sample (column 4). The estimated coefficient from this exercise implies that a one standard deviation (0.401) increase in risk taking increases the probability of being an entrepreneur by 15 percent. As a complementary exercise, we also ran a regression by excluding all second-generation Americans with Mexican parents. The estimated coefficient on risk taking is highly significant: 0.031 (0.014). In this case, a one standard deviation (0.390) increase in risk taking increases the likelihood of being entrepreneur by 12 percent, relative to the sample mean (which is 0.098).

In the GPS, individuals in each country vary considerably in their willingness to take risk. To the extent that this reflects the role of age and gender, it is already taken care of by our adjusted measure of risk taking. Nevertheless, some influential observations within countries could also affect their mean value of risk taking. To address this issue, column 5 reports regression results in which risk taking in each country is measured by the median value of un-adjusted risk. The estimated coefficient is positive and statistically highly significant. It implies that a one standard deviation (0.261) in (median) risk taking increases the propensity of being an entrepreneur by 18 percent, relative to the sample mean.

The World Values Survey (WVS, Inglehart et al. (2014)) is another periodically conducted cross-country survey that asks questions about people's preferences over a variety of issues (e.g., trust, altruism, long-term orientation, etc). In the fifth (2005-06) and the sixth (2010-12) waves of WVS, the only measure that is closely related to risk taking in the GPS data is the response to "Adventure and taking risks are important to this person; to have an exciting life." Choices range from "Very much like me" (coded as 1) to "Not at all like me" (coded as 6). The variable is considered to be a measure of stimulation- "excitement, novelty, and challenge in life" (Schwartz, 2012). Note that higher values

now indicate that individuals are more risk *averse*. Each country's average is obtained by taking the simple mean across the respondents in that country. We use the average value obtained from the last two waves of this survey (prior waves did not include this question).

The last column in Table 5 reports the impact of risk taking on entrepreneurship if we use the measure from the WVS. Since the number of countries is 36, we report the $p-$value obtained from the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). The estimated coefficient on risk taking is small and insignificant (the number in brackets is the p-value). This is not surprising given that we have a smaller set of overlapping countries. The correlation between the average value of risk taking from the WVS and that from the GPS is not high: the coefficient of correlation is about about -0.23 in our sample. This is lower than the -0.32 that Falk et al. (2018) observe for the 47 common countries across WVS and GPS.[24]

6 Alternative Preference Measures

So far, our research has emphasized the role of risk preferences in choosing to be an entrepreneur. Nevertheless, preferences along other dimensions could matter just as much, or more. They could also be strongly correlated with risk taking, in which case, the latter might be proxying for some of the former. Alternatively, they might complement risk taking. In this section, we investigate these possibilities by focusing on a few select measures of other preference and cultural dimensions that are conceivably important for entrepreneurship. In particular, we examine the importance of trust, time preferences (as captured by measures of patience and long term orientation), individualism, and uncertainty avoidance. Measures for these are available in the GPS and also Hofstede et al.'s (2010) cultural dimensions.[25]

We begin by looking at the effect of trust on entrepreneurship. The role of trust in

[24]Rieger et al. (2015) conduct an international survey on risk preferences using about 7,000 individuals in 53 countries, and relate them to economic and cultural factors. They derive risk preferences from the participants' willingness to pay for hypothetical lotteries, and distinguish risk attitudes in the gain and loss domain. Using the median relative risk premium (RRP) for gains and losses at the country level in their survey, we estimated the impact of these measures on entrepreneurship. However, given our set of controls, we can only use 35 countries. Nevertheless, the estimates have the correct sign and, in the case of the RRP for gains, a large coefficient. However, they are not statistically significant. One drawback is that the survey is not as representative and extensive as the GPS. The participants were first- or second-year undergraduate students from departments of economics, finance, or business administration.

[25]The Hofstede cultural dimensions are widely used in economics and management. However, they are based mainly on IBM employees, and thus, despite their popularity, are not necessarily representative samples for the countries surveyed.

building institutional quality and on economic growth is now widely acknowledged, and so is its persistence across generations (Alesina and Giuliano, 2015, Guiso et al., 2006). As Guiso et al. (2006) observe, trust can play an important role in economic outcomes through various channels. It is a salient factor when trade involves buyers and sellers who are strangers, when legal enforcement is imperfect, and when transactions are conducted over a length of time. In such environments, they observe, trustworthy individuals are more likely to be successful as entrepreneurs. When they examine the effect of trust on entrepreneurship, Guiso et al. (2006) find significant positive effects.[26] In subsequent research, using a Dutch sample, they show that stock market participation is driven by trust and not attitudes towards risk (Guiso et al., 2008). These findings suggest that though entrepreneurship is a risky activity, the degree to which individuals trust each other in society is important as well. Furthermore, trust in institutions might shape attitudes towards risks.

To gain further insight, we use the GPS measure of trust.[27] In the survey, this is based on a self assessed question, "I assume that people have only the best intentions." In their own investigations, Falk et al. (2018) note that trust is not significantly correlated with GDP per capita once one adds geographic controls. This runs counter to the large literature showing the importance of trust on comparative development.[28] Column 1 in Table 6 displays the coefficient for trust in our baseline specification: it is positive but insignificant. In column 2, we run the horse-race between trust and risk taking. Trust is now negative and insignificant, while risk-taking continues to be positive and significant with the magnitude of the estimated coefficient in line with earlier estimates. The literature on trust often uses religious affiliation dummies as instruments. Consequently, one might be concerned that we are over-controlling in both columns by including religious composition variables of the country of origin. If we remove religion controls our results are qualitatively unchanged. The fact that trust is not significant in these regressions, especially given prior research, seems surprising. While it is difficult to provide a specific reason, one possibility is that since legal enforcement in the US is better than most of the rest of the world, the variable is less relevant here.

The rate of time preference plays a central role in inter-temporal optimization models in economic theory, and thus has important implications for any dynamic decision whether

[26] Their sample is second generation Americans in the Generalized Social Survey.

[27] As with the measure of risk, we construct a demography adjusted measure of trust.

[28] In studies that preceded theirs, the more commonly used measure of trust is a question in the World Values Survey and the GSS (for USA) asking "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Falk et al. (2018) note that this value is strongly correlated (0.49) with the GPS measure, but is also not robust in a horse race with their measure of patience in cross-country regressions.

it be entrepreneurship, investment, education, fertility choices, or self-control. There is now a wealth of empirical research, using various methods, that uses measures of *patience*, *delayed gratification*, or *long term orientation*, and ties them to many of these outcomes.[29] In the case of entrepreneurship, patience is important since any business undertaking by definition involves upfront costs accompanied with uncertain returns later. The ability to delay gratification (i.e., frugality and thrift) is also an important trait in Weber's Protestant ethic and the spirit of capitalism. To the extent that entrepreneurship is central to capitalism, one would expect variations in time preference to play an important role. Indeed, Doepke and Zilibotti (2014) spend most of their survey modeling the endogenous transmission of time preference when discussing entrepreneurship and growth.

In economic theory, the rate of time preference and risk aversion are two different parameters. They can complement each other, or under some situations have opposing implications. For instance, earlier studies have documented the link between measures of risk tolerance and individual smoking habits. However, clearly smoking runs counter to long-term orientation. Falk et al. (2018) note that the GPS measure of average risk taking does not have significant effects on cross-country entrepreneurial outcomes once one controls for their measure of patience. This result, though, might be due to the fact that their entrepreneurial outcome measures are total factor productivity and scientific articles per capita - variables that could be more correlated with human capital and R&D investments rather than entrepreneurship in the traditional sense. In general, compared to other preference measures or personality traits, the empirical literature on patience and entrepreneurship is limited, though there is research on the protestant ethic and entrepreneurship. The disconnect between the significant amount of theoretical work but limited empirical work is evident when one reads a survey such as Kerr et al. (2018). They exclude delayed gratification noting that it is one of the traits where empirical research is too little to summarize meaningfully.

To examine the role of time preferences, we use two measures. One is the GPS measure of patience, and another, the index of "long-term orientation" from Hofstede et al. (2010). Like the construction of risk, the GPS measure is a weighted average of two components, one quantitative and the other qualitative.[30] We also use the Hofstede's measure of long-term orientation (LTO) given its wide use in both economics and management.[31] Columns

[29] We use these terms interchangeably. See Galor and Özak (2016) for an extensive discussion and the related literature, including evidence on inter-generational transmission.

[30] As with risk taking and trust, we use the demography adjusted measure.

[31] LTO "...stands for a society which fosters virtues oriented towards future rewards, in particular adaptation, perseverance and thrift. Short Term orientation stands for a society which fosters virtues related to the past and present, in particular respect for tradition, preservation of "face", and fulfilling social obligations" (Hofstede et al., 2010). We normalize the index dividing by 100 so that it has a range

3 and 4 present the results for patience, while columns 5 and 6 for long term orientation. In the case of patience, the variable is negative, but insignificant. When we add risk, it remains negative and insignificant at the 5-percent level. This is contrary to cross-country results in Falk et al. (2018) discussed earlier. When we replace patience with LTO, we see that the latter variable is also uninformative. It is difficult to explain outright why measures of delayed gratification are insignificant. One possibility is that while patience might be important for entrepreneurship, it might be more salient for human capital accumulation (e.g. Figlio et al. (2019)) which is a pathway to non-entrepreneurial but high wage occupations.

Next, we consider a measure of individualism. The Hofstede et al. (2010) measure of individualism "stands for a society in which the ties between individuals are loose: a person is expected to look after himself or herself and his or her immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which continue to protect them throughout their lifetime in exchange for unquestioning loyalty." One might expect this to be an important personality trait of an entrepreneur, and one which can help cultivate a culture of risk taking. However, as Rieger et al. (2015) observe, this stereotype is not entirely correct. They discuss the literature which documents that collectivist cultures promote risk taking. Indeed, casual observation within the US would lead one to hypothesize that ethnic migrant networks help support entrepreneurship among fellow immigrants. The relevant estimation results are displayed in columns 7 and 8. There is little evidence here to indicate that societal measure of individualism has any effect on entrepreneurship among the second generation population. This is in contrast to the statistically significant effects of Ang's (2019) labor intensity of farming in section 5.2 , a deep determinant of individualism.

Lastly, we look at another measure from Hofstede et al. (2010), "uncertainty avoidance" (UAI). Despite its name, they explicitly rule out this as a measure of risk taking. It is defined "as the extent to which the members of institutions and organizations within a society feel threatened by uncertain, unknown, ambiguous, or unstructured situations," i.e. the extent to which a society might be fatalistic. In high UAI societies, they note, there might be strict rules of behavior. In low UAI societies there are fewer rules, which may be broken if necessary, more deregulation, faster adoption of innovations, and changing jobs

of 0 to 1. Lower values reflect short-term orientation while higher values reflect long-term orientation. It is interesting that in the definition, while long-term orientation seems to capture thrift, short-term orientation is equated with traditional values, which at least in our view, is not the opposite. We should clarify that unlike the other cultural dimensions which are based on interviews of IBM employees, Hofstede et al construct LTO based on factor analysis of three questions from the World Values Survey. See Hofstede et al. (2010) for further details, and also a brief discussion in Figlio et al. (2019, p 280). As a result the sample of countries is larger for LTO than for the other Hofstede measures. Unlike the GPS measures, we do not adjust for demographics as the distribution of the underlying sample is not available to us.

is easy. Even if this index is not a reflection of risk-taking, it clearly seems to capture a cultural dimension that may potentially have an impact on entrepreneurship.[32] Columns 9 and 10 display the results for UAI. Like other Hofstede et al.'s (2010) indices, we find no evidence that it affects entrepreneurship. [33]

The results indicate overwhelming importance of risk-taking preferences on entrepreneurship. While this is reassuring for risk, it is also surprising to see that the other variables are consistently insignificant. To further investigate this, we conducted three sets of additional estimations. First, we substituted each of these preference measures for risk-taking and re-estimated the specifications in Table 2. The results are presented in appendix Table A.6. Each row corresponds to one of the alternative preference measures, and repeats the regressions from Table 2. The first row recaps the results for risk for easier comparison. The remaining rows substitute the preference measures, e.g. the second row uses Trust instead of Risk-Taking. Each column uses the same corresponding specification as in Table 2. Therefore, each cell is a different regression. The results indicate that despite their lack of robustness when including risk in the baseline specification, individually they may have some explanatory power.

Starting with trust, we see unusual results - it seems to consistently have a negative and significant effect for most specifications. However, the baseline specification renders trust insignificant with a positive sign. For both the GPS measure of patience and Hofstede measure of long-term orientation we see that they have positive signs, and are often significant, but not robust to the religion controls. This is not surprising to the extent that the literature has often ascribed thrift to particular religious groups (Guiso et al., 2006). Nevertheless, when we repeated the regressions in column (6) without religion controls, both patience and long-term orientation remained insignificant.[34]

Second, we repeated the analysis in Table 6 but instead defined entrepreneurs as only those who are incorporated (i.e. as in column 2 of Table 5). The results are displayed in appendix Table A.7. While the positive effects of risk taking are still present, they are no longer significant when adding the Hosftede measures (long term orientation, individualism, uncertainty avoidance). However, neither are the latter (numbers in brackets are

[32]Pan et al. (2019) suggest that UAI reflects Knightian uncertainty. They use historical ship arrival records from 1820 to 1957 to assign last names to ethnicity. After identifying the national cultural heritage of US CEO's, they find a more uncertainty-averse (high UAI) cultural heritage is significantly less likely to engage in corporate acquisitions.

[33]For columns 6, 8, and 10, risk-taking remains significant even when long-term orientation/individualism/uncertainty avoidance are dropped, i.e. the results are not specific to the fewer countries in these regressions.

[34]As with the tables in the main text, we use the demography adjusted patience and trust variables. When we used their un-adjusted counterparts in earlier versions of this study, the variables were even less significant. The results are available upon request.

p-values, not standard deviations). This might be because of the simultaneous issues with having fewer countries, and sample limitations for incorporated self-employed discussed earlier. [35] Third, we repeated the analysis of Table 6 but also included an interaction term between risk taking and other respective preferences. Risk taking was always significant. Among the interaction terms, that between risk and patience was negative and significant, while that between risk and individualism was positive and significant.

We conclude this section by noting that the preferences discussed here are ones we feel are more closely connected to entrepreneurship. The GPS also includes additional measures of social preferences such as positive reciprocity, negative reciprocity, and altruism. As with the variables already discussed so far, we find that risk taking continues to be significant after controlling for these, while only negative reciprocity is also positive and significant. In the entrepreneurship literature, there is much less discussion about these variables. An exception is Caliendo et al. (2012) who find that negative reciprocity predicts exit from entrepreneurship but not entry. For now, we leave these variables for future research.

7 Concluding Remarks

Entrepreneurship has long been recognized as a driving force behind innovation, job creation, and economic prosperity. However, entrepreneurship is an inherently risky activity. It stands to reason that those with a greater tolerance for risk are more likely to engage in entrepreneurial activities. Identifying the exogenous effects of risk tolerance has been a difficult task due to various statistical issues such as omitted variables, reverse causation, and lack of reliable and objective measure of attitudes toward risk taking. Some surveys ask participants how they evaluate adventure or risky activity, but this is a hardly reliable measure of risk in economics context. Lab and field experiments, while being more rigorous, are limited by sample constraints, either of size or composition.

In this paper, we attempted to address these concerns, and showed that willingness to take risk does indeed explain the propensity of being entrepreneur. We used the recently published risk measure from the Global Preference Survey (GPS) (conducted within the framework of the 2012 Gallup poll) by Falk et al. (2018). The GPS is an experimentally validated survey data set of different preference measures (including risk taking), and thus is more credible than previous survey-based questions. In assessing how country-level measure of risk taking from the GPS affect entrepreneurship, we considered self-employed business owners among second-generation Americans in the Current Population Survey

[35] We repeated our baseline regression for these smaller sample sizes. Risk taking remained significant.

(CPS) data over the 1995–2019 period. Rich and reliable nature of the CPS data allows us to precisely control for individual characteristics (gender, age, race, education) that may affect entrepreneurship.

We found that the average level of risk taking in the country of origin has a positive and significant impact on the likelihood of being an entrepreneur among second-generation Americans. More precisely, a one-standard deviation increase in risk taking increases the probability of being entrepreneur by almost 15 percent among second-generation Americans. The results are also supported when we restrict the definition of entreprenurship to only the incorporated self-employed. We extended our baseline model by examining other preference measures (e.g., trust, patience, individualism, etc) that might be influential for entrepreneurship. It turns out that these preference measures do not have any significant impact on entrepreneurship once we control for risk preference.

We view this exercise as a first step towards uncovering the link between transmission of cultures and preferences and entrepreneurship among immigrants and their descendants. The CPS is unique as a large data set that captures recent ancestry, occupation choice, employment status, education and demographics. However, being cross-sectional and top-coded, it is more limited when it comes to tracking income and occupation history of respondents. As a result, beyond providing information on whether entrepreneurs are incorporated, there is little that can be gleaned regarding the innovative nature of the business, or whether businesses have expanded over time. Future research linking census and administrative data might provide an avenue for further investigation. Azoulay et al. (2020) is an example of a recent contribution along these lines.

A second question that needs to be researched further is the relative role of preferences and attitudes beyond risk taking. The results in this paper clearly indicate the overwhelming role of risk taking while delivering sobering results on patience, trust and individualism. This is certainly worth exploring deeper. For example, even if trustworthiness varies considerably between societies, and is transmitted across generations, is it as relevant among second generation population in the US where legal enforcement is stronger? Does trust only play a greater role in entrepreneurship in economies where this might not be the case? When it comes to patience/long term orientation, the empirical literature on entrepreneurship seems to be much less informative compared to the theoretical models of growth and entrepreneurship. Is this because patience is equally salient for non-entrepreneurial occupations e.g. salaried jobs that require considerable human capital accumulation? Additionally, does patience play a lesser role in the US because of well developed financial markets? Clearly much more work needs to be done to disentangle the relative roles of various preferences in occupational choices.

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Tables

Table 1: Summary Statistics: Entrepreneurs vs Wage Workers

	Second-generation Americans		Immigrants	
	Entrepreneurs	Workers	Entrepreneurs	Workers
	1	2	3	4
Female	0.293	0.483	0.321	0.422
Age	42.300	34.567	44.484	40.349
	(11.060)	(11.288)	(9.785)	(10.841)
White	0.792	0.760	0.674	0.662
Married	0.684	0.475	0.788	0.698
Some College	0.636	0.624	0.496	0.462
Full-time	0.832	0.857	0.844	0.888
Weeks Unemp.	0.654	1.117	0.855	1.087
	(3.519)	(4.633)	(4.165)	(4.591)
Manufacturing	0.042	0.123	0.038	0.176
Service	0.789	0.808	0.776	0.717
Years in U.S.			20.278	17.068
			(10.732)	(10.760)
Sample Size	2,811	35,862	16,545	149,579
Shares	7.3%	92.7%	10.0%	90.0%

Notes: Numbers in parentheses are standard deviations. Some College represents individuals who have at least some college education. Calculations are based on the ASEC files (1995–2019) available at the IPUMS website (Ruggles et al., 2019). Shares indicate the share of each group (entrepreneurs or workers) relative to the sum of the two within each generation.

Table 2: Impact of Risk Taking on Entrepreneurship among 2nd-generation Americans

	1	2	3	4	5	6
Risk Taking	0.059***	0.048**	0.048***	0.050***	0.041***	0.028***
	(0.013)	(0.018)	(0.007)	(0.016)	(0.010)	(0.008)
Continental FEs		✓				✓
Geographic Controls			✓			✓
Religion				✓		✓
Individual Controls					✓	✓
Adjusted R^2	0.021	0.025	0.029	0.023	0.054	0.058

*Notes: Each regression uses data on 38,673 second-generation immigrants whose parents from 51 countries. All regressions include state-year fixed effects, as specified in equation (2). Religion reflects corresponding measures for the country of origin. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table 3: Impact of Risk Taking on Incorporated Self-employment among 2nd-generation Americans

	1	2	3	4	5	6
Risk Taking	0.032***	0.021**	0.027***	0.024***	0.027***	0.013**
	(0.008)	(0.009)	(0.005)	(0.006)	(0.008)	(0.006)
Continental FEs		✓				✓
Geographic Controls			✓			✓
Individual Controls				✓		✓
Religion					✓	✓
Adjusted R^2	0.026	0.030	0.032	0.024	0.028	0.048

*Notes: Each regression uses data on 38,673 second-generation Americans whose parents from 51 countries. All regressions include state-year fixed effects, as specified in equation (2). Religion reflects corresponding measures for the country of origin. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table 4: Impact of Risk Taking on Entrepreneurship among 2nd-generation Americans: Robustness to Deep-root Determinants

	1	2	3	4	5	6	7
Risk Taking	0.027***	0.029***	0.027***	0.033***	0.033***	0.014	0.025***
	(0.008)	(0.009)	(0.009)	(0.008)	(0.010)	[0.321]	(0.009)
Genetic Diversity	✓						
Genetic Distance		✓					
State History			✓				
Legal Origins				✓			
Crop Yield & Cycle					✓		
Labor Int. in Farming						✓	
GDP/Capita							✓
Observations	38,673	38,673	38,673	38,673	38,673	37,621	38,673
Country of Origin	51	51	51	51	51	45	51
Adjusted R^2	0.058	0.058	0.058	0.059	0.058	0.057	0.058

*Notes: All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Col. 1 adds (ancestry-adjusted) predicted genetic diversity and its square from Ashraf and Galor (2013), col. 2 -weighted FST genetic distance to the US (Spolaore and Wacziarg, 2018), col. 3 - (ancestry-adjusted) state history till 1950 (1% discount) (Borcan et al., 2018), col. 4- legal origin variables (La Porta et al., 2008), col. 5 - (ancestry-adjusted) crop yield and growth cycle (Galor and Özak, 2016), col. 6- (ancestry-adjusted) labor intensity of farming environment (Ang, 2019), col. 7- (log) GDP per capita, 2012. Numbers in parentheses are robust standard errors clustered at the country-of-origin level, and numbers in square brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table 5: Impact of Risk Taking on Entrepreneurship among 2nd-generation Americans: Additional Robustness Checks

	1	2	3	4	5	6
Risk Taking	0.026***	0.027***	0.028**	0.027*	0.052***	−0.011
	(0.008)	(0.008)	[0.044]	(0.015)	(0.008)	[0.330]
Add. Indv Controls	✓					
Immigrant Share		✓				
Hundred or more Obs			✓			
Estimation with WLS				✓		
Median Average Risk					✓	
World Values Survey						✓
Observations	38,673	38,673	37,600	38,673	38,673	33,865
Country of Origin	51	51	30	51	51	36
Adjusted R^2	0.081	0.058	0.058	0.208	0.058	0.054

*Notes: All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Column 1 reports baseline results. Column 2 includes population share of immigrants by country-of-origin. Column 3 considers countries with at least 100 observations, and columns 4 reports results from weighted least squares estimation. In column 5 the median value of Average Risk Taking is used instead of the adjusted value. Column 6 uses World Value Survey (WVS) measure of risk taking. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table 6: Risk Taking vs Alternative Preference Measures

	1	2	3	4	5	6	7	8	9	10
Risk Taking		0.029***		0.029***		0.027*		0.025*		0.043**
		(0.010)		(0.009)		[0.076]		[0.076]		[0.024]
Trust	0.008	−0.004								
	(0.012)	(0.011)								
Patience			−0.001	−0.008						
			(0.017)	(0.015)						
Long-term Orient.					0.005	0.025				
					[0.918]	[0.536]				
Individualism							0.042	0.023		
							[0.235]	[0.385]		
Uncertainty Avoid.									−0.012	0.047
									[0.689]	[0.189]
Observations	38,673	38,673	38,673	38,673	37,293	37,293	37,283	37,283	37,283	37,283
Country of Origin	51	51	51	51	45	45	41	41	41	41
Adjusted R^2	0.058	0.058	0.058	0.058	0.057	0.060	0.057	0.058	0.057	0.058

*Notes: All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Risk Taking, Trust, and Patience are taken from the GPS (Falk et al. 2018), and Long-term Orientation, Individualism, and Uncertainty Avoidance are taken from Hofstede (2010). Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

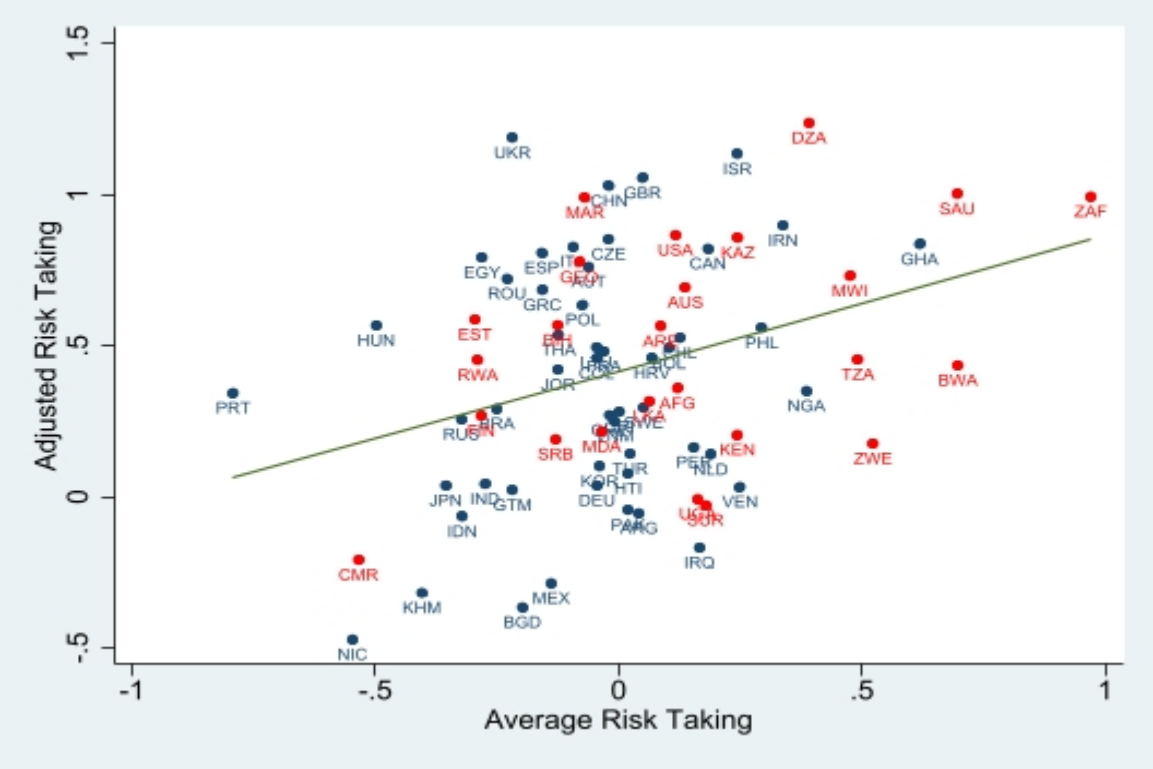

Figure 1: Average Risk Taking vs. Adjusted Risk Levels

Notes: Average Risk Taking refers to country-level values from the GPS data(Falk et al., 2018, 2016). Adjusted Risk Taking refers to the estimated country fixed effects from equation (1). The scatter plot includes all 76 countries in the GPS data, and dark blue ones represent 51 countries included in our analysis.

Appendix: Additional Tables

Table A.1: Impact of Average Risk (GPS) on Entrepreneurship among 2nd-generation Americans

	1	2	3	4	5	6	7	8
A. All Self-employed								
Average Risk	0.025	0.046***	0.045**	0.066***	0.025*	0.046***	0.063***	0.063***
	(0.027)	(0.014)	(0.019)	(0.018)	(0.013)	(0.012)	(0.011)	(0.011)
B. Incorporated Self-employed								
Average Risk	0.009	0.022**	0.020*	0.032***	0.011	0.020***	0.032***	0.032***
	(0.012)	(0.009)	(0.019)	(0.013)	(0.009)	(0.009)	(0.009)	(0.009)
GPS Controls		✓	✓	✓	✓	✓		✓
Continental FEs			✓				✓	✓
Geographic Controls				✓			✓	✓
Individual Controls					✓		✓	✓
Religion						✓	✓	✓

*Notes: Average Risk refers to the country level means in Falk et al. (2018). Each regression uses data on 38,673 second-generation Americans whose parents from 51 countries. All regressions include state-year fixed effects. GPS Controls are the sample share of females and the median age in the country of origin derived from the GPS. Religion reflects corresponding measures for the country of origin. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.2: Impact of Risk Taking on Entrepreneurship among Immigrants

	1	2	3	4	5	6
Risk Taking	0.036**	0.009	0.045***	0.027**	0.012	0.009
	(0.015)	(0.017)	(0.012)	(0.013)	(0.019)	(0.011)
Continental FEs		✓				✓
Geographic Controls			✓			✓
Individual Controls				✓		✓
Religion					✓	✓
Adjusted R^2	0.008	0.010	0.016	0.028	0.011	0.038

Notes: Each regression uses data on 166,124 immigrants from 68 countries. All regressions include state-year fixed effects, as specified in equation (2). Religion reflects corresponding measures for the country of origin. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and ***, **, *and* * *represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.3: Impact of Risk Taking on Incorporated Self-employment among 2nd-generation Americans: Robustness to Deep-root Determinants

	1	2	3	4	5	6	7
Risk Taking	0.011*	0.013*	0.011*	0.018***	0.019***	0.011	0.012**
	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	[0.111]	(0.009)
Genetic Diversity	✓						
Genetic Distance		✓					
State History			✓				
Legal Origins				✓			
Crop Yield & Cycle					✓		
Labor Int. in Farming						✓	
GDP/Capita							✓
Observations	38,673	38,673	38,673	38,673	38,673	37,621	38,673
Country of Origin	51	51	51	51	51	45	51
Adjusted R^2	0.048	0.048	0.048	0.048	0.048	0.047	0.048

*Notes: All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Col. 1 adds (ancestry-adjusted) predicted genetic diversity and its square from Ashraf and Galor (2013), col. 2 -weighted FST genetic distance to the US (Spolaore and Wacziarg, 2018), col. 3 - (ancestry-adjusted) state history till 1950 (1% discount) (Borcan et al., 2018), col. 4- legal origin variables (La Porta et al., 2008), col. 5 - (ancestry-adjusted) crop yield and growth cycle (Galor and Özak, 2016), col. 6- (ancestry-adjusted) labor intensity of farming environment (Ang, 2019), col. 7- (log) GDP per capita, 2012. Numbers in parentheses are robust standard errors clustered at the country-of-origin level, and numbers in square brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.4: Effects of Risk Taking on Entrepreneurship among 2nd-generation Americans: No Geography Controls

	1	2	3	4	5	6	7
Risk Taking	0.017**	0.027***	0.036***	0.043***	0.043**	0.041**	0.036***
	(0.007)	(0.007)	(0.011)	(0.010)	(0.010)	[0.018]	(0.010)
Genetic Diversity	✓						
Genetic Distance		✓					
State History			✓				
Legal Origins				✓			
Crop Yield & Cycle					✓		
Labor Int. in Farming						✓	
GDP/Capita							✓
Observations	38,673	38,673	38,673	38,673	38,673	37,621	38,673
Country of Origin	51	51	51	51	51	45	51
Adjusted R^2	0.056	0.055	0.055	0.054	0.053	0.053	0.054

*Notes: All regressions include only control variables from the CPS as well as state-year fixed effects, as specified in equation (2). Col. 1 adds (ancestry-adjusted) predicted genetic diversity and its square from Ashraf and Galor (2013), col. 2 -weighted FST genetic distance to the US (Spolaore and Wacziarg, 2018), col. 3 - (ancestry-adjusted) state history till 1950 (1% discount) (Borcan et al., 2018), col. 4- legal origin variables (La Porta et al., 2008), col. 5 - (ancestry-adjusted) crop yield and growth cycle (Galor and Özak, 2016), col. 6- (ancestry-adjusted) labor intensity of farming environment (Ang, 2019), col. 7- (log) GDP per capita, 2012. Numbers in parentheses are robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.5: Impact of Risk Taking on Incorporated Self-employment among 2nd-generation Americans: Additional Robustness

	1	2	3	4	5	6
Risk Taking	0.011*	0.012**	0.013	0.011	0.030***	−0.014**
	(0.006)	(0.008)	[0.140]	(0.010)	(0.007)	[0.016]
Add. Indv Controls	✓					
Immigrant Share		✓				
Hundred or more Obs			✓			
Estimation with WLS				✓		
Median Risk					✓	
World Values Survey						✓
Observations	38,673	38,673	37,600	38,673	38,673	33,865
Country of Origin	51	51	30	51	51	36
Adjusted R^2	0.055	0.048	0.048	0.206	0.048	0.045

*Notes: All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Column 1 reports baseline results. Column 2 includes population share of immigrants by country-of-origin. Column 3 considers countries with at least 100 observations, and columns 4 reports results from weighted least squares estimation. In column 5 the median value of Risk Taking is used. Column 6 uses World Value Survey (WVS) measure of risk taking. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.6: Effects of Preferences on Entrepreneurship among 2nd-generation Americans

	1	2	3	4	5	6
A. Effects of Risk Taking on Entrepreneurship						
Risk Taking	0.059***	0.048**	0.048***	0.041***	0.050***	0.028***
	(0.013)	(0.018)	(0.007)	(0.010)	(0.016)	(0.008)
B. Effects of Trust on Entrepreneurship						
Trust	−0.053***	−0.040***	−0.015	−0.037**	−0.033***	0.008
	(0.017)	(0.011)	(0.018)	(0.014)	(0.011)	(0.012)
C. Effects of Patience on Entrepreneurship						
Patience	0.050***	0.014	0.044***	0.034	0.029**	−0.001
	(0.013)	(0.019)	(0.012)	(0.021)	(0.011)	(0.017)
D. Effects of Long-term Orientation on Entrepreneurship						
Long Term Orientation	0.111**	0.074**	0.086***	0.099	0.076**	0.005
	[0.016]	[0.039]	[0.003]	[0.44]	[0.017]	[0.56]
E. Effects of Individualism on Entrepreneurship						
Individualism	0.135***	0.097	0.035	0.131**	0.066	0.042
	[0.003]	[0.370]	[0.467]	[0.026]	[0.132]	[0.411]
F. Effects of Uncertainty Avoidance on Entrepreneurship						
Uncertainty Avoidance Index	−0.020	−0.024	−0.076**	0.064*	−0.005	−0.012
	[0.602]	[0.710]	[0.019]	[0.068]	[0.593]	[0.682]
Continental FEs		✓				✓
Geographic Controls			✓			✓
Religion				✓		✓
Individual Controls					✓	✓

Notes: All regressions include state-year fixed effects, as specified in equation (2). Each panel represents a series of regressions. In each column, controls are sequentially added as specified in Table 2. Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, *and* * *represent statistical significance at the 1%, 5%, and 10% level, respectively.*

Table A.7: Risk Taking vs Alternative Preference Measures: 2nd-generation Incorporated Self-employed

	1	2	3	4	5	6	7	8	9	10
Risk Taking		0.014**		0.032***		0.010		0.008		0.022
		(0.006)		(0.009)		[0.297]		[0.352]		[0.128]
Trust	0.002	−0.004								
	(0.007)	(0.006)								
Patience			−0.010	−0.006						
			(0.012)	(0.009)						
Long-term Orient.					−0.008	−0.000				
					[0.703]	[0.994]				
Individualism							0.021	0.015		
							[0.296]	[0.452]		
Uncertainty Avoid.									0.008	0.039
									[0.645]	[0.189]
Observations	38,673	38,673	38,673	38,673	37,293	37,293	37,283	37,283	37,283	37,283
Country of Origin	51	51	51	51	45	45	41	41	41	41
Adjusted R^2	0.047	0.048	0.048	0.048	0.048	0.048	0.048	0.049	0.048	0.049

*Notes: The sample in this table comprises of second generation Americans with entrepreneurs being restricted to only those self employed that are incorporated. All regressions include all control variables as well as state-year fixed effects, as specified in equation (2). Risk Taking, Trust, and Patience are taken from the GPS (Falk et al. 2018), and Long-term Orientation, Individualism, and Uncertainty Avoidance are taken from Hofstede (2010). Numbers in parentheses are the robust standard errors clustered at the country-of-origin level, and numbers in brackets represent p-values associated with the wild bootstrap t-procedure clustered at the country-of-origin level (with 9,999 replications). ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.*