Self-Employment of Immigrants: Understanding the Country of Origin Effects

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Abstract:

A growing literature seeks answer to the question why immigrants from certain countries of origin are more entrepreneurial and whether entrepreneurship is culturally determined. Yet, focusing on the first-generation immigrants, this literature failed the thorny task of isolating the effect of institutional settings and macroeconomic conditions in origin countries from the "entrepreneurial culture", and furthermore has found inconclusive results. We propose that comparing second-generation immigrants that are born in the U.S., lived under the same macroeconomic climate and institutional setting provides a way around this problem and alleviates the concerns about the immigrant selection. Using Current Population Survey (1994-2011), we analyse the mechanisms through which the rate of self-employment in the country where parents had originated from affects their children's propensity to choose self-employment. Our preliminary result shows a significant negative correlation, which is robust to various specifications and fixed effects. Overall, our study offers insights about cultural transmission of self-employment across immigrant generations.

1. Introduction

There is no doubt that immigrants have been vital components of modern societies and their importance grows by day. Yet, immigrants from different countries of origin display variation in terms of economic and social outcomes (for instance, savings (Carroll et al. 1994), earnings growth (Adsera & Chiswick, 2007), labor market participation (Tubergen et al. 2004, Blau et al. 2011) and educational achievement (Kanas & Tubergen, 2009)) and these variations seem to persist even in the face of shared economic or educational traits. Explaining this variation has long preoccupied scholarly attention, forming important subfields ("country of origin") in various disciplines. More recently, studies have begun to probe the nature and sources of these among second generation immigrants (Borjas, 1993; Anectol, 2000; Gang and Zimmerman, 2000; Farley & Alba, 2002; Giuliano 2007).

A country of origin literature has also evolved in the context of immigrant entrepreneurship (e.g., Hout & Rosen, 2000; Tubergen 2005), though second generation immigrants have yet to make inroads to current research agenda. This is an important gap that warrants attention. Many of our theoretical expectations have been derived from analyses of immigrants born elsewhere and as such tend to display a strong concern for "structural barriers" confronting these individuals, due to for instance, lack of comparable educational credentials, poor language skills, absence of credit history or even limited access to loans, welfare programs and other institutional sources of resources as a consequence of lack of citizenship rights (Evans, 1989; Fairlie & Mayer, 1995; Borjas, 1986; Yuengert, 1995). Further, any study of first generation immigrants' economic choices must grapple with two key challenges, the effect of selection in migration and the country of origin effects which combines the effects of culture (defined broadly to include social customs, attitudes, preferences and values (Fernandez & Fogli, 2005; Guiso et al. 2006)) and effects of markets and economic institutions in the home country. Studying outcomes for individuals who were born in one country and whose parents were born in another country can offer a way around the latter issue, leading to exposition of more precise causal mechanisms (Fernandez & Fogli,

2005; Giuliano, 2007; Fernandez 2011)[1], whereas the former problem is reduced among the children of first generation immigrants who grew up in the US. Third, extant literature on immigrant entrepreneurship treats second generation as part of the native population, assuming absence of country of origin effects (e.g., cultural heritage from ancestors). Several studies however show that children of immigrants and natives face differential access to resources and opportunities and display differential attitudes and behavior[2]. Last but not least, descriptive assessments of trends in ethnic entrepreneurship point an interesting tendency (see figure 1 from US CPS). Second generation immigrants seem to have lower rates of business ownership than both the previous and the succeeding generations, especially in the last years.

In this study, we examine the relevance of source country to the choice of business ownership among the children of immigrants who have been born in the US. In particular, we ask: How does the rate of business founding in the country where parents had originated from affect their children's propensity to choose self-employment? We present theoretical insights that may explain the link and test with data from Current Population Surveys, 1994-2011. When doing so, we disentangle the determinants of incorporates business creation from those of unincorporated and thus contribute to richer understanding of whether and how country of origin effects matter. Contrary to widely held beliefs, controlling for key individual and community related characteristics, our results show a strong negative correlation, suggesting that the more entrepreneurship takes place in one's source country, the lower the likelihood that one's children are entrepreneurs. This finding is robust to inclusion of fixed effect and to various other specification strategies, which we discuss in the following but next sections together with future steps.

2. Theoretical Background

[1] To illustrate with an example from our context, consider the case of first generation immigrants who had developed a lack of trust for banking systems in their countries of origins as a result of personal experience with market failures. It is likely that this affects their capital sourcing choices in the host country. But it is unlikely that their children who grew up facing a different banking environment will have similar degree of distrust. Fernandez (2011) calls the method of comparing second generation immigrants among each other as an "**epidemiological approacj"** since epidemiologists, with the help of a set of controls, used second generation immigrants, to control for the environmental effects on different ethnicities health outcomes.

[2] Consider the consumer discrimination thesis which states that minorities contemplating self-employment have to be prepared to deal with potential customer prejudice (Borjas & Bronars, 1989). It is unlikely that US born children of immigrants will not experience any level of consumer discrimination when they set out to create own business.

The past two decades have witnessed a renaissance in the study of immigrant entrepreneurs. Although immigrant entrepreneurship research has made important strides into the central questions of how immigrant entrepreneurship compares to those of native men (Borjas, 1986), what factors explain why immigrants become entrepreneurs (Evans, 1989) and how immigrant entrepreneurship determines various economic outcomes (Fairlie & Mayer, 1995; Yuengert, 1995) little is known about why immigrants face different entrepreneurial opportunities based on their country of origins and even lesser is known about what explains the variation among business ownerships across the US born children of immigrants originating from different countries.

2.1. Country of origin and immigrant entrepreneurship

Immigrants are generally on average more able, ambitious, aggressive and more entrepreneurial than similar individuals who choose to remain in their place of origin (Chiswick, 1999). Not all immigrants however become entrepreneurs in their host country. A significant variation exists in rates of business formation along ethnic lines.

Extent literature offers four explanations of this variation. The selective migration thesis holds that countries send different types of immigrants and the differences in socioeconomic characteristics such as age, education, wealth and marital status explain why entrepreneurship rates vary across national origin groups (Zhou, 1997). In another view, an immigrant's country of origin provides access to ethnic social networks and organizations. These, in turn, help mobilize capital, labor and specific business skills and experience; enable information about laws, permits, management practices and promising business ideas, all vital ingredients to successful business formation (Aldrich & Waldinger, 1990; Portes, 1995). Accordingly, some ethnic communities are more resourceful and offer greater "organizing capacity" (Aldrich & Waldinger, 1990) for prospective entrepreneurs than others. For instance, employment experience in ethnic economy appears to be a more common pathway to business ownership for Koreans than Hispanics, Middle Eastern or South East Asian immigrants in the US (Raijman & Tienda, 2000). Others point to the "ease of reverse migration", which can be captured by the country of origin variable. Source countries vary in terms of how costly or difficult to return to one's country of origin (Portes &

Rumbaut, 1996). These differences may translate into differential entrepreneurship rates through affecting one's assimilation processes.

A fourth perspective draws upon cultural theory, which posits the existence of cultural elements within an ethnic group that predisposes its members to engage in entrepreneurial activities (Light, 1984). Accordingly, if immigrants confronting similar institutional opportunities and constraints display differential economic behavior and outcomes, then variation in their cultural backgrounds must provide one explanation. Recent research indeed shows that culture plays a role in the determination of such outcomes as gender differences in labor market participation (Anectol, 2000), living arrangements and household structures (Giuliano 2007) and savings (Carroll et al. 1994).

From this perspective, several traits of culture may be transmitted from country of origin to the host country and eventually may lead to business formation. In particular, it is argued that immigrants who come from countries with relatively higher rates of entrepreneurship not only may have more favorable attitudes towards self-employment and show greater willingness to take on economic risks; they may also have been more exposed to processes, pitfalls and perils of entrepreneurship, making them more skilled (Portes & Bach, 1985; Yuengert, 1995; Tubergen, 2005).

2.2. Culture and second generation immigrants

These arguments explain differential rates of entrepreneurship across source countries among the first generation immigrants. The thesis that they may hold for second generation immigrants is not without controversy. In particular, the potential effect of ancestral culture is the most contested. Aldrich and Waldinger (1990), for instance, "remain skeptical of an over-socialized conception of an ethnic group's cultural heritage, apart from the social structure and institutions it constructs within the context of larger society". They point that "separating the effects of the cultural values with which a group arrives in a host society from effects of the values generated by its post-migration experiences is extremely difficult. Structural factors limit the capacity of ethnic communities to preserve and pass on "traditional" ethnic

customs and values". Sanders (2002) contend that cultural traits of ethnic groups respond to ecological circumstances, resulting in considerable retreat from origin over time[3].

Others suggest that although some aspects of immigrant cultural patterns may be modified, changed, adapted, transformed, reformed and negotiated in the course of immigrant adjustments, other aspects are likely to remain in continuity even when they may be inconsistent with those of the host country (Zhou, 1997; Portes & Rumbaut, 2000). The stability of pre-migration beliefs may partly be driven by sheer cultural resistance. When immigrants tend to perceive their host country as temporary homes, they are more likely to refrain from adopting the beliefs and practices professed in the host country[4]. Discrimination and denial of assimilation opportunities to minorities may also produce such resistance (cite). Stability may additionally be ensured by cognitive processes. Past pre-migration experience and cultural learning may condition future learning, leading to selective exposure and filtering - avoiding cultural messages that are inconsistent with what has been accumulated while accepting those that confirm.

Other factors may also be responsible. Studies show that immigrants, especially those originating from relatively less developed economies, often share households with extended-kin and multiple families. These strong ties may reproduce and bolster existing cultural orientations while buffering the penetration of host country culture. A similar embeddedness effect is likely to play out at a more macro level. Many immigrants choose to live in ethnic enclaves (cite). Enclaves offer strong social and economic incentives to preserve one's cultural heritage. They are characterized by a sense of cultural membership. They maintain collective cultural memory, enforce cultural conformity and provide a supportive institutional infrastructure for cultural socialization (e.g., schools for immigrant children, ethnic media, cultural events). Through dynamic links to home country (e.g. mobility, trade), enclaves also serve to narrow the gap

[3] More radically, there have also been suggestions that preimmigration cultural attributes cannot be equated with homeland cultures, because immigrants tend to select carefully not only what they bring but also what to unpack once settled (see Zhou, 1997 for a review of this work).

[4] This is also implicit in the sojourner hypothesis (Bonacich & Modell, 1980). Accordingly, some immigrant groups are more entrepreneurial than others because they have higher proportions of members who do not intend to settle permanently in the host country, but plan to return to the homeland. Self-employment offers a quick route of exit. As a corollary, these individuals are unlikely to resocialize extensively into the host culture.

between home country culture and the culture reflected in the enclave so that changes in the former are transmitted and internalized. They keep home culture alive and up to date (Ruggles??XXX).

So, although immigrants' attachment to own cultures may fade away over time and over generations, this should happen slowly and some cultural imprinting should occur between generations. The conditions that keep first generation immigrants attached to their home country culture should not cease to be effective as far as their offspring are concerned. On the basis of US census, Jensen and Chitose (1996) for instance reported that second generation children are more likely to live in households with both parents than are their native counterparts in the US. Indeed, Portes and Rumbaut (2000) observe that immigrant children are likely to develop dual personality, one of which retains certain cultural traditions of the source country, to accommodate ethnic pressures.

Besides ethnic pressures, second generation immigrants may also see stronger benefits to deliberately cultivating their ethnic identities. For some immigrant children, being part of an ethnic community appears to offer a better route to upward mobility than being Americanized (Zhou and Bankston, 1994). In fact, the less favorable environmental conditions become for immigrant children, as has been the case in the past two decade, the more likely they will conform to ancestral culture and selectively acculturate in order to lean on material and moral resources available in the immigrant community (Zhou, 1997; Portes & Rumbaut, 2000).

3. The Method, Data and Variables

As discussed in the introduction, we aim to isolate the effect of "entrepreneurial culture" in the home country from the institutional structure and the macroeconomic conditions prevalent in those countries, and also alleviate the problems of immigrant selection by studying second-generation immigrants (born) in the US. Following the recent literature on culture and immigrants (see the review in Fernandez 2011), we proxy home country self-employment rate as an indicator for the prevalence of the "entrepreneurial culture" in the home country. If there is no effect of this variable on the second-generation migrants, then one may more confidently opt for the institutional and contextual arguments.

We elaborate this argument after we describe our data and sample, when we discuss our model specification.

3.1. Data and Sample

For the proposed analysis, we use the Current Population Survey (CPS) March Supplements from 1994 to 2011, harmonized by IPUMS-USA[5]. The CPS is the main source of labor force statistics for the United States and contains extensive demographic information on labor market conditions of overall population, as well as different population sub groups.

We start with its 1994 wave because the nativity questions, from which we identify second generation immigrants, are introduced to CPS in this year. Between 1994 and 2000, the CPS survey covered at average 138,000 individuals, living in approximately 68,000 households in the US. After 2000, the sample size is increased to include approximately 200,000 individuals in about 98,000 households in the US. A large sample size is necessary in order to obtain a reasonable number of migrants from various countries of origin. The number of second-generation migrants, which constitute our main study sample, varies between 5000 and 8000 in each survey from 1994 to 2011 and they add up to 108,272 individuals, altogether. In the following sections, we present our results and sensitivity analysis on both a pooled sample of these waves and separately, yearly surveys.

Sample size concerns have lead some studies with similar empirical strategy to ours, rely on 1970 Census Survey, where the nativity questions are available for a few millions of observations (e.g. Fernandez and Fogli, 2005, Guilano 2007[6]). Others have used 2000 Census with equally large sample size and focused on migrants born elsewhere but arrived in the US earlier than 5 years instead of second generation migrants (e.g. Blau, Kahn and Papps, 2008; Furtado et al. 2011). However, CPS has a number of advantages over 1970 and 2000 Census data:

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[5] Miriam King, Steven Ruggles, J. Trent Alexander, Sarah Flood, Katie Genadek, Matthew B. Schroeder, Brandon Trampe, and Rebecca Vick. ***Integrated Public Use Microdata Series, Current Population Survey: Version 3.0***. [Machine-readable database]; Minneapolis: University of Minnesota, 2010.

[6] Guliano (2007) in addition to 1970 Census; also uses pooled waves of CPS between1994 and 2000.

First, the last Census survey that asked father's birth place was the 1970 Census and the immigrant population in that Census might not fully reflect the compositional changes as a result of 1965 Immigration Act. In fact, even 1990 Immigration Act which allowed the US to admit 700,000 immigrants annually, up from half a million before the bill, might have serious influences on the diversity of immigrants in terms of country of origin. Thus, the CPS data covering all the years up until 2011 allow us to provide the most up to date analysis on the current migrant population.

Second, Census data, as opposed to CPS data, did not ask questions about the mother's birthplace, thus allowed the researchers defining "the second generation" only through the information about father's birthplace, which might result in a different composition of second generation migrants; one which excludes a considerable group of migrants whose mothers were foreign born and identify themselves with the culture of mother's home country. Third, CPS data contains more detailed information about the self-employment type and labor market activities of migrants than the other datasets. For example, the survey distinguishes incorporated and unincorporated self-employment and provides information on self-employment earnings in greater-detail[7].

We measure the effect of country origin using the home-country non-agricultural self-employment rate. The home countries of second generation immigrants are defined as the country of birth of their father or their mother whoever is foreign-born, when one of them is strictly US-born. In a few cases where both parents are born in a different country than the US, we assign the country of the father as the origin country, in line with the previous literature. Home country self-employment rates of approximately 110 countries come from the Table 2 of OECD's 2009 publication called "Overview: Data on Informal Employment and Self-Employment 'Is Informal Normal? Towards More and Better Jobs in Developing Countries'" (OECD, 2009), which provides 10-year averages of the percentages of self-employed in non-agricultural employment as for the decades 1970s, 1980s, 1990s and 2000s. We then, consequently assign corresponding decade –rate to each individual in each wave. However, because some

[7] In this version of the paper we do not use the self-employment

of the decades for a number of countries have been missing and some countries have changed names (i.e. Slovakia and Czech Republic was former Czechoslovakia), we recoded and supplemented our data using the information in another OECD publication: OECD 2012 Factbook[8]. Finally, not excluding the

3.2. The Method and the Variables

We estimate various versions of the following baseline model:

$$SE_i = f(\beta_0 + \beta_1 X_i + \beta_1 Z_j + D_s + D_y + \varepsilon_{isj})$$

where SE_i represents a binary indicator of the self-employment status of individual *i,* who resides in the state *s* and is of origin from country j. X_i denotes a set of individual characteristics that are likely to affect entrepreneurship outcomes, and D_s represent a full set of dummies for the 56 states (we also use metropolitan area of residence instead of states). State (or metropolitan area) fixed effects serves two purposes: first, since migrants from different countries of origin

Finally, Z_j is our variable of interest: home country self-employment rate, which is a proxy of country of origins entrepreneurial culture. Since, the key variable on the right-hand side varies only by country of origin; the standard errors of our models are corrected by clustering at the country-of-origin level, which also accounts for any within ethnicity correlation in the error terms. We estimate this model using linear probability model (LPM), logit or poisson link depending on nature of our dependent variable, which are described below.

Additionally, there may be other confounding factors at the country level that affect the sign of the correlation between our variable of interest, origin self-employment rate, and the dependent variable. For example, if countries with high self-employment rate, are also the ones that are poorer countries with less institutionalized markets and poor human capital, then we may be capturing an overall institutional or structural country differences, rather than the home country's "entrepreneurial culture". Therefore, in addition, to the individual level controls we also aim incorporate a set of country level control variables. The current version of our analysis includes country of origin's GDP per capita (adjusted for purchasing

[8] OECD (2012), OECD Factbook 2011-2012: Economic, Environmental and Social Statistics, OECD Publishing.

power parity) as a proxy for general economic resources available in a country of origin to start a business. The sceptical researchers may naturally suggest using a dummy variable for each country of origin rather than finding a continuous variable to proxy for the home country self-employment rate. Yet, our approach has two advantages over using just a dummy indicator for the country of origin. First, we tease out the mechanisms more directly. Second, this approach allows investigating into the alternative hypothesis and omitted variables at the country level (Fernandez 2007). Last, we generate an indicator that groups countries by the major dominant languages used. This indicator captures some of the heterogeneity that varies systematically across the countries. If immigrants from certain countries of origin are more adept at learning the rules or regulations of the US society because of their language ability and proximity, we then would be capture simply an overall cultural proximity rather than "entrepreneurial culture", thus we include major language groups.

Table 1a and 1b below shows the number of origin countries, we consider and their respective sample sizes represented in our CPS study sample of second-generation migrants, as well as summary statistics for our key covariates.

(Table 1a and 1b is about here)

We use three binary dependent variables that are indicators to measure entrepreneurship[9]. First one is the standard self-reported indicator of self-employment provided by the CPS. This indicator is then further detailed in the CPS questionnaire to separate the self-employed into two categories, unincorporated business owners/ self-employed and incorporated self-employed. Incorporated self-employed tends to have higher education levels, more likely to be occupying professional and managerial positions (such as lawyers, doctors, dentists, etc) and more likely to be married men (e.g. Hipple 2010, Ozcan 2011). Therefore, some studies use solely incorporated self-employed as entrepreneurs. However, previous studies show that the distribution of these traits between incorporated and unincorporated business owners are overlapping (Hipple 2010, Ozcan 2011) and using solely incorporated business

[9] We aim to use self-employment earnings and occupation indicators to distinguish entrepreneurs from other self-employed in the next version of this paper. Due to time constraints, we use conventional definitions of entrepreneurship.

owners is not very comparable with the definition of self-employment in the countries of origin (e.g. Blanchflower 2000), therefore we report as our main results the specifications that use the broad self-employment indicator. As a robustness check, we also report results where we use a binary dependent variable where incorporated self-employed are coded as 1, but because these are rare events in the data, whenever we use this variable, we adopt a poisson model instead of a LPM.

In addition to our key country level variables, we include standard demographic controls which are found to determine the likelihood of owning a business, such as, age, education, race, marital status, family size and total household income to account for family resources available to start a business. As you can see from table 1, there is some variation across the countries in the average values of our covariates, which justifies their inclusion as controls.

4. Preliminary Results and Conclusions

Table 2a and 2b below report four models for men and women respectively, where each model adds another group of controls at the individual or country level in a stepwise fashion. All of these models include state dummies and year dummies, and the standard errors are clustered at the country of origin level. Model 1 includes our variable of interest, origin self-employment rate and a number of individual characteristics as controls, such as age, education, marital status, race and metropolitan area status. Model 2 additionally includes household level controls such as total household income and family size. Both indicators have been found to correlate positively with entrepreneurship transitions by the previous research, although we observe that solely total household income is positively associated with the likelihood of being self-employed. Model3 incorporates our first country level control, which is the GDP per capita (in Purchasing Power Parity terms). This indicator strongly and negatively associated with our home country self-employment rate. This means, the poorer the countries are the higher the self-employment rate. Because we are interested whether entrepreneurship is specifically strong in certain cultures, our proxy for entrepreneurial culture should be significant net of a given countries' development.

Thus, we include it in our models. For the moment we include it linearly, but in the next versions, we will try different functional forms also to avoid potential multicollinearity.

Overall our models show that home country self-employment rate is negatively and significantly associated with the likelihood of being self-employed for men, but as we add country level controls this effect disappear. However, for women the effect is negative and significant even after we include the origin country self- employment rate. The effect of home country also turns not significant for women, when we include a language indicator, that groups the countries in 4 categories.

Tables 3 and 4 show models for our more refined measures of entrepreneurship and they contain 7 different specifications. Table 3 just considers incorporated business owners as entrepreneurs and reports a set of stepwise models. Because incorporated self-employed are less than a few percent in our data set, estimating the rare events using poisson models are more appropriate. All the coefficients in the table are expressed in terms of incidence risk ratio. None of the models in Table 3 shows a significant negative (or positive) effect of origin country on the incidence of being self-employment. Table 4 considers unincorporated self-employed only, and finds a consistent negative effect of country of origin, which persist even after, including state and year fixed effects and their interactions. This is interesting because unincorporated self-employed tends to have fewer resources, lower levels of human capital and concentrate on manual and service occupations, which means that individuals whose parent's are from countries that have higher rate self-employed are less likely to become unincorporated self-employed.

In fact, previous research found no significant effect of origin on the likelihood of being self-employed for the first generation immigrants (Van Tubergen 2005, Yuengert 1995). However, we find a consistent negative effect in many of our specifications. The origin effect statistically becomes not significant in a few of our models where we add further controls at the country level although this appears more of a sample and statistical power problem rather than a lack of effect. In fact, as Fernandez states, not finding a significant coefficient does not mean that cultural effects are not there because there may be other reasons, such as sample size, omitted variables that systematically vary across the countries.

Therefore, at this stage we are cautious not to interpret our findings as the non-existence of a entrepreneurial culture before completing the following robustness checks and sensitivity analysis, which are our next steps:

1) A few countries have few incidence of self-employment, and we will pursue an outlier analysis at the country level. We will also randomly select a subsample of the countries and estimate the same models with a different set of countries of origin, to increase our confidence that the results are not driven by a few country in our sample.
2) Certain groups of countries may actually shift sign of the slope, thus we will provide within country group estimations, such as looking solely Europeans.
3) In search for alternative hypotheses, we will include a number of country level variables, such as enrollment rates, adult literacy score, etc.
4) Using a subsample of our second generation migrants whose parents or children are also in the sample., we will analyze whether father's own self employment is the mechanism of transmission. We will look at other proxies to estimate the people that directly inherit a family business.
5) Since our estimates for women are proving to be more robust, we will test those models with female self-employment rate as our proxy of female entrepreneurship in their home countries.

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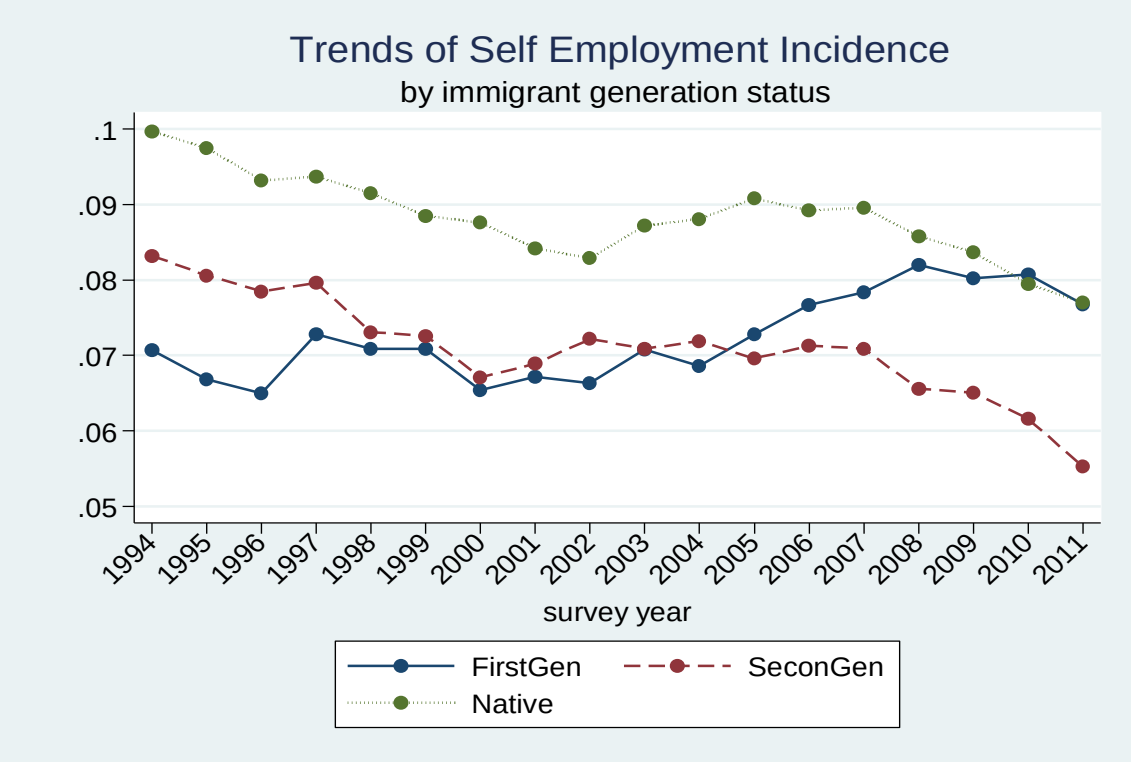
Figure 1: Trends of Self-Employment Incidence within each generation status



Note: CPS1994-2011, denominator includes everyone within a given generation, at ages between 16 and 66. Natives are defined as those whose both parents and themselves are US born individuals.Second generation immigrants are those that have at least one foreign-born parent.

Table 1a: Summary Statistics of the Main Variables (CPS 1994-2011 waves)

Dependent Variables	**Mean**	**Std. Dev**	**Min**	**Max**
Self-Employed	0.072	0.26	0	1
Unincorporated Self Emp.	0.046	0.21	0	1
Incorporated Self Emp.	0.026	0.16	0	1
Independent Variables				
Origin Self Emp. Rate	23.22	11.14	4%	75.4%
Age	37.20	15.25	16	66
Age^2	1616.29	1218.26	256	4356
Education (Years of Schooling)	12.75	2.21	1	18
Male	0.49	0.50	0	1
Race (Ref. Category: White)				
Black	0.01	0.12	0	1
Native American	0.01	0.10	0	1
Asian Pacific	0.07	0.25	0	1
Other	0.02	0.15	0	1
Marital Stats (Ref Category: Single)				
Divorced/Separated	0.10	0.30	0	1
Widow	0.02	0.14	0	1
Married	0.50	0.50	0	1
Ln(Total Hh Income)	10.88	0.91	0	13.97848
Log of Family Size	1.05	0.58	0	2.772589
Metropolitan Area Status (Ref Category: Not in a Metropolitan Area)				
In a Central City	0.28	0.45	0	1
Outside the Central City	0.59	0.49	0	1
GDP Per Capita/1000	18.67	11.28	0.3283	48.8240
Country of Origin Language (Ref Cat Other languages)				
Spanish	0.40	0.49	0	1
English	0.24	0.43	0	1
Arabic	0.01	0.09	0	1
German	0.08	0.28	0	1
Year dummies from 1994 to 2011				
State dummies: 56				
				N: 113,949 individuals

Table 1b: Descriptive Statistics *by Country of Origin (1994- 2011)* **(N= 113,949 obs)**

Countries	Self-Emp. Rate (CPS Sample)	Country Self-Emp. Rate	Country GDP Per Capita	Age	Years of Schooling	Male	Married	Log Total HH Income	Sample Size
Canada	11.1%	12.89	31,788.68	44.56	13.17	50%	64.4%	10.969	12,341
Mexico	3.3%	30.84	10,840.73	30.90	11.77	48%	39.0%	10.621	37,461
Costa Rica	0.8%	23.74	9,932.69	29.01	12.82	51%	27.6%	11.048	243
El Salvador	4.5%	45.02	5,181.42	29.32	12.15	52%	32.8%	10.750	2,778
Honduras	4.6%	50.50	2,586.82	29.02	12.53	43%	33.0%	10.361	109
Panama	6.1%	20.71	7,450.89	32.06	12.95	46%	38.1%	10.856	493
Dominican Repub.	2.4%	44.90	4,693.42	24.13	11.73	49%	20.9%	10.166	494
Haiti	4.0%	64.70	1,022.64	25.68	12.65	51%	22.0%	10.558	177
Argentina	7.4%	26.17	9,567.98	31.60	13.43	52%	45.2%	11.139	405
Bolivia	5.7%	54.36	3,288.05	27.32	13.33	46%	22.6%	11.003	106
Brazil	6.2%	34.61	7,089.03	31.04	12.86	46%	33.7%	11.062	273
Chile	7.1%	31.03	9,337.00	31.41	13.35	51%	35.6%	10.992	309
Colombia	4.2%	49.18	6,333.58	26.86	12.86	49%	27.0%	10.967	1,276
Ecuador	0.0%	49.30	3,740.96	24.80	12.28	46%	23.7%	10.483	190
Uruguay	2.1%	19.50	9,478.34	28.56	13.28	48%	31.9%	11.244	94
Venezuela	4.5%	40.11	8,056.37	28.79	12.86	48%	34.3%	11.146	198
Denmark	11.8%	8.70	34,296.36	45.31	13.68	50%	66.1%	11.142	254
Finland	9.5%	10.31	28,593.00	46.58	13.58	46%	69.8%	10.938	199
Norway	15.3%	6.76	41,542.08	48.37	13.48	47%	68.4%	11.020	849
Sweden	13.6%	9.98	30,597.24	49.00	13.50	47%	63.1%	10.946	766
United Kingdom	10.1%	12.82	29,465.59	42.23	13.33	49%	60.8%	11.041	6,644
Ireland	9.0%	12.60	38,096.74	45.52	13.82	50%	66.2%	11.253	1,974
Belgium	10.5%	13.90	33,881.47	43.63	13.38	55%	69.9%	11.143	256
France	10.0%	9.35	28,492.98	39.33	13.36	48%	52.3%	10.967	1,162
Netherlands	14.4%	10.67	33,720.18	40.30	13.47	48%	65.9%	11.103	1,166
Greece	11.7%	29.67	21,173.24	38.43	13.53	50%	50.4%	11.018	1,493
Italy	10.3%	25.36	26,450.52	45.46	13.23	50%	63.7%	10.988	9,363
Portugal	5.8%	17.04	18,277.41	34.88	12.52	50%	44.8%	10.935	1,474
Spain	10.0%	19.12	25,593.44	39.67	13.33	52%	52.6%	10.987	896
Austria	13.7%	9.01	32,350.91	46.01	13.80	47%	64.0%	11.047	786
Czech Republic	10.1%	14.55	19,704.16	46.97	13.58	46%	66.5%	11.120	257
Slovakia	10.0%	9.29	12,643.64	46.86	13.51	49%	64.1%	10.977	579
Germany	8.9%	10.86	29,747.63	39.41	13.29	50%	58.9%	10.999	8,795
Hungary	9.0%	10.63	13,550.17	44.75	13.52	47%	61.3%	10.896	1,117
Poland	10.5%	12.51	11,276.69	48.05	13.74	48%	64.5%	11.061	3,400
Romania	9.8%	6.65	7,212.44	40.29	13.50	49%	56.3%	11.003	295
Bulgaria	15.4%	6.70	9,166.65	41.77	13.85	31%	61.5%	11.409	13
Croaita	5.5%	12.00	13,983.85	36.76	13.96	53%	63.6%	11.357	55
Lithuania	11.3%	8.20	12,618.68	47.27	14.01	43%	71.7%	11.289	265

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Continuing from the previous page

USSR/Russia	17.9%	4.41	9,601.29	53.47	13.73	51%	68.4%	10.953	1,808
Hong Kong	2.9%	15.32	31,325.82	27.16	13.09	54%	24.4%	11.001	344
Japan	6.6%	11.75	29,439.47	38.88	13.39	49%	50.2%	11.077	2,421
South Korea	3.7%	28.40	20,869.18	26.19	13.05	51%	24.5%	10.952	920
Cambodia	2.0%	55.64	1,429.20	26.21	11.98	48%	19.9%	10.841	346
Indonesia	8.0%	47.24	3,232.79	32.49	13.05	46%	45.1%	11.093	175
Malaysia	12.5%	17.78	10,328.62	24.08	13.06	48%	31.3%	11.192	48
Philippines	3.8%	32.57	2,683.24	32.12	12.99	50%	36.4%	11.172	5,648
Singapore	0.0%	14.95	41,205.48	28.50	13.46	65%	19.2%	10.909	26
Thailand	3.9%	35.84	6,779.06	27.13	12.91	51%	30.3%	10.957	482
India	5.3%	37.60	1,300.41	26.83	13.16	42%	25.8%	10.983	209
Bangladesh	0.0%	75.37	1,108.27	22.79	11.29	44%	6.6%	10.852	61
Pakistan	3.3%	42.25	1,975.18	24.08	12.92	56%	25.8%	11.092	244
Iran	4.4%	37.55	7,716.30	25.26	13.01	49%	24.3%	11.201	457
Israel/Palestina	9.2%	13.40	24,073.05	29.57	13.21	47%	40.9%	11.014	303
Jordan	0.0%	24.20	2,979.35	21.47	12.42	68%	0.0%	10.524	19
Lebanon	13.7%	35.04	9,441.31	36.31	13.40	50%	53.0%	11.092	336
Turkey	11.9%	25.49	8,375.21	37.52	13.22	48%	46.3%	11.079	227
Egypt	7.2%	39.48	3,871.45	29.80	13.80	52%	37.2%	11.270	250
Morocco	12.0%	47.62	3,033.14	30.27	13.20	51%	42.2%	11.065	83
Algeria	11.1%	31.70	5,655.54	28.22	12.67	56%	22.2%	11.505	9
Ethiopia	0.0%	73.05	505.69	28.05	12.03	45%	25.0%	10.866	40
Kenya	0.0%	61.00	899.83	29.40	15.40	40%	40.0%	10.298	5
South Africa	10.2%	11.60	6,990.94	33.25	13.53	61%	44.3%	11.081	88
Australia	9.1%	14.49	35,823.70	41.37	13.63	48%	57.9%	11.111	309
New Zealand	11.6%	16.01	24,618.23	36.97	13.00	55%	54.7%	10.995	86

Note: First Column of the table indicates the self-employment rate (prevalance) in the CPS Sample. Second column shows the home country self-employment rate. The next column shows the average GDP per capita for these countries.

Table 2.a. Logistic regressions estimations of being Self Employed for MEN

	Model 1	Model 2	Model 3	Model 4
Origin SE Rate	**0.987***	**0.988***	**0.991**	**0.997**
	(0.007)	**(0.007)**	**(0.008)**	**(0.004)**
Age	1.253***	1.248***	1.246***	1.246***
	(0.014)	(0.015)	(0.014)	(0.013)
Age^2	0.998***	0.998***	0.998***	0.998***
	(0.000)	(0.000)	(0.000)	(0.000)
Years of Schooling	1.078***	1.062***	1.062***	1.050***
	(0.013)	(0.012)	(0.013)	(0.014)
Race (Ref. Category: White)				
Black	0.806	0.818	0.824	0.820
	(0.164)	(0.167)	(0.164)	(0.155)
Native American	0.620***	0.629***	0.629***	0.666***
	(0.079)	(0.079)	(0.077)	(0.074)
Asian	0.792	0.780*	0.798*	0.644***
	(0.115)	(0.111)	(0.109)	(0.064)
Other	0.834	0.833	0.841	0.773**
	(0.115)	(0.112)	(0.113)	(0.093)
Marital Status (Ref Category: Never Married Single)				
Married	1.345***	1.428***	1.425***	1.427***
	(0.068)	(0.072)	(0.071)	(0.072)
Divorced	1.130**	1.130**	1.129**	1.140**
	(0.068)	(0.070)	(0.069)	(0.072)
Widow	0.808	0.826	0.824	0.824
	(0.151)	(0.156)	(0.157)	(0.159)
Metropolitan Area Status (Ref Category: Outside the Metropolitan Area)				
In the Central City	0.805**	0.791**	0.793**	0.780**
	(0.080)	(0.079)	(0.080)	(0.081)
Outside the Central City	0.822**	0.808**	0.808**	0.795**
		(0.025)	(0.025)	(0.025)
Total HH Income		1.111***	1.110***	1.099***
		(0.025)	(0.025)	(0.025)
Log Family Size		0.874***	0.877***	0.892**
		(0.038)	(0.039)	(0.041)
Origin GDP per Capita (PPP)			1.005	1.003
			(0.006)	(0.004)
Language of the Origin Country (Ref: Other)				
Spanish				0.519***
				(0.083)
English				0.797***
				(0.033)
Arabic				1.629**
				(0.311)
German				0.741***
				(0.038)
Constant	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Log Likelihood	-1.60e+04	-1.59e+04	-1.59e+04	-1.59e+04
N	55934	55934	55934	55934

Note: All models include 56 State dummies and 19 year dummies. Odds ratios are reported and all the standard errors are clustered at the country of origin level (for 65 countries of origins).

Table 2.b. Logistic regressions estimations of being Self Employed for WOMEN

	Model 1	Model 2	Model 3	Model 4
Origin SE Rate	**0.987*** **	**0.988*** **	**0.989** **	**0.993**
	(0.004)	**(0.004)**	**(0.005)**	**(0.006)**
Age	1.210***	1.209***	1.208***	1.208***
	(0.020)	(0.020)	(0.019)	(0.019)
Age^2	0.998***	0.998***	0.998***	0.998***
	(0.000)	(0.000)	(0.000)	(0.000)
Years of Schooling	1.145***	1.131***	1.131***	1.125***
	(0.017)	(0.018)	(0.018)	(0.019)
Race (Ref. Category: White)				
Black	0.868	0.879	0.882	0.891
	(0.180)	(0.181)	(0.184)	(0.185)
Native American	0.996	1.002	1.005	1.040
	(0.433)	(0.435)	(0.436)	(0.453)
Asian	0.762*	0.753**	0.759*	0.710**
	(0.112)	(0.106)	(0.109)	(0.105)
Other	0.940	0.929	0.933	0.907
	(0.151)	(0.147)	(0.144)	(0.141)
Marital Status (Ref Category: Never Married Single)				
Married	1.798***	1.989***	1.988***	1.979***
	(0.171)	(0.176)	(0.176)	(0.177)
Divorced	1.324**	1.370**	1.370**	1.374**
	(0.173)	(0.182)	(0.182)	(0.184)
Widow	1.036	1.085	1.085	1.083
	(0.258)	(0.264)	(0.263)	(0.263)
Metropolitan Area Status (Ref Category: Outside the Metropolitan Area)				
In the Central City	0.775***	0.765***	0.766***	0.761***
	(0.048)	(0.049)	(0.049)	(0.049)
Outside the Central City	0.767***	0.763***	0.763***	0.758***
	(0.037)	(0.040)	(0.040)	(0.041)
Total Hh. Income		1.059	1.059	1.055
		(0.048)	(0.048)	(0.047)
Log Family Size		0.821***	0.822***	0.830***
		(0.042)	(0.042)	(0.043)
Origin GDP per Capita (PPP)			1.002	1.001
			(0.005)	(0.005)
Language of the Origin Country (Ref: Other)				
Spanish				0.772**
				(0.100)
English				0.893
				(0.068)
Arabic				1.747***
				(0.235)
German				0.958
				(0.110)
Constant	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Log-Likelihood	-1.01e+04	-1.01e+04	-1.01e+04	-1.01e+04
N	58015	58015	58015	58015

Note: All models include 56 State dummies and 19 year dummies. Odds ratios are reported and all the standard errors are clustered at the country of origin level (for 65 countries of origins).

Table 3. Poisson estimations of being *Incorporated Self Employed* (Incidence rate ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Origin SE Rate	0.985*	0.992	0.995	0.997	1.004	1.004	1.005
	(0.009)	(0.008)	(0.007)	(0.008)	(0.005)	(0.005)	(0.005)
Age	1.375***	1.296***	1.275***	1.273***	1.271***	1.271***	1.272***
	(0.019)	(0.017)	(0.016)	(0.015)	(0.015)	(0.014)	(0.014)
Age2	0.997***	0.997***	0.998***	0.998***	0.998***	0.998***	0.998***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
male	2.834***	2.709***	2.639***	2.637***	2.639***	2.638***	2.639***
	(0.226)	(0.216)	(0.212)	(0.210)	(0.209)	(0.209)	(0.212)
Years of Schooling		1.184***	1.079***	1.079***	1.065***	1.065***	1.065***
		(0.029)	(0.023)	(0.023)	(0.019)	(0.019)	(0.019)
Race (Ref. Category: White)							
Black		0.478***	0.537**	0.542**	0.557**	0.558**	0.563**
		(0.125)	(0.139)	(0.139)	(0.149)	(0.148)	(0.151)
Native American		0.579*	0.651	0.655	0.718	0.718	0.724
		(0.164)	(0.181)	(0.183)	(0.210)	(0.210)	(0.207)
Asian		0.790	0.736*	0.752	0.593***	0.598***	0.600***
		(0.151)	(0.129)	(0.137)	(0.077)	(0.088)	(0.089)
Other		0.866	0.875	0.885	0.797	0.800	0.816
		(0.166)	(0.157)	(0.161)	(0.132)	(0.139)	(0.137)
Married		1.695***	1.563***	1.561***	1.550***	1.549***	1.553***
		(0.095)	(0.092)	(0.092)	(0.093)	(0.092)	(0.093)
Total Hh Income			1.938***	1.937***	1.903***	1.903***	1.894***
			(0.057)	(0.056)	(0.052)	(0.052)	(0.052)
Log family size			0.765***	0.766***	0.779***	0.779***	0.785***
			(0.044)	(0.044)	(0.043)	(0.043)	(0.045)
Metropolitan Area Status (Ref Category: Outside the Metropolitan Area)							
In the Central City			0.953	0.956	0.939	0.939	0.946
			(0.062)	(0.062)	(0.063)	(0.062)	(0.059)
Outside the Central City			1.011	1.012	0.990	0.990	0.995
			(0.074)	(0.074)	(0.069)	(0.069)	(0.065)
Origin GDP per Capita (PPP)				1.004		1.001	1.001
				(0.007)		(0.005)	(0.004)
Language of the Origin Country (Ref: Other)							
Spanish					0.443***	0.447***	0.443***
					(0.084)	(0.088)	(0.088)
English					0.809***	0.805***	0.800***
					(0.047)	(0.050)	(0.051)
Arabic					1.266	1.276	1.277
					(0.231)	(0.237)	(0.237)
German					0.742***	0.739***	0.737***
					(0.051)	(0.051)	(0.051)
Constant	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Note: Model 1 is the baseline model with our key variable and age Model2 incorporates basic demographic characteristics of 2nd geneation migrants. Model3 takes into account household –level controls and model 4 incorporates country of origin GDP per capita. Model 5 includes just language of origin country. Model 6 is our full model and Model 7 tests State x Year interactions, for time varying effects of being in certain states.

Table 4. Logistic regressions estimations of being *Unincorporated Self Employed*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Origin SE Rate	0.984***	0.986***	0.986***	0.988**	0.991**	0.991**	0.992**
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
Age	1.244***	1.219***	1.218***	1.216***	1.218***	1.217***	1.218***
	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Age2	0.998***	0.998***	0.998***	0.998***	0.998***	0.998***	0.998***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	1.802***	1.784***	1.795***	1.794***	1.796***	1.796***	1.795***
	(0.072)	(0.071)	(0.071)	(0.070)	(0.070)	(0.070)	(0.070)
Years of Schooling		1.039***	1.062***	1.062***	1.055***	1.055***	1.055***
		(0.010)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
Race (Ref. Category: White)							
Black		1.036	1.025	1.030	1.029	1.035	1.033
		(0.184)	(0.179)	(0.178)	(0.170)	(0.171)	(0.171)
Native American		0.850	0.800	0.800	0.824	0.824	0.817
		(0.165)	(0.164)	(0.166)	(0.172)	(0.172)	(0.173)
Asian		0.788	0.813	0.826	0.738**	0.757**	0.748**
		(0.116)	(0.113)	(0.110)	(0.094)	(0.091)	(0.096)
Other		0.915	0.906	0.912	0.875	0.884	0.881
		(0.113)	(0.111)	(0.107)	(0.105)	(0.101)	(0.099)
Married		1.210***	1.429***	1.427***	1.422***	1.421***	1.422***
		(0.064)	(0.057)	(0.057)	(0.057)	(0.057)	(0.057)
Total HH Income			0.854***	0.853***	0.851***	0.851***	0.851***
			(0.023)	(0.023)	(0.022)	(0.022)	(0.022)
Log Family Size			0.877***	0.879***	0.887***	0.888***	0.886***
			(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Metropolitan Area Status (Ref Category: Outside the Metropolitan Area)							
In the Central City			0.725***	0.727***	0.720***	0.721***	0.717***
			(0.047)	(0.046)	(0.047)	(0.047)	(0.048)
Outside the Central City			0.718***	0.718***	0.713***	0.713***	0.717***
			(0.047)	(0.047)	(0.047)	(0.047)	(0.048)
Origin GDP Per Capita				1.004		1.003	1.002
				(0.004)		(0.003)	(0.003)
Language of the Origin Country (Ref: Other)							
Spanish					0.729***	0.748***	0.740***
					(0.065)	(0.072)	(0.073)
English					0.896**	0.882***	0.887***
					(0.047)	(0.041)	(0.041)
Arabic					1.737***	1.783***	1.762***
					(0.292)	(0.313)	(0.306)
German					0.928	0.913	0.917
					(0.070)	(0.064)	(0.065)
Constant	0.000***	0.000***	0.001***	0.001***	0.001***	0.001***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Note: Model 1 is the baseline model with our key variable and age Model2 incorporates basic demographic characteristics of 2nd geneation migrants. Model3 takes into account household –level controls and model 4 incorporates country of origin GDP per capita. Model 5 includes just the language of origin country. Model 6 is our full model and Model 7 tests State x Year interactions, for time-varying effects of being in certain states. All the standard errors are clustered at the country of origin level and * is significant at the 10%, ** at the 5% level and *** is significant at the 1% level.