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**TRENDS IN
ENTREPRENEURSHIP**

This report is part of a series on trends in entrepreneurship by the Office of Advocacy. New businesses are key sources of jobs and innovation, and trends in entrepreneurship have important implications for economic growth. The previous report in the series describes the growing economic role of immigrant entrepreneurs.

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EXPLAINING THE EMERGENCE OF THE IMMIGRANT ENTREPRENEUR

By Daniel Wilmoth, PhD

ABSTRACT

Between 1994 and 2015, self-employment rose substantially among those born abroad, and, by 2015, self-employment was much higher among those born abroad than among those born in the United States. This report explains the rise in self-employment among those born abroad and the difference in self-employment in 2015 by birthplace. The prevalence of self-employment varies with age. Between 1994 and 2015, the population born abroad shifted toward ages with higher self-employment. If the age distribution of those born abroad had not changed, self-employment would not have risen among those born abroad, and self-employment in 2015 would not have differed significantly by birthplace.

Jerry was born in Taiwan to parents who had fled there from China. His father died when he was very young, and, a few years later, his mother moved the family to the United States. Although she had taught English professionally in Taiwan, the only word Jerry knew when he arrived was “shoe.”

Jerry learned English quickly and did well in school. He enrolled in Stanford and began creating websites as a hobby. His first website was about sumo wrestlers. He also created a website about other websites called “Jerry’s Guide to the World Wide Web.” Within months, the traffic it generated was such a burden for the computer infrastructure at Stanford that officials requested another host be found.

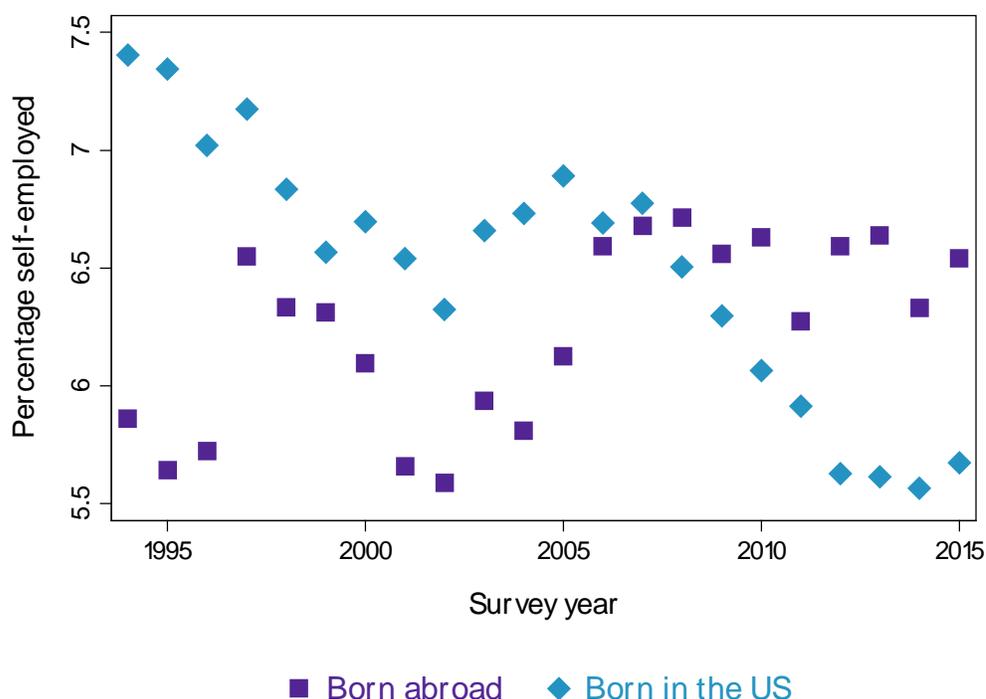
The name of the website was changed to Yahoo.¹ Jerry, whose full name is Jerry Yang, and cofounder David Filo incorporated, obtained venture capital, and began

¹ The name of the firm is actually Yahoo!—exclamation point included—but sentences peppered with exclamation points are difficult to read.

hiring employees. The value of Yahoo peaked at over \$100 billion in 2000 before declining, and the personal wealth of Jerry Yang was still estimated to exceed \$2 billion in 2016.²

Entrepreneurship has been growing among immigrants like Jerry Yang. As Figure 1 illustrates, the percentage of individuals born abroad who were self-employed increased from 5.9 percent in 1994 to 6.5 percent in 2015. In contrast, the percentage of those born in the United States who were self-employed decreased from 7.4 percent in 1994 to 5.7 percent in 2015.

Figure 1: Percentages self-employed by birthplace



Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

This report shows that the growth in self-employment among immigrants was caused by an aging of the immigrant population, and the large difference in self-employment in 2015 by birthplace was caused by a difference in age distributions in 2015 by birthplace. The next section describes the data, and the third section presents the analysis. The final section concludes the report with a discussion of context, implications, and resources for aspiring entrepreneurs.

² Vindu Goel and Michael J. de la Merced, “Yahoo’s Sale to Verizon Ends an Era for a Web Pioneer,” The New York Times, July 24, 2016, www.nytimes.com/2016/07/25/business/yahoo-sale.html; Brent Schlender, “How a Virtuoso Plays the Web: Eclectic, Inquisitive, and Academic, Yahoo’s Jerry Yang Reinvents the Role of the Entrepreneur,” Fortune, March 6, 2000, archive.fortune.com/magazines/fortune/fortune_archive/2000/03/06/275253/index.htm; “Jerry Yang,” Forbes, accessed Sept. 13, 2016, www.forbes.com/profile/jerry-yang.

Data

The data analyzed here were originally gathered through the Current Population Survey (CPS), which is conducted by the Census Bureau on behalf of the Bureau of Labor Statistics. The CPS is the foremost source of data on the labor market in the US and is used by the Bureau of Labor Statistics to measure employment. The data analyzed here were subsequently processed to facilitate analysis and made publicly available online.³

When this analysis was performed, 2015 was the most recent survey year for which data were available. The question revealing birthplace was introduced in 1994. Questions about employment were asked of individuals age 15 and over. Therefore trends among individuals age 15 and over from 1994 to 2015 are examined here.

The definitions that respondents implicitly use when identifying themselves as self-employed may vary and may not coincide with all conceptualizations of entrepreneurship.⁴ However, self-employment is closely related to entrepreneurship, and the CPS is an attractive source of data for this analysis because the survey is representative of the population of interest, large enough to allow precise measurements of relationships, and has been conducted over a long enough period to allow a meaningful examination of changes over time.

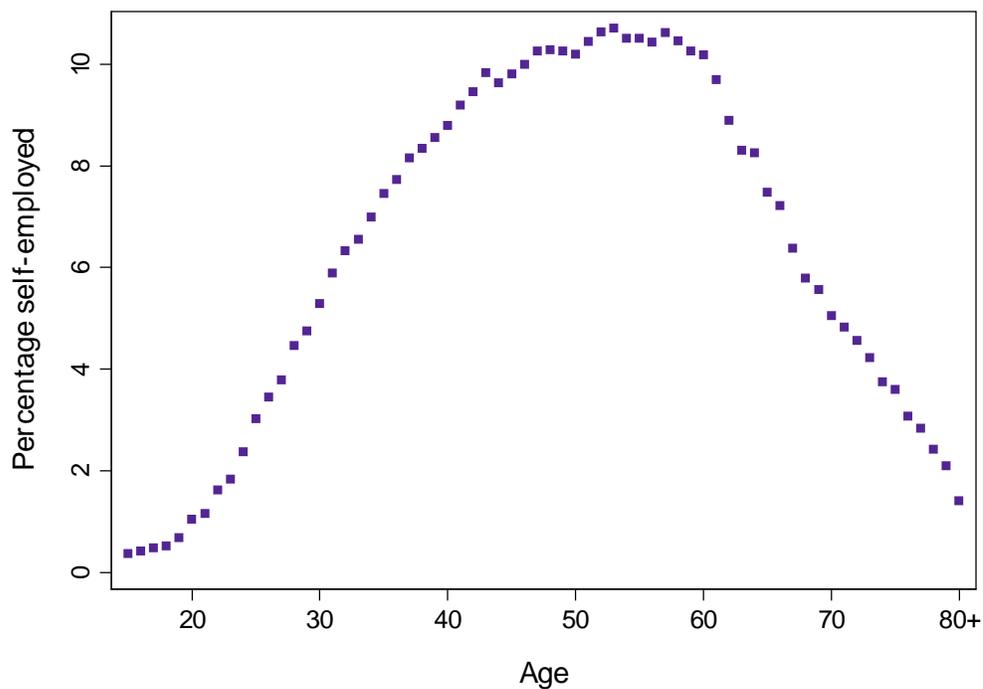
³ Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren, "Integrated Public Use Microdata Series, Current Population Survey: Version 4.0" (Minneapolis: University of Minnesota, 2016).

⁴ For example, some respondents who drive as independent contractors for companies like Lyft or Uber may report self-employment while others may report employment by a private company. The appropriate legal classification of such drivers is, in fact, currently under dispute.

Analysis

The growth in self-employment among immigrants was caused by a shift in the percentage of immigrants at each age. The prevalence of self-employment varies with age. Figure 2 shows the relationship between age and self-employment during the period examined in this report. The percentage of people who were self-employed increases gradually with age, growing from only 1 percent at age 20 to a peak of 11 percent at age 53.⁵

Figure 2: Percentages self-employed by age

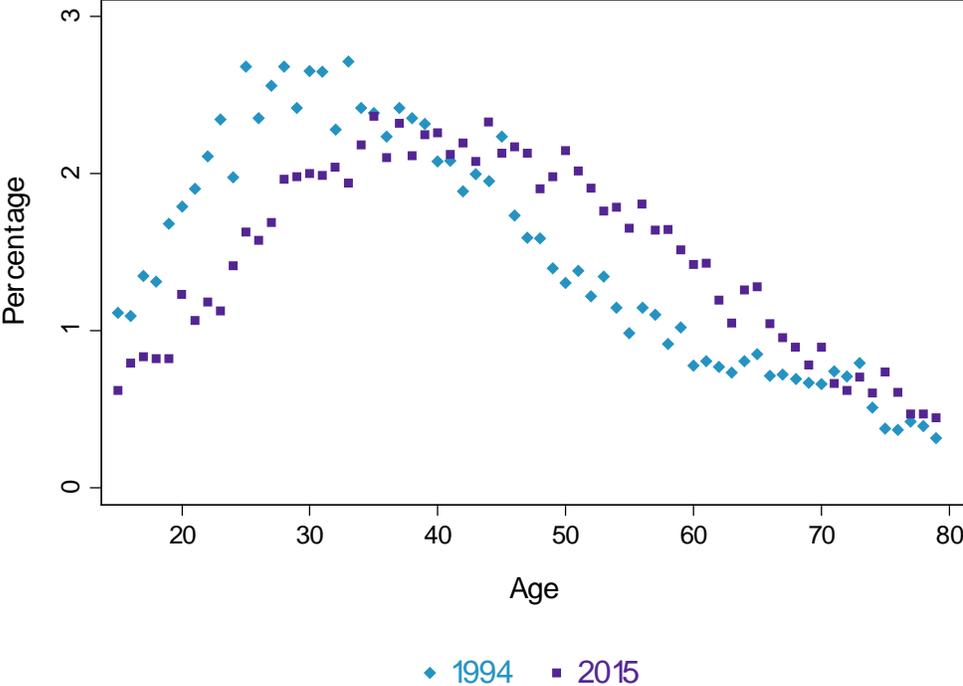


Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

⁵ Jerry Yang, mentioned in the introduction, was an unusually young entrepreneur when he founded Yahoo.

The immigrant population has shifted toward ages where self-employment is more common. Figure 3 shows the age distributions in 1994 and 2015 of those born abroad. The peak of the distribution shifted from around age 30 in 1994 to around age 40 in 2015.

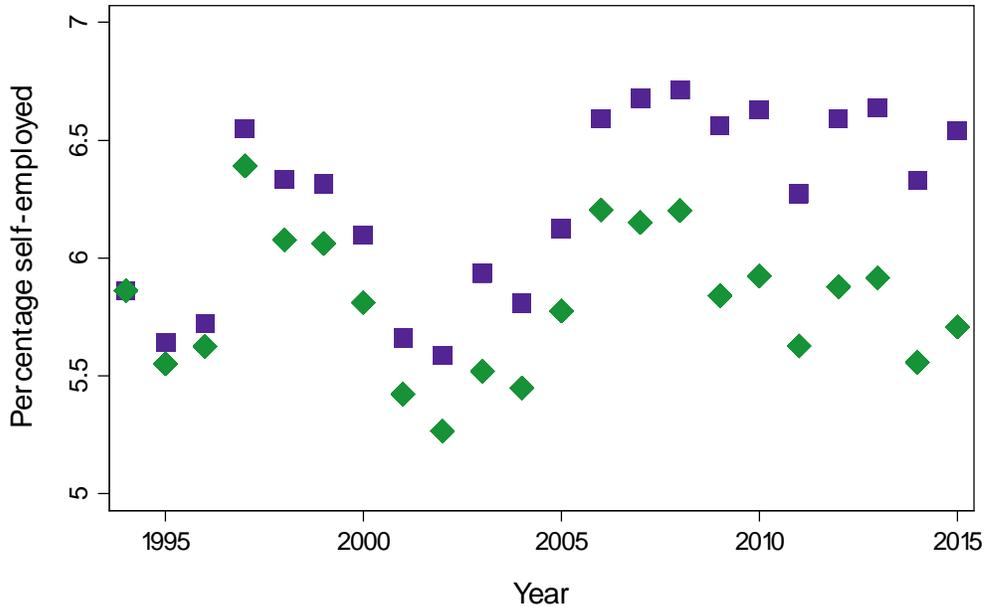
Figure 3: Age distributions in 1994 and 2015 of those born abroad



Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

The effect of the shift in the age distribution can be seen by comparing the percentages of immigrants who were self-employed in each year with the percentages who would have been self-employed if the age distribution had remained constant.⁶ Figure 4 shows that if the age distribution had remained as it was in 1994, the percentage of immigrants who were self-employed would have decreased slightly from 5.9 percent in 1994 to 5.7 percent in 2015 instead of increasing to 6.5 percent.

Figure 4: Self-employment among those born abroad, observed and with a constant age distribution



Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

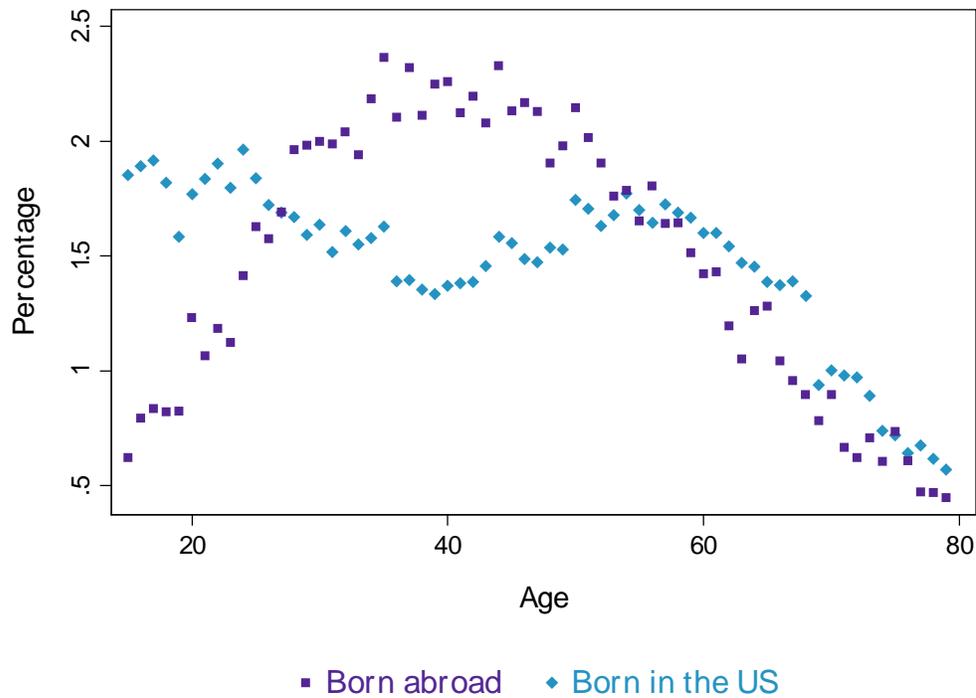
⁶ Counterfactual percentages self-employed can be calculated as follows. Let t_y denote the total number of immigrants in year y , and let s_y denote the total number of self-employed immigrants in year y . Let $t_{a,y}$ denote the total number of immigrants who are age a in year y , and let $s_{a,y}$ denote the total number of self-employed immigrants who are age a in year y . Let $p_{a,y} = s_{a,y}/t_{a,y}$ denote the proportion of immigrants at age a in year y . Let $r_{a,y} = s_{a,y}/t_{a,y}$ denote the proportion of immigrants at age a who were self-employed in year y . Then the percentage of immigrants self-employed in year y is

$$\frac{s_y}{t_y} = \sum_a \frac{s_{a,y}}{t_y} = \sum_a \frac{s_{a,y}}{t_{a,y}} \times \frac{t_{a,y}}{t_y} = \sum_a r_{a,y} \times p_{a,y}$$

The percentage who would have been self-employed in year y if the age distribution in year y had matched the age distribution in year \hat{y} can be calculated using the equation above by substituting $p_{a,\hat{y}}$ for $p_{a,y}$.

The age distribution of those born abroad differs from the age distribution of those born in the United States. Figure 5 shows the age distributions in 2015. The age distribution of those born abroad peaked around age 40. The age distribution of those born in the United States had a peak between ages 50 and 60 corresponding to the large Baby Boomer⁷ generation and high values at younger ages corresponding to the Millennial⁸ generation.

Figure 5: Age distributions in 2015 by birthplace



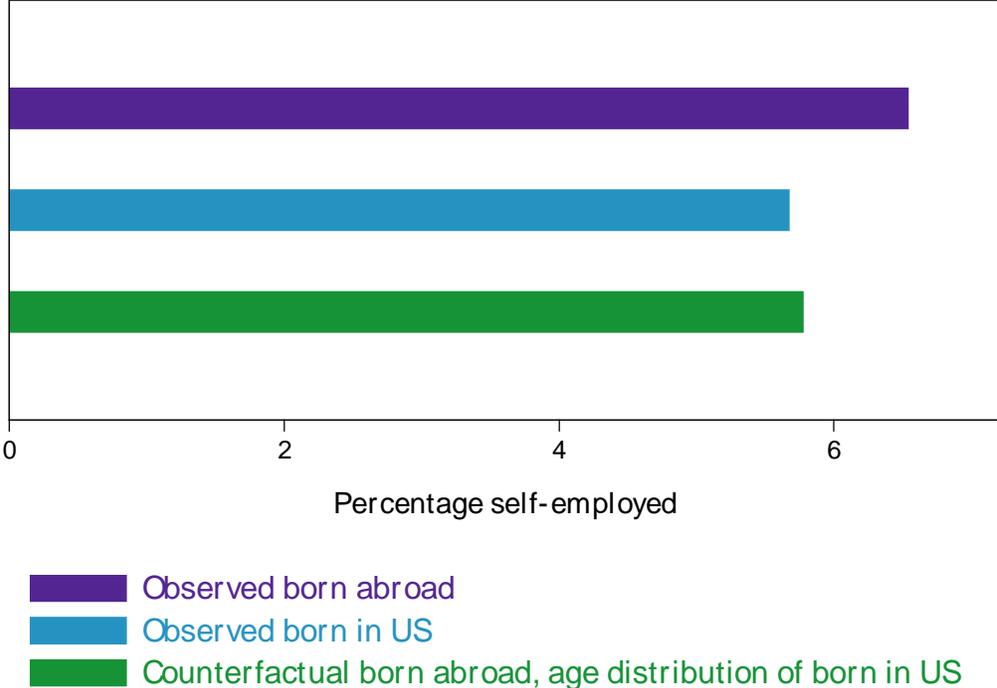
Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

⁷ Born from about 1946 to about 1964.

⁸ Born from about 1982 to about 2000.

Differences by birthplace in age distributions contributed to differences by birthplace in self-employment. The effect of differences in age distributions can be seen by calculating what the percentage of those born abroad who were self-employed would have been if the age distribution of those born abroad had matched the age distribution of those born in the United States. Figure 6 shows that if the age distribution in 2015 of those born abroad had matched that of those born in the United States, the percentage of those born abroad who were self-employed would have been 5.8 percent instead of 6.5 percent.

Figure 6: Self-employment in 2015 by birthplace, observed and counterfactual



Source: Calculations by the author using data from the Current Population Survey by the US Census Bureau.

Between 1994 and 2015, self-employment rose substantially among those born abroad, and, by 2015, self-employment was much higher among those born abroad than among those born in the United States. Both the increase in self-employment among those born abroad and the large difference in self-employment in 2015 by birthplace were caused by differences in age distributions.

Discussion

Entrepreneurship benefits the economy. New businesses create new jobs and introduce new products.⁹ New businesses also keep prices down through competition for customers and keep wages up through competition for employees.¹⁰ However, entrepreneurship in the United States has decreased substantially in recent decades.¹¹

The aging of Baby Boomers will cause entrepreneurship to decrease further. The prevalence of self-employment varies with age, and the aging of Baby Boomers will cause a decline in self-employment as that large generation leaves the ages where self-employment is high.

However, the presence of immigrants will mitigate the decrease. The age distribution of those born abroad complements the age distribution of those born in the United States, with a peak corresponding to the trough between Baby Boomers and Millennials. As the aging of Baby Boomers shifts them away from ages where self-employment is high, the aging of immigrants will compensate by shifting them toward those ages.

The prevalence of entrepreneurship can be increased by facilitating the immigration of foreign entrepreneurs. No visa designed specifically for entrepreneurs is available, and foreign entrepreneurs must therefore pursue visas with evaluation criteria not directly related to entrepreneurship. A visa specifically for entrepreneurs would likely increase the number of foreign entrepreneurs entering and staying in the United States.¹²

Although Jerry Yang arrived in the United States knowing no more English than the word “shoe,” he founded a famous business and became a billionaire. Similar success may await other immigrants. Visa pathways for foreign entrepreneurs are described at www.uscis.gov/eir/visa-guide/entrepreneur-visa-guide. Resources from the Small Business Administration for immigrant entrepreneurs are described at www.sba.gov/MadeItInAmerica.

⁹ Zoltan J. Acs and Pamela Mueller, “Employment Effects of Business Dynamics: Mice, Gazelles, and Elephants,” *Small Business Economics* 30 (2008): 85-100; John Haltiwanger, Ron S. Jarmin, and Javier Miranda, “Who Creates Jobs? Small Versus Large Versus Young,” *The Review of Economics and Statistics* 95 (2013): 347-361; John A. Hansen, “Innovation, Firm Size, and Firm Age,” *Small Business Economics* 4 (1992): 37-44.

¹⁰ “Benefits of Competition and Indicators of Market Power,” Council of Economic Advisers, April 2016, www.whitehouse.gov/sites/default/files/page/files/20160414_cea_competition_issue_brief.pdf; “Justice Department Requires eBay to End Anticompetitive ‘No Poach’ Hiring Agreements,” United States Department of Justice, May 1, 2014, www.justice.gov/opa/pr/justice-department-requires-ebay-end-anticompetitive-no-poach-hiring-agreements; Steven A. Morrison, “Actual, Adjacent, and Potential Competition: Estimating the Full Effect of Southwest Airlines,” *Journal of Transport Economics and Policy* 35 (2015): 239-256.

¹¹ For more information on this trend, please see the previous reports in this series.

¹² United States Citizenship and Immigration Services has proposed a rule that would provide some foreign entrepreneurs temporary permission to be in the United States. For more information, see www.uscis.gov/news/news-releases/uscis-proposes-rule-to-welcome-international-entrepreneurs.

Previous reports in this series

- “The Missing Millennial Entrepreneurs,” Feb. 4, 2016, www.sba.gov/sites/default/files/advocacy/Millennial_IB.pdf.
- “The Ascent of the Senior Entrepreneur,” Aug. 17, 2016, www.sba.gov/sites/default/files/advocacy/Ascent-Senior-Entrepreneur.pdf.
- “The Arrival of the Immigrant Entrepreneur,” Oct. 6, 2016, www.sba.gov/sites/default/files/advocacy/Arrival-Immigrant-Entrepreneur.pdf.

