Measuring Entrepreneurship in the American Community Survey: A Demographic and Occupational Profile of Self-Employed Workers [1]

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I.   Introduction

Entrepreneurs help drive the economy forward by increasing competition, introducing new ideas, and fueling job creation (Haltiwanger, et. al 2013, Kritikos 2014). A wide range of data have been used in an attempt to study this population. However, few studies have used the American Community Survey (ACS).[2] In this paper we explore whether the ACS can be used to describe the demographic characteristics and economic outcomes of entrepreneurs.

Perhaps the most difficult part of studying this population is the lack of clear definition of the "entrepreneur," which results in studies interchanging the terms "entrepreneur," "self-employed," and "business owner" (Bruyat and Julien 2001, Parker 2009).[3] As seen in a large portion of research on entrepreneurs (Katz 1990, Parker 2009), this paper uses self-employment as a proxy for entrepreneurship.

Specifically, using self-employment data from the ACS we compare characteristics of the self-employed with their wage-and-salary counterparts, with special attention paid to industry, occupation, income, nativity, race, and sex. We also compare self-employment rates across demographic characteristics, and highlight demographic and economic differences among the self-employed by occupation and incorporation status. In addition, using ACS industry and occupation write-in response fields, we analyze the specific job titles, primary job duties, and industries most associated with self-employed workers. Overall, we find that demographic trends and economic outcomes of self-employed workers are similar to what prior research has found.

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[2] For example, The Survey of Income and Program Participation (Lim 2018, Hamilton 2000), National Longitudinal Surveys (Light and Munk 2018, Dunn and Holtz-Eakin 2000), Statistics of U.S. Businesses (Hurst and Pugsley 2011), Current Population Survey (Blau 1998)

[3] For example, Hofstede et. al (2004), Douglas and Shepherd (2002), Hamilton (2000), Dunn and Holtz-Eakin (2000), Robinson and Sexton (1994)

II.   Literature

The percent of workers who are self-employed has declined in the last two decades from about 12.1 percent in 1994 to about 10.1 percent in 2015 (Hipple and Hammond 2016). However, there are well-documented differences in self-employment rates between sexes, ages, races, and ethnic groups. For example, men have higher a self-employment rate than women (Bruce et al. 2000, Blau 1998, Hipple 2010). Self-employed men and women also differ in their fields of work. Self-employed women tend to work in personal service (Bates 1995, Hisrich and Brush 1984) and jobs that allow them to care for children while working (Connelly 1992), while self-employed men tend to work in agriculture, construction, and professional services (Hipple 2010, Hundley 2001). Men and women also have noticeable differences in the amount of hours they work. Hundley (2001) argues that the substantially higher number of hours that self-employed men work versus self-employed women explains much of the difference in earnings between them. Hipple (2010) echoes this point, saying that self-employed men are much more likely to work full time.

Self-employed workers also tend to be older than non-self-employed workers (Bruce et al. 2000, Fairlie and Meyer 2000, Hisrich and Brush 1984). Hipple and Hammond (2016) argue that this is could be the relatively low level of capital available to younger workers, as well as their relative lack of management experience.

Large self-employment rate differences among racial and ethnic groups is also well-documented (Borjas and Bronars 1989). Specifically, Blacks tend to have about one-third of the self-employment rate of Whites, whereas Korean-American workers are twice as likely as Whites to be self-employed (Fairlie and Meyer 2000, Fairlie and Meyer 1996). In terms of native-born versus foreign-born workers, Borjas (1986) and Fairlie and Meyer (1996) note that immigrants tend to have higher self-employment rates than native-born workers.

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Self-employment rates are also affected by the presence and age of children in a worker's household, especially for women (Budig 2006, Caputo and Dolinsky 1998, Connelly 1992). More specifically, Lim (2018) finds a 14 percent higher self-employment rate for women whose youngest child is 2 years old.

In terms of educational attainment, Bates (1995) argues that education does not strongly differ between self-employed and non-self-employed workers. Conversely, Robinson and Sexton (1994) claim that self-employed workers are in fact more educated, possibly due to a lower rate of closure for higher-educated self-employed workers versus lower-educated self-employed workers (Fairlie and Robb 2007).

Prior research also discusses earnings discrepancies between self-employed men and self-employed women, as well as work-life flexibility as a driving factor for women to choose self-employment (Lim 2018, Boden 1999, Caputo and Dolinsky 1998, Lombard 1996). In particular, Budig (2006) argues that women frequently transition into self-employment to gain flexibility that their wage-and-salary jobs were unable to provide. Hundley (2001) finds that while self-employed women earn less than men, much of the difference can be explained by differences in industry-choice and women bearing a higher burden for household tasks. Blau (1998) also finds that while self-employed men and women receive similar premiums from self-employment, women in nonprofessional occupations face a wage penalty. Other work supports that, overall, self-employed women earn less than self-employed men (Budig 2006, Lombard 1996, Blau 1998). These women may sacrifice higher earnings and occupational prestige for independence and to maintain a work-life balance. Men on the other hand are frequently motivated to become self-employed to advance their careers and obtain higher wages (Hundley, 2000).

Although not discussed in this paper, other research examines additional motivations for workers to enter self-employment. Caliendo, Fossen, and Kritikos (2011) study personality dimensions of entry and exit from self-employment, and find that openness, extraversion, and risk tolerance affect willingness to enter into self-employment. Shane et. al (2010) also find that extraversion and openness to experience are correlated with self-employment, and that genetic factors accounted for some of the variation in these

characteristics. Some argue that certain people enter self-employment when they are unable to find desirable employment in the wage and salary sector (Budig 2006). Others think of self-employment as an opportunity for economic advancement (Fairlie and Meyer 1996), and even a means to escape poverty (Fairlie and Meyer 2000). Fairlie and Robb (2007) also find that children with self-employed parents are more likely to become self-employed themselves, with only a small percentage of those businesses being inherited.

III.   Data

The ACS is a nationally representative survey conducted throughout the year by the U.S. Census Bureau. It is the largest household survey in the United States, with about 3.54 million addresses sampled in 2016. The survey collects demographic, household, and socio-economic data from all residents in each sampled household. Self-employment data are based on an individual's current, primary job or the most recent job held within five years if not currently working. For individuals working multiple jobs, their primary job is the one in which they worked the most hours during the previous week. For this paper we restrict our sample to individuals currently working at the time of their interview.

Self-employment status is derived from a larger employment topic called "class of work," which describes the type of ownership of one's employing organization. Respondents report their employer type as either private (for profit or not-for-profit), government (local, state, or Federal), self-employed (not incorporated or incorporated), or working without pay in a family business or farm. For this paper we focus on individuals who reported being self-employed in their own incorporated or not incorporated business, professional practice or farm.

Other characteristics collected by the ACS include sex, race, foreign-born status, marital status, educational attainment, income, hours worked, commuting times, place of work, industry, and

occupation, among others. The address and characteristics of the home are also collected, allowing comparable estimates of housing and demographic information at detailed levels of geography.

The ACS contains three questions that ask about a person's industry: for whom did this person work? What kind of business or industry was this? And is this mainly manufacturing, wholesale trade, retail trade, or other? The responses to these questions are used to assign a 4-digit Census Industry Code. The 2016 Census Industry Codes are based on the 2012 North American Industry Classification System (NAICS). Similarly, the ACS uses two write-in questions to assign Census Occupation Codes: What kind of work was this person doing? And what were this person's most important activities or duties? The 2016 Census Occupation Codes are 4-digit codes based on the 2010 Standard Occupational Classification (SOC). Industry codes are assigned first, followed by occupation codes. ACS coding takes place at the Census Bureau's National Processing Center where clerical coders use the Census *Alphabetical Indexes of Industries and Occupations* to assign cases Census industry and occupation codes.[4]

The ACS is the largest household survey in the U.S., which allows us to analyze highly detailed subpopulations. However, the ACS does have limitations when measuring the self-employed workforce. Since the ACS is a household survey with limited questions on employment, it provides less detail on business activity than a survey of business owners might have. While the ACS can provide details of the types of industries and occupations that self-employed workers are working in, it has no way of measuring the scale of these businesses. The ACS alone provides no data on firm size, firm age, or profits. However, linking the ACS with other sources, such as the Business Register or the Longitudinal Employee-Household Dynamics (LEHD) program could help to fill in some of this missing information.[5]

In addition, the employment data collected by the ACS is only reported for the respondent's primary and most recent job. This means that individuals who are self-employed but primarily work a

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[4] In 2012, an autocoder was implemented to decrease the industry and occupation clerical coding workload. Approximately 30 percent of cases are assigned an automated industry and occupation code.
[5] For an example of this type of linking, see Isenberg, Landivar and Mezey (2013).

wage and salary job are not represented in our analysis of self-employed workers, and there is no data on whether those who are primarily self-employed work additional jobs concurrently. In addition, since data is collected on only the respondent's most recent job, the ACS provides no information on the length of this job or transitions in and out of self-employment.

IV. Results

a. Demographic Characteristics of the Self-Employed

As Table 1 shows, nearly two-thirds (63.1 percent) of self-employed workers are men, while non-self-employed workers are nearly split between men and women (51.3 percent and 48.7 percent, respectively). The self-employed are also more likely to be White and non-Hispanic than wage workers by about 8 percentage points (71.2 percent versus 62.7 percent). Conversely, the self-employed population has about half the proportion of Black, non-Hispanic workers than the non-self-employed population (5.8 percent versus 11.9 percent).

As prior research finds, self-employed workers tend to be older. About three quarters (74.6 percent) of self-employed workers are age 40 or greater, compared with about half (51.9 percent) of non-self-employed workers. The largest difference in age groups occurs in the 20 to 29 and 60 or greater age ranges. People who are 20 to 29 years old comprise 7.4 percent of self-employed workers and 22.3 percent of non-self-employed workers. Conversely, nearly a quarter of the self-employed population (24.0 percent) are age 60 or greater, while this group only makes up 11.3 percent of non-self-employed workers.

In terms of marital status, about two-thirds (65.4 percent) of self-employed workers are married, whereas about half (50.3 percent) of non-self-employed workers are married. The trend for self-employed workers to be older likely contributes to this difference.

Supporting Bates's (1995) findings on educational attainment, the educational of self- and non-self-employed workers is similar between the groups. In both cases, those without a high-school diploma make up about 10 percent of the population, and those attaining a high-school diploma without further education make up about 24 percent of their respective populations. Those with some college education but no degree make up a larger part of the non-self-employed population at 32.3 percent versus 28.5 percent. The proportion with a Bachelor's degree as their highest degree is also similar for both employment types at about 22 percent each, and those with a graduate or professional degree make up a larger percentage of the self-employed population at 14.9 percent versus 12.3 percent.

The nativity of workers also differs between the self- and non-self-employed. The self-employed population has a larger proportion of foreign-born residents at 21.4 percent compared with 16.7 percent of non-self-employed workers.

In terms of whether or not children are present in the household, the self-employed population has a higher proportion of workers without children under the age of 18 in the household by about 4 percentage points (64.0 percent versus 59.9 percent). The percentage of workers with children ages 6-17 only in the household is similar for both employment types at about 23 percent, while the self-employed population has a smaller proportion of workers with any children under age 6 in the household (12.7 percent versus 16.5 percent).

b. Self-Employment Rates for Selected Demographic Characteristics

As seen in Table 2, about 9.6 percent of all workers are self-employed (14.6 million out of 152.6 million workers). Within specific demographic categories, self-employment rates vary the most by sex, race, age, and marital status.

Similar to prior research, we find that men are more likely to be self-employed than women at 11.5 percent versus 7.4 percent respectively, and that Black, non-Hispanic workers are about half as likely as White, non-Hispanic workers to be self-employed (5.0 percent vs 10.7 percent). The self-employment

rate of Asians is similar to those of Whites at 10.7 percent versus 9.4 percent, respectively, while those who report multiple races or a race other than White, Black, or Asian (referred to as the "Other Race" category) that are not of Hispanic origin have a self-employment rate of about 7.7 percent. Workers who report being of Hispanic origin, who can be of any race, have a self-employment rate of 8.6 percent.

As for age, workers ages 16-19 are the least likely to be self-employed at 1.8 percent, whereas workers ages 60 and above are the most likely to be self-employed at 18.4 percent. Between these age groups, the rate steadily increases from 3.4 percent for workers ages 20 to 29, to 12.6 percent for workers ages 50 to 59. In terms of marital status, 12.1 percent of married workers are self-employed, while only 5.1 percent of workers who have never been married are self-employed.

Self-employment rates also differ by educational attainment and nativity. For educational attainment, those attaining a graduate or professional degree have the highest self-employment rate at 11.4 percent, while those with some college experience but no degree have the lowest rate of self-employment at 8.5 percent. As for nativity, and consistent with prior research, 11.9 percent of foreign-born workers are self-employed versus 9.1 percent for native-born workers.

Whether or not children are present in the household also has a mild association with the self-employment rate. About 12.0 percent of workers without children are self-employed. When children are present in the household, this rate drops to 11.2 percent for those with children ages 6 to 17 only in the household, and further down to 8.9 percent when there are any children under six years old in the household. It may be that the risks or time investment inherent to starting a business may prove too much of a deterrent for many individuals with young children present. As discussed in the Section 4d below, and consistent with prior literature (Lim 2018), many self-employed women work in childcare occupations, which could allow self-employed women to combine work and childcare.

c. Characteristics of the Self-Employed by Incorporation Status, and the Non-Self-Employed

Incorporating a business can provide legal protections for its owner, yet not all self-employed individuals find incorporation beneficial. It requires creating a separate tax entity, which may be too burdensome for some, and can lead to a higher tax liability. This section compares demographic and employment characteristics between self-employed workers who incorporate their business with those who do not, as well as with those who are non-self-employed. This section also compares these categories between men and women, and Table 3 shows these results. Nearly all measures have large variations between the three types of employment, and many differ between the sexes as well.

Men are not only more likely to be self-employed, they also incorporate their businesses at a higher rate than women. About 41.1 percent of self-employed men incorporate their business, while about 30.9 percent of self-employed women do so. As seen previously with age, the self-employed workforce is older than workers who are not self-employed. This is particularly true of self-employed, incorporated workers; about a quarter (25.6 percent) of self-employed, incorporated men are over the age of 60, compared with only 11.1 percent for non-self-employed men. Women have the same pattern. About 22.1 percent of self-employed, incorporated women are age 60 or older compared to 11.5 percent for non-self-employed women. In fact, around half of self-employed workers are age 50 or older for both sexes regardless of incorporation status.[6] By comparison, for both men and women, around 30 percent of non-self-employed workers are age 50 or older.

As discussed previously, the self-employed population is more likely to be married. While both the incorporated and unincorporated populations are more likely than non-self-employed workers to be married, the marriage rate differs between them. For men, 75.7 percent of self-employed, incorporated workers are married compared with 62.8 percent of self-employed, unincorporated workers. For women,

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[6] For self-employed, unincorporated men, 50.8 percent are age 50 or older. Among self-employed, incorporated men, 54.8 percent are 50 or older. For women, 47.8 percent of self-employed, unincorporated are ages 50 or older, and 50.9 percent of self-employed, incorporated women are in this age group.

the trend is the same, but the rates are lower. About 69.1 percent of self-employed, incorporated women are married compared to 57.2 percent for self-employed, unincorporated women.

Supporting the hypothesis that many women choose self-employment in order to achieve greater flexibility, we see that self-employed women have shorter commute times and are more likely to work at home than self-employed men, whether incorporated or not. In addition, women exhibit a different pattern of full- and part-time employment than men, also supporting prior research that women may be more likely than men to enter self-employment for flexibility. Non-self-employed men and incorporated self-employed men have a similar part-time rate of about 14 percent, while for women this rate jumps from 26.9 percent for non-self-employed women to 34.7 percent for self-employed, incorporated women. Despite this difference, both sexes have similar trends for the non-self-employed versus the self-employed, unincorporated. The part-time rate for self-employed, unincorporated men nearly doubles to about 28.2 percent. The part-time rate for self-employed, unincorporated women also nearly doubles to 52.2 percent.

As prior research has found, we find that median earnings vary between employment categories and sexes. For both men and women, self-employed, incorporated workers earn more than both the self-employed, unincorporated and the non-self-employed.[7] In addition, women earn less than men within each category. For both self-employed categories, women earn about 58-60 percent as much as men. For the non-self-employed, women earn about 74.2 percent as much as men.

Looking at earnings between employment categories, median earnings for self-employed, incorporated women are 16.4 percent higher than non-self-employed women, while median earnings for self-employed, incorporated men are 43.3 percent higher than non-self-employed men. In addition, male self-employed, unincorporated median earnings are 26.3 percent lower than male non-self-employed

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[7] Earnings are the sum of wage and salary and net self-employment earnings reported for the past 12 months. The self-employment status is determined based on the main or most recent job held. It is possible for an individual to have multiple jobs, either concurrently or within the past 12 months, and they may have earnings from multiple sources.

earnings, while female self-employed, unincorporated median earnings are about 43.0 percent lower than female non-self-employed earnings.

d. Industry and Occupation

ACS data show that the industries and occupations of self-employed workers differ from their wage and salary counterparts. Table 4 shows that self-employed individuals are more likely to work in the professional, scientific, and management, and administrative and waste management services industry than those who are not self-employed (21.5 percent and 10.3 percent, respectively). Self-employed workers are also more likely to work in the construction industry than those who are not self-employed (15.6 percent and 5.5 percent, respectively). A lower percentage of self-employed individuals work in educational services and health care and social assistance at 10.8 percent compared with 24.3 percent for non-self-employed workers. Lastly, about 3.5 percent of self-employed workers worked in manufacturing compared with 10.8 percent of non-self-employed workers.

The occupational distribution of the self-employed shows that they are most likely to work in management, business, science, and arts occupations (40.8 percent). In particular, self-employed individuals are significantly more likely to work in management occupations than the non-self-employed (17.0 percent and 9.6 percent respectively). Table 5 shows these results.

Service occupations contain the largest portion of self-employed workers behind management, business, science, and arts occupations. Both self-employed workers and non-self-employed workers have a similar proportion that work in service occupations (19.8 percent and 17.9 percent respectively). However, as shown in Figure 1, the majority (87.9 percent) of self-employed service workers are working in building and grounds cleaning and maintenance occupations and personal care and service occupations.

Figure 1. Service Occupations by Self-Employment Status
(Percent civilian population employed in service occupations, 16 years and over)

Occupation	Non-self-employed	Self-employed
Healthcare support occupations	13.9%	5.6%
Protective service occupations	12.7%	0.9%
Food preparation and serving related occupations	35.8%	5.6%
Building and grounds cleaning and maintenance occupations	19.8%	39.3%
Personal care and service occupations	17.8%	48.6%

Source: U.S. Census Bureau, 2016 American Community Survey
Note: For More information on the American Community Survey, see <www.census.gov/programs-surveys/acs/>.

To study the characteristics of self-employed workers in more detail, we looked at data from ACS write-in response fields to gain a better understanding for how these individuals are describing themselves, their businesses, and the work that they do.

When analyzing the responses self-employed individuals gave to the four industry and occupation write-in questions on the ACS, we found that many self-employed workers described working in management occupations, but often gave non-specific responses to describe their occupation such as "manager" or "business owner." They also provided similarly generic responses to describe their job duties such as "everything" or "running the business" (see the Appendix for examples of write-in responses). When a clerical coder comes across a non-specific job title, such as "manager" with non-specific job duties, the Occupational Index (also seen in the Appendix) instructs them to assign an occupation code based on the industry code that has been assigned to that case. For example, if a respondent writes only "manager" and was already assigned the industry code 8680 (Restaurants and

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other food services), the index dictates that the case be assigned the occupation code of 0310 (Food service managers). If the assigned industry code does not match one of the restrictions listed in the index, the coder will assign it to a residual group, which in this case would be code 0430 "Managers, all other".

This observation was reflected in the coded microdata with code 0430 "Managers, all other" being the largest detailed occupation group at 5.6 percent of all self-employed workers. This shows that a large number of self-employed individuals work in management but do not provide enough detail about their employment to be assigned a more specific code, or that they work in another management occupation that the index does not specify.

Literature suggests that self-employed individuals also differ from each other on industry and occupation variables based on demographic characteristics, specifically sex (Bates 1995, Budig 2006). While "managers, all other" was the largest occupation for all self-employed workers, the occupational distribution was not the same for men and women. Table 6 shows that the top occupations for self-employed men were managers, all other (6.9 percent), carpenters (4.3 percent), and construction laborers (4.3 percent). For females, the most common occupations were maids and housekeeping cleaners (7.9 percent), childcare workers (7.6 percent), and hairdressers, hairstylists, and cosmetologists (6.8 percent).[8]

Based on our analysis of the occupation data, we find that analyzing industry data is important to gaining insight into the kind of work that self-employed workers are doing. While occupation data shows that a significant portion of the self-employed work in management occupations, it provides limited detail on the types of businesses individuals are managing. Table 7 shows that construction was the most common industry for self-employed individuals to work in (15.6 percent), followed by real estate (5.1 percent), and private households (3.6 percent).

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[8] The proportion of women working as maids and housekeeping cleaners (7.9 percent) and childcare workers (7.6 percent) are not significantly different from one another.

Consistent with the findings of Budig (2006) and Hundley (2001), there are striking differences between the industries of male and female self-employed workers. As shown in Table 7, construction was the top industry for self-employed men at 23.1 percent, followed by landscaping services with 4.5 percent. For women, the most common industry was private households (8.9 percent) followed by beauty salons (7.5 percent). Real estate was the third largest industry for both men and women with 4.2 percent and 6.5 percent respectively.

V.   **Conclusion**

Despite being the nation's largest household survey to measure self-employment as a primary job, the ACS is an underutilized data source for understanding entrepreneurs. The purpose of this paper was to explore the utility of the ACS self-employment data for studying the demographic characteristics and economic outcomes of entrepreneurs.

Overall, using ACS data we find that demographic trends and economic outcomes of self-employed workers are similar to what prior research has found. Our results suggest that despite some limitations related to collecting data for only the main or most recent employment, the ACS is in line with other data sources and prior research about the experiences of entrepreneurs. We also find that ACS industry and occupation write-in responses allow us to analyze the specific job titles, primary job duties, and industries most associated with self-employed workers. While occupation data shows that a significant portion of entrepreneurs work in management occupations, it provides limited detail on the types of businesses individuals are managing.

VI. Tables

Table 1. Demographic Characteristics of the Self-Employed and Non-Self-Employed: 2016

Characteristic	Self Employed				Non-Self-Employed			
	Estimate	Estimate Margin of Error (±)[1]	Percent of Characteristic	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent of Characteristic	Percent Margin of Error (±)[1]
Total	14,600,000	73,080	**100.0**		138,000,000	146,200	**100.0**	
Sex								
Male	9,205,000	57,000	**63.1**	0.2	70,840,000	90,710	**51.3**	Z
Female	5,392,000	38,080	**36.9**	0.2	67,130,000	98,460	**48.7**	Z
			100.0				**100.0**	
Race and Ethnicity[2]								
White Alone, Non-Hispanic	10,400,000	56,260	**71.2**	0.2	86,510,000	98,720	**62.7**	Z
Black Alone, Non-Hispanic	852,000	17,390	**5.8**	0.1	16,360,000	49,750	**11.9**	Z
Asian Alone, Non-Hispanic	824,700	15,730	**5.6**	0.1	7,940,000	33,480	**5.8**	Z
Other Race, Non-Hispanic	313,600	10,670	**2.1**	0.1	3,774,000	40,240	**2.7**	Z
Hispanic, Any Race	2,207,000	27,110	**15.1**	0.2	23,390,000	50,940	**17.0**	Z
			100.0				**100.0**	
Age								
16-19	94,660	5,015	**0.6**	Z	5,256,000	32,830	**3.8**	Z
20-29	1,075,000	18,930	**7.4**	0.1	30,820,000	68,370	**22.3**	Z
30-39	2,533,000	27,900	**17.4**	0.2	30,430,000	70,180	**22.1**	Z
40-49	3,439,000	33,450	**23.6**	0.2	28,510,000	69,060	**20.7**	Z
50-59	3,949,000	33,680	**27.1**	0.2	27,440,000	60,150	**19.9**	Z
60+	3,506,000	25,810	**24.0**	0.2	15,530,000	55,760	**11.3**	Z
			100.0				**100.0**	
Marital Status								
Married	9,553,000	51,690	**65.4**	0.2	69,410,000	191,700	**50.3**	0.1
Previously Married	2,486,000	27,190	**17.0**	0.2	20,480,000	81,650	**14.8**	0.1
Never Married	2,558,000	31,270	**17.5**	0.2	48,080,000	120,200	**34.8**	0.1
			100.0				**100.0**	
Educational Attainment								
No High School Diploma	1,561,000	24,710	**10.7**	0.1	12,900,000	73,100	**9.4**	0.1
High School Diploma	3,535,000	31,300	**24.2**	0.2	33,890,000	106,400	**24.6**	0.1
Some College, No Bachelor's Degree	4,156,000	31,700	**28.5**	0.2	44,630,000	101,300	**32.3**	0.1
Bachelor's Degree	3,173,000	27,480	**21.7**	0.2	29,630,000	111,000	**21.5**	0.1
Graduate or Professional	2,172,000	25,430	**14.9**	0.1	16,920,000	84,410	**12.3**	0.1
			100.0				**100.0**	
Nativity								
Native Born	11,470,000	66,500	**78.6**	0.2	114,900,000	162,300	**83.3**	0.1
Foreign Born	3,123,000	29,700	**21.4**	0.2	23,070,000	89,560	**16.7**	0.1
			100.0				**100.0**	
Presence of Children								
No Children	7,985,000	42,250	**64.0**	0.2	58,540,000	162,700	**59.9**	0.1
Any Children Under 6	1,580,000	24,080	**12.7**	0.2	16,140,000	78,510	**16.5**	0.1
Children 6 to 17 Only	2,913,000	28,850	**23.3**	0.2	23,020,000	87,770	**23.6**	0.1
			100.0				**100.0**	

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate . This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

[2] Federal surveys give respondents the option of reporting more than one race. Therefore, two basic ways of defining a race group are possible. A group such as Asian may be defined as those who reported Asian and no other race (the race-alone or single-race concept) or as those who reported Asian regardless of whether they also reported another race (the race-alone-or-incombination concept). This report shows data using the race alone approach. Use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches. Since Hispanics may be any race, data in this report for Hispanics overlap with data for race groups.

Source: U .S. Census Bureau 2016 American Community Survey <www.census.gov/programs-surveys/acs/>

Table 2. Self-Employed Versus Non-Self-Employed Workers by Selected Characteristics: 2016

Characteristic	Total Employed	Total Margin of Error (±)[1]	Self Employed		Non-Self Employed	
			Percent of Total Employed	Percent Margin of Error (±)[1]	Percent of Total Employed	Percent Margin of Error (±)[1]
Total	152,600,000	138,300	**9.6**	0.0	**90.4**	0.0
Sex						
Male	80,050,000	84,080	**11.5**	0.1	**88.5**	0.1
Female	72,520,000	95,540	**7.4**	0.1	**92.6**	0.1
Race and Ethnicity[2]						
White Alone, Non-Hispanic	96,910,000	91,670	**10.7**	0.1	**89.3**	0.1
Black Alone, Non-Hispanic	17,210,000	44,330	**5.0**	0.1	**95.0**	0.1
Asian Alone, Non-Hispanic	8,765,000	31,390	**9.4**	0.2	**90.6**	0.2
Other Race, Non-Hispanic	4,087,000	41,080	**7.7**	0.3	**92.3**	0.3
Hispanic, Any Race	25,600,000	51,070	**8.6**	0.1	**91.4**	0.1
Age						
16-19	5,351,000	33,110	**1.8**	0.1	**98.2**	0.1
20-29	31,900,000	68,010	**3.4**	0.1	**96.6**	0.1
30-39	32,960,000	64,380	**7.7**	0.1	**92.3**	0.1
40-49	31,950,000	67,520	**10.8**	0.1	**89.2**	0.1
50-59	31,380,000	52,690	**12.6**	0.1	**87.4**	0.1
60+	19,030,000	56,720	**18.4**	0.1	**81.6**	0.1
Marital Status						
Married	78,970,000	196,900	**12.1**	0.1	**87.9**	0.1
Previously Married	22,960,000	85,870	**10.8**	0.1	**89.2**	0.1
Never Married	50,640,000	120,400	**5.1**	0.1	**94.9**	0.1
Educational Attainment						
No High School Diploma	14,460,000	77,600	**10.8**	0.2	**89.2**	0.2
High School Diploma	37,430,000	116,000	**9.4**	0.1	**90.6**	0.1
Some College, No Bachelor's Degree	48,790,000	105,100	**8.5**	0.1	**91.5**	0.1
Bachelor's Degree	32,800,000	113,300	**9.7**	0.1	**90.3**	0.1
Graduate or Professional Degree	19,090,000	90,890	**11.4**	0.1	**88.6**	0.1
Nativity						
Native Born	126,400,000	166,300	**9.1**	0.1	**90.9**	0.1
Foreign Born	26,190,000	90,930	**11.9**	0.1	**88.1**	0.1
Presence of Children						
No Children	66,520,000	167,500	**12.0**	0.1	**88.0**	0.1
Any Children Under 6	17,720,000	83,730	**8.9**	0.1	**91.1**	0.1
Children 6 to 17 Only	25,930,000	89,810	**11.2**	0.1	**88.8**	0.1

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate . This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

[2] Federal surveys give respondents the option of reporting more than one race. Therefore, two basic ways of defining a race group are possible. A group such as Asian may be defined as those who reported Asian and no other race (the race-alone or single-race concept) or as those who reported Asian regardless of whether they also reported another race (the race-alone-or-incombination concept). This report shows data using the race alone approach. Use of the single-race population does not imply that it is the preferred method of presenting or analyzing data. The Census Bureau uses a variety of approaches. Since Hispanics may be any race, data in this report for Hispanics overlap with data for race groups.

Source: U .S. Census Bureau 2016 American Community Survey <www.census.gov/programs-surveys/acs/>

Table 3. Selected Characteristics of the Self-Employed Who Are Incorporated, the Self-Employed Who Are Not Incorporated, and the Non-Self-Employed, by Sex: 2016

Characteristic	Male — Self-Employed, Incorporated Estimate	Margin of Error (±)[1]	Male — Self-Employed, Not Incorporated Estimate	Margin of Error (±)[1]	Male — Non-Self-Employed Estimate	Margin of Error (±)[1]	Female — Self-Employed, Incorporated Estimate	Margin of Error (±)[1]	Female — Self-Employed, Not Incorporated Estimate	Margin of Error (±)[1]	Female — Non-Self-Employed Estimate	Margin of Error (±)[1]
Total	3,786,000	34,170	5,419,000	40,680	70,840,000	90,710	1,668,000	20,790	3,723,000	32,890	67,130,000	98,461
Incorporation Rate	41.1	0.3	-	-	-	-	30.9	0.3	-	-	-	-
Distribution of Age (percent)												
16-19	0.3	Z	0.8	0.1	3.6	Z	0.4	0.1	1.0	0.1	4.1	Z
20-29	4.7	0.2	8.4	0.2	22.3	0.1	5.8	0.3	9.3	0.3	22.4	0.1
30-39	15.5	0.3	17.7	0.3	22.7	0.1	17.1	0.4	18.9	0.3	21.3	0.1
40-49	24.7	0.4	22.4	0.3	20.9	0.1	25.9	0.6	23.1	0.3	20.5	0.1
50-59	29.2	0.4	25.8	0.3	19.5	0.1	28.8	0.5	25.9	0.3	20.3	0.1
60+	25.6	0.3	25.0	0.3	11.1	Z	22.1	0.4	21.9	0.4	11.5	0.1
	100.0		100.0		100.0		100.0		100.0		100.0	
Marital Status												
Married	75.7	0.3	62.8	0.4	53.1	0.1	69.1	0.6	57.2	0.4	47.4	0.1
Previously Married	12.3	0.3	21.5	0.4	35.6	0.1	12.4	0.4	19.4	0.4	34.1	0.1
Never Married	12.0	0.3	15.7	0.3	11.4	0.1	18.5	0.5	23.4	0.4	18.5	0.1
	100.0		100.0		100.0		100.0		100.0		100.0	
Mean Commute Time (Minutes)	25.4	0.2	27.3	0.2	28.3	0.1	22.2	0.2	24.3	0.3	25.1	Z
Percent Who Worked From Home	16.8	Z	19.9	Z	3.0	Z	25.7	Z	29.9	Z	3.5	Z
Income[2]												
Mean Earnings	101,900	1,104	51,880	645	58,170	153	60,750	1,182	30,720	465	40,230	92
Median Earnings	59,330	1,631	30,510	130	41,400	60	35,780	416	17,530	273	30,730	44
Part/Full-Time Work Status												
Full-Time	86.0	Z	71.8	Z	85.5	Z	65.3	Z	47.8	Z	73.1	Z
Part-Time	14.0	Z	28.2	Z	14.5	Z	34.7	Z	52.2	Z	26.9	Z
	100.0		100.0		100.0		100.0		100.0		100.0	

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate . This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

[2] Income represents the summation of wages and net self-employment income within the past 12 months

Source: U .S. Census Bureau 2016 American Community Survey <www.census.gov/programs-surveys/acs/>

Table 4. Self-Employed Versus Non-Self-Employed Workers by Industry: 2016

Industry	Self-Employed				Non-Self-Employed			
	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]
Agriculture, forestry, fishing and hunting, and mining	625,300	13,740	**4.3**	0.1	2,024,000	24,910	**1.5**	Z
Construction	2,283,000	28,660	**15.6**	0.2	7,527,000	53,120	**5.5**	Z
Manufacturing	506,100	11,230	**3.5**	0.1	14,920,000	65,960	**10.8**	Z
Wholesale trade	320,400	11,120	**2.2**	0.1	3,724,000	33,950	**2.7**	Z
Retail trade	1,090,000	19,980	**7.5**	0.1	16,390,000	71,620	**11.9**	0.1
Transportation and warehousing, and utilities	713,900	14,370	**4.9**	0.1	7,237,000	43,500	**5.3**	Z
Information	239,000	7,622	**1.6**	0.1	2,917,000	31,980	**2.1**	Z
Finance and insurance, and real estate and rental and leasing	1,168,000	14,690	**8.0**	0.1	8,880,000	50,760	**6.4**	Z
Professional, scientific, and management, and administrative and waste management services	3,144,000	32,420	**21.5**	0.2	14,260,000	64,490	**10.3**	Z
Educational services, and health care and social assistance	1,576,000	18,990	**10.8**	0.1	33,480,000	113,700	**24.3**	0.1
Arts, entertainment, and recreation, and accommodation and food services	950,800	15,530	**6.5**	0.1	14,080,000	66,850	**10.2**	0.1
Other services, except public administration	1,980,000	24,900	**13.6**	0.2	5,544,000	41,830	**4.0**	Z
Public administration	0	193	**0.0**	Z	6,995,000	48,330	**5.1**	Z

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate. This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

Source: U.S. Census Bureau 2016 American Community Survey, <www.census.gov/programs-surveys/acs/>.

Table 5. Self-Employed Versus Non-Self-Employed Workers by Occupation: 2016

Occupation	Self-Employed				Non-Self-Employed			
	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]
Management, business, science, and arts occupations	5,952,000	39,550	**40.8**	0.2	51,380,000	157,900	**37.2**	0.1
Management occupations	2,488,000	28,310	**17.0**	0.2	13,220,000	65,760	**9.6**	0.1
Service occupations	2,888,000	32,080	**19.8**	0.2	24,710,000	91,020	**17.9**	0.1
Sales and office occupations	2,527,000	28,990	**17.3**	0.2	33,070,000	98,510	**24.0**	0.1
Natural resources, construction, and maintenance occupations	2,152,000	23,750	**14.7**	0.2	11,350,000	58,780	**8.2**	Z
Production, transportation, and material moving occupations	1,078,000	19,050	**7.4**	0.1	17,460,000	67,220	**12.7**	0.1

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate. This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

Source: U.S. Census Bureau 2016 American Community Survey, <www.census.gov/programs-surveys/acs/>.

Table 6. Selected Occupations of Self-Employed Workers by Sex: 2016

Occupation	Total Self-Employed				Self-Employed Men				Self-Employed Women			
	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]
Managers, all other	818,600	17,170	**5.6**	0.1	636,600	15,430	**6.9**	0.2	182,000	7,339	**3.4**	0.1
Maids and housekeeping cleaners	450,400	14,100	**3.1**	0.1	24,810	3,207	**0.3**	Z	425,600	13,040	**7.9**	0.2
Hairdressers, hairstylists, and cosmetologists	402,400	12,220	**2.8**	0.1	38,610	3,637	**0.4**	Z	363,800	11,230	**6.8**	0.2
Childcare workers	422,800	11,460	**2.9**	0.1	12,050	1,834	**0.1**	Z	410,700	11,320	**7.6**	0.2
Carpenters	404,600	12,090	**2.8**	0.1	397,200	12,040	**4.3**	0.1	7,457	1,459	**0.1**	Z
Construction laborers	403,500	9,793	**2.8**	0.1	392,400	9,707	**4.3**	0.1	11,100	1,933	**0.2**	Z

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate. This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

Source: U.S. Census Bureau 2016 American Community Survey, <www.census.gov/programs-surveys/acs/>.

Table 7. Selected Industries of Self-Employed Workers by Sex: 2016

Industry	Total Self-Employed				Self-Employed Men				Self-Employed Women			
	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]	Estimate	Estimate Margin of Error (±)[1]	Percent	Percent Margin of Error (±)[1]
Construction	2,283,000	28,660	**15.6**	0.2	2,130,000	26,790	**23.1**	0.3	153,600	7,114	**2.9**	0.1
Real estate	740,500	12,820	**5.1**	0.1	389,100	10,760	**4.2**	0.1	351,400	9,288	**6.5**	0.2
Private households	522,200	15,050	**3.6**	0.1	41,610	3,544	**0.5**	Z	480,600	13,850	**8.9**	0.3
Management, scientific, and technical consulting services	484,900	11,730	**3.3**	0.1	297,800	8,657	**3.2**	0.1	187,100	6,199	**3.5**	0.1
Landscaping services	454,200	12,080	**3.1**	0.1	416,800	11,290	**4.5**	0.1	37,470	3,082	**0.7**	0.1
Beauty salons	450,900	12,080	**3.1**	0.1	47,860	3,905	**0.5**	Z	403,000	11,400	**7.5**	0.2

[1] Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimate, the less reliable the estimate. This number when added to and subtracted from the estimate forms the 90 percent confidence interval. A margin of error of "Z" represents a margin of error that rounds to zero.

Source: U.S. Census Bureau 2016 American Community Survey, <www.census.gov/programs-surveys/acs/>.

VII. Appendix

a. ACS Questionnaire Excerpts

2016 ACS Class of Worker Question:

2016 ACS Industry Questions:

41 – 46 CURRENT OR MOST RECENT JOB ACTIVITY. *Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for his/her last job or business.*

41 Was this person –
Mark (X) ONE box.

☐ an employee of a PRIVATE FOR-PROFIT company or business, or of an individual, for wages, salary, or commissions?

☐ an employee of a PRIVATE NOT-FOR-PROFIT, tax-exempt, or charitable organization?

☐ a local GOVERNMENT employee (city, county, etc.)?

☐ a state GOVERNMENT employee?

☐ a Federal GOVERNMENT employee?

☐ SELF-EMPLOYED in own NOT INCORPORATED business, professional practice, or farm?

☐ SELF-EMPLOYED in own INCORPORATED business, professional practice, or farm?

☐ working WITHOUT PAY in family business or farm?

42 For whom did this person work?
If now on active duty in the Armed Forces, mark (X) this box ➔ ☐ and print the branch of the Armed Forces.

Name of company, business, or other employer

43 What kind of business or industry was this? *Describe the activity at the location where employed. (For example: hospital, newspaper publishing, mail order house, auto engine manufacturing, bank)*

44 Is this mainly – *Mark (X) ONE box.*

☐ manufacturing?

☐ wholesale trade?

☐ retail trade?

☐ other (agriculture, construction, service, government, etc.)?

2016 ACS Occupation Questions:

45 What kind of work was this person doing? *(For example: registered nurse, personnel manager, supervisor of order department, secretary, accountant)*

46 What were this person's most important activities or duties? *(For example: patient care, directing hiring policies, supervising order clerks, typing and filing, reconciling financial records)*

b. Excerpt from 2016 Census Occupation Index

Occupation Description	Industry Restriction	2010 Census Occupation Codes
Manager business See "Manager\ ns"	\ Any not listed	
Manager\ any other specified Code as ns		
Manager\ ns	0190, 0270	6005
Manager\ ns	1190, 4670-5790	4700
Manager\ ns	6570, 8560 exc. booking agency	0430
Manager\ ns	6770	2430
Manager\ ns	7070	0410
Manager\ ns	7690	4200
Manager\ ns	8680	0310
Manager\ ns	8690	4010
Manager\ ns	9370-9590	0430

Source: Census 2016 Occupation Index
Note: For More information on industry and occupation indexes see https://www.census.gov/topics/employment/industry-occupation/guidance/indexes.html

c. Excerpt from the Public-Use Sample of Occupation and Industry Write-ins from ACS 2009

Observation Number	OCC Code	Occupation Write-in (OCW1)	IND Code	Industry Write-in (INW3)
5	10	CEO	9170	NON-PROFIT YOUTH ORG
92	20	GENERAL MANAGER	770	CONSTRUCTION
383	200	FARMING	170	FARM
727	410	REAL ESTATE	7070	REAL ESTATE
779	430	CO-OWNER	7490	PHOTOGRAPHY-
814	430	MANAGEMENT	5670	SERVICE BUSINESS
838	430	MANAGER	6170	MOVING SERVICE
881	430	OWNER	7690	CLEANING SERVICE
1118	710	MANAGEMENT CONSULTING	7390	CONSULTING
2054	2100	LAWYER	7270	LAW FIRM
2891	2750	MUSICIAN	9160	CHURCH
2951	2850	WRITER	8560	WRITING FREELANCE
3961	4010	SUPERVISOR	8680	RESTAURANT

4413	4210	OWNER-OPERATOR	7770	LANDSCAPING
4621	4230	HOUSEKEEPER	9290	HOUSE
4719	4250	LANDSCAPER	7770	LANDSCAPING
4858	4510	HAIR STYLIST	8980	BEAUTY SALON
4992	4600	NANNY	9290	HOME
5009	4600	SUPERVISOR	8470	DAYCARE
5137	4700	CO-OWNERS	4970	CONVENIENCE STORE
6132	4920	REALTOR	7070	REAL ESTATE
7836	6230	CARPENTER	770	REMODELING
7979	6260	LABORER	770	CONSTRUCTION
7999	6260	MAINTENANCE	770	ODD JOBS
9387	9130	TRUCK DRIVER	6170	TRUCKING
9437	9140	TAXI DRIVER	6190	TAXI SERVICE TRANSPORTATION

Source: Public-Use Sample of Occupation and Industry Write-ins from ACS 2009
Note: For More information on industry and occupation indexes see https://www.census.gov/topics/employment/industry-occupation/guidance/indexes.html

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