

An Exploration of Veteran Business Creation and Management using the Census Bureau's Survey of Income and Program Participation

by

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Executive Summary

There have been ongoing concerns regarding the economic welfare of veterans after they have completed their military service. Many veteran business owners have gained important skills and leadership abilities from their active duty and reserve service that are often directly relevant to business ownership. Because business ownership is one means of economic improvement, various programs exist to help support these endeavors.

The primary purpose of this study is to explore data collected in the U.S. Census Bureau's ongoing Survey of Income and Program Participation (SIPP) over 20 years, from 1984 to 2004, which provide insights into the level and nature of veteran involvement in business creation and ownership. These data include details on each business venture observed in the respective samples surveyed, or panels, as they are called, including the first mention of a business activity by a respondent. Longitudinal information on interview wave completion dates makes it possible to identify ventures described in the initial interview as well as those ventures described for the first time a year following the first interview. The former are designated "established" firms and the latter "new" firms.

The SIPP datasets provide information on individuals which includes their activity as a business owner or manager. The datasets also permit an assessment of business activity as they allow creation of longitudinal records of business ventures linked to their individual owners. Because the longitudinal data identify business creation, they facilitate analysis of entrepreneurial success, including the relative survival of ventures managed by veterans.

The key questions addressed in this research are:

- Are there differences in veteran and non-veteran business creation and management?
- If so, have these differences changed over time?
- Are there differences in the firms managed by veterans and non-veterans in terms of:
 - Types of firms (industry, occupation)?
 - Firm size (employment, sales)?

- Firm survival or duration of operation?
- Does participation in firm creation and management improve veterans' financial well-being?

SIPP data developed in panels beginning from 1984 through 2004 are used to address these questions. During this period, the SIPP datasets tracked over time the workforce activity of thirteen separate groups of participating households, also called panels, through repeated interviews of each group at four month intervals. In eleven of the thirteen panels, seven or more interviews were conducted spanning at least 28 months. These eleven panels, each with seven interviews, provide the data for this study. Each panel provides a representative sample of U.S. adults. The data generated in the SIPP interview process include information for assessing the relative participation in business creation and firm ownership of 44,449 military veterans, compared to 271,822 non-veterans. To answer questions about the characteristics of businesses associated with both veterans and non-veterans, a business entity file with 76,096 distinct business ventures was generated from the SIPP panels.

Overall, the study establishes: 1) a high level of activity among veterans in firm creation and business management, comparable to that of their non-veteran age peers; 2) stability in major patterns over the 20 years represented by the 11 SIPP panels used in these analyses; 3) a better financial condition for veterans involved in firm creation and management, compared to wage and salary earning veterans; and 4) reduced levels of employment, personal business income, and profits among the businesses managed by younger veterans, which is in sharp contrast to the “scope equality” in these factors observed between firms managed by older veterans and those managed by their non-veteran age peers.

As less than 2 percent of veterans in the sample were women, this assessment focuses on men, with controls for age. Over the entire study period, about 2.7 percent of male veterans were involved in business creation, slightly less than the 3.3 percent of male non-veterans so engaged. Although there is statistical parity in business creation between veterans and non-veterans at all individual age levels, the overall difference when veterans of all ages are aggregated reflects the concentration of veterans in certain older age groups. The only reason that the overall business

creation rate for veterans is lower is that a very large proportion of male veterans are older and the business creation rate for those aged 65 and older is significantly lower than that for those younger than 65, for both veterans and non-veterans. Although older veterans have the same business creation rate as their non-veteran age peers, there are more older veterans, with the result that the lower business creation rate at these ages has a disproportionate effect on the all-age veteran rate. The age structure among veterans reduces the overall veteran prevalence rates.

Mid-career male veterans, those between 25 and 54 years old, are less involved in firm management than their age peers; there is no statistical difference in firm management between veterans and non-veterans among those under 25 years old or those 55 years and older.

There is suggestive evidence that women veterans are less involved in business creation and management than women non-veterans; however, the differences observed in these two groups are not statistically significant in most instances because of the relatively low number of women veterans in the SIPP samples.

There is little evidence that veteran participation in business creation and management changed over the 1984 to 2004 period. In addition, veteran firms are very much like the non-veteran firms. Veteran-managed businesses are found in all economic sectors and involve a wide range of occupational skills; there are no major differences when they are compared with businesses managed by non-veterans in all 15 industry sectors and all 25 occupational categories examined. Business ventures managed by mid- and late-career male veterans (i.e., over 34 years old) are quite similar to non-veteran businesses in terms of size, management, and duration. However, ventures managed by younger male veterans (aged 18-34) appear to have slightly fewer employees, less sales, and shorter durations than those managed by their non-veteran age peers. Veteran-managed firms are slightly less likely to have a corporate legal form compared to their age-peers; they are slightly more likely to be sole proprietorships.

Compared to veterans who rely on wage-and-salary income alone, those involved in firm creation and management appear to have higher average household and personal incomes and are more likely to be in the highest income categories.

1. Overview and Project Objectives

There have been ongoing concerns regarding the economic welfare of veterans after they have completed their military service. A series of cross-sectional assessments have found that veterans are very active in firm creation and management. Although these assessments provide adequate measures of military service, they have not provided information about the nature of firm creation and management activities.¹ The primary purpose of the current project is to take advantage of data collected in the U.S. Census Bureau's ongoing Survey of Income and Program Participation (SIPP) over 20 years, from 1984 to 2004, which provide a more complete portrayal of the level and nature of veteran involvement in business creation and ownership. The primary SIPP datasets also provide longitudinal data on some aspects of business creation, which facilitates determining the relative survival of ventures managed by veterans.

The report begins with an initial analysis and definition of key themes and topics of the study. Discussion begins with a description of the SIPP datasets, and issues related to the development of a harmonized assessment and comparison of business ownership and creation over time through the use of standardized individual longitudinal records. The report then discusses the establishment of the primary measure of business ownership as captured in response to SIPP questions about "self-employment" or "business ownership". The study uses a unique identification number for a respondent's business activity as the primary indicator of the presence of a business in the SIPP datasets. Further, the report identifies, analyzes, and defines veteran status by examining the characteristics of SIPP population samples from 1984 to 2004.

The project also required the creation of a business entity file, through which it is possible to examine the extent to which veterans were involved in business creation and management using the business venture (start-up or established) as the unit of analysis.

A key aspect of the analytical approach of the report is a comparison of samples of veteran and non-veteran firms, focusing on those with a minimal level of activity. The report also presents

¹ A literature review is included as Appendix A.

analyses of patterns in the prevalence of nascent entrepreneurs, temporal patterns in firm creation and ownership from 1984 to 2004, and regional variations in firm creation and management.

The report describes the approach undertaken by the study in consolidating and harmonizing SIPP panel data to address a number of issues related to participation in business creation and management by both veterans and non-veterans. This section covers issues such as firm characteristics, differences in the tendency of veterans and non-veterans to be involved in business, changes in firm ownership patterns over time, differences in the type of firms managed by veterans compared to non-veterans, differences in firm survival rates between veterans and non-veterans, and differences in the scope of veteran-owned and nonveteran-owned firms.

2. Research Issues

The major research issues to be pursued in this assessment are as follows:

- 1) Are there differences in the tendency of veterans, compared to non-veterans, to be involved in business creation and management?
- 2) Have the differences in the tendency of veterans to create or manage businesses changed over time?
- 3) Are there differences in the types of firms managed by veterans and non-veterans?
- 4) Are there differences in the size (employment, sales) of firms managed by veterans and non-veterans?
- 5) Are there differences in the survival, or duration of operation, of firms managed by veterans and non-veterans?
- 6) Does business creation and management improve veterans' financial well-being?

Data from the Survey of Income and Program Participation (SIPP) 1984 through 2004 panels can be utilized to develop responses to these issues. An assessment of questions one, three, four and six can be made with a cross sectional analysis of representative samples of veterans and non-veterans. This is available with the SIPP datasets consolidated across time. Information on question two requires comparison of data from different panels, using measures harmonized across the panels. This is available for the twenty years from 1984 to 2004. Assessment of

question five requires information on the same ventures over a standardized period of time. This is available for seven interviews representing 28 months from eleven of the SIPP panels.

3. Survey of Income and Program Participation Datasets ²

The Survey of Income and Program Participation (SIPP) research program has identified and tracked thirteen specific panels, each representative of the U.S. population, over the 1984 to 2004 period.³ Development of a harmonized assessment, comparing those involved in business ownership and creation over time, is facilitated with a dataset including a number of features. First, implementing a standardized individual longitudinal history across all panels would provide a uniform window of opportunity for participation in business ownership and creation. Second, identifying changes across historical time, over the 1984 to 2004 period, is facilitated if measures of participation in business ownership are the same for all panels. Third, a focus on the experiences of military veterans is most useful if the measures of military service are harmonized across panels. These three features have been, as much as possible, standardized in the following analysis. Issues in providing these comparisons are discussed following an overview of the SIPP data collection.

Each SIPP panel⁴ is developed from a representative sample of households from the contiguous 48 U.S. states plus the District of Columbia. Starting with five non-overlapping lists of households (sampling frames), a two stage sampling process is used to select housing units, considered a living quarter with a separate entrance and its own cooking facilities. On the initial visit the interviewer makes a list of all persons that consider this housing unit their primary place of residence, where they usually live and sleep and are free to return at any time. While the initial inventory is of all persons of all ages, each of those aged fifteen and older receives personal interviews. These personal interviews are repeated with each adult household member for each wave of data collection. If individuals move into an initial sample household, they are added to

² U.S. Census Bureau (2001). Survey of Income and Program Participation Users' Guide, Third Edition. Washington, DC: U.S. Department of Commerce.

³Data collection associated with the 14th or 2008 panel is currently underway and a compilation of this data is not expected until December 2013.

⁴ Survey of Income and Program Participation (SIPP) 1984 Full Panel Microdata Research File Technical Documentation. Prepared by the Data User Services Division, Bureau of the Census. Washington, DC; The Bureau, 1989.

the household inventory and are interviewed as long as this is their primary residence. If a member in the initial interview leaves the household, they are interviewed in their new housing unit along with other members of this new household. Those that leave the country, move into military barracks, or are institutionalized in a prison, a nursing home or other facility are not interviewed again. In some cases, however, a member of the original household may act in their stead, providing a proxy interview. If the entire household moves, an attempt is made to interview all the members in their new location for the duration of the project.

The primary objective, then, is to develop a longitudinal record of a representative sample of households, based on a series of interviews with all adults that consider the household their primary residence. This also provides a longitudinal record of individual adults, which includes their activity as a business owner or manager, usually in a form of self-employment.

Developing an assessment of business activity requires the creation of case records with the business firm as the unit of analysis. The procedure, as described in Appendix B, involves extracting firm-relevant data from each wave of data collection to create a firm record. The firm records are then attached to the individual records developed for each adult in each SIPP panel.

Standardized Individual Longitudinal Records

Comparing business ownership and activity among different panels is facilitated if there is a standardized longitudinal record for each individual. For example, if there are 40,000 individuals in Panel A and each completes seven interviews at four month intervals, and if there are 60,000 individuals in Panel B and each completes seven interviews at four month intervals, comparing the prevalence of entry into business creation or firm ownership is relatively straightforward.

However, the SIPP data is designed to provide a representative sample of households and individuals at each period of data collection. To facilitate this objective, a number of individual respondents are not involved in all waves of data collection. This reflects the churning among household populations as new individuals join a household, individuals leave to form new households, and the attrition, low for the SIPP program, from failure to complete follow-up

interviews.⁵ These adjustments substantially reduce the number of individual respondents with complete longitudinal data. The patterns for all thirteen panels are presented in Table 1. The top row represents the number of adult respondents interviewed in the first wave. The percentage in each column represents the proportion of the initial sample that remains in all following waves. For example, 33.7% of those interviewed in the first wave of the 1984 panel were interviewed in every one of the following seven waves, for a total of eight data records—four months apart—for these individuals.

As can be seen in Table 1, the number of interview waves varies substantially across the thirteen SIPP panels, from three to twelve. In addition, there is substantial attrition in the number of individuals that are interviewed for every wave of data collection. Attrition is, however, somewhat less in the households selected for the initial interview, as any respondent can represent a household in each wave of interviews.

Given the benefits of having a standardized number of interviews per respondent, and having data from all interviews for each respondent, this study's analysis was restricted to those SIPP panels with at least seven waves of data collection, and the analysis was restricted to the first seven waves of those panels. Reflecting the patterns found in Table 1, this eliminated the 1988 and 1989 panels from the analysis, as well as data after the seventh waves in the 1984, 1990, 1991, 1992, 1993, 1996, 2001 and 2004 panels. This reduced the sample for analysis from 646,361 individuals interviewed in the first wave to 433,156 individuals across seven waves in the eleven panels remaining eligible for analysis.⁶ Omitting those household members under eighteen years old further reduces the sample to 318,089. These reduced samples are, however, large enough to provide stable estimates of the level of activity and some information on the duration of operation of the firms created in the data collection window.

⁵ It is also affected by operational issues in the SIPP program. Each SIPP panel is divided into four rotation groups, each group interviewed on a different month, every four months. For the 1986 panel one rotation group was not interviewed in wave 3, immediately reducing the proportion of the group with a complete longitudinal record to 75% of the original sample.

⁶ A total of 769,146 individuals are found in all thirteen SIPP datasets, including respondents added after the initial sample of households was chosen.

As those individuals selected from each panel were identified in the initial interviews, weights from the initial interview were used to adjust the samples to match the population in the initial interview year. This provides information about the level of activity for eleven different years from 1984 to 2004 (1984, 1985, 1986, 1987, 1990, 1991, 1992, 1993, 1996, 2001, and 2004).

Business Ownership

The primary measure of business ownership is the response to the question about “self-employment” or “business ownership.” A review of the SIPP interview schedules suggests that respondents are allowed wide latitude in defining these concepts, and other research suggests that there is considerable variation in how they may be applied. For example, for some, self-employment may reflect hours of effort devoted to an activity; for others it may reflect legal status; and for still others a flow of money (either revenue or expenses). This is a particular problem when a person is asked “When was this business started?”

The primary indicator of the presence of a business in the SIPP dataset is the assignment of a unique identification number to a respondent’s business activity. Each person may report on up to two business activities. If two are mentioned, the one with greater revenue is given priority. If a person reports one business in an interview and reports on a different business in a subsequent interview, the new business activity is given a new identification number. Over seven waves of data, 76,096 unique business identification numbers were assigned to ventures reported by 65,252 respondents. While 86.5% reported only one business venture over the seven interviews, 10.9 % reported two, 2.1% reported three, and 0.5% reported more than three. Two reported eight different ventures over the seven interviews, which reflect periods when they were simultaneously involved in two business ventures.

Table 1: SIPP Initial Panel Attrition over all Waves

Panel	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1996	2001	2004
Sample <i>n</i> (individuals)	53,726	36,114	30,566	30,770	31,051	58,149	58,149	37,424	51,235	51,995	95,315	90,408	110,659
Wave	Percentage of original panel surviving through successive waves												
W1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
W2	74.2	75.4	99.6	99.7	99.7	93.7	93.7	93.1	93.9	94.0	92.7	78.3	91.2
W3	72.7	73.0	73.4	97.1	97.1	89.3	89.3	88.6	89.9	89.6	86.1	72.1	83.0
W4	70.3	59.5	70.1	93.0	93.4		85.8	85.1	86.4	86.2	80.6	67.6	76.7
W5	60.8	57.2	67.9	90.5	90.8		82.5	82.1	83.2	82.9	75.2	63.5	71.1
W6	54.8	55.3	65.7	88.3	88.7		79.4	79.7	80.4	79.7	70.6	60.2	66.6
W7	53.6	53.8	64.1	86.3			77.4	77.9	78.0	76.7	66.4	57.6	62.8
W8	33.7						76.0	76.8	75.7	76.2	63.1	55.0	59.7
W9									73.0	75.7	60.5	52.2	26.5
W10											58.1		25.0
W11											56.1		23.7
W12											54.5		22.8
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Shaded cells indicate data not included in the analysis.													

Information about the business venture collected in the interviews includes the firm industry sector, occupation of the principal, amount of time devoted to the effort, the presence of other household members in firm management, legal form, the number of employees, income to the principal from the venture, expected profits for the firm, and level of expected income in the next twelve months. This provides a basis for comparing business ventures managed or initiated by different individuals, such as veterans and non-veterans.

Veteran Status

The primary questions related to military service are rather straight-forward. Two have been used in the same format across all interviews in all SIPP panels:

- 1) Did [you or named individual] ever serve on active duty in the U.S. Armed Forces?
- 2) Are/is [you or named individual] now in the Armed Forces?

As a result, there is strong confidence that those with experience in the Armed Forces have been identified in all SIPP panels.

Other details, however, vary substantially across panels. Total amount of time served in the military is only available from 1984 to 1993. Information on the initial period of service was not uniformly collected. For example, those that served during World War I were specifically identified only in the 1984 and 1985 panels, and those that served in World War II were not specifically identified after 1993. Furthermore, the most recent panel used in this study was initiated in 2004, which was prior to several major campaigns in Iraq and Afghanistan. The procedure used to identify periods of military service was changed for the 2004 panel, complicating comparisons. In addition, there is no information on the rank (enlisted versus officer status), branch of service, or military service occupational specialty. Hence, the potential for assessing the relationship between aspects of the military service and participation in firm creation or business ownership is limited.

Business Entity File Creation and Analysis

The focus of this analysis is on the extent to which veterans are involved in business creation and management. This requires analysis with the business venture (start-up or established) as the unit of analysis. The SIPP datasets, however, are structured to provide cross-sectional or longitudinal data on individuals or households. In order to create a business entity file, it was necessary to assemble data on each specific business reported by each respondent across different waves of data collection. Fortunately, the SIPP operational procedure involved tracking each unique firm reported by each respondent with a distinct identification number. This made it possible to assemble data across time for each specific business venture. The final result was a separate file that included details about each venture, including the first mention by a respondent.⁷ This, and information on the dates when each interview wave was completed, made it possible to identify those ventures described in the initial interview and those described, for the first time, in the 365 days following the first interview. This was the basis for determining the prevalence of established and new firms.

If the appropriate data were available, it would have been desirable to develop linear additive models using regression analysis to identify those personal and contextual factors affecting the decision to pursue firm creation. It would be useful to compare the optimal models predicting veteran and non-veteran participation in business creation and management. Unfortunately, the major factors that seem to affect such decisions – particularly the length and nature of prior work and industry experience – were not gathered in the SIPP interviews. The longest work record that was available was for 12 waves, or four years, and that was provided for only two of the thirteen panels in the study period. The SIPP interviews were, after all, designed to portray the income and program use of individuals and households at a given point in time. In addition, there was no information gathered with regards to the nature or duration of work responsibilities during military service. There could be a considerable difference between service in a combat role compared to administrative or support responsibilities, which would be similar to work in civilian organizations. As a consequence of this lack of detailed background data, no effort was made to compare predictive models.

⁷ More details on the development of the different analysis files are provided in Appendix B.

4. Characteristics of SIPP Population Samples: 1984 – 2004

The sample of individuals in the SIPP panels are, with appropriate weights, considered to be representative of the non-institutionalized population living in the contiguous 48 U.S. states and the District of Columbia, including Armed Forces personnel not living on a military installation. This is particularly true of those identified in the representative sample of households in the first wave of each panel. However, the decision to restrict analysis to those who participated in all seven of the first interviews shifts the emphasis to individuals with a more stable relationship to their households. It will not include some adults that frequently change households.

These SIPP samples may be considered a close approximation of the population of U.S. adults. An overview of their major characteristics in the eleven SIPP samples is provided in Tables 2A and 2B. These tables represent a description of 318,090 individuals who are 18 years or older and who completed seven consecutive interviews. The eleven panels cover 20 years. Many features reflect remarkable stability. For example, in Table 2A women are about 54% of all eleven panels. The marital status data reflect a slight reduction in those who are married, or living as married, from 62% to 58%, largely offset by an increase in the proportion who are divorced, from 7% to 11%. The proportion of never married adults is constant, at about 22%.

On the other hand, other features show systematic change. The age distribution is clearly shifting. The average age of those 18 and older increases from 44 to 47 over this twenty year period. This is reflected in the proportion of those 65 and older, which increases from 16.0% of the 1984 panel to 17.8% of the 2004 panel. Over the same period there is a significant and gradual reduction in the proportion that are 18 to 34 years old, from 38.6% to 27.0%. This may reflect an increase in the proportion of young adults who frequently shift households and would not be included in the follow-up interviews; these respondents have been excluded from this analysis.

Table 2A: SIPP Panel Descriptions, Demographics: 1984 to 2004

SIPP Panel	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
Analysis dataset count	21,046	14,122	14,274	19,394	32,926	21,274	29,165	28,932	46,188	38,705	52,064	318,090
Gender												
Women	53.9%	53.9%	53.9%	53.8%	54.2%	54.1%	53.6%	53.8%	53.7%	53.6%	53.9%	53.8%
Men	46.1%	46.1%	46.1%	46.2%	45.8%	45.9%	46.4%	46.2%	46.3%	46.4%	46.1%	46.2%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Age												
Average (18-90 years)	43.6	43.7	43.6	43.7	44.5	44.6	44.5	44.8	45.5	46.7	47.1	45.2
18-24	15.5%	14.6%	14.2%	13.6%	12.0%	11.8%	11.9%	11.8%	10.7%	10.9%	10.6%	12.0%
25-34	23.1%	23.3%	23.9%	23.6%	23.0%	22.4%	21.8%	21.2%	19.8%	16.6%	16.4%	20.5%
35-44	18.7%	19.5%	19.8%	20.0%	21.2%	22.1%	22.7%	22.3%	22.8%	21.2%	20.0%	21.1%
45-54	13.4%	13.1%	13.5%	13.8%	14.8%	15.0%	15.6%	16.3%	17.6%	20.2%	20.1%	16.7%
55-64	13.3%	13.4%	12.7%	12.8%	12.0%	11.8%	11.5%	11.6%	11.6%	13.3%	15.1%	12.7%
65-74	9.9%	10.0%	9.9%	10.1%	10.5%	10.4%	10.0%	10.2%	10.1%	9.8%	9.6%	10.0%
75-90	6.1%	6.1%	6.0%	6.1%	6.5%	6.5%	6.5%	6.6%	7.4%	8.0%	8.2%	7.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Race/Ethnicity *												
White	82.3%	82.2%	82.0%	81.6%	81.8%	81.1%	80.2%	79.8%	77.6%	76.0%	73.1%	78.7%
Black	9.9%	9.4%	9.7%	9.4%	9.0%	8.7%	9.0%	9.0%	10.0%	9.7%	10.4%	9.6%
Hispanic	5.2%	5.8%	6.0%	6.3%	6.3%	6.7%	7.6%	7.7%	8.6%	9.7%	11.1%	8.0%
Asian	2.2%	2.0%	1.8%	2.3%	2.5%	3.0%	2.7%	2.9%	3.1%	3.6%	2.9%	2.8%
Other	0.3%	0.5%	0.6%	0.4%	0.4%	0.6%	0.5%	0.6%	0.7%	1.0%	2.5%	0.9%
	99.9%	99.9%	100.1%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Marital Status												
Married (or living as)	61.8%	61.3%	60.4%	61.5%	61.1%	60.9%	60.2%	60.0%	60.3%	59.9%	58.5%	60.3%
Widowed	7.3%	7.3%	7.4%	7.2%	7.4%	7.4%	7.1%	7.1%	7.3%	6.9%	6.8%	7.2%
Divorced	6.9%	7.3%	8.0%	7.8%	8.1%	8.5%	8.8%	9.3%	9.4%	9.9%	10.6%	9.0%
Separated	2.3%	2.3%	2.4%	2.4%	2.2%	2.2%	2.1%	2.1%	2.2%	2.1%	2.0%	2.2%
Never married	21.8%	21.8%	21.8%	21.2%	21.2%	21.0%	21.8%	21.5%	20.7%	21.3%	22.1%	21.4%
	100.1%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%	100.0%	99.9%	100.1%	100.0%	100.1%
* Hispanic individuals can be of any race. In the Race/Ethnicity breakout, all cohorts other than Hispanic are non-Hispanic. Source data from the U.S. Census Bureau's Survey of Income and Program Participation, 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.												

Table 2B: SIPP Panel Descriptions, Education and Income: 1984 to 2004

SIPP Panel	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
Analysis dataset count	21,046	14,122	14,274	19,394	32,926	21,274	29,165	28,932	46,188	38,705	52,064	318,090
Education *												
No high school degree	24.2%	23.4%	21.2%	21.1%	19.1%	18.1%	17.8%	17.4%	18.4%	16.7%	15.6%	18.5%
High school degree	37.4%	37.5%	38.3%	37.9%	37.5%	37.5%	37.1%	36.7%	30.7%	29.7%	25.0%	33.5%
Post HS, no college degree	20.1%	20.4%	21.1%	21.3%	21.9%	22.0%	22.6%	22.9%	29.1%	29.4%	34.8%	25.9%
College degree	9.6%	9.8%	9.9%	10.6%	11.4%	12.2%	12.3%	12.3%	14.7%	15.8%	16.0%	13.1%
Post college	8.6%	8.9%	9.5%	9.1%	10.0%	10.1%	10.2%	10.7%	7.1%	8.3%	8.7%	9.0%
	99.9%	100.0%	100.0%	100.0%	99.9%	99.9%	100.0%	100.0%	100.0%	99.9%	100.1%	100.0%
* Until 1993, SIPP asked about years of schooling; after 1993, SIPP asked about degrees earned for those completing high school.												
Total Monthly Household Income (2012 \$)												
Average (2012 \$)	\$5,400	\$5,550	\$5,870	\$5,880	\$5,900	\$5,770	\$5,820	\$5,800	\$6,130	\$6,440	\$6,490	\$6,020
Negative or none	0.9%	0.6%	0.7%	0.5%	0.5%	0.5%	0.5%	0.5%	0.7%	0.9%	1.0%	0.7%
\$1 - \$2,000	18.3%	17.0%	16.5%	16.1%	15.2%	16.4%	15.8%	16.3%	16.8%	15.8%	16.3%	16.3%
\$2,001 - \$4,000	24.6%	25.4%	23.8%	23.2%	23.8%	24.1%	24.2%	24.5%	23.9%	22.8%	22.5%	23.7%
\$4,001 - \$6,000	21.7%	21.8%	20.5%	20.8%	21.4%	21.1%	21.1%	20.2%	20.0%	19.9%	18.7%	20.4%
\$6,001 - \$8,000	15.4%	14.4%	15.0%	15.0%	15.6%	14.7%	14.7%	15.2%	14.6%	14.1%	14.2%	14.7%
\$8,001 - \$10,000	8.4%	9.1%	9.4%	10.2%	9.4%	9.0%	9.3%	9.5%	9.6%	9.9%	9.7%	9.5%
\$10,001 - \$12,000	4.5%	4.7%	5.3%	5.6%	5.4%	5.4%	5.8%	5.4%	5.4%	6.1%	6.2%	5.6%
\$12,001 or more	6.2%	7.1%	8.6%	8.8%	8.8%	8.7%	8.5%	8.6%	9.1%	10.6%	11.3%	9.2%
	100.0%	100.1%	99.8%	100.2%	100.1%	99.9%	99.9%	100.2%	100.1%	100.1%	99.9%	100.1%
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals not equal 100.0% due to rounding.												

These SIPP samples may be considered a close approximation of the population of U.S. adults. An overview of their major characteristics in the eleven SIPP samples is provided in Tables 2A and 2B. These represent a description of 318,090 individuals who are 18 years or older and who completed seven consecutive interviews. The eleven panels cover 20 years. Many features reflect remarkable stability. For example, in Table 2A women are about 54% of all eleven panels. The marital status reflects a slight reduction in those who are married, or living as married, from 62% to 58%, largely offset by an increase in the proportion who are divorced, from 7% to 11%. The proportion of never married adults is constant, at about 22%.

On the other hand, other features show systematic change. The age distribution is clearly shifting. The average age of those 18 and older increases from 44 to 47 over this twenty year period. This is reflected in the proportion of those 65 and older, which increases from 16.0% of the 1984 panel to 17.8% of the 2004 panel. Over the same period there is a significant and gradual reduction in the proportion that are 18 to 34 years old, from 38.6% to 27.0%. This may reflect an increase in the proportion of young adults who frequently shift households and would not be included in the follow-up interviews; these respondents have been excluded from this analysis.

Although classification of individuals by age and gender is straightforward, racial/ethnic background, presented in Table 2A, is more complicated. The procedure for allowing respondents to identify their ethnic background varied across the eleven panels. In all panels the respondents were asked to choose one category from a selection that did not include “Hispanic.”⁸ A second item allowed all respondents to identify themselves as “Hispanic.” A single classification scheme was developed by giving priority to the response to the Hispanic item. Individuals that self-identified themselves as “Hispanic” were kept in this category regardless of responses to any other item. In addition, there has been a growing trend for people to consider themselves of mixed ethnic heritages. The proportion reporting “Other” increased from 0.3% in 1984 to 2.5% in 2004. As presented in Table 2A, there is a steady decline in the proportion of

⁸ There was some variation in the “non-Hispanic” options, reflecting different treatments of Asian and American Indians.

respondents considered White, from 82.3% to 73.1%, offset by increases in the other four categories: Black, Hispanic, Asian, and Other.

Tracking changes in educational attainment, presented in Table 2B, is complicated by a major change in the interview procedure in 1996. Those in the 1984 to 1993 panels were asked about the number of years of schooling. Assuming a high school degree is achieved after 12 years and a college degree after 16 years led to classifying those with 13 to 15 years as “post high school, no college” and those with more than 16 years as having post college experiences. Starting in 1996 respondents were asked about “earned degrees.” Most significant, those that attended classes after completing an undergraduate degree but did not earn a graduate degree were not identified. Hence, in Table 2B there is a reduction of 2 to 3% in the proportion of respondents in the “post college” category in the 1996, 2001, and 2004 panels; these individuals would remain in the “college degree” category. The proportion in the combined college degree and post college degree categories has grown over the 20 years, from 18% to 25%. This is offset by a continuous decline in the proportion without a high school degree, which declined from 24% to 16%. There is no question that educational attainment has increased over the 20 years represented by the SIPP panels.

The final measure, total monthly household income, was based on total personal income of all adult respondents. The information was obtained using the dollar values current at the time of each interview. To provide a consistent comparison, all figures were adjusted to 2012 dollar values based on the consumer price index (CPI) published by the U.S. Bureau of Labor Statistics.⁹ This led to increasing all 1984 values by 212% and all 2004 values by 122%. The result, as shown in Table 2B, clearly indicates both an overall increase and greater dispersion. The average household monthly income, adjusted for inflation, increased from \$5,400 to \$6,490 over this twenty year period. Although there is a slight reduction in the proportion with incomes less than \$2,000 per month, the proportion reporting \$12,000 or more in monthly income increased from 6% to 11% over the twenty years.

⁹ The All Urban Consumers CPI, U.S. city average annual values (dated January 16, 2013 and accessed on January 28, 2013) was utilized for this adjustment. This varied from 99.6 for 1983 to 188.9 for 2004, an increase of 190%. As monthly adjustments within the eleven panel years varied an average of 3.6%, with a range of 1.1% to 6.1 %, the increase in precision from using monthly inflation adjustments did not seem to justify the additional complications.

Identifying, Describing Veterans

Each adult member of the household was asked about active duty service in the U.S. Armed Forces. They were also asked if they were currently in the service and, if not, the initial period of service. Among the 318,090 individuals in the combined eleven SIPP panels, 44,449 (14.0%) were veterans, and 1,819 (0.6%) were currently on active duty. The relationship to the individual panels and initial service periods are presented in Table 3. The proportion of veterans among those 16 and older was 16.8% in the 1980 census, 14.7% in the 1990 census, and 11.4% among those 18 and older in the 2000 census.¹⁰ These are very similar to the proportions presented in Table 3 and indicate a similar pattern of decline.

As shown in Table 3, the majority with military service are veterans having finished their active duty service, although their proportion in the population declines from 16.5% in 1984 to 11.4% in 2004. The proportion on active duty is relatively constant from 1984 to 1993, at about 0.8%, but declines to 0.3% in 2004.

The initial periods of service are presented in the bottom of Table 3. The periods of initial service are identified down the rows from earliest to the most recent. The classification procedure was relatively uniform from 1984 through 1993, which indicates that World War II and Korean War veterans were 50% of the total in 1984 and still 42% in 1993. The options in the SIPP interview changed in 1996; after this date World War I, World War II, and Korean veterans are placed in the “other category;” presumably they are a major proportion of this group. Vietnam veterans are about 30% of the total for all eleven panels. Veterans from the Persian Gulf conflict are first identified in 1993 at 3% of the total, but this proportion grows to 15% by 2004. This will, no doubt, be a larger proportion in later SIPP panels.

¹⁰ U.S. Department of Commerce, 1980 Census of Population, General Social and Economic Characteristics, U.S. Summary, PC80-1-C1, Table 106; U.S. Department of Commerce, 1990 Census of Population, Social and Economic Characteristics, PC-2-1, Table 146; U.S. Department of Commerce, 2000 Census of Population, U.S. Summary: 2000, Summary Social, Economic, and Housing Characteristics, PHC-2-1, Table 1.

Table 3: Armed Forces Participation Described in SIPP Panels: 1984 to 2004

SIPP Panels	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
Analysis dataset count	21,046	14,122	14,274	19,394	32,926	21,274	29,165	28,932	46,188	38,705	52,064	318,090
Armed Forces Participation												
Never served	82.7%	83.0%	83.2%	83.1%	84.2%	84.6%	84.9%	85.4%	86.0%	87.4%	88.3%	85.5%
Past service	16.5%	16.3%	16.0%	16.0%	15.1%	14.8%	14.4%	13.9%	13.5%	12.3%	11.4%	14.0%
Current service	0.8%	0.7%	0.8%	0.9%	0.7%	0.6%	0.7%	0.7%	0.5%	0.3%	0.3%	0.6%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.1%
Total Veterans (plus active)	3,636	2,402	2,401	3,287	5,193	3,276	4,399	4,225	6,456	4,892	6,088	46,255
Initial Service Period												
WW I: Apr 17 - Nov 18	0.9%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
WWII: Sep 40 - Jul 47	33.9%	31.9%	38.1%	30.5%	28.5%	28.3%	27.0%	25.8%	0.0%	0.0%	0.0%	18.4%
Korea: Jun 50 - Jan 55	16.3%	16.9%	18.4%	16.8%	17.4%	15.7%	15.0%	16.2%	0.0%	0.0%	0.0%	10.2%
Vietnam: Aug 64 - Apr 75	28.9%	28.5%	34.5%	29.0%	28.6%	29.5%	29.7%	30.2%	28.2%	28.7%	27.6%	29.1%
Other 1: May 75 - Aug 80	3.5%	6.0%	4.6%	4.0%	4.9%	6.0%	5.2%	5.4%	6.4%	5.7%	7.3%	5.5%
Other 2: Sep 80 - Jul 90	0.0%	0.0%	0.0%	4.4%	6.4%	7.0%	8.4%	6.9%	9.2%	9.2%	10.6%	6.7%
Gulf I: Aug 90 - 2004	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	5.7%	9.2%	14.6%	4.0%
Other, not specified *	16.7%	16.1%	4.6%	15.3%	14.2%	13.4%	14.8%	12.4%	50.6%	47.2%	39.9%	26.1%
	100.2%	99.9%	100.2%	100.0%	100.0%	99.9%	100.1%	100.0%	100.1%	100.0%	100.0%	100.1%
<p>* World War I, World War II, and Korean veterans are included in "Other, not specified" after the 1993 panel.</p> <p>Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals not equal to 100.0% due to rounding.</p>												

Major socio-demographic characteristics of veterans and those on active duty are presented in Tables 4A and 4B. Women are an increasing minority in this group, from 3% in 1984 to 7% in 2004. The average age shows a dramatic increase, from 50 years in 1984 to 59 years in 2004. In 1984, 42% of veterans were older than 54 years; by 2004 this had grown to 65%.

The dramatic difference in the age distribution of male veterans and non-veterans is illustrated in Figure 1. In fact, in the consolidated SIPP samples used in this assessment, 67% of non-veterans are less than 45 years old and 54% of veterans are over 54 years old. As one of the major factors affecting participation in business creation is age, comparison of veterans and non-veterans in business ownership and firm creation would be misleading without controls for age.

Figure 1: Male Non-Veterans and Veterans by Age: SIPP 1984 – 2004

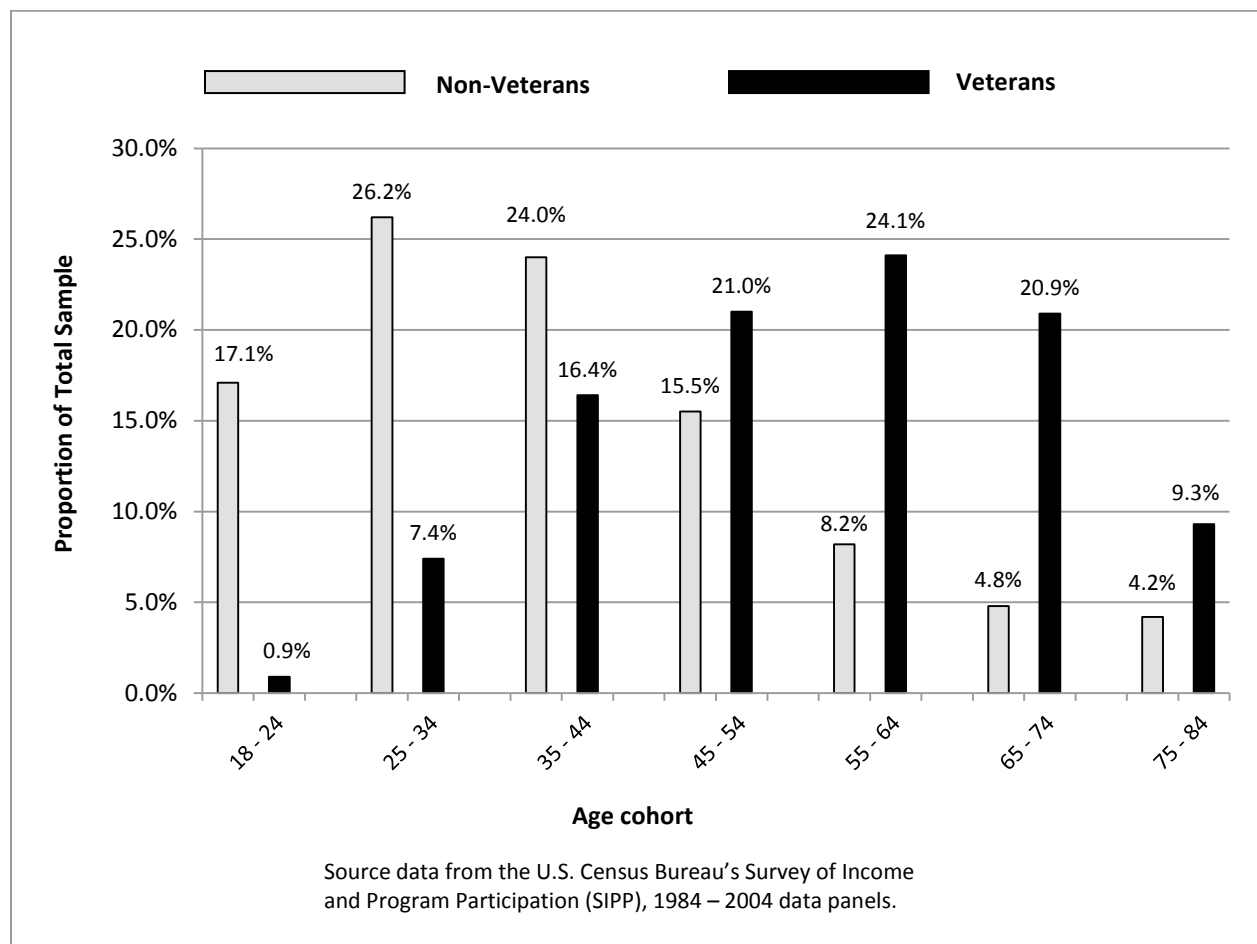


Table 4A: Veteran Socio-Demographics in SIPP Panels: 1984 to 2004

SIPP Panel	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
Total veterans (plus active)	3,636	2,402	2,401	3,287	5,193	3,276	4,399	4,225	6,456	4,892	6,088	46,255
Gender												
Women	3.2%	3.6%	3.6%	4.3%	4.2%	4.7%	5.0%	5.7%	4.4%	5.6%	6.9%	4.9%
Men	96.8%	96.4%	96.4%	95.7%	95.8%	95.3%	95.0%	94.3%	95.6%	94.4%	93.1%	95.1%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Age												
Average (18 - 90 years)	50.4	50.5	50.9	51.3	53	53.4	53.7	54.2	55.7	58.3	59.1	54.4
18 - 24	2.0%	2.0%	2.3%	2.1%	1.6%	1.4%	2.0%	2.1%	1.3%	1.1%	1.1%	1.6%
25 - 34	11.0%	10.3%	10.7%	10.8%	10.2%	10.2%	10.1%	9.3%	9.2%	7.2%	6.2%	9.3%
35 - 44	24.0%	24.5%	23.6%	22.3%	20.3%	19.4%	17.0%	15.1%	13.4%	11.7%	12.1%	17.3%
45 - 54	20.9%	20.1%	19.8%	19.7%	18.9%	20.1%	21.7%	23.1%	23.8%	20.4%	15.9%	20.4%
55 - 64	25.9%	26.9%	24.8%	25.2%	23.6%	21.1%	20.6%	20.7%	18.7%	21.1%	25.4%	22.7%
65 - 74	13.4%	13.9%	15.1%	16.4%	20.7%	22.4%	21.9%	22.4%	22.2%	21.7%	20.1%	19.8%
75 - 90	2.8%	2.3%	3.7%	3.5%	4.7%	5.3%	6.8%	7.4%	11.4%	16.8%	19.2%	8.9%
	100.0%	100.0%	100.0%	100.0%	100.0%	99.9%	100.1%	100.1%	100.0%	100.0%	100.0%	100.0%
Race/Ethnicity *												
White	89.3%	88.8%	88.5%	88.5%	89.4%	87.8%	87.6%	87.0%	86.2%	86.8%	83.9%	87.3%
Black	7.1%	7.7%	7.2%	7.0%	6.1%	7.3%	7.2%	7.1%	8.8%	8.3%	8.3%	7.6%
Hispanic	2.3%	2.6%	3.3%	3.5%	2.9%	3.2%	4.0%	4.1%	3.4%	3.3%	3.9%	3.4%
Asian	0.7%	0.5%	0.7%	0.7%	1.1%	1.1%	0.8%	1.2%	0.9%	0.8%	0.7%	0.8%
Others	0.5%	0.3%	0.4%	0.3%	0.5%	0.5%	0.4%	0.6%	0.7%	0.8%	3.1%	0.9%
	99.9%	99.9%	100.1%	100.0%	100.0%	99.9%	100.0%	100.0%	100.0%	100.0%	99.9%	100.0%
<p>* Hispanic individuals can be of any race. In the Race/Ethnicity breakout, all cohorts other than Hispanic are non-Hispanic. Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some total do not equal 100.0% due to rounding.</p>												

Table 4B: Veteran Demographics in SIPP Panels, Education and Income: 1984 to 2004

SIPP Panel	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
Total veterans (plus active)	3,636	2,402	2,401	3,287	5,193	3,276	4,399	4,225	6,456	4,892	6,088	46,255
Education *												
No high school degree	19.2%	18.5%	17.1%	18.2%	15.9%	15.2%	15.0%	14.6%	13.0%	9.6%	8.0%	14.2%
High school degree	37.4%	37.0%	38.4%	36.6%	37.4%	38.5%	36.8%	36.4%	33.0%	32.5%	26.3%	34.7%
Post HS, no college degree	22.2%	21.4%	21.7%	23.3%	23.1%	22.8%	25.0%	24.4%	32.4%	33.4%	40.3%	27.8%
College degree	10.5%	10.8%	10.8%	10.7%	12.0%	12.3%	11.3%	12.6%	13.2%	14.9%	16.1%	12.7%
Post college	10.7%	12.2%	12.0%	11.3%	11.6%	11.2%	11.8%	12.1%	8.4%	9.6%	9.3%	10.6%
	100.0%	99.9%	100.0%	100.1%	100.0%	100.0%	99.9%	100.1%	100.0%	100.0%	100.0%	100.0%
* Until 1993, SIPP asked about years of schooling; after 1993, SIPP asked about degrees earned for those completing high school.												
Total Monthly Household Income (2012 \$)												
Average (2012 \$)	5,920	6,230	6,510	6,430	6,360	5,980	6,080	6,090	6,220	6,160	6,250	6,200
Negative or none	0.7%	0.5%	0.5%	0.4%	0.3%	0.6%	0.5%	0.3%	0.4%	0.4%	0.6%	0.5%
\$1 - \$2,000	11.9%	11.2%	10.7%	9.8%	9.9%	11.5%	10.2%	11.1%	12.0%	12.7%	13.3%	11.4%
\$2,001 - \$4,000	23.2%	22.4%	22.4%	21.7%	23.2%	25.3%	25.2%	26.1%	26.3%	26.0%	26.0%	24.7%
\$4,001 - \$6,000	23.6%	23.6%	22.1%	23.7%	22.7%	22.9%	23.6%	21.9%	22.9%	22.0%	20.0%	22.5%
\$6,001 - \$8,000	18.7%	16.7%	17.5%	15.9%	17.7%	16.5%	16.6%	15.9%	15.4%	14.3%	15.0%	16.2%
\$8,001 - \$10,000	10.2%	11.3%	10.4%	12.1%	10.8%	9.5%	9.5%	10.0%	9.2%	10.3%	9.6%	10.1%
\$10,001 - \$12,000	5.1%	5.9%	6.2%	6.8%	5.7%	5.3%	6.0%	6.0%	5.0%	5.7%	6.4%	5.8%
\$12,001 or more	6.6%	8.5%	10.3%	9.6%	9.6%	8.4%	8.4%	8.8%	8.9%	8.6%	9.0%	8.8%
	100.0%	100.1%	100.1%	100.0%	99.9%	100.0%	100.0%	100.1%	100.1%	100.0%	99.9%	100.0%
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.												

The shifts in the distribution of veterans' racial/ethnic background, as presented in Table 4A, are much more gradual than in the general population. These are compared in Table 5. The proportion classified as White declines from 89% in 1984 to 84% in 2004, reflecting the large proportion that served in World War II and Korea. This is offset by increasing shares identified as Black, Hispanic, or Other.

The educational attainment of veterans, depicted in Table 4B, shows a continuous increase. The proportion that had not completed high school dropped from 19% in 1984 to 8% in 2004. The proportion that had education beyond high school grew from 43% in 1984 to 66% in 2004. The proportion with college degrees, including graduate experience or degrees, grew from 21% in 1984 to 25% in 2004.

The monthly household income of veterans, presented in Table 4B, reflects an increase similar to that of the general population (not shown in table). However, the average monthly income of veterans' households was higher than the general population from 1984 through 1996; it is slightly lower in 2001 and 2004. This probably reflects the aging of the veteran population. As those with World War II and Korean service enter retirement, their income may have declined, which would reduce the average for all veterans.

In summary, there is substantial information about those with past military service in these eleven SIPP samples of U.S. adults over the 1984 to 2004 period. The consolidated, all-year sample of 44,436 veterans is large enough to develop comparisons of the participation of veterans and non-veterans involved in firm creation and the management of existing businesses.¹¹

¹¹ The 1,819 currently in the military at the time of their interviews are not included in most analyses.

Table 5: Race/Ethnicity of National Population and Veterans: 1984 to 2004

SIPP Panel	1984	1985	1986	1987	1990	1991	1992	1993	1996	2001	2004	All
National Population *												
White	82.3%	82.2%	82.0%	81.6%	81.8%	81.1%	80.2%	79.8%	77.6%	76.0%	73.1%	78.7%
Black	9.9%	9.4%	9.7%	9.4%	9.0%	8.7%	9.0%	9.0%	10.0%	9.7%	10.4%	9.6%
Hispanic	5.2%	5.8%	6.0%	6.3%	6.3%	6.7%	7.6%	7.7%	8.6%	9.7%	11.1%	8.0%
Asian	2.2%	2.0%	1.8%	2.3%	2.5%	3.0%	2.7%	2.9%	3.1%	3.6%	2.9%	2.8%
Others	0.3%	0.5%	0.6%	0.4%	0.4%	0.6%	0.5%	0.6%	0.7%	1.0%	2.5%	0.9%
Totals	99.9%	99.9%	100.1%	100.0%	100.0%	100.1%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Veterans *												
White	89.3%	88.8%	88.5%	88.5%	89.4%	87.8%	87.6%	87.0%	86.2%	86.8%	83.9%	87.3%
Black	7.1%	7.7%	7.2%	7.0%	6.1%	7.3%	7.2%	7.1%	8.8%	8.3%	8.3%	7.6%
Hispanic	2.3%	2.6%	3.3%	3.5%	2.9%	3.2%	4.0%	4.1%	3.4%	3.3%	3.9%	3.4%
Asian	0.7%	0.5%	0.7%	0.7%	1.1%	1.1%	0.8%	1.2%	0.9%	0.8%	0.7%	0.8%
Others	0.5%	0.3%	0.4%	0.3%	0.5%	0.5%	0.4%	0.6%	0.7%	0.8%	3.1%	0.9%
Totals	99.9%	99.9%	100.1%	100.0%	100.0%	99.9%	100.0%	100.0%	100.0%	100.0%	99.9%	100.0%
<p>* Hispanic individuals can be of any race. In this breakout, all cohorts other than Hispanic are non-Hispanic. Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.</p>												

5. Business Ownership: Firm Creation and Established Ventures

The primary focus of this project is on the creation and ownership of businesses. While there is some consensus regarding the attributes of established firms – a revenue stream, some level of profit, work contributions by owners and perhaps employees, legal registration – there is less consensus about the nature of start-up initiatives. There is little agreement regarding the events that mark the transition of a start-up effort into a “business.” This has implications for identifying individuals, or teams, which are in the start-up process in relation to those who are to be considered as managing an established firm.

A variety of criteria have been used to define the transition from start-up to new firm, including inclusion in a registry, initial transactions (purchase or sale), investment of work effort by the ownership team, or the occurrence of initial profits. Studies of U.S. panels tracking the development of nascent ventures, start-ups in the pre-profit stage, as they become established firms have found that these different events occur at different stages of the start-up process and the choice of criteria for defining a “new business” has a major impact on the assessment of outcomes.¹² Most important, there is considerable diversity among individuals in how they interpret the phrase “being in business.” For some it refers to any effort to engage in economic activity, regardless of the level of profit, while others consider that they are in a start-up phase until initial profits are achieved. This issue is relevant to the assessment of participation in business creation, as opposed to the management of an established firm.

A major focus of the SIPP program has been on identifying all sources of household income. Although the major sources of household income are salaries and wages, a substantial proportion of individuals are also involved in managing an independent business. Hence, the interview schedule includes modules regarding this “non-salary or wage” income generated from self-employment. Details about this business ownership activity were obtained to ensure a complete record of sources of household income.

¹² Schoonhoven, Claudia B., M. Diane Burton, and Paul D. Reynolds (2009). Reconcepting the Gestation Window: The Consequences of Competing Definitions of Firm Conception and Birth. Chapter 11 in Reynolds, P. and R. Curtin (Eds): *New Firm Creation in the United States: Initial Explorations with the PSED II Data Set*. NY: Springer, pp. 219-238.

The SIPP interview schedules use items that allow the respondent to use their own criteria for defining “a business.” For example, questions about work activity ask if the person “did have a job or business, either full or part time....” More details are obtained if the respondent has identified a household member’s efforts as “work for an employer or self-employed.” In both cases the household respondent’s personal conception of “business” or “self-employment” is the basis for their response. Considerable research has found there is great diversity in personal definitions of such activity.

Several major research programs have used population surveys to identify adults active in business creation and management.¹³ A major complication has been separating those involved in a substantial business from those that are involved in part-time ventures. Many of those that report business activity appear to be involved in very modest ventures; individuals that claim to be pursuing a business start-up for several decades are found in these survey samples.

In order to exclude the very smallest business ventures, two criteria were developed for this analysis. First, respondents should report five or more hours of work per week on the business venture. Second, they should report the receipt of some personal income from the business. Those activities that met both criteria were considered a “business” for this assessment. Some activities assigned a business ID in SIPP data do not satisfy both criteria, so they are excluded from this study’s analysis.

Questions are asked during each of the interviews about the amount of work devoted to the business venture and the personal income received by the respondent. This information is used to identify business ventures in two states of the firm life course:

¹³ These have included the U.S. Panel Studies of Entrepreneurial Dynamics, summarized in Reynolds, Paul D. and Richard T. Curtin. 2009. Business Creation in the United States: Entry, Startup Activities, and the launch of New Ventures. Chapter 7 in U.S. Small Business Administration, Office of Advocacy, *The Small Business Economy: A Report to the President 2008*. Washington, DC: U.S. Government Printing Office, pp. 165-240, and the cross national assessments of participation in business creation developed as the Global Entrepreneurship Monitor program (Reynolds, Paul, Niels Bosma, Erkko Autio, Steve Hunt, Natalie De Bono, Isabel Servais, Paloma Lopez-Garcia, and Nancy Chin. (In 2005) Global Entrepreneurship Monitor: Data Collection Design and Implementation: 1998-2003. *Small Business Economics*: 24: 205-231).

- **Established Firms:** Those businesses where the reports of business work activity and personal income are provided during the first interview.
- **New Firms:** Those businesses where the first reports of work activity and personal income occurred within 12 months after the first interview.

This allows for the assessment of participation in two phases of the firm life course. Those reporting the initiation of a new business are referred to as “nascent entrepreneurs.” Those reporting they are managing an existing business are referred to as “owner-managers.”

The new firms that are reported during the longitudinal data collection, after the first interview, provide information on the tendency to pursue new firm creation and the short term survival of the firms. The maximum survival that may be recorded over seven waves of data collection, one wave conducted every four months, would be 28 months, i.e., 2 years and 4 months.¹⁴ This allows for the identification of firms that survive over this time period.

6. Prevalence of Nascent Entrepreneurs and Owner-Managers

An overview of participation in firm creation and ownership is provided in Figures 2 and 3. These figures show the patterns found when all 11 panels are combined.¹⁵ The horizontal bars represent the estimate of the prevalence rate, the number of persons per hundred involved in a business start-up or as owner-managers of an existing business. The vertical bars in the chart represent the 95% confidence intervals.¹⁶ If the procedure was repeated a number of times, the average value would be expected to be within this interval 95% of the time. It indicates the precision of the estimates; the narrow vertical bars represent larger samples. If the vertical bars for two samples do not overlap, then the difference in the average values between the samples is

¹⁴ There is no information on the age of existing firms in the SIPP data collected in 1984 through 1993.

¹⁵ The individual case weights were recentered so the average value was 1.000 for each of the eleven panels. No adjustment was implemented to account for changes in cohort size; larger cohorts in 1996 and 2004 would have a greater impact on the assessments. This impact, however, is not expected to be of significance.

¹⁶ Computation of all prevalence rates involved substantial manipulation of data from all eleven panels. The SIPP sampling procedure used a sophisticated cluster sampling procedure that was different for each panel, precluding straightforward calculation of confidence intervals for each unique prevalence rate. As a result, confidence intervals were estimated under the assumption that each sample was based on a simple random sample of the population. Standard errors were computed with the formula $SE = (\text{square root } ((p)(1-p))/n)$, with p = prevalence rate and n = sample size. The standard error was multiplied by $+/- 1.96$ for the 95% confidence interval. The results were a conservative estimate of the confidence intervals, suggesting care in interpretation when there is a small difference in confidence intervals between two prevalence rates.

considered to be statistically significant at the 0.05 level; this difference would be expected to occur by chance no more than 5% of the time.

For example, among women about 2.5% of those 25-34 years old are active as nascent entrepreneurs and slightly less, 2.4%, of women 35-44 years old are active as nascent entrepreneurs. But as can be seen in Figure 2, the vertical bars for these two groups overlap, so this difference is not statistically significant. But among women 45-54 years old, 2.1% are active as nascent entrepreneurs. The vertical bar for this group does not overlap those for 25-34 year old women, indicating that the difference between women 25-34 years old and those 45-54 years old is statistically significant at the 0.05% level. If this survey was repeated 20 times, this difference would be expected in 19 comparisons of the same group of participants.

The narrow bars on the left of Figure 2 show that about 2.4% of those aged 18-84 years old are involved in firm creation, and in Figure 3 they show that 6.0% are firm owner-managers. The charts also provide estimates for all men and women; men are about twice as likely to be involved in both stages of the firm life course as women. They also provide estimates for both men and women by age cohort. Although the ratios of activity between men and women are quite similar, the patterns in the charts vary by stage in the firm life course. Figure 2 shows a sharp increase in new firm creation among those aged 25-34, compared to those aged 18-24 years old, followed by higher levels of activity among those aged 35-44 and 45-54 years old. There is a decline among those 55-64 years old and a sharp reduction among those 65-74 years old; this decline continues among those 75-84 years old. These same patterns, with slightly higher prevalence rates, have been found in a number of adult population surveys. For example, the overall prevalence rate of nascent entrepreneurs was found to be 5.6% in the first U.S. Panel Study of Entrepreneurial Dynamics (PSED) in 1999, and 6.0% for the panel identified in the second study (PSED II) in 2005.¹⁷

¹⁷ See Figure 7.3 in Reynolds, Paul D. and Richard T. Curtin. 2009. Business Creation in the United States: Entry, Startup Activities, and the launch of New Ventures. Chapter 7 in U.S. Small Business Administration, Office of Advocacy, *The Small Business Economy: A Report to the President 2008*. Washington, DC: U.S. Government Printing Office, pp. 165-240.

Figure 2: Nascent Entrepreneurs, Prevalence by Gender and Age: SIPP 1984 - 2004

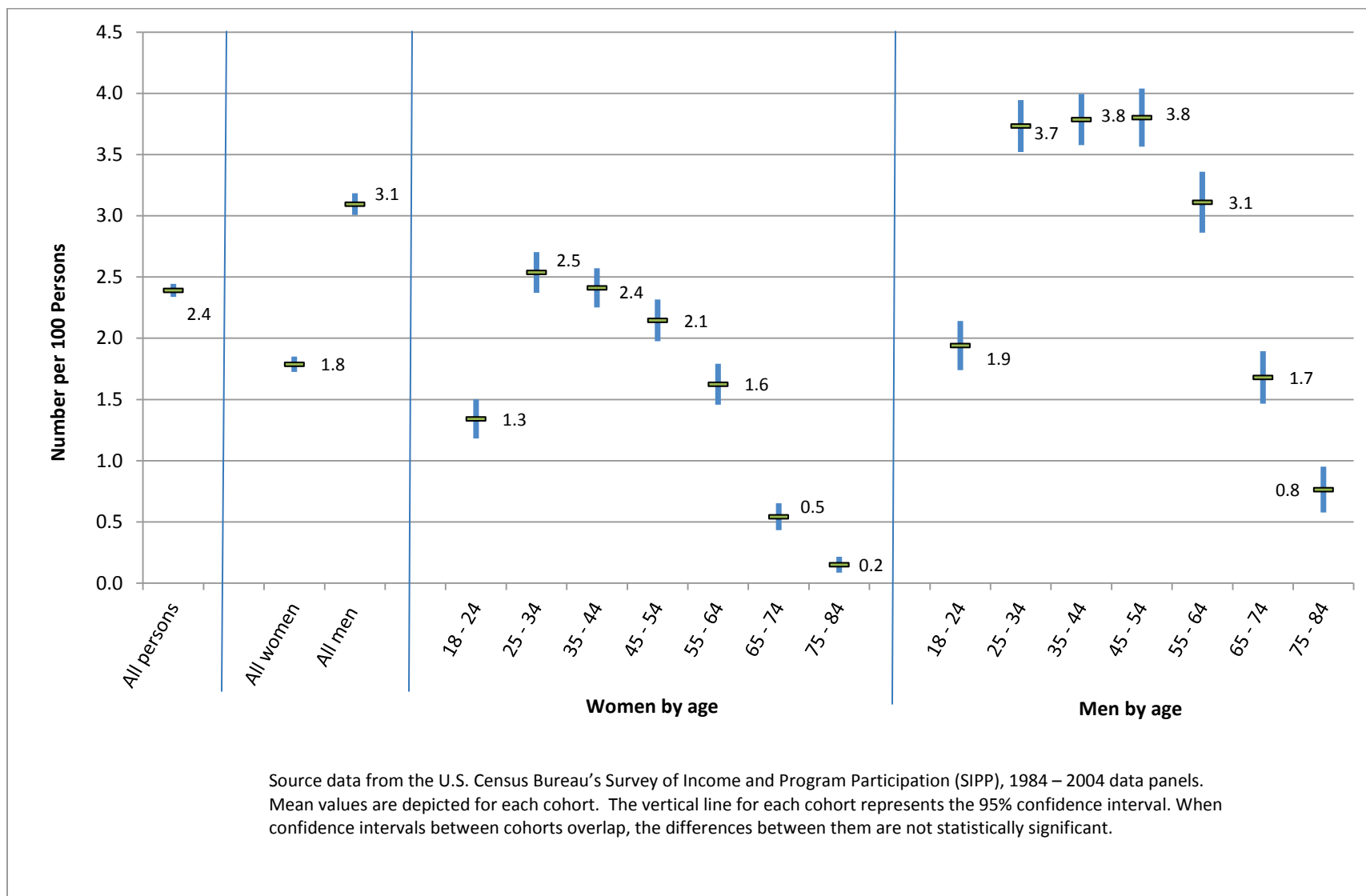
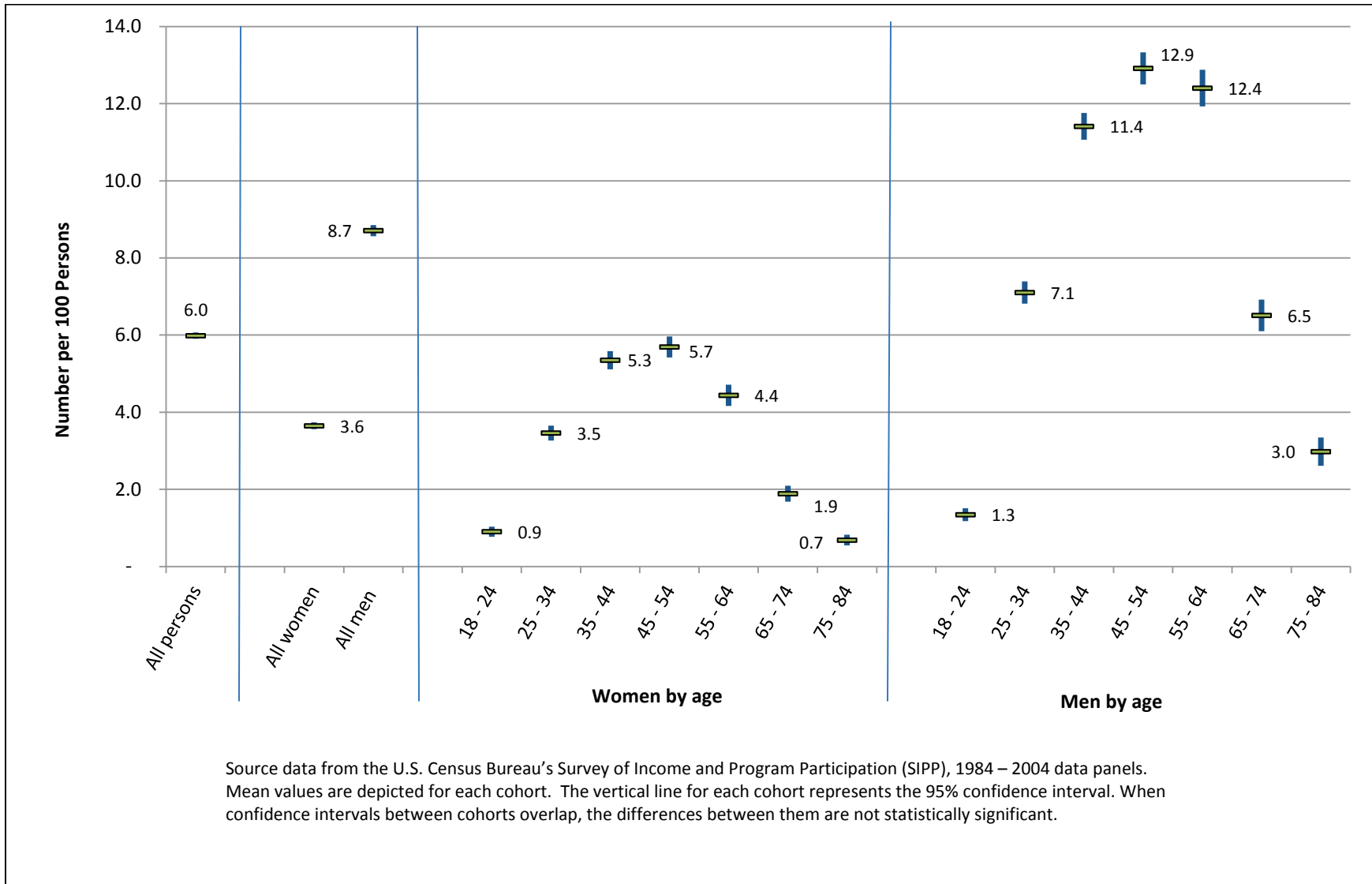


Figure 3: Owner-Managers, Prevalence by Gender and Age: SIPP 1984 – 2004



The pattern is somewhat different among those considered firm owner-managers, presented in Figure 3. Prevalence is very low among those 18-24 years old and then has a steep rise until it reaches a maximum among those 45-54 years of age. There is a gradual decline among those 55-64 and then a steep drop among those 65-74 years old and a further major reduction among those 75-84 years old.

These age-related patterns are similar for both men and women. Given the major impact of age on participation in these two stages of the firm life course, any assessment involving veterans clearly needs to control for age, particularly given the large proportion of older veterans represented in the SIPP panels developed after 1993.

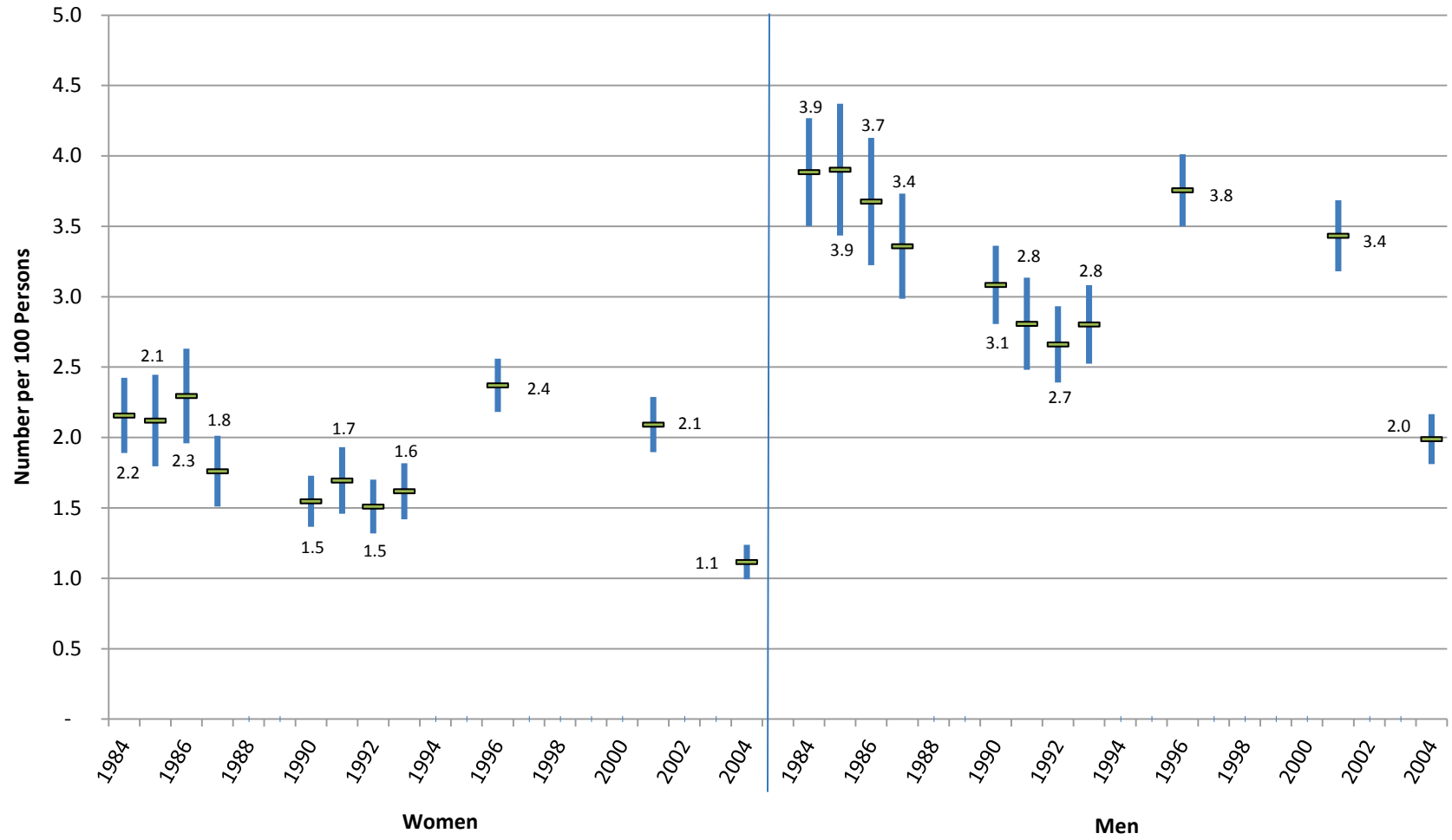
7. Temporal Patterns in Firm Creation and Ownership: 1984 – 2004

A second issue that arises is the temporal stability of these patterns. Are there major changes over the twenty years represented by the eleven SIPP panels? This is presented for nascent entrepreneurs implementing new firms in Figure 4, and owner-managers of existing firms in Figure 5. In both cases women, on the left, are compared to men, on the right.

Both presentations have the same pattern. Although there is some year to year volatility, the prevalence rates are generally stable from 1984 through 2001. For most years, and for both men and women, there are no statistically significant differences.¹⁸ About 3.5% of men and 2.0% of women are active as nascent entrepreneurs from 1984 to 2001; about 10.5% of men and slightly more than 4.0% of women are active as owner-managers in this same period. The level of participation is relatively constant over time. But for 2004 there is a sharp decline of almost 50% on the prevalence of both nascent entrepreneurs and owner-managers. As the 2004 sample is relatively large, there is clearly a statistically significant difference. This sharp drop in the prevalence for 2004 could reflect either a reduction in participation in business creation and ownership or a change in the SIPP data collection procedure. The differences are too great to be explained by the subtle shift in the age distribution across the SIPP panels presented in Table 2A.

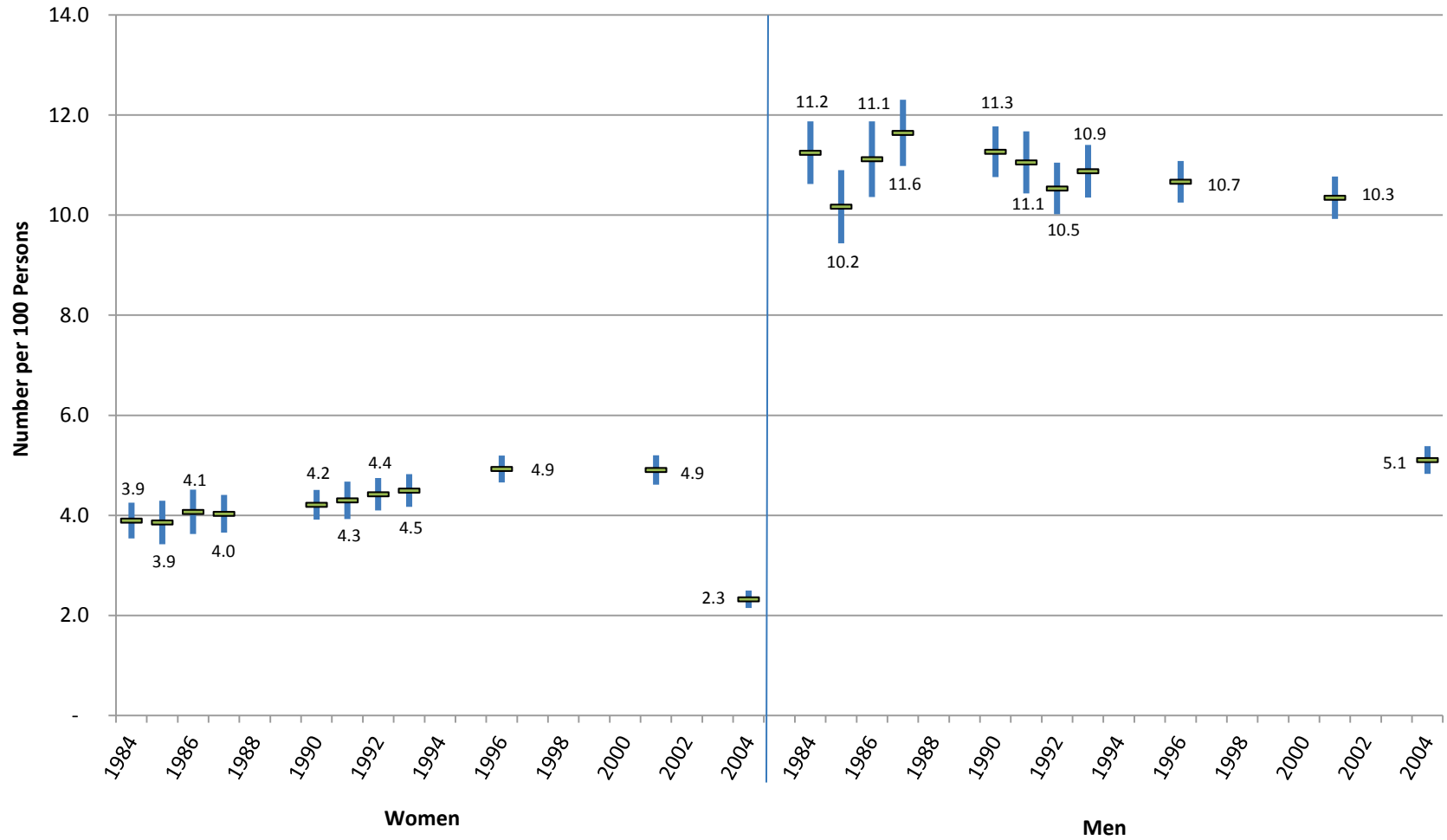
¹⁸ This is reflected in the overlap among the vertical bars for different years.

Figure 4: Prevalence of Nascent Entrepreneurs by Gender: SIPP 1984 – 2004



Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Mean values are depicted for each cohort. The vertical line for each cohort represents the 95% confidence interval. When confidence intervals between cohorts overlap, the differences between them are not statistically significant.

Figure 5: Prevalence of Owner-Managers by Gender: SIPP 1984 – 2004



Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Mean values are depicted for each cohort. The vertical line for each cohort represents the 95% confidence interval. When confidence intervals between cohorts overlap, the differences between them are not statistically significant.

Two other items of information help to interpret this pattern. First, there was a major change in the structure and implementation of the SIPP 2004 interviews. One of the distinctive features of dealing with low prevalence rates is that small changes in the data collection procedure can have a major impact on the prevalence rates.¹⁹ If the prevalence rate is 6 per 100 and item wording changes the responses of 2 per 100 individuals, the prevalence rate can be dramatically affected.

Second, there are a number of time series assessments that cover this period that reflect no decline in the prevalence of new firms from 1996 through 2003, 2004 and 2005. These include new employer firms in U.S. Census Bureau data, new employer establishments in the U.S. Bureau of Labor Statistics (BLS) data, new entries into self-employment tracked in the BLS Current Population Surveys, and nascent entrepreneurs identified in the Panel Studies of Entrepreneurial Dynamics and the Global Entrepreneurship Monitor surveys.²⁰

It is most likely, then, that the decline in the 2004 SIPP data prevalence rates reflects changes in the interview procedure, rather than a decline of participation in firm creation and ownership in the U.S. adult population.

8. Regional Variation in Firm Creation and Ownership

There are some regional differences in the level of business creation. The U.S. Census Bureau has developed nine regional divisions to facilitate regional comparisons. The allocation of states to divisions is presented in Table 6.²¹

¹⁹Paul Reynolds (2008). Screening Item Effects in Estimating the Prevalence of Nascent Entrepreneurs. *Small Business Economics*. 33(2):151-163.

²⁰ See Figure 8 in Paul Reynolds (2008). Screening Item Effects in Estimating the Prevalence of Nascent Entrepreneurs. *Small Business Economics*. 33(2):151-163.

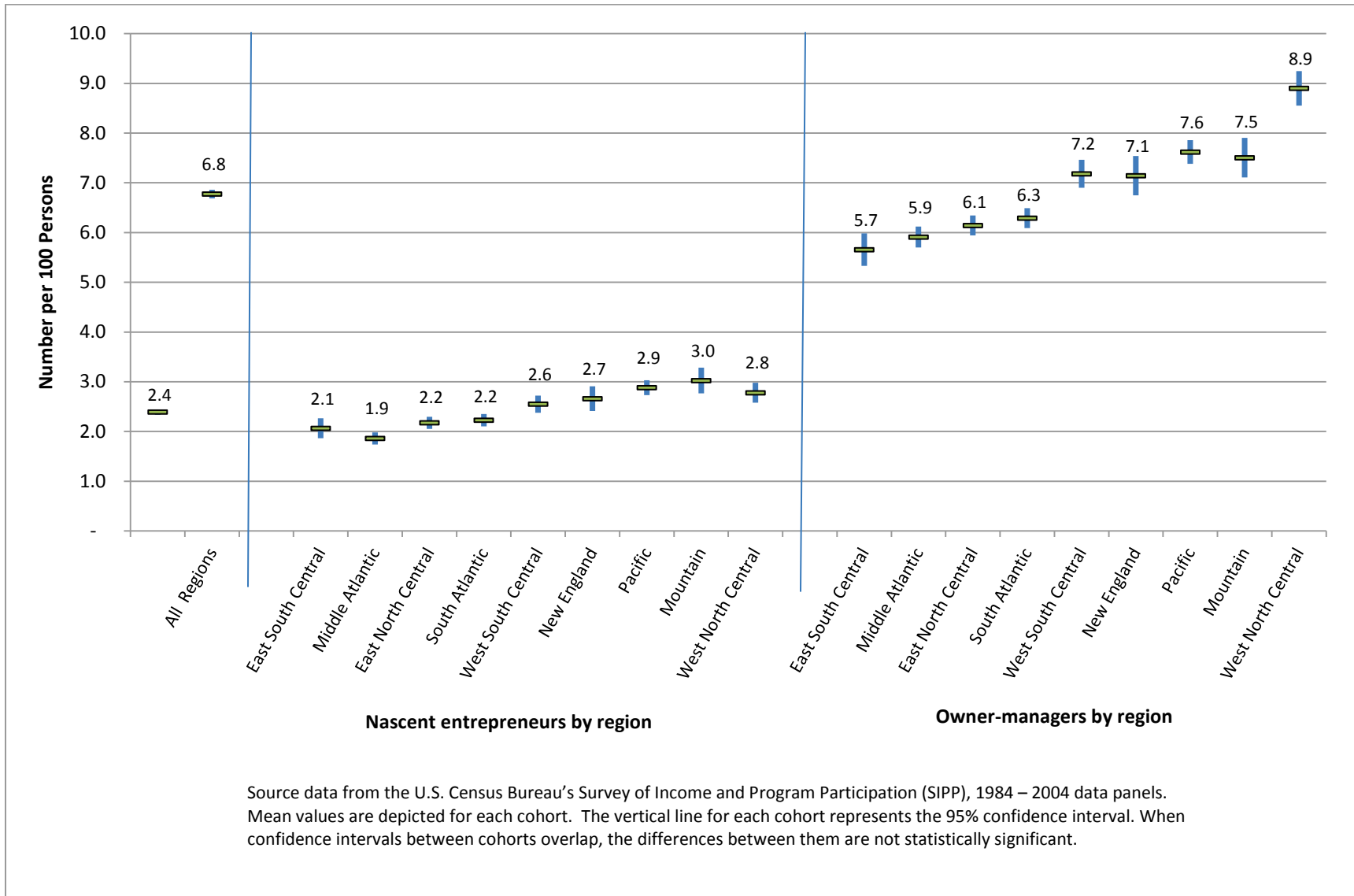
²¹ To preserve respondent anonymity, in some years with small samples coding for some small population states was consolidated. Assigning some of these groups to the region most heavily represented results in a small number of cases (less than 1%) allocated to an adjacent division. The 359 cases in either Mississippi or West Virginia were omitted from this analysis.

Table 6: U.S. Census Bureau Regional Divisions

Region	States
1: New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
2: Middle Atlantic	New Jersey, New York, Pennsylvania
3: East North Central	Indiana, Illinois, Michigan, Ohio, Wisconsin
4: West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
5: South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
6: East South Central	Alabama, Kentucky, Mississippi, Tennessee
7: West South Central	Arkansas, Louisiana, Oklahoma, Texas
8: Mountain	Arizona, Colorado, Idaho, New Mexico, Montana, Utah, Nevada, Wyoming
9: Pacific	Alaska, California, Hawaii, Oregon, Washington

The prevalence of nascent entrepreneurs and owner-managers across the entire SIPP sample by census division is presented in Figure 6. They are rank ordered from low to high, based on the combined prevalence rates (nascent entrepreneur and owner-manager rates added together). Although there are statistically significant differences across regional divisions associated with both stages of the firm life course, the differences in nascent prevalence rates are not as great as among those of firm owner-managers. These regional differences remain when comparisons are controlled for gender or age.

Figure 6: Prevalence of Nascent Entrepreneurs and Owner-Managers by Census Regions



There has been considerable research on regional factors affecting firm creation, and one of the most important factors is the distribution of firms by employment size. Those regions with a large proportion of smaller firms, and few massive employers, tend to have more firm creation.²² This may reflect the sector emphasis as well, as some sectors—farming, retail, consumer services, business services, leisure and recreation—are characterized by a large proportion of smaller businesses. The relatively higher prevalence rates of owner-managers for the West North Central region, those states north of Oklahoma and between the Rocky Mountains and the Mississippi, may reflect economies with a relatively large proportion of smaller businesses; few of the Fortune 500 firms are found in this region. In contrast, they do tend to be located in the four regional divisions with the lowest prevalence of owner-managers, the four U.S. divisions south of New England and East of the Mississippi.

9. Veterans Involved in Firm Creation and Business Ownership

The participation of veterans compared with non-veterans of the same age is provided for those involved in business creation in Figure 7 for men and Figure 8 for women. For this assessment, the small proportion currently serving in the Armed Forces, 1,819 cases or 0.6% of the total, are excluded.

The left of Figure 7 presents the overall prevalence across the eleven panels of non-veterans and veterans in business creation. Male veteran prevalence, at 2.7 per 100, is lower than male non-veteran prevalence, at 3.3 per 100, and as the 95% confidence intervals do not overlap, the difference is statistically significant. The comparison of the different age groups, however, suggests a more nuanced pattern. There is no age category where male veterans are statistically significantly different from the male non-veterans. In most cases, except for a high prevalence rate among veterans for those 18-24 years old, the prevalence rates are similar. The only reason

²² Acs, Zoltan J., and Catherine Armington (2004). Employment Growth and Entrepreneurial Activity in Cities. *Regional Studies*, 38(9): 911-927. Reynolds, Paul D., Brenda Miller, and Wilbur Maki. 1995. "Explaining Regional Variation in Business Births and Deaths: U.S. 1976-88" *Small Business Economics* 7:389-407. Reynolds, Paul D., David J. Storey, and Paul Westhead. 1994. "Cross-National Comparisons of the Variation in New Firm Formation Rates." *Regional Studies* 28(4):443-456.

the overall veterans rate is lower is because a very large proportion of male veterans are older. Although older veterans have the same lower level of participation as non-veterans of the same age, older veterans are a major proportion of all veterans and thus have a greater effect on the all-age business creation rate. The age structure among veterans, then, reduces the overall veteran prevalence rates.

The participation of female veterans in business creation, compared to their non-veteran age peers, is shown in Figure 8. The small number of female veterans results in very wide confidence intervals, and only the 55 to 64 age group shows a statistically significant difference between women veterans and non-veterans. However, except for the 65 to 74 age group, the prevalence rates for women veterans are consistently lower, although only one of the differences is statistically significant - again, that for the 55 to 64 age group.

Similar presentations involving prevalence as owner-managers are presented for men in Figure 9 and for women in Figure 10. A comparison of all age groups in Figure 9 suggests that the prevalence rates for veterans and non-veterans are quite similar, although slightly higher for male veterans. But there are some differences for different age comparisons. There is no difference among those 18-24 years old, where prevalence is quite low for all men. But the prevalence of owner-managers among veterans is statistically significantly lower among those aged 25-34, 35-44, and 45-54. There are no statistically significant differences for men in all groups older than 54 years, and the veterans' prevalence rate is slightly higher among those 64 or more years old. The large proportion of men that are veterans among those over 54 years old accounts for the lack of overall difference.

A similar presentation is provided for women owner-managers in Figure 10. The small number of women veterans leads to, once again, very wide confidence intervals for women veterans, and the only statistically significant difference is the lower level prevalence rate of owner-managers among women veterans 18-24 years old (where there are NO owner-managers among women veterans) and 35-44 years old.

Figure 7: Prevalence of Non-Veterans and Veterans in Firm Creation, Men by Age

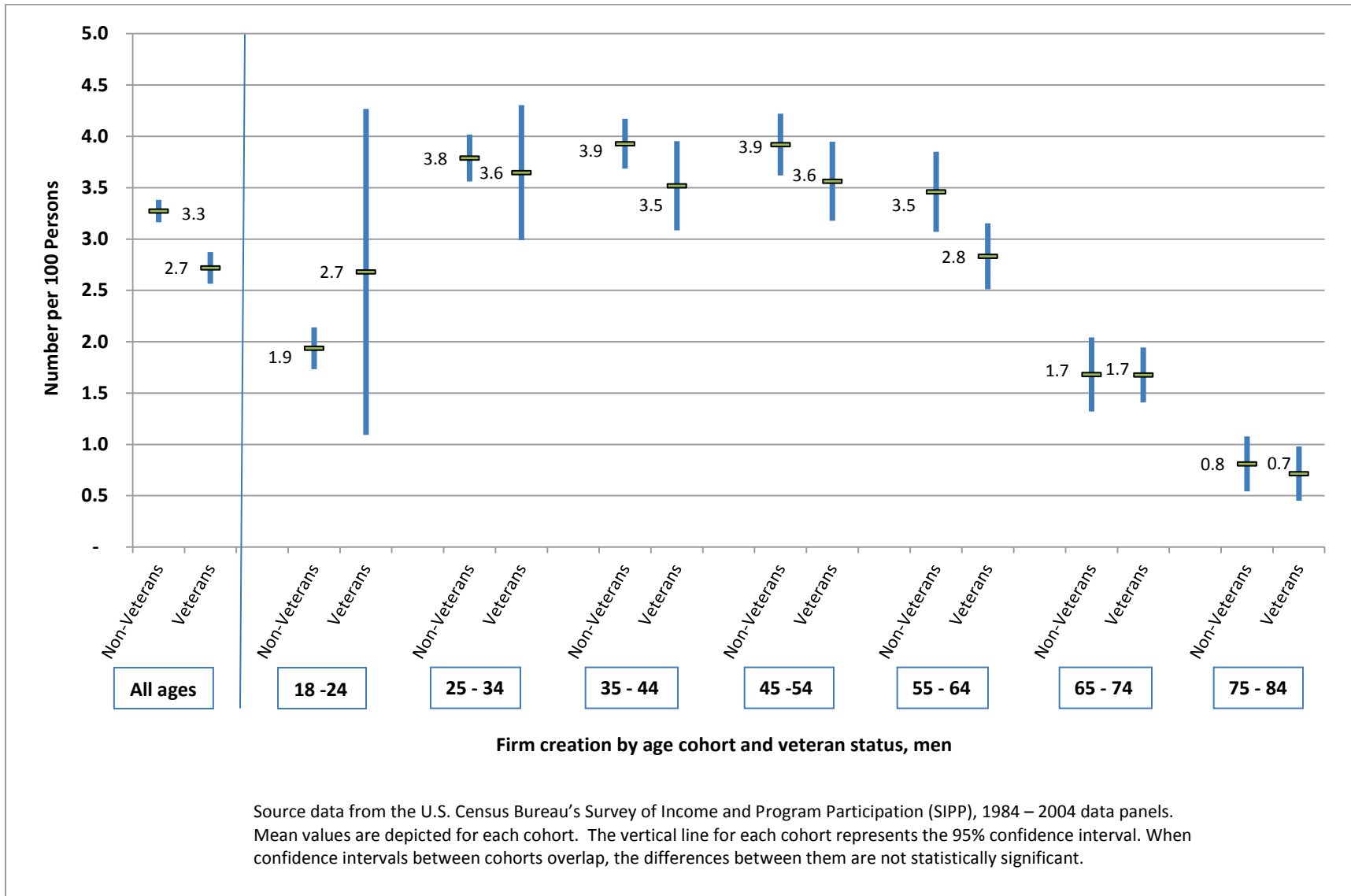


Figure 8: Prevalence of Non-Veterans and Veterans in Firm Creation, Women by Age

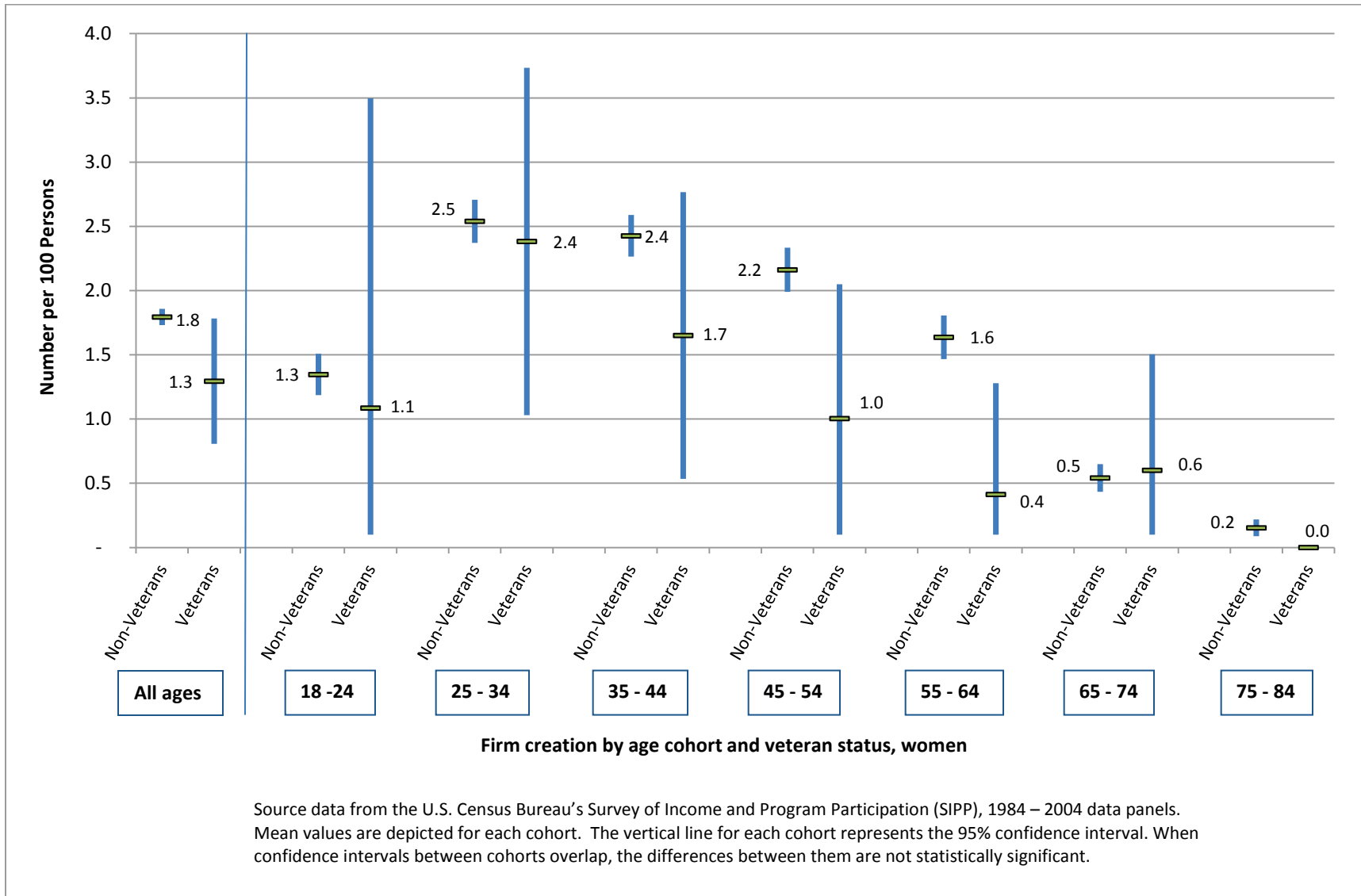


Figure 9: Prevalence of Non-Veterans and Veterans as Owner-Managers, Men by Age

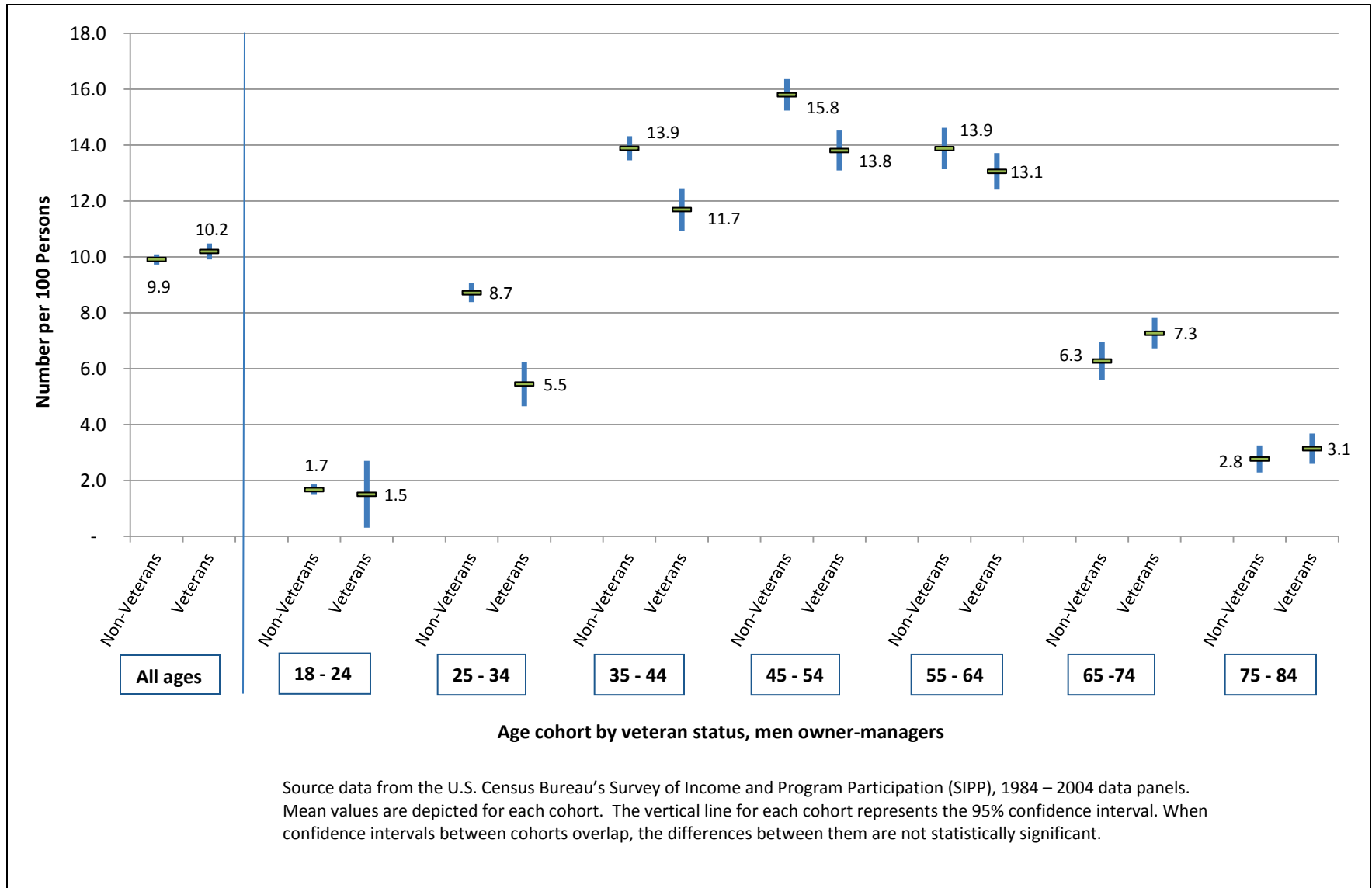
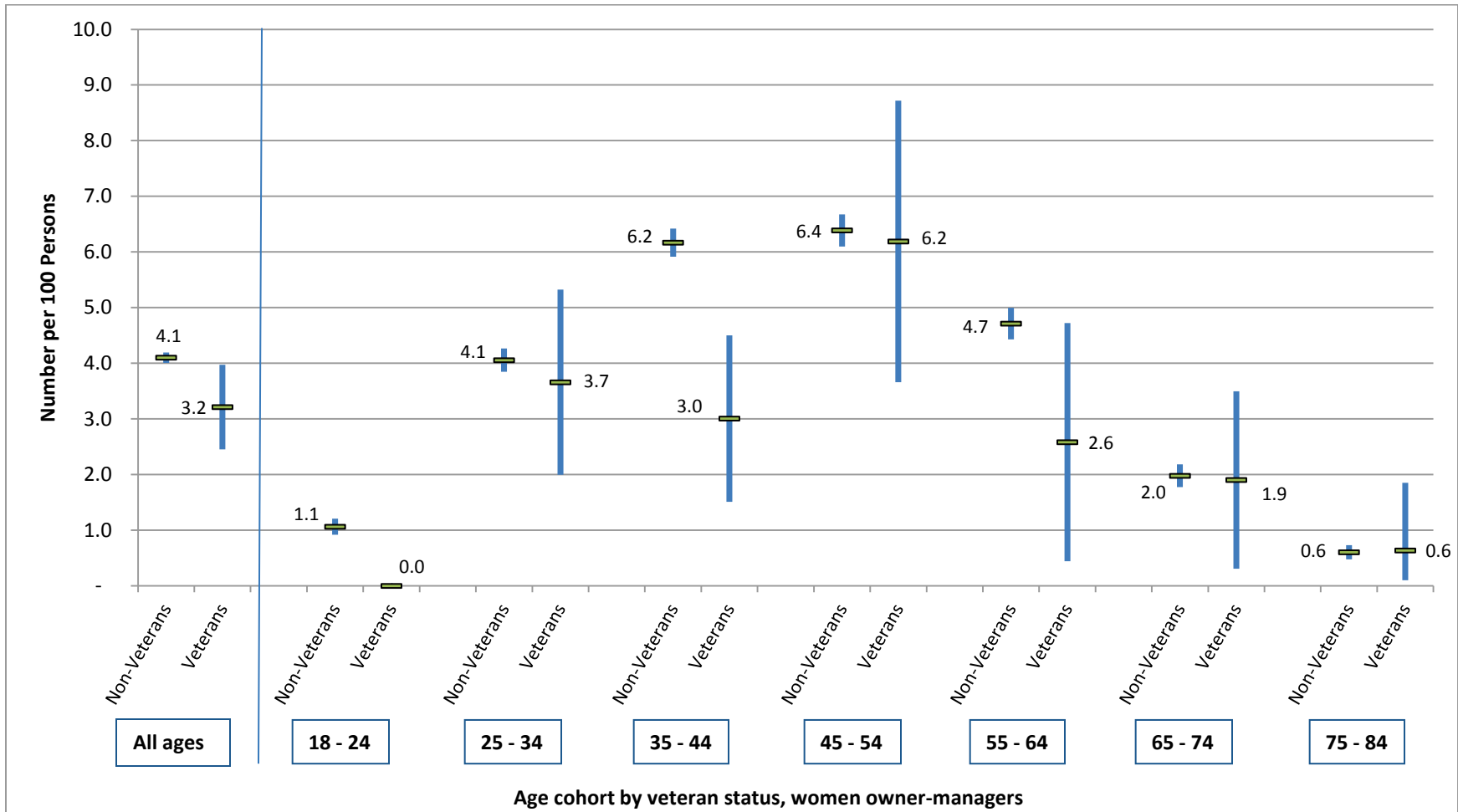


Figure 10: Prevalence of Non-Veterans and Veterans as Owner-Managers, Women by Age



Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Mean values are depicted for each cohort. The vertical line for each cohort represents the 95% confidence interval. When confidence intervals between cohorts overlap, the differences between them are not statistically significant.

Overall, the major patterns are:

- When male veterans of all ages are combined, they are slightly less involved in firm creation than their all-age non-veteran peers. This difference is statistically significant but due to the disproportionately large number of veterans in older age cohorts that have lower levels of firm creation. In all specific age cohorts there are no statistically significant differences.
- Older male veterans are just as involved as owner-managers as their age peers; younger male veterans, those less than 55 years old, are somewhat less involved as owner-managers as their age peers.
- Women veterans may be less involved in both firm creation and as owner-managers than their age peers, but the differences are not statistically significant in most cases.

10. Veteran Firm Creation and Ownership Over Time: 1984 – 2004

Has there been a major change in veterans' participation in business ownership over the twenty years covered by the SIPP panels? Because of the very small number of women veterans, it is only possible to approach this issue with the male sample. Obtaining a statistically significant comparison is complicated by the need to control for age.

For some of the SIPP panels the number of veterans in each of the three age groups, ages 18-34 years, 35-54 years, and 55-74 years, is quite small. This results in very wide confidence intervals. This complication is mitigated if the four panels from 1984 to 1987 and the four from 1990 to 1993 are aggregated to provide larger samples and, in turn, narrower confidence intervals. The results are presented in the following six charts:

- Figure 11: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 18 – 34
- Figure 12: Owner-Managers, Male Non-Veterans and Veterans, Ages 18 – 34
- Figure 13: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 35 – 54
- Figure 14: Owner-Managers, Male Non-Veterans and Veterans, Ages 35 – 54
- Figure 15: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 55 – 74
- Figure 16: Owner-Managers, Male Non-Veterans and Veterans, Ages 55 – 74

In all cases, the overall comparison is presented to the far left, and the comparisons for five different time periods are presented across the chart, from 1984-87 to 2004. The differences and their statistical significance are summarized in Table 7 following the charts.

The results are broadly consistent across time periods. As shown in Figure 11, veterans aged 18-34 years old appear to be slightly more involved as nascent entrepreneurs than their age peers when all panels are taken together, although the differences are not statistically significant. Figure 13 and Table 7 indicate that veterans aged 35-54 years old are just as active as nascent entrepreneurs as their age peers in 1984-87, 1996, and 2001. Veterans aged 35-54 are statistically significantly less active in 1990-1993 and 2004. Figure 15 indicates no statistically significant difference in the prevalence rates among veterans and their age peers for those aged 55-74 years old, although veterans are slightly lower in four of the five periods.

Figure 12 shows no statistically significant difference in the prevalence of owner-managers among veterans and non-veterans aged 18-34 years old for all five periods, although veterans are slightly lower in every period except 2004, where they are slightly higher. The overall comparison indicates that veterans aged 18-34 years old are statistically significantly less active. Figure 16 indicates no statistically significant difference in three time periods, 1984-87, 1990-93, and 2004, a marginally significant difference in 1996, and a clearly significant difference for 2001. In most time periods veterans are less active.

Among those 35-54 years old who are owner-managers, as shown in Figure 14 and Table 7, there is a lower level of activity among veterans compared to non-veterans for all time periods. This is statistically significant for all time periods and the overall comparison. This gap appears to have increased for the last two time periods, 2001 and 2004. This may reflect the fact that most veterans were engaged in military service before they were 44 years old. This would reduce the time available to develop civilian business experience, a key factor affecting successful business creation, the precursor to business ownership. The disadvantages of this “experience gap” may be overcome by the time veterans are over 54 years old, the age comparison where there is little difference between veterans and non-veterans.

Figure 11: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 18 - 34

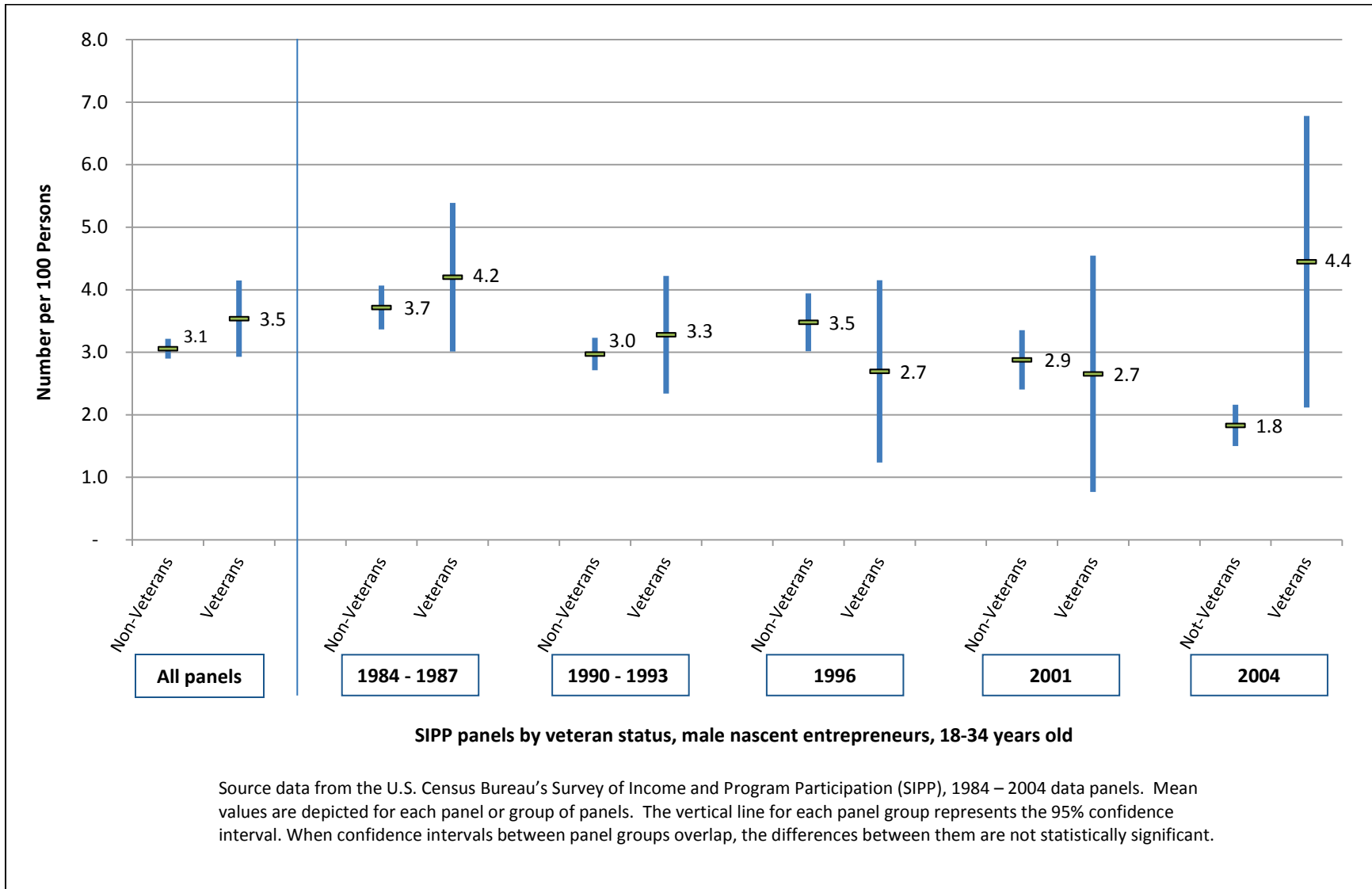


Figure 12: Owner-Managers, Male Non-Veterans and Veterans, Ages 18 - 34

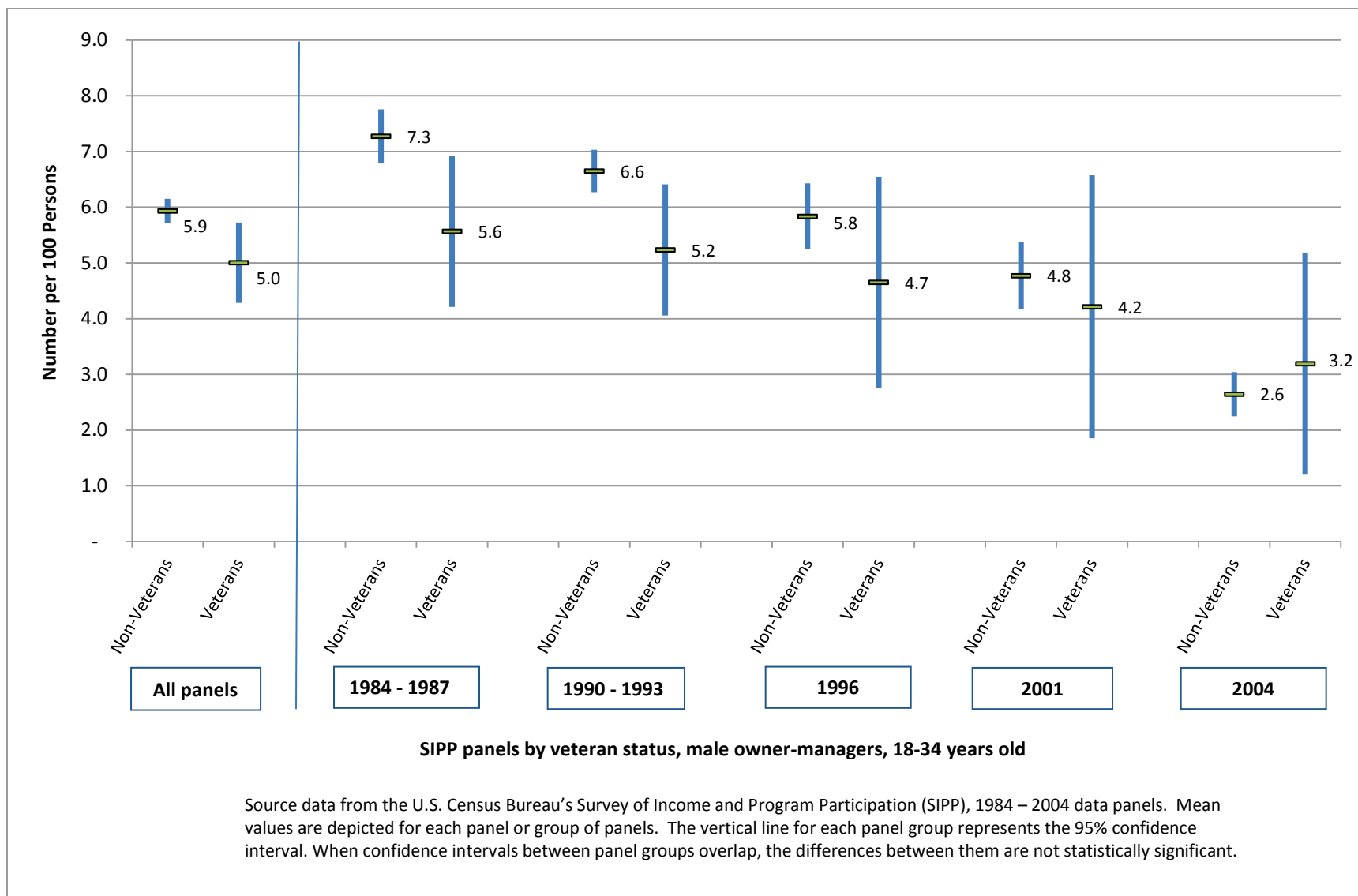


Figure 13: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 35 – 54

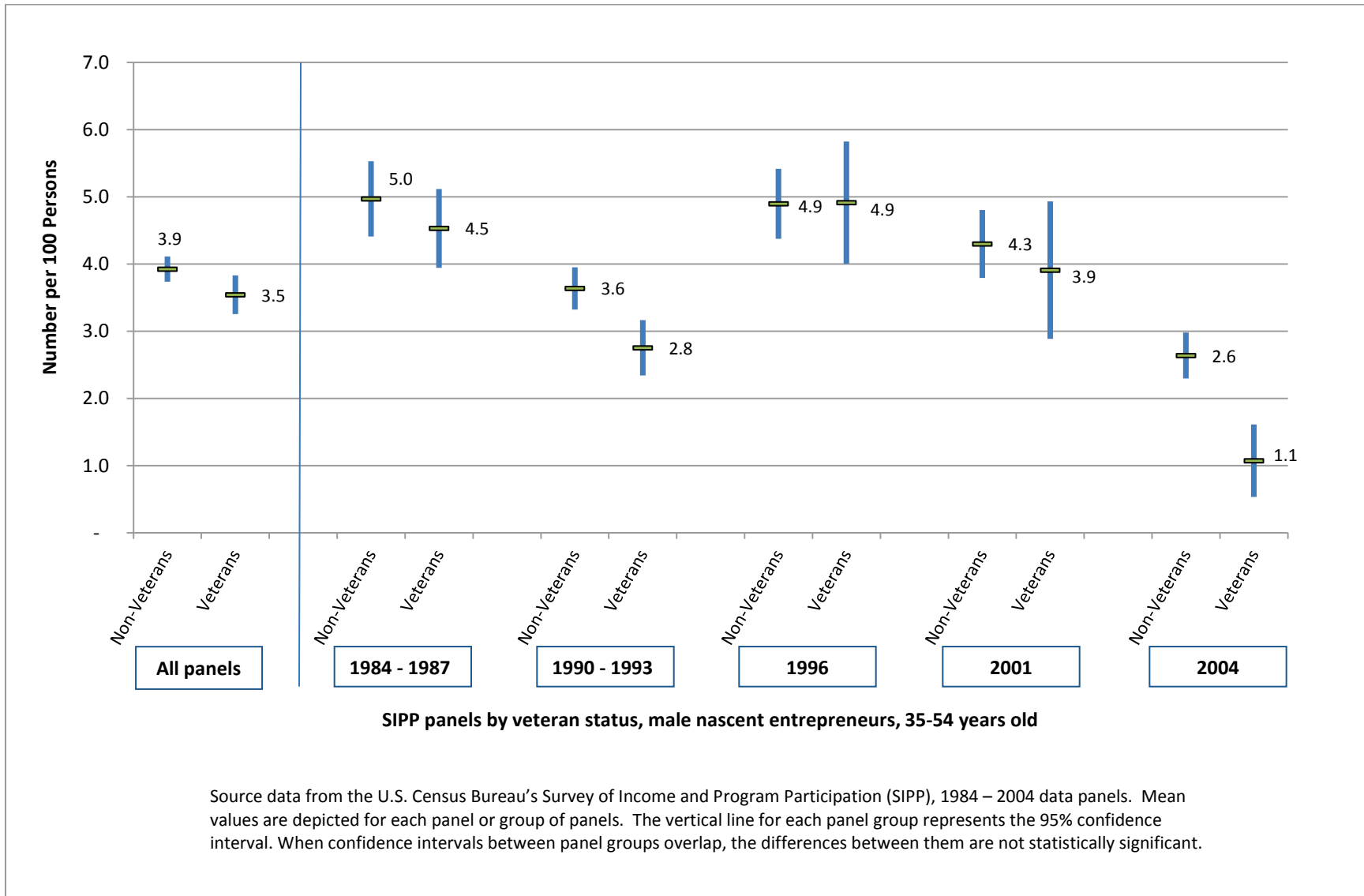


Figure 14: Owner-Managers, Male Non-Veterans and Veterans, Ages 35 - 54

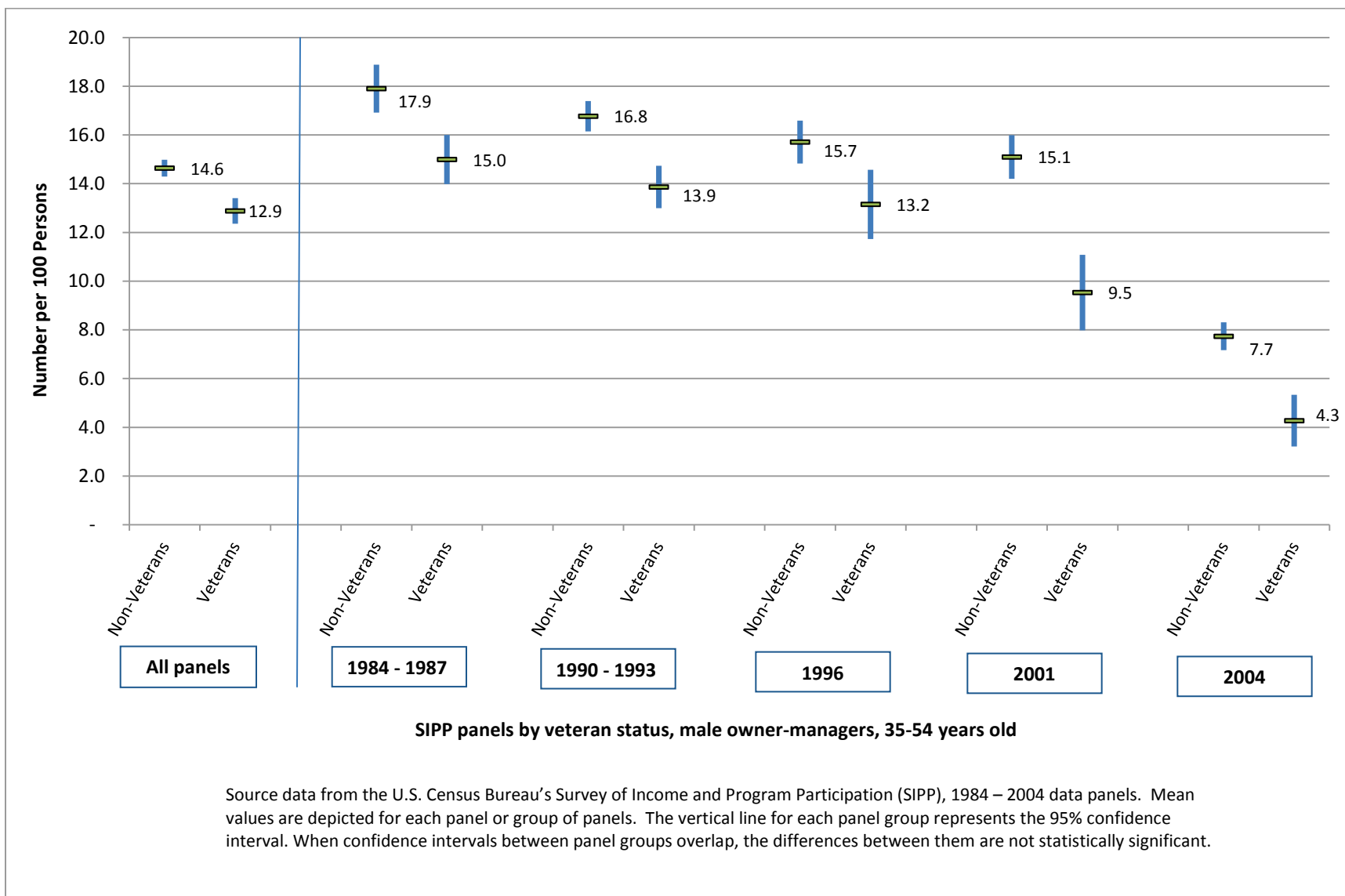


Figure 15: Nascent Entrepreneurs, Male Non-Veterans and Veterans, Ages 55 – 74

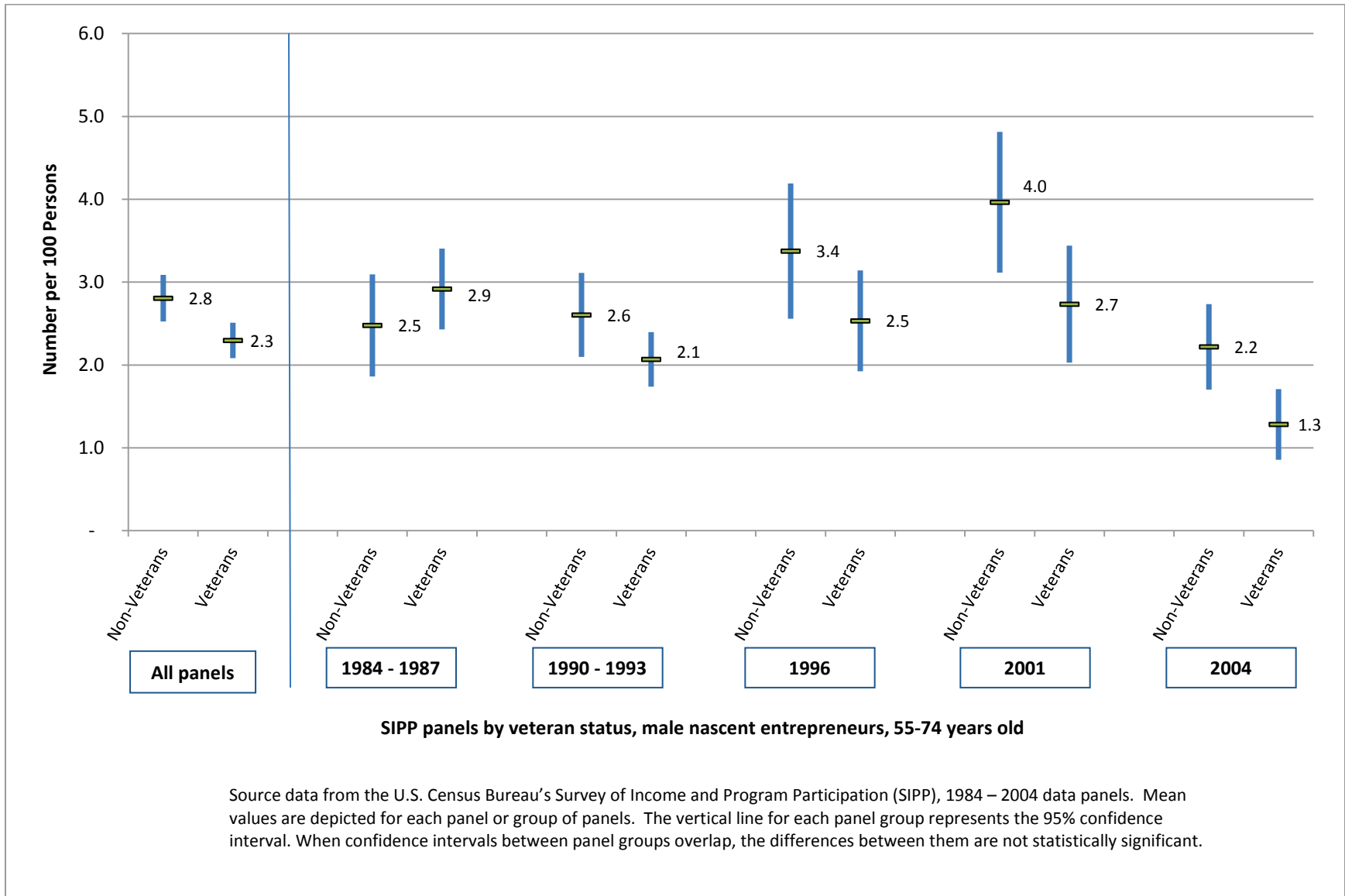


Figure 16: Owner-Managers, Male Non-Veterans and Veterans, Ages 55 – 74

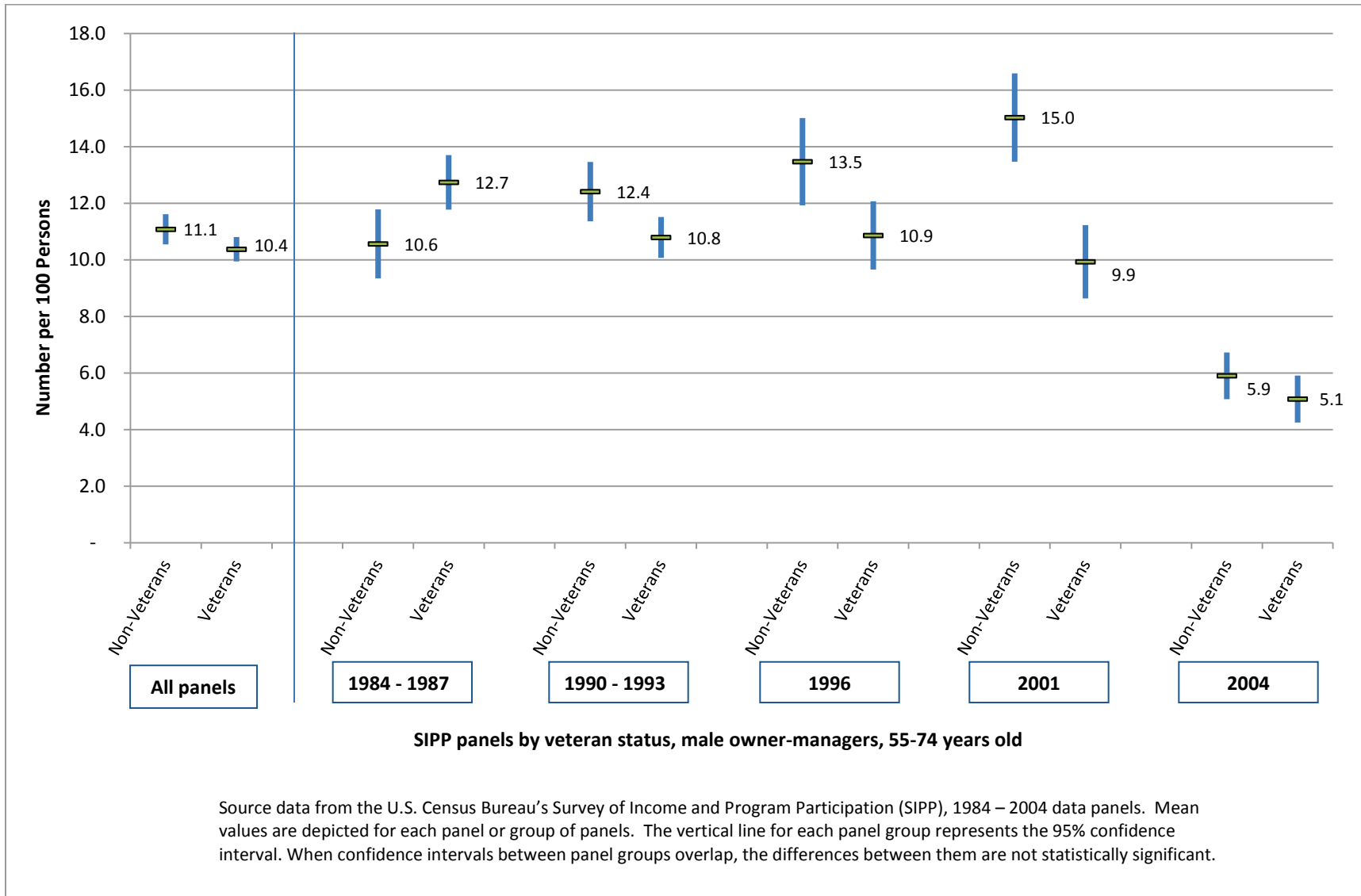


Table 7: Male Non-Veteran and Veteran Business Participation, by Age

SIPP Panels by Age Group	Nascent Entrepreneurs, Percentage by Panel Group				Owner-Managers, Percentage by Panel Group			
	Non- Veterans	Veterans	Difference	Statistical Significance	Non- Veterans	Veterans	Difference	Statistical Significance
18-34 years old								
1984-1987	3.7	4.2	0.5		7.3	5.6	-0.7	
1990-1993	3.0	3.3	0.3		6.6	5.2	-1.4	
1996	3.5	2.7	-0.8		5.8	4.7	-1.1	
2001	2.9	2.7	-0.2		4.8	4.2	-0.6	
2004	1.8	4.4	2.6		2.6	3.2	0.6	
All years	3.1	3.5	0.4		5.9	5.0	-0.9	*
35-54 years old								
1984-1987	5.0	4.5	-0.5		17.9	15.0	-2.9	*
1990-1993	3.6	2.8	-0.8	*	16.8	13.9	-2.9	*
1996	4.9	4.9	0.0		15.7	13.2	-2.5	*
2001	4.3	3.9	-0.4		15.1	9.5	-5.6	*
2004	2.6	1.1	-1.5	*	7.7	4.3	-3.4	*
All years	3.9	3.5	-0.4		14.6	12.9	-1.7	*
55-74 years old								
1984-87	2.5	2.9	0.4		10.6	12.7	2.1	*
1990-1993	2.6	2.1	-0.5		12.4	10.8	-1.6	
1996	3.4	2.5	-0.9		13.5	10.9	-2.6	
2001	4.0	2.7	-1.3		15.0	9.9	-5.1	*
2004	2.2	1.3	-0.9		5.9	5.1	-0.8	
All years	2.8	2.3	-0.5		11.1	10.4	-0.7	

* Indicates difference is statistically significant at 0.05 or greater.

Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels.

Keeping in mind the reservations about changes in SIPP self-employment data collection in 2004, the differential between veterans and non-veterans presented in Table 7 does not reflect a systematic increase in the 2001 and 2004 panels. In fact, among those 18-34 years old, presented in Figures 11 and 12, veterans appear to be more active as nascent entrepreneurs and owner-managers than their age peers in the 2004 panel, although the differences are not quite statistically significant. This assessment leads to several conclusions:

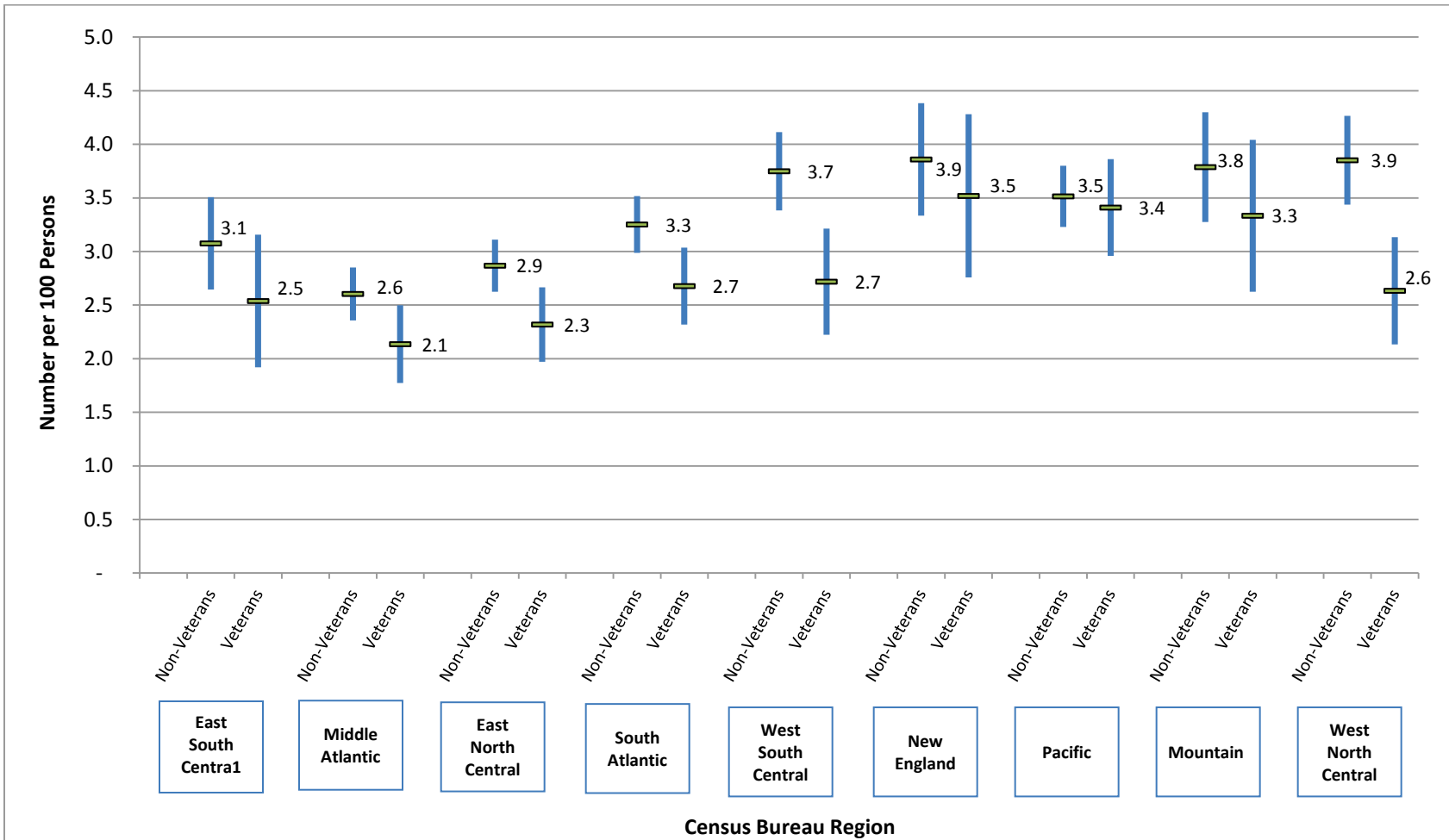
- Veterans in almost all time periods are equally or less involved in firm creation and ownership than their non-veteran age peers.
- Veterans 35-54 years old are less involved as owner-managers than their non-veteran age peers in the two decades from 1984 to 2004.
- The differential in participation in firm creation and ownership between veterans and non-veterans is relatively constant over the two decades from 1984 to 2004.

11. Veteran Firm Creation and Ownership: Regional Differences

Geographic comparisons of participation in firm creation for male non-veterans and veterans are provided for the nine U.S. Census Bureau regional divisions. The prevalence of nascent entrepreneurs is provided in Figure 17. There is less activity among veterans in all nine regions. These differences are statistically significant in two regions, where the vertical bars do not overlap. These are the West South Central region and the West North Central region, basically all the states from Mexico to Canada between the Rocky Mountains and the Mississippi River. This is a vast region that has a few major cities, a low population density, and in which agriculture is a major activity. As shown in Tables 11 and 12, veterans are less involved in agriculture than non-veterans. In addition, agriculture is a sector that is undergoing consolidation as farms and ranches increase in size to gain efficiencies of scale. These adjustments may account for the reduced business creation activity by veterans in the Great Plains.

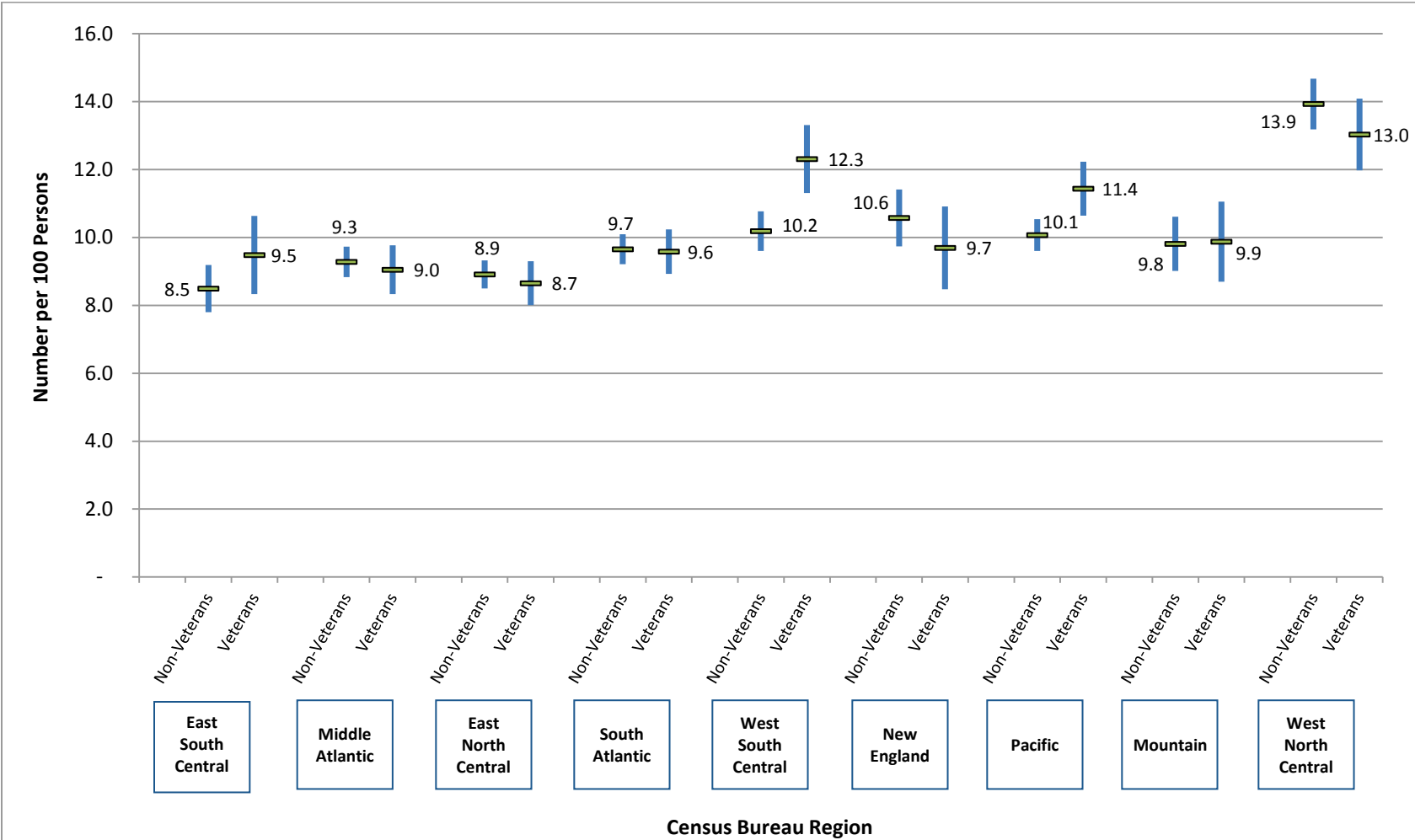
The prevalence of owner-managers is compared for male veterans and non-veterans in Figure 18. Veterans are comparable to non-veterans in seven of the nine regional divisions. In the other two, the West South Central and Pacific regions, veteran participation in firm management is statistically significantly higher than for non-veterans.

Figure 17: Nascent Entrepreneur Prevalence, Male Non-Veterans and Veterans by Region



Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Mean values are depicted for each cohort. The vertical line for each cohort represents the 95% confidence interval. When confidence intervals between cohorts overlap, the differences between them are not statistically significant.

Figure 18: Owner-Manager Prevalence, Male Non-Veterans and Veterans by Region



Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Mean values are depicted for each cohort. The vertical line for each cohort represents the 95% confidence interval. When confidence intervals between cohorts overlap, the differences between them are not statistically significant.

One possibility that would help to explain this difference would be variation in the age distribution of veterans in the different regional divisions. If some U.S. regions had a higher proportion of veterans 55 years and older, they might have more veteran business owners. A comparison of the age distribution of male veterans and non-veterans in the nine regions is presented in Table 8. Although there are dramatic differences between the non-veterans and veterans in every regional division, there is very little variation across the nine geographic divisions among veterans.

Although the geographic variations associated with veteran participation in business creation are statistically significant in two regions, the substantive differences are modest. A full understanding of these differences would require more detailed information on the economic character of the regional divisions and is outside the scope of the current assessment.

Table 8: Male Non-Veterans and Veterans, Age Distribution by Region

U.S. Census Bureau Region	Non-Veterans: Percentage in Age Cohort				Veterans: Percentage in Age Cohort			
	18-34 years	35-54 years	55-74 years	Total	18-34 years	35-54 years	55-74 years	Total
New England	45.7	41.9	12.4	100.0	8.9	41.6	49.5	100.0
Middle Atlantic	44.6	41.2	14.2	100.0	7.6	38.9	52.5	100.0
East North Central	45.8	41.0	13.2	100.0	9.4	41.3	49.3	100.0
West North Central	46.2	40.9	12.9	100.0	9.7	41.6	48.7	100.0
South Atlantic	43.1	42.0	14.9	100.0	9.4	39.8	50.9	100.1
East South Central	45.1	40.2	14.7	100.0	9.1	39.0	51.9	100.0
West South Central	47.0	40.7	12.4	100.1	10.2	42.8	47.0	100.0
Mountain	46.5	41.0	12.5	100.0	10.5	42.8	46.7	100.0
Pacific	45.1	42.0	12.9	100.0	8.8	43.1	48.1	100.0
All Regions	45.2	41.3	13.5	100.0	9.2	41.2	49.6	100.0

Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some row totals may not equal 100.0 % due to rounding.

12. Nature of Business Ventures: Veteran and Non-Veteran Firms

Are veteran-managed businesses different from those managed by non-veterans? Are veterans' firms in different sectors and involve different skills? Do veteran-owned firms have different management structures or involve different amounts of work? Is their scope, or size, different? Is there a difference related to survival?

Responding to these issues shifts the unit of analysis from the individual, veteran or non-veteran, to the business venture. A business venture is one with the same identification number over a series of interviews with the same individual. Combining all the first and second businesses reported over the seven interviews in the eleven SIPP panels results in a file of 76,096 distinct ventures.²³ Several adjustments have been made that reduce the total business count. First, there are 1,114 businesses reported by household members less than 18 years old, reflecting the SIPP interview strategy of detailed interviews with all household members 15 and older. A focus on adults led to removal of these reported ventures.

Second, there are a small number of ventures, 224, reported by those currently in active duty military service. As only those active duty military living off-post in the U.S. would be included in the SIPP panels, those living on a military installation or overseas would not be included. As this is not a representative sample of all those currently serving in the military, this small number of cases have been removed.

Third, adjustments were made to identify the "importance" of the venture. All businesses were classified in terms of the personal income derived from the venture by the respondent and the average amount of time devoted to the initiative. The results are presented in Table 9.²⁴ As can be seen, 23%, or 16,790 ventures, are in the "minor" category. These may be considered very early stage start-ups or perhaps part-time businesses. Table 9 also shows that veterans are more

²³ Some businesses in the file shared the same owner-manager. Over three-quarters of the ventures are represented by a single respondent; 17% represent two ventures sharing the same respondent; and 5% have three ventures with the same respondent. Slightly more than 1% of the ventures share the same respondent from four to eight times. There is no substantive or statistical difference between veterans and non-veterans in the proportion of multiple businesses in the consolidated venture file.

²⁴ Because of missing data and differences in interview schedules across panels there is variation in total venture counts across the following tables.

likely to be associated with more important ventures, and this difference is statistically significant. As many of the “minor” ventures may be start-up initiatives that have yet to reach their operational scope, this may reflect the reduced tendency of veterans to be involved in business creation, discussed in the previous section.

An emphasis on “going concerns” leads to a focus on those in the more significant categories. In addition, this was the criterion used to identify start-up and established firms to develop estimates of the prevalence rates discussed in the previous sections. It is useful to use the same definitions of ventures in these two complementary assessments.

Table 9: Venture “Importance” by Veteran Status

Level of Importance			Non-Veterans	Veterans	All
Number			61,070	13,186	74,256
Importance	Hours/Week	Monthly Income	Percentage in Cohort		
Minor	Under 5	Under \$1	23.3	19.4	22.6
Noticeable	5-10	\$1 - \$100	15.8	12.4	15.2
Important	11-20	\$101 - \$1,000	44.3	44.8	44.4
Substantial	21-40	\$1,001 - \$2,000	11.6	16.0	12.4
Major	Over 40	Over \$2,000	5.0	7.4	5.4
			100.0	100.0	100.0

Note: Weights re-centered for each cohort; those currently in military service or with no case weights are excluded. A comparison of the non-veteran and veteran columns indicates they are statistically significantly different at the 0.000 level.
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels.

The distribution of the respondents by age and gender for veterans and non-veterans is provided in Table 10. Two patterns among the veterans are quite apparent. First, the small number of ventures reported by women veterans, 202, represents 1.8% of all veteran ventures. Second, there is a substantial age difference between veterans and non-veterans, with 44.0% of the veteran ventures associated with a respondent over 54 years old compared to 15.0% of the non-veteran ventures. Assessment of the unique features of veteran firms will involve only firms managed by men with controls for age.

Table 10: Ventures by Veteran Status, Gender, and Age

	Non-Veterans		Veterans		All	
	Men	Women	Men	Women	Men	Women
Venture count	27,996	18,989	10,461	202	38,457	19,191
Age cohort	Percentage in cohort					
18-24	4.0	2.4	0.7	0.1	3.4	2.0
25-34	16.1	9.6	7.2	0.5	14.4	7.9
35-44	18.7	11.9	19.2	0.5	18.8	9.8
45-54	12.9	9.3	27.4	0.4	15.6	7.6
55-64	5.7	5.2	28.4	0.2	9.9	4.3
65-74	1.5	1.6	12.9	0.1	3.6	1.3
75-84	0.6	0.4	2.4	0.0	0.9	0.3
Gender totals	59.5	40.4	98.2	1.8	66.6	33.2
All		99.9		100.0		99.8
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals may not equal 100.0 % due to rounding.						

Characteristics of firms associated with veterans and non-veterans include business activities, the nature of management activities, the scope of activity, legal form, and (within limits) the duration of activity. In most cases the firms are characterized by the average or median value of the feature over the multiple periods in which data was collected, which was from one to seven periods. For example, reports on the average number of hours worked on the firm each week may be averaged across one to seven interviews. To control for age, firm principals (the respondents) are presented in three categories: 18-34 years old, 35-54 years old, and 55-74 years old.

Firm and Work Activity

Two sources of information are available on the business activity: the sector in which the business operates, and the nature of the occupational work associated with the reports of firm ownership/self-employment. The sector of emphasis, comparing veterans and non-veterans by

age, is available for over 99% of the ventures initiated by men; the distribution across 15 categories is presented in Table 11.²⁵

Table 11: Industry Group, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,381	833	14,753	4,928	3,394	4,374	27,809	10,391
Industry group	Percentage by industry group							
Agriculture, forestry, fishing	12.5	6.6	9.6	9.0	15.9	10.8	11.8	9.7
Mining	0.2	0.2	0.4	0.4	0.4	0.6	0.3	0.5
Construction	25.8	30.7	20.0	21.2	15.0	13.3	21.2	18.3
Manufacturing	4.2	3.2	5.4	5.9	6.3	6.3	5.1	5.8
Wholesale	4.0	4.6	5.2	6.0	5.3	5.8	4.8	5.8
Retail	9.8	7.6	12.0	11.4	11.7	12.3	11.2	11.5
Transportation, communication, utilities	5.2	7.1	4.9	5.9	5.1	4.4	5.0	5.3
Information	0.4	0.2	0.3	0.0	0.1	0.1	0.3	0.1
Finance, insurance, real estate	4.8	5.3	6.5	8.0	8.1	10.3	6.1	8.9
Professional management, related services	9.3	9.5	15.3	12.7	15.1	17.5	13.3	14.7
Education, health, social services	0.3	0.4	1.0	0.5	1.3	0.8	0.8	0.6
Business, repair services	14.9	17.9	13.0	13.4	10.0	12.2	13.2	13.1
Arts, entertainment, lodging, food	5.9	4.3	3.6	2.5	2.4	1.7	4.2	2.3
Personal services	2.9	2.2	2.8	2.8	3.1	3.6	2.9	3.1
Public administration	0.1	0.2	0.1	0.2	0.2	0.3	0.1	0.2
Totals	100.3	100.0	100.1	99.9	100.0	100.0	100.3	99.9
Source data from the U.S. Census Bureau's Survey of Income and Program Participation, (SIPP) 1984 – 2004 data panels. Some totals may not equal 100.0% due to rounding.								

²⁵ Three different coding schemes were used for industry sector in the SIPP program. For 1984-1990 the modified 1972 coding scheme was employed. For 1991 to 2001, the scheme for the 1990 Census of Population was employed, which represented a major adjustment. For 2004 the coding scheme for the 2000 Census of Population was utilized, which is a slightly modified version of the 1990 industry coding scheme. For this analysis the categories utilized in 1984-1990 and 1991-2001 assessments were recoded into those utilized in the 2000 Census of Population.

Although there are statistically significant differences between veteran and non-veteran firms, this is largely a reflection of the large sample sizes, not major differences in sector emphasis. Both veteran and non-veteran managed firms have similar emphases in all sector categories. There are, however, a few significant differences. Veteran-owned businesses – compared to those owned by non-veterans – are:

- Less likely to be in agriculture, forestry, and fishing.
- More likely to be involved in construction for those with owners 18-34 years old, but less so for those with owners 55-74 years old.
- Slightly more likely to be involved in finance, insurance, and real estate if their owners are 55-74 years old.
- Slightly more likely to be involved in professional management and related services if their owners are 55-74 years old.
- More likely to be involved in business and repair services at all owner ages.

Many of these differences may reflect the skills, aptitudes, and training associated with military service.

The occupational activity associated with the business venture was reported for about 20% of male-supervised ventures. This is most relevant to those ventures that are one-person firms. A presentation of the distribution across 25 categories, comparing male veterans and non-veterans for the three age groups, is presented in Table 12.²⁶ As with the industry sector assessment, the most striking feature is the presence of veteran firms in all occupational categories, often with about the same level of participation as among non-veteran firms.

²⁶ The occupation coding also changed over time, with the 1980 U.S. Population Census scheme used for the 1984 to 1990 SIPP cohorts, the 1990 U.S. Population Census scheme use for the 1991 to 2001 SIPP cohorts, and the 2000 U.S. Population Census scheme used for 2004. There were major changes in the 2000 scheme which was based on 25 major categories. For this assessment all data was recoded to match the 25 category 2000 U.S. Census scheme.

Table 12: Business Owner Occupation, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	2,719	323	2,679	1,155	396	501	5,797	1,985
Occupational group	Percentage by occupational group							
Management	7.4	7.4	13.3	13.2	16.4	16.6	10.7	13.3
Business operations specialist	4.5	6.5	7.1	6.8	5.8	7.0	5.8	6.8
Financial specialist	0.5	0.6	0.3	0.4	0.8	0.8	0.4	0.6
Computer and math occupations	3.1	0.6	2.9	3.1	1.0	1.4	2.9	2.3
Architect and engineer occupations	5.0	4.6	2.6	2.0	0.8	1.8	3.6	2.4
Life, physical, or social scientist	0.9	0.0	1.6	1.4	2.0	2.2	1.3	1.3
Community and social service	0.9	0.6	1.2	1.1	3.3	0.4	1.2	0.8
Legal occupations	1.3	0.3	1.1	0.7	1.3	1.2	1.2	0.8
Education, training, and librarians	4.2	3.1	8.8	5.5	8.8	11.0	6.6	6.5
Art, media, sports	4.0	1.2	2.9	2.0	3.3	2.8	3.4	2.1
Health practitioners and technicians	0.9	2.2	2.7	2.3	2.8	2.4	1.9	2.2
Healthcare support	0.5	0.9	0.2	0.0	0.5	0.0	0.4	0.2
Protective services	2.2	5.3	2.3	4.3	1.5	3.0	2.2	4.1
Food preparation and service	0.4	0.0	0.1	0.1	0.0	0.0	0.2	0.1
Building and grounds maintenance	2.2	2.5	2.5	1.6	4.3	2.2	2.5	1.9
Personal care and service	0.6	0.0	0.5	0.5	0.5	1.0	0.5	0.6
Sales and related occupations	12.6	11.5	10.7	12.4	11.6	13.2	11.7	12.4
Office and administrative support	4.8	6.8	4.3	4.8	5.3	5.4	4.6	5.3
Farming, fishing, forestry	5.4	2.5	3.4	3.4	4.5	1.6	4.4	2.8
Construction trades	14.3	12.4	8.6	7.6	6.6	5.6	11.1	7.9
Extraction occupations	0.2	0.0	0.3	0.2	0.0	0.2	0.3	0.2
Installation, maintenance, and repair	6.0	8.0	5.3	6.5	3.0	4.0	5.5	6.1
Production occupations	9.5	12.7	9.6	9.5	6.6	8.2	9.3	9.7
Transportation occupations	8.9	9.3	7.5	10.2	9.1	8.0	8.2	9.6
Armed Forces	0.0	0.9	0.0	0.3	0.3	0.2	0.0	0.4
Totals	100.3	99.9	99.8	99.9	100.1	100.2	99.9	100.4
Chi-square statistical significance	0.000		0.000		0.100		0.000	

Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels.
Some totals may not equal 100.0% due to rounding.

Although veteran-owned businesses have about the same level of participation in most occupational categories as their non-veteran counterparts, there are some differences between veteran-owned firms and non-veteran-owned firms. Veterans are:

- Less likely to be involved in computer and math occupations if they are 18-34 years old.
- Less likely to be in the arts, media, or sports, particularly if they are 18-34 years old.
- More likely to be in protective services at all ages.
- Less likely to be in building and grounds maintenance if they are over 34 years old.
- Less likely to be farmers, fishermen, or foresters unless they are 35-54 years old.
- Less likely to be involved in a construction trade.
- More likely to be a transportation worker if they are less than 55 years old.

Overall, the similarity of the distributions is more striking than subtle age-related differences.

Firm Management

Two features of management activities are available. First is the extent to which various members of a household (or family) share management responsibility, presented in Table 13. While in most cases this may include spouses, no distinction is made in such a relationship in the dataset. The second management feature is the amount of time devoted to management efforts, presented in Table 14.

The SIPP interview procedure emphasized the contribution of businesses to the household income, and a review of other household members that may have been involved in the firm was asked for all ventures. However, no questions were asked about others outside of the household who may have had a role in the business. The portrayal is, therefore, incomplete. For this overview, the maximum number of household members involved in the firm management reported at any interview is identified.

It is clear in Table 13 that the number of household members sharing in firm management increases across the age groups for both veteran and non-veteran firms. Only 9% of the ventures reported by men 18-34 years old have other household members involved, compared to over

20% among those 55-74 years old. There appear to be no statistically significant differences between veteran and non-veteran firms for those 18-34 and 35-54 years old. Among those 55-74 years old, it would appear that non-veteran firms have slightly more household members involved in management.

Table 13: Other Household Members on Business Management Team

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,381	833	14,753	4,928	3,394	4,374	27,809	10,391
Average number on team	0.0924	0.0887	0.1816	0.1764	0.2559	0.2153	0.1608	0.1856
T-test statistical significance	0.737		0.432		0.000		0.000	
Other household members on management team	Percentage participation by number							
None	91.1	91.1	82.3	82.9	74.8	79.0	84.3	81.9
One	8.6	8.9	17.4	16.7	24.9	20.5	15.4	17.7
Two	0.2	0.0	0.2	0.4	0.3	0.5	0.2	0.4
Three	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
Totals	100.0	100.0	100.0	100.1	100.0	100.0	100.0	100.1
Chi-square statistical significance	0.497		0.295		0.000		0.000	
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals may not equal 100.0% due to rounding.								

The time devoted to the firm by the respondent is presented in Table 14. In this case the average number of hours per week reported across all interviews is utilized for comparison. However, this assessment omits all those that reported less than 5 hours per week on their venture. It would appear that veterans report slightly less work devoted to their ventures than non-veterans. This is uniformly statistically significant for all age categories and for both the average hours and the comparison of the frequency distributions. On the other hand, the actual differences are quite small, averaging about 2 hours per week. The statistical significance reflects large sample sizes, rather than dramatic substantive differences.

Table 14: Hours per Week Devoted to Firm, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,380	832	14,755	4,928	3,395	4,399	27,807	10,391
Average number of hours	39.4	37.4	43.0	42.0	39.4	37.2	41.2	39.3
T-test statistical significance	0.001		0.000		0.000		0.000	
Hours per week devoted to firm	Percentage by hours per week							
Less than 11 hours	6.6	10.2	4.1	5.0	5.7	6.6	5.2	6.3
11 – 20 hours	11.7	12.1	8.3	9.4	11.5	14.6	10.0	12.2
21 – 30 hours	11.9	13.2	9.7	9.9	12.8	14.6	11.0	12.3
31 – 40 hours	25.2	23.4	22.0	22.5	24.3	23.1	23.3	22.9
41 – 50 hours	21.4	20.1	25.0	22.6	22.6	19.9	23.3	21.0
51 or more hours	23.2	20.9	30.9	30.5	23.2	21.2	27.1	25.3
Totals	100.0	99.9	100.0	99.9	100.1	100.0	99.9	100.0
Chi-square statistical significance	0.002		0.001		0.000		0.000	
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals may not equal 100.0% due to rounding.								

Scope of Firm Activity

The scope of current and expected firm activity is reflected in four measures: the average number of jobs provided for others, the average monthly personal income derived from the business, the average monthly business profits, and sales expected in the next 12 months. Two are complicated by changes in the interview structure used in the SIPP project.

One of these changes is associated with reports of the jobs provided by the ventures. Although the interview schedules indicate that this was recorded as an exact number, in the SIPP datasets employment is reported in categories. As shown in Table 15, from 1984 to 1993 employment

was reported as either one, two, three to five, or six or more jobs. From 1996 to 2004 it was reported as either under 25, 25 to 99, or 100 or more jobs.²⁷

Because the reporting categories used in 1996-2004 were so broad and there is no distinction made among ventures with less than 25 employees, it is not clear what inferences can be made for the 1996-2004 SIPP panels. It would appear that the proportion with more than 25 employees increases slightly for ventures managed by older respondents, both veterans and non-veterans, from about 5% for firms managed by those 18-34 years old to over 8% for those 55-74 years old. Among those 18-34 years old, it would appear that 1.4% of non-veteran firms have more than 100 jobs compared to 3.2% of veteran firms. But this is actually only 5 out of 156 veteran firms. On the other hand, 96.2% of veteran firms have fewer than 25 employees, compared to 94.9% of non-veteran firms in this age cohort. So even though there is a statistically significant difference between veteran and non-veteran firm employment for this age group, the most conservative interpretation would be that of no difference.

There do seem to be some differences associated with veteran status when the more precise categories utilized for the 1984 to 1993 panels are examined. Among veteran firms managed by those 18-34 years old, 70.7% appear to provide one or two jobs compared to 61.4% for non-veteran firms. This difference is statistically significant. The differential is reduced, but still statistically significant among those 35-54 years old. But among those 55-74 years old, the patterns among veteran firms are more diverse, with the proportion reporting one or two jobs the same as non-veteran firms, but the proportion reporting six or more jobs somewhat greater, at 24.5% for veteran firms and 20.4% for non-veteran firms. The overall comparison, which is also statistically significant, suggests the same proportion of veteran and non-veteran firms are providing one or two jobs, but that slightly more veteran firms, 24.0%, are providing 6 or more jobs compared to non-veteran firms, at 21.5%. This reflects the small proportion of veteran firms (8.0%) among those 18-34 years old and the 39.9% of veteran firms among those 55-74 years old. Overall, the differences in jobs associated with veteran and non-veterans are quite small.

²⁷ The SIPP interview item, "What was the total number of employees working for this business?" implies that owner-managers and other household partners were to be excluded. Owner-managers are not, therefore, included in this count. Those responsible for the SIPP program are considering the option of adding non-employer firms as a firm size category in future SIPP datasets.

Table 15: Jobs Provided by Firm, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
1984 - 1993								
Venture count	5,121	505	6,401	3,183	1,356	2,504	13,063	6,277
Jobs provided	Percentage by number of jobs							
1	43.9	52.1	34.0	34.9	36.1	37.6	38.2	37.6
2	17.5	18.6	16.5	18.2	20.1	18.5	17.4	18.4
3 - 5	22.1	19.5	23.6	20.9	23.3	19.4	22.8	20.1
6 or more	16.5	9.7	25.8	26.0	20.4	24.5	21.5	24.0
Totals	100.0	99.9	99.9	100.0	99.9	100.0	99.9	100.1
Chi-square statistical significance	0.000		0.011		0.002		0.000	
1996 - 2004								
Venture count	2,331	156	5,433	938	1,136	1,406	9,229	2,185
Jobs provided	Percentage by number of jobs							
Under 25	94.9	96.2	92.2	93.5	91.7	91.0	92.7	92.7
25 - 99	3.7	0.6	5.5	4.3	5.7	6.6	5.3	4.8
100 or more	1.4	3.2	2.3	2.2	2.6	2.3	2.1	2.5
Totals	100.0	100.0	100.0	100.0	100.0	99.9	100.1	100.0
Chi-square statistical significance	0.030		0.272		0.588		0.280	
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals may not equal 100.0% due to rounding.								

There are two measures of financial flows related to the ventures. As this information was obtained in dollar amounts for the year in which the interview was conducted, they have all been adjusted to 2012 dollars using the consumer price index.²⁸ The first measure is related to the average monthly business income provided to the respondent, which will not take into account the monthly income provided to other members of the management team, whether or not they

²⁸ The U.S. Bureau of Labor Statistics produced All Urban Consumers CPI, U.S. city average annual values, dated January 16, 2013 and accessed 28 January 28, 2013, was utilized for this adjustment.

live in the same household. It does not, therefore, provide a precise measure of the total income provided by the firm to the entire management team; and 20% of respondents report on firms managed by a team.

Personal income derived from the business is, nonetheless, one indicator of the scope of activity. The monthly average and distribution across five categories is provided in Table 16. When all ages are compared, the average monthly incomes are almost identical. However, for those less than 55 years old the non-veteran principals report a statistically significant higher monthly income from the firms. There is no difference among those 55-74 years old. The same pattern is found in the comparison across the five categories in the lower part of Table 16. There are slightly more veterans reporting a very low monthly income in the all age comparison. It seems appropriate to conclude that younger male veterans are receiving slightly less monthly income from their businesses than their age peers.

Table 16: Average Monthly Business Income, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,380	833	14,757	4,928	3,395	4,377	27,806	10,390
Average monthly income (2012 dollars)	\$706	\$575	\$1,084	\$971	\$967	\$963	\$938	\$928
T-test statistical significance	0.000		0.000		0.895		0.468	
Monthly business income (2012 dollars)	Percentage of age cohort by amount of average monthly business income							
\$100 or less	14.9	19.9	9.3	11.1	12.0	11.9	11.7	12.3
\$101 - \$1,000	63.7	63.5	54.6	55.8	58.0	57.1	58.1	57.2
\$1,001 - \$2,000	15.6	12.5	21.8	21.1	18.6	18.7	19.2	19.2
\$2,001 - \$5,000	5.4	4.0	12.5	11.1	9.5	10.9	9.7	10.3
\$5,001 - \$8,333	0.5	0.1	1.7	1.0	1.9	1.4	1.3	1.1
Totals	100.0	100.0	99.9	100.1	100.0	100.0	100.0	100.1
Chi-square statistical significance	0.000		0.000		0.113		0.033	
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals may not equal 100.0% due to rounding.								

Average monthly profits, as presented in Table 17, do provide a firm-related measure, for it is the firm profit that is obtained in the interview. The pattern, moreover, is very similar to that associated with personal income. Younger veteran firm owners report less profit than their age peers; there is no substantive or statistically significant difference among those 55-74 years old.

The difference for all ages, those 18-74 years old in the right columns of Table 17, is small. One measure, comparing the average values, is not statistically significant while the other, comparing the differences in the column distributions, is statistically significant. This latter result probably reflects the large sample size.

Table 17: Average Monthly Business Profits, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,380	834	14,755	4,929	3,394	4,377	27,807	27,807
Average monthly profits (2012 dollars)	\$595	\$508	\$705	\$642	\$643	\$663	\$657	\$643
T-test statistical significance	0.000		0.039		0.622		0.491	
Monthly business profits (2012 dollars)	Percentage of age cohort by amount of average monthly business profits							
Loss of more than \$100	4.0	7.0	3.5	5.5	4.0	4.2	3.8	5.0
-\$100 to + \$100	59.2	54.6	62.2	58.7	61.1	66.1	61.1	59.6
\$101 - \$1,000	18.2	20.6	15.0	16.2	16.4	21.3	16.3	17.0
\$1,001 - \$2,000	8.6	9.6	7.4	8.4	7.9	4.1	7.9	7.8
\$2,001 - \$5,000	7.4	6.2	8.1	8.3	7.3	3.4	7.7	7.6
\$5,001 or more	2.5	2.0	3.7	2.9	3.2	1.0	3.2	3.0
Totals	99.9	99.9	99.9	100.0	99.9	100.1	100.0	100.0
Chi-square statistical significance	0.000		0.000		0.349		0.000	
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.								

The final measure is related to expectation for sales over the next 12 months. Assessment is complicated by a change in the SIPP interview schedule, which provided a choice of above or below \$1,000 from 1984 to 1993, and a choice of above or below \$2,500 from 1996 to 2004. As a consequence, both patterns are presented in Table 18.

As can be seen, there is little difference between the expectations of veteran and non-veteran business owners. A slightly higher proportion of young non-veteran owners, those 18-34 years old, are expecting sales above the thresholds (\$1,000 or \$2,500), but there is little difference for those 55-74 years old, leading to small overall differences.

Table 18: Sales Expected in Next 12 Months, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
1984 - 1993								
Venture count	6,190	619	7,306	3,635	1,518	2,817	15,217	7,168
Annual sales expected	Percentage of age cohort by sales expected							
Up to \$1,000	8.6	11.5	4.5	5.0	4.9	5.3	6.3	5.8
\$1,000 or more	91.4	88.5	95.5	95.0	94.1	94.7	93.7	94.2
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi-square statistical significance	0.021		0.249		0.616		0.120	
1996 - 2004								
Venture count	3,097	211	7,376	1,271	1,865	1,534	12,408	3,170
Annual sales expected	Percentage of age cohort by sales expected							
Up to \$2,500	11.3	14.2	6.9	9.6	6.9	8.8	8.1	9.6
\$2,500 or more	88.7	85.8	93.1	90.4	93.1	91.2	91.9	90.4
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Chi-square statistical significance	0.219		0.001		0.045		0.005	
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels.								

In summary, when the four measures of firm scope are examined, it would appear that:

- Firms managed by younger veterans, 18-34 years old, may provide less employment than those of their age peers; there is no difference among older age groups.
- Firms managed by younger veterans, 18-34 years old, may provide less monthly income and less firm profit than those of their age peers; there is no difference among those managed by men 55-74 years old.
- Firms managed by younger veterans may have slightly lower expectations for future sales compared to those of their age peers; there is little substantive difference in sales expectations among those 55-74 years old.

What is not clear is how older veteran-managed firms reach parity with their non-veteran age peers. Veterans with modestly performing firms may learn how to improve performance and increase scope of operations. On the other hand, veteran-owned firms of modest scope may close down, leading to a larger proportion of veteran-owned firms with larger scope. It is probably a combination of the two processes.

Firm Legal Form

The legal form of the venture was captured in every interview wave where the business was discussed. These are sorted into two measures, the legal form at the first interview where the firm was mentioned and the legal form at the last interview where firm descriptions were obtained. For some this will be the one and only interview, but for others these are two separate reports.

There is a hierarchy of legal forms in terms of administrative complexity: from none, to sole proprietorship, to a form of partnership, to a form of incorporation. Many firms tend to migrate toward a form of incorporation as the final legal form. Examination of both the initial and final legal forms in Tables 19 and 20 indicates that the share incorporated is greatest for the oldest cohort, those 55 and older, and the final legal forms. In contrast, the proportion with “no legal form” declines among the older cohorts in Table 19, and for the final legal form in Table 20.

Table 19: Initial Legal Form of Business, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,381	833	14,755	4,929	3,395	4,377	27,808	10,391
Initial legal form	Percentage of age cohort by legal form							
None	22.6	24.0	16.9	19.8	19.6	21.4	19.3	20.9
Sole proprietorship	55.4	58.2	53.1	55.7	51.1	52.2	53.6	54.3
Partnership	9.8	8.2	8.0	7.4	7.4	5.9	8.5	6.9
Corporation	12.3	9.6	22.0	17.1	21.9	20.5	18.6	18.0
Totals	100.1	100.0	100.0	100.0	100.0	100.0	100.0	100.1
Chi-square statistical significance	0.037		0.000		0.008		0.000	
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.								

Table 20: Final Legal Form of Business, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,380	834	14,755	4,929	3,394	4,377	27,807	10,390
Final legal form	Percentage of age cohort by legal form							
None	8.6	10.1	4.1	4.0	4.3	4.4	5.7	4.7
Sole proprietorship	51.4	56.7	44.7	50.2	42.2	46.7	48.7	49.1
Partnership	16.2	15.2	12.4	13.6	15.5	13.5	14.1	13.6
Corporation	23.7	18.0	38.7	32.3	38.0	35.5	33.4	32.6
Totals	99.9	100.0	99.9	100.1	100.0	100.1	101.9	100.0
Chi-square statistical significance	0.001		0.000		0.001		0.000	
Source data from the U.S. Census Bureau’s Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.								

Most relevant for this analysis is the consistent tendency for non-veteran firms to have more sophisticated legal forms. This is true for all age categories, all ages combined, and for both initial and final legal forms. While statistically significant, the substantive differences are small.

Firm Duration

The number of interviews in which a given firm was identified provides information about the duration of survival. The maximum, if information about a specific business venture was obtained in all seven interviews at four month intervals, would be 28 months (i.e., 2 years, 4 months). For a venture discussed in only one interview the minimum would be four months.²⁹ Table 21 provides a summary of the duration of ventures associated with veterans and non-veterans for each of the three age groups and all ages combined. Note that the average duration is longer for the older owner-managers, increasing from 12 to about 18 months. This reflects the larger proportion of firms in place for all seven interviews among the older owner-managers.

Table 21: Duration of Business Activity, by Age and Veteran Status

	18 – 34 Years Old		35 – 54 Years Old		55 – 74 Years Old		All Ages	
	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans	Non-Veterans	Veterans
Venture count	9,381	834	14,755	4,929	3,395	4,377	27,808	10,390
Average number of months	13.1	11.8	16.7	16.6	17.7	17.6	15.6	16.7
T-test stat. significance	0.000		0.478		0.596		0.000	
Number of months	Percentage of age cohort by duration of business activity							
1 – 4	31.4	34.3	19.7	20.4	17.4	17.7	23.3	20.3
5 – 8	18.4	21.5	14.3	13.6	12.6	12.2	15.5	13.6
11 – 12	11.4	12.9	10.8	10.7	9.6	10.3	10.8	10.6
13 – 16	8.7	7.1	8.0	8.7	8.0	8.7	8.3	8.5
17 – 20	6.7	6.5	7.7	7.7	8.2	7.4	7.4	7.5
21 – 24	6.7	6.0	8.9	9.5	10.0	9.6	8.3	9.3
25 – 28	16.8	11.6	30.6	29.4	34.1	34.0	26.4	30.2
Totals	100.1	99.9	100.0	100.0	99.9	99.9	100.0	100.0
Chi-square stat. significance	0.001		0.243		0.696		0.000	
Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.								

²⁹ An ideal analysis would start with a data file that had dates of founding and termination of all veteran and non-veteran ventures, to facilitate a survival analysis using a hazard model. The only available data on the harmonized data from 11 panels with 7 waves of data collection was the number of waves in which the firm was active. As information is severely left and right censored, this assessment is a simple comparison of the number of waves in which a venture was in operation across the 7 waves of data collection.

Two patterns related to military service are statistically significant and have some substantive import. First, veterans 18-34 years old are associated with ventures with a shorter duration than their age peers. The average duration of the non-veterans firms is about 1.3 months longer. This is reflected in the larger number of short duration ventures and reduced number of long duration ventures associated with veterans in the frequency distribution. There is no statistically significant difference in firm duration among those in the 35-54 and 55-74 age groups.

The second pattern is the longer duration of veteran-owned firms when all ages are considered. These differences are statistically significant and with some substantive interest. The average veteran firm lasts 1.1 months longer than the average non-veteran firms. This reflects the large proportion of veteran firms among the older respondents, which offsets the impact of shorter firm durations among the veterans 18-34 years old.

Overall, it would appear that firms initiated by younger veterans, 18-34 years old, have a shorter duration, but firms initiated by veterans 35 years and older may last as long as non-veteran firms.

Overview

The comparison of samples of veteran and non-veteran firms emphasized ventures above a minimal level of activity. The major patterns can be summarized as follows:

- Veteran-owned firm are represented in all industry sectors and the emphasis is broadly similar to firms owned by non-veterans. The age of the veteran has some small effect on the emphasis, with younger veterans more involved in construction and older veterans more involved in the professional management or finance, insurance, and real estate groups than their age peers.
- Veterans are involved with all occupations associated with business ventures and the distribution is very similar to that of non-veterans. Differences are minor and may reflect sampling variation.
- Less than 20% of the ventures observed involve other household members as part of the management team. More household members, male and female, are associated with firms

described by older firm principals. There are no major differences between veteran and non-veteran firms in including other household members in the management team.

- Non-veteran firm principals appear to devote about 2 hours more per week to their firms than veterans; this small difference is true for all age groups. But almost half of veterans and non-veterans report devoting 40 or more per week to their firms.
- All measures of firm scope – employment, monthly income to the principal, monthly firm profit, or expectation of future sales – indicate that firms managed by younger veterans have reduced scope compared to their non-veteran age peers. There is, however, no difference between older veterans and their non-veteran age peers.
- Firms managed by younger veterans appear to have a shorter duration than the firms managed by their age peers; there is no difference in duration among those managed by veterans or non-veterans over 34 years old.

In summary then, veteran-owned businesses are very much like those owned by non-veterans. The similarities associated with firms of those over 34 years of age are striking. The firms initiated by younger veterans, those 18-34 years old, appear to have a reduced scope and exist for a shorter time than those managed by their non-veteran age peers.

13. Effects of Business Ownership for Veterans

Are veterans who become involved in business creation and ownership better off than veterans with wage and salary jobs? For this assessment male veterans are placed into three groups. Those who are not involved in business creation or ownership (87.8%), those involved in business creation (2.2%), and those involved as owner-managers (9.4%). A small proportion (0.4% of the total) are both owner-managers and involved in business creation; they are placed in the owner-manager category for this analysis. These three groups of veterans are compared on the basis of the total household income in Table 22 and their total personal income in Table 23.³⁰ All amounts have been adjusted for inflation and are presented in 2012 dollars. Although households with negative or no income are included in Table 22, individuals with no income are excluded from Table 23. The assessment controls for age by presenting male veterans in three age groups.

³⁰ All differences presented in these tables are statistically significant at 0.000 or better.

Table 22: Veterans' Household Income, With and Without Business Activity

Veteran Age and Monthly Household Income	Not Involved In Business	Nascent Entrepreneurs	Owner-Managers
18-34 years old, number	3,234	115	176
Average monthly household income	\$5,484	\$6,442	\$5,262
Monthly household income	Percentage by income range		
Negative or no income	0.5	3.4	1.7
\$1 - \$2,000	11.9	7.8	21.6
\$2,001 - \$4,000	26.1	27.6	21.6
\$4,001 - \$6,000	26.6	26.7	21.6
\$6,001 - \$8,000	17.4	13.8	16.5
\$8,001 - \$10,000	8.8	8.6	6.3
\$10,001 - \$12,000	3.6	5.2	2.8
\$12,001 or more	5.1	6.9	8.0
Totals	100.0	100.0	100.1
35-54 years old, number	13,360	453	2,043
Average monthly household income	\$6,932	\$6,814	\$8,421
Monthly household income	Percentage by income range		
Negative or no income	0.6	1.1	0.7
\$1 - \$2,000	7.6	9.9	10.0
\$2,001 - \$4,000	16.3	17.9	17.3
\$4,001 - \$6,000	23.1	20.5	17.5
\$6,001 - \$8,000	20.6	21.4	16.0
\$8,001 - \$10,000	13.3	9.9	12.0
\$10,001 - \$12,000	8.1	8.2	6.0
\$12,001 or more	10.4	11.0	20.4
Totals	100.0	99.9	99.9
55-74 years old, number	16,721	367	1,978
Average monthly household income	\$5,679	\$6,868	\$8,749
Monthly household income	Percentage by income range		
Negative or no income	0.4	0.3	0.5
\$1 - \$2,000	12.9	11.7	9.6
\$2,001 - \$4,000	28.9	25.3	17.4
\$4,001 - \$6,000	22.8	19.3	18.3
\$6,001 - \$8,000	14.0	18.5	15.6
\$8,001 - \$10,000	8.9	6.8	10.3
\$10,001 - \$12,000	5.1	5.2	7.4
\$12,001 or more	7.1	12.8	21.0
Totals	100.1	99.9	100.1

Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding.

Table 23: Veterans' Personal Income, With and Without Business Activity

Veteran Age and Monthly Personal Income	Not Involved In Business	Nascent Entrepreneurs	Owner-Managers
18-34 years old, number	3,059	113	174
Average monthly personal income	\$3,197	\$3,577	\$3,740
Monthly personal income	Percentage by income range		
\$1 - \$2,000	29.0	31.0	28.2
\$2,001 - \$4,000	44.2	38.9	41.4
\$4,001 - \$6,000	18.6	17.7	15.5
\$6,001 - \$8,000	6.1	4.4	6.9
\$8,001 - \$10,000	1.3	5.3	3.4
\$10,001 - \$12,000	0.4	0.0	1.7
\$12,001 or more	0.4	2.7	2.9
Totals	100.0	100.0	100.0
35-54 years old, number	12,145	437	1,965
Average monthly personal income	\$4,717	\$4,663	\$5,455
Monthly personal income	Percentage by income range		
\$1 - \$2,000	12.6	26.7	21.7
\$2,001 - \$4,000	32.8	26.5	29.7
\$4,001 - \$6,000	31.3	21.0	18.2
\$6,001 - \$8,000	13.3	11.4	11.0
\$8,001 - \$10,000	5.3	5.0	6.3
\$10,001 - \$12,000	2.1	3.7	3.5
\$12,001 or more	2.5	5.7	9.6
Totals	99.9	100.0	100.0
55-74 years old, number	6,877	321	1,761
Average monthly personal income	\$3,963	\$3,486	\$4,606
Monthly personal income	Percentage by income range		
\$1 - \$2,000	32.1	48.4	24.5
\$2,001 - \$4,000	26.9	20.0	13.3
\$4,001 - \$6,000	21.6	15.6	8.4
\$6,001 - \$8,000	9.6	6.9	6.3
\$8,001 - \$10,000	4.6	3.8	10.3
\$10,001 - \$12,000	2.6	1.6	3.3
\$12,001 or more	2.5	3.8	7.7
Totals	99.9	100.1	73.8

Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding. Those with no monthly income have been excluded from this table.

The patterns of household incomes in Table 22 show that there is a clear age effect among those veterans who are owner-managers. The average monthly household income of owner-managers aged 18-34 years is lower than those not involved in businesses or as nascent entrepreneurs. But among those 35-54 years old and 55-74 years old, the owner-managers have the highest average monthly household incomes. Perhaps more dramatic, over 20% of veterans over 34 years old are in the highest category; two to three times the proportion of those not involved.

Some of these same patterns are found in Table 23, which presents the total monthly personal income of veterans in these three age categories. This makes clear that veterans in the owner-manager role are reporting the highest personal incomes in all age categories. In addition, those owner-managers over 34 years old have the highest proportion in the top monthly income category, over \$12,000 per month. Those veterans 18-34 years old involved in business creation as nascent entrepreneurs are doing well compared to their age peers, as are those 35-54 years old. But older veteran nascent entrepreneurs, 55-74 years of age, have a more modest income than their age peers, accounted for by the half who have very low monthly personal income, under \$2,000 per month. Many of these may be part-time businesses initiated by retirees.

Sources of personal monthly income are presented in Table 24. Two classes of income were developed for this assessment. Wages and salaries from both the first and second job were considered wage and salary income; all personal income from the first or second business was considered business ownership or self-employment income. Table 24 presents the percentage of business income related to participation in the business creation and ownership process.

It is to be expected that the majority of personal income among those not involved in business creation and management would come from salaries. Indeed, over 99% of the personal income for those under 55 years of age, and over 97% for those over 55 years of age not involved in firm creation or management are provided by wages and salaries. In contrast, the majority of personal income for veterans considered owner-managers comes from their businesses. As shown in Table 24, this increases from 64.7% among veteran owner-managers 18-34 years old, to 78.6% for those 35-54 years old, to 86.9 % among those 55-74 years old.

Table 24: Proportion of Veterans' Personal Income from Business Activity

Veteran Age and Proportion of Income from Business	Not Involved In Business	Nascent Entrepreneurs	Owner-Managers
18-34 years old, number	3,059	113	174
Average % share of income from business	0.7	42.7	64.7
Percent share of income from business	Percentage by share range		
0	98.6	21.4	22.4
1 – 20	0.4	24.1	6.3
21 – 40	0.4	11.6	6.3
41 – 60	0.2	4.5	3.4
61 – 80	0.2	13.4	3.4
81 – 90	0.0	0.0	0.6
91 – 100	0.3	25.0	57.5
Totals	100.1	100.0	99.9
35-54 years old, number	12,142	437	1,965
Average % share of income from business	0.9	48.4	78.6
Percent share of income from business	Percentage by share range		
0	98.3	19.0	11.0
1 – 20	0.5	19.0	5.0
21 – 40	0.3	11.4	4.2
41 – 60	0.2	9.8	3.3
61 – 80	0.1	5.7	3.5
81 – 90	0.0	2.3	1.7
91 – 100	0.6	32.7	71.3
Totals	100.0	99.9	100.0
55-74 years old, number	6,877	321	1,781
Average % share of income from business	2.9	68.9	86.9
Percent share of income from business	Percentage by share range		
0	96.5	13.1	7.2
1 – 20	0.4	9.7	2.1
21 – 40	0.2	9.7	2.6
41 – 60	0.2	5.9	2.5
61 – 80	0.1	3.7	2.2
81 – 90	0.0	1.2	1.0
91 – 100	2.6	56.7	82.4
Totals	100.0	100.0	100.0

Source data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP), 1984 – 2004 data panels. Some totals do not equal 100.0% due to rounding. Those with no monthly income have been excluded from this table.

In addition, a high proportion of owner-managers received over 90% of their monthly income from their business; this ranges from 57.5% among the veteran owner-managers 18-34 years old to 82.4 % among those over 54 years old.

Based on this assessment, it would appear that:

- Veteran nascent entrepreneurs are in households with monthly income equal to or higher than veterans not involved in the business life course.
- Young veteran nascent entrepreneurs have personal incomes equal to the incomes of those veterans not involved in business creation; older veteran nascent entrepreneurs, who may be involved with new part-time businesses, have a lower personal income than those veterans not involved in business creation.
- Veteran owner-managers of all ages have personal income that is higher than those veterans not involved and have a higher proportion of personal and household income in the higher monthly income category, \$12,000 or higher. The majority of this additional income is derived from their businesses.

There is strong evidence that veterans involved in business creation have a better personal and household financial situation than those veterans not involved.

14. Summary Overview

Data from eleven of the thirteen SIPP panels beginning from 1984 to 2004 were consolidated to provide harmonized information that could be used to address a number of issues related to participation in business creation and management by veterans and non-veterans. The desire to track patterns over this 20 year period led to an emphasis on those features that were comparable across all eleven datasets. Although this had the advantage of developing the largest possible dataset, it had the disadvantage of restricting attention to a limited number of firm characteristics. Assessment based on this consolidated dataset provides confidence in the patterns related to a number of major issues.

- 1) Are there differences in the tendency of veterans, compared to non-veterans, to be involved in business creation and management?

- When all panels and age groups were combined, participation in business creation by male veterans was slightly lower than that of their non-veteran peers. This difference was statistically significant but due to the disproportionately large number of veterans in older age cohorts that have lower levels of firm creation. Differences in the business creation rate between veterans and non-veterans in specific age cohort breakouts were not statistically significant.
 - In almost every age category, except those 65-74 years of age, the participation of female veterans in business creation was less than female non-veterans. However, because of the small number of female veterans, only one of these differences was statistically significant, that for those aged 55 to 64.
 - Male veterans less than 55 years old appear to be less involved in firm ownership than their age peers. Male veterans over 55 years old are just as active in firm ownership as their age peers.
 - Among women less than 65 years of age, veterans were less likely to be involved as firm owner-managers, and these differences were statistically significant for the all-age comparison, those 18-24 years old, and those 35-44 years old. There was no difference in firm ownership related to military service among women over 64 years old.
- 2) Have the patterns associated with veteran-owned businesses, or differences between veteran and non-veteran firms, changed over time?
- Assessment of male veterans in three age groups compared to their non-veteran age peers, found no significant change in creating new firms or managing existing firms over the 1984 to 2004 period.
 - Veterans 35-54 years old were found to be less involved in firm management than their age peers for every period from 1984 to 2004.
- 3) Are there differences in the types of firms managed by veterans and non-veterans?
- The overall distribution of male veteran and non-veteran managed firms reflected similar emphases in all 15 economic or industry sectors examined, with some small variations associated with age.

- The overall distribution of male veteran and non-veteran self-employment occupations reflected similar emphases in 25 occupational categories, with a few variations associated with age.
 - Veterans 55-74 years of age may have slightly fewer household members involved in firm management than non-veterans.
 - Veterans of all ages appear to devote about 2 hours a week less to their firms than their non-veteran age peers.
 - Veteran-managed firms are slightly less likely to have a corporate legal form compared to their age peers; they are slightly more likely to be sole proprietorships.
- 4) Are there differences in the scope and impact of firms managed by veterans and non-veterans?
- The scope of activity, reflected in employment, monthly business income to the respondent, monthly firm profits, and expectations of sales in the next 12 months, was very similar for firms managed by veterans or non-veterans 55-74 years old.
 - Personal monthly business income and firm profits are slightly lower for veteran managed firms by those 35-54 years old compared to their age peers.
 - Employment, personal monthly income, and firm profits are somewhat lower for firms managed by veterans 18-34 years old compared to their age peers.
- 5) Are there differences between the survival, or duration of operation, of firms managed by veterans and those managed by non-veterans?
- Firms managed by veterans over 34 years old have survival patterns comparable to firms managed by non-veteran age peers.
 - Firms managed by veterans 18-34 years old have shorter duration, by about 1 month within the 28 month time frame examined, than their age peers.
- 6) Does participation in firm creation and management improve veterans' financial well-being?
- Veterans involved in firm creation and management are associated with higher household incomes and higher personal incomes. The dominant source of personal income for

veterans active in the business life course is from their businesses. Veterans with businesses are much more likely to report the highest levels of income.

Overall, the most striking patterns are: 1) the high level of activity among veterans in firm creation and business management, comparable to their age peers; 2) the stability of the major patterns over the 20 years represented by the 11 SIPP panels; 3) the better financial situation of veterans involved in firm creation and management compared to wage and salary veterans; and 4) the reduced levels of employment, personal business income, and profits among the firms managed by younger veterans, which is in sharp contrast to “scope equality” of firms managed by older veterans when compared to their age peers. This “scope equality” may reflect learning and adaptation by younger veteran firm owners or a shift in the population of veteran-managed firms as those with less employment, personal income, and profits are discontinued.

The high level of business creation among veterans noted in this study is similar to the findings of other studies which see positive effects of military service on veteran business creation. For instance, studies by Hope, et al. (2011), Fairlie, (2012), and Moutray (2011) show significant positive effects for military service on the probability of self-employment and provide varying estimates of veterans’ tendencies to become involved in self-employment. However, some studies, such as Hope et al. (2011), make the qualification that they did not find evidence that it was military training itself which predisposes individuals towards entrepreneurship.

Although not within the scope of this study, it is also important to note that veteran self-employment has been the focus of various programs and laws supporting veteran business creation. Such programs include Operation Boots to Business: From Service to Startup (SBA), Women Veterans Igniting the Spirit of Entrepreneurship (V-WISE), the Entrepreneurship Boot Camp for Veterans with Disabilities (EBV), and the Native American Veteran’s Outreach Initiative (SBA). To determine the impact of such programs, an identification of their program goals, activities, and specific quantifiable outcomes in terms of veteran business creation would be valuable. This information could provide a basis for evaluating the effectiveness of the programs.

Appendix A: Literature Review

Veterans continue to receive growing attention in policymaking. An increasing number of government-sponsored and academic studies are examining veteran-related issues such as veteran employment, welfare, income, economic outcomes, business creation, and entrepreneurship. Signature legislation such as the Veterans Entrepreneurship and Small Business Development Act of 1999, Public Law 106-50, have been enacted and include provisions for the development of more information about businesses owned by veterans and service-disabled veterans, as well as the role played by those businesses in the U.S. economy.

The prioritization of topics related to veteran entrepreneurship and employment patterns is reflected in the U.S. Small Business Administration Office of Advocacy (SBA Advocacy) economic research program. Its report based on veteran-related U.S. Census Bureau Survey of Business Owners data released in 2011 for data year 2007 is another case in point (SBA Advocacy 2012). Other studies focusing on veteran population trends continue to inform the understanding of veteran employment, earnings, and economic patterns. Some studies have observed a continued decline in the veteran population. Haynes (2007) observes a continued decline of veteran households in the U.S. between 1989 and 2004, as well as an aging of the veteran population itself. In 1989, 23.6 % of veteran household heads were 65 years of age or older, while in 2004 this age cohort had grown to 38.4% of veteran households (Haynes 2007). These shifting veteran demographics and the social and economic realities they present have policymaking implications. This review examines literature on veteran employment, entrepreneurship, and business creation patterns. The review begins by examining the literature on veteran employment patterns and earnings differentials. It then examines literature on key aspects of veteran business creation and management such as veteran entrepreneurship, business ownership, regional business variations, and firm management.

Data Constraints

The literature suggests that there has been relatively limited data on veteran-owned businesses and employment patterns. Jack Faucett Associates et al. (2004) argue that efforts need to be made to improve data quality on veteran-owned businesses and to capture veteran-owned

businesses not identified in data sources. For instance, among private-sector business listing providers, Dun & Bradstreet and Austin-Tetra had the largest listing of veteran-owned businesses. Yet, as many veteran-owned businesses are very small, they often do not appear in many directory listings. Beginning in FY 2001, markers were implemented in the Federal Procurement Data System to identify contracts provided to veteran-owned firms. Jack Faucett Associates et al. (2004) argued, however, that the reported data was spotty at that time and possibly inaccurate. Fairlie (2012) also observes that there is a dearth of data comparing veteran-owned businesses to their non-veteran counterparts. Thus, Fairlie states that the Kauffman Index of Entrepreneurial Activity (KIEA), an initiative of the Ewing Marion Kauffman Foundation, will report veteran status in its future activity reports in order to track veteran business formation. Fairlie also states that KIEA microdata releases will include a new variable for measuring veteran status in order to allow researchers to study veteran entrepreneurial activity.

Veteran Employment Patterns

According to the U.S. Bureau of Labor Statistics (BLS 2013), the general unemployment rate for veterans has been declining. The unemployment rate for veterans who served in active duty in the U.S. Armed Forces since September 2001 (also referred to as Gulf War-era II veterans) declined by 2.2 percentage points in 2012 to 9.9%. The BLS also reports that in 2012 21.2 million men and women aged 18 and over had previously served on active duty in the U.S. Armed Forces and were accordingly veterans. Veteran employment and unemployment patterns in different service cohorts and periods are summarized below.

Gulf War-era II Veterans

Veterans of the Gulf War-era II (beginning in September 2001) numbered approximately 2.6 million in 2012 (BLS 2013). Almost half of them were aged 18 to 34, and 17% were women compared with 3% of those who served in World War II, the Vietnam War, and the Korean War. Close to a third of men worked in management and professional occupations, representing a higher proportion than any other occupational group. For employed women, 50% of Gulf War-era II veterans and 42 % of non-veterans worked in management and professional occupations.

Gulf War-era I Veterans

In 2012, 3.0 million veterans had served during Gulf War-era I (August 1990 to August 2001) (BLS 2013). The unemployment rate for this group was lower than that of their Gulf War-era II veteran counterparts. The unemployment rate for Gulf War-era I men was 5.6%, while that of women was 8.0%. Their Gulf War-era II counterparts had unemployment rates of 9.5% and 12.5%, respectively.

Veterans of World War II, the Korean War, and the Vietnam Era

In 2012, the number of veterans who had served in World War II, the Korean War, and the Vietnam War was estimated to be about 9.9 million and their unemployment rate was 6.4% (BLS 2013). A noteworthy observation is that the share of the population of this group of veterans declined over the last sixteen years. Korean War veterans represented 1.3% of the working-age population in 1996, but declined to 0% of the working age population by 2011. The Vietnam War veteran population declined from 5.0% to 2.5% percent over the same period.

Veterans with a Service-Connected Disability

Veterans with a service-connected disability were estimated at 3.0 million in 2012 (BLS 2013). Their labor force participation was 70.3% in August 2012 compared to 87.0% of veterans with no service-connected disability. Many veterans with a service-connected disability worked in the public sector.

Reserve and National Guard Membership

Veterans who were current or past members of Reserve Components or the National Guard were nearly 30% of Gulf War-era I and Gulf War-era II veterans. Also, current and past members of Reserve Components or the National Guard had an unemployment rate of 7.2% (BLS 2013).

Earnings Differentials: Veterans and Non-Veterans

A significant part of the literature examines income and earnings differentials between veterans and non-veterans. The literature also links these income and earnings differentials to occupational, self-employment, business creation and other differences between the veterans and

their non-veteran counterparts. For instance, Haynes (2007) observes changes in income and wealth for veterans who were self-employed and/or managed small businesses. Haynes notes that the percentage of small business owners in the population of veteran households declined from 13.6% in 1989 to 12.2 % in 2004. Haynes utilized univariate analyses which indicated that the likelihood of having high income declined for small business veteran households by 24%, while the likelihood of having high wealth increased by about 22%. Thus, Haynes states that aggregate income declined by nearly 17% while aggregate wealth increased, albeit at a slower rate than non-veteran small business households. Further, Haynes makes the following summary observations regarding the changes which occurred during the period from 1989 to 2004: 1) veteran households fared about the same as non-veteran households; 2) veteran small business households fared about the same as veteran non-business households; and 3) veteran small business households fared about the same as non-veteran small business households.

Gottschalck and Holder (2009) estimated earnings equations for four groups: white male veterans and non-veterans, white female veterans and non-veterans, black male veterans and non-veterans, and black female veterans and non-veterans. Black male veterans earned on average 10% more than black male non-veterans in 2005. On the other hand, white male veterans earned on average 8% less than white male non-veterans. Gottschalck and Holder utilized the Blinder-Oaxaca decomposition technique to identify the share of observed earnings differential explained by human capital differences and labor market imperfections.

Veteran and Non-Veteran Entrepreneurship

The literature also explores whether there are substantive differences in entrepreneurship and business creation patterns between veterans and non-veterans. The literature reveals varying conclusions. For instance, Hope et al. (2011), in an SBA Advocacy-sponsored study, sought to determine whether veterans were more likely to become entrepreneurs than otherwise demographically similar individuals. To address the question, Hope et al. utilized self-employment as a measure and analyzed data from the Bureau of Labor Statistics and the Defense Manpower Data Center. Hope et al. found that veterans have had and do have a higher self-employment rate than non-veterans. In fact, Hope et al. argue that veterans were at least 45% more likely to be self-employed than those who had no prior active-duty military experience and

correlated military service with self-employment probability. Notwithstanding, Hope et al., make the qualification that the study did not find evidence that it was military service which predisposes individuals towards entrepreneurship. Interestingly, Hope et al. also found self-employment differences by cohort. In their estimation, Hope et al. determined that the cohort of veterans who served in World War II, the Korean War, and the Vietnam War era were more likely to be self-employed relative to veterans serving since 2001, or Gulf War-era II veterans, their self-employment rates being 10.9 % vs. 3.6 %, respectively.

On the other hand, Fairlie (2012), using the KIEA for the sixteen-year period between 1996 and 2011, observed that in 2011, 0.32 percent of the adult population (or 320 out of 100,000 adults) created a new business each month. Fairlie found that the veteran entrepreneurship rate was slightly lower than the national average. Nonetheless, Fairlie observed that veteran entrepreneurship rates had generally been higher than non-veteran entrepreneurship rates over the preceding sixteen years, although veteran rates had been lower than non-veteran rates over the preceding three years.

Veteran Business Ownership

According to the U.S. Census Bureau, in 2007 there were 2.45 million businesses with majority ownership by veterans, of which 491,000 were employers (SBA Advocacy 2012). Veteran-owned businesses had sales/receipts of \$1.2 trillion, 5.793 million employees and annual payroll of \$210 billion. Within industry groups, finance and insurance had the largest share of veteran-owned businesses, followed by the transportation, mining, construction, professional, and manufacturing industry groups. The largest number of veteran-owned firms were to be found in the professional services and construction industries. Also, veteran business owners were predominantly male (94.8%) and white (89.7%).

Hope et al. (2011) also observe that older military retirees have a higher self-employment and entrepreneurship probability as they age – each additional year in age increases the probability of self-employment by about 7.5%. In a similar vein, Haynes (2007) suggests that veteran households were older and less likely to belong to a minority group, more likely to be male, and more likely to be married than non-veteran householders.

Regional Variation in Firm Creation and Ownership

The literature also reveals regional patterns related to veteran firm creation. The largest number of veteran owned businesses were recorded in California, Texas, Florida, New York, and Georgia (SBA Advocacy 2012). The top five states, ranked by veteran-owned percentage of businesses in the state were South Carolina, West Virginia, Virginia, Tennessee, and Alabama.

Firm and Work Activity

The literature also includes reviews of veteran business activity by sector and type of occupations in which veteran businesses are involved. Data sources present varying conclusions and estimates. Jack Faucett Associates et al. (2004) compared U.S. Census Bureau data from its 1992 *Characteristics of Business Ownership* (CBO) and Dun and Bradstreet (D&B) data for all firms and veteran-owned firms and the proportion of veteran firms which made up the total number of firms.

The CBO data reported that the percentage of all firms owned by veterans was 24.3% in 1992 with the greatest percentage of veteran-owned businesses in the finance, insurance, and real estate sector. The construction and wholesale trade cohorts had 30.2 and 26.8% veteran ownership respectively. CBO data also showed that veteran ownership was lowest in the retail trade sector at 17.9 %. On the other hand, the D&B data reported 0.53% (a small fraction of the CBO estimated percentage) overall share of veteran-owned firms among all firms in its database, with manufacturing and the wholesale trade cohorts reporting the largest percentages (1.33% and 1.32% of all firms in sectors owned by veterans). Also, the D&B data reported the lowest percentages in veteran business ownership in the finance, insurance and real estate sector and the agricultural services, forestry, fishing and mining sector (0.33% and 0.35% of all firms owned by veterans respectively). They attribute the significant differences between the CBO and D&B data to possible under-reporting of veteran ownership in the D&B file.

Firm Management

The literature offers varied perspectives on veteran firm management. Commentaries and observations include analyses on veteran firm family roles, ownership patterns, and hours

worked. The SBA Advocacy (2007) analysis of the U.S. Census Bureau's *Characteristics of Veteran-Owned Businesses (CVOB)* and *Characteristics of Veteran Business Owners (CVBO)* for data year 2002 found that an estimated 52.1% of all owners of respondent veteran companies reported their primary function as the production of the business's goods and services. On the other hand, 52.8% of all owners of veteran firms reported that managing the day to day operations of the business was their primary function. Additionally, the Advocacy study notes that in 2002 15.7% of veteran-owned businesses reported that they were family-owned, while 75.2% reported having one owner, compared to 23.4% family ownership and 63.6% sole proprietorship for all respondent firms. The study surmises that while the combined shares of family and sole ownership were similar between all firms and veteran-owned firms, veteran-owned businesses trended toward sole ownership. Further, 51.8% of veteran-owned respondent businesses reported operating from the owner's home, compared with 49.4% of all respondent businesses.

Another aspect of veteran firm management highlighted in the literature is the amount of time committed to the businesses. The Advocacy study observes that 50.8% of veteran owners of employer respondent firms reported working an average of 41 hours or more per week in 2002.

Summary of Literature Review

Veterans and veteran-owned businesses are receiving increasing attention, particularly after the enactment of the Veterans Entrepreneurship and Small Business Development Act of 1999, Public Law 106-50. Themes such as veteran employment, welfare, income and economic outcomes, business creation, entrepreneurship and economic contribution are attracting research and policy attention. Increasing attention is also being paid to the characteristics of veteran-owned businesses and to differences from their non-veteran counterparts. At the same time, efforts to understand veterans and their characteristics are impeded by lack of detailed data which could also enable relevant comparison with other non-veteran business actors.

Appendix B: Development of Consolidated Datasets and Analysis

The Survey of Income and Program Participation (SIPP) is designed to provide information on how households and families manage their economic life. As such, it develops extensive information about households and their members. As with any complex and ongoing program, there were adjustments and enhancements over the 13 SIPP panels initiated during the period of this study, 1984 – 2004, including revisions in important details such as variable labels and coding of response alternatives across these projects. Any analysis involving all, or almost all SIPP panels, requires a great deal of checking and harmonizing of all critical details. Recognition that this would reduce the usefulness of the data for research assessments, the U.S. Bureau of the Census and the National Institute of Child Development has sponsored a consolidation and harmonization project implemented by Unicon.³¹ While the resources to independently verify the accuracy of this program were not available, the details in the Unicon documentation and the quality of the datasets provided by their programs provided confidence that there were no major complications or errors in their consolidation of 13 datasets into a harmonized set of files.

SIPP data are provided from periodic interviews, every four months, of all adult household members. This includes information about all sources of work activity and income, including that derived from self-employment or business ownership (no distinction was made in the SIPP records).

The focus of this assessment is on new and independent businesses. One of the central complications in the analysis of new and small businesses based on information provided by individuals is the complexity of an individual's economic activity, particularly those involved in business creation. It is not unusual to identify individuals who are simultaneously managing one business, starting another, and working for another organization.

³¹Unicon Research Corporation. (2012) The SIPP Utilities User's Manual: Survey Panels 1984 through 2004. Version 5.0 (February 2012) Los Angeles, CA: Unicon Research Corporation. Development funded by grants from the U.S. Bureau of the Census (YA132309CN0064) and the National Institute of Child Health and Human Development (2R44 HD39618-02). (www.unicon.com)

While these multiple activities can be accounted for with a well-designed interview schedule for cross-sectional analysis, it becomes more complicated if a longitudinal record is the goal. Specifically, a single individual may be managing business A in one period while they are starting business B. Six months later they have disengaged from business A, are managing business B, and starting business C. After another 6 months the mix may change again, they may have disengaged from B or C and are now involved with business D.

There is some effort to reflect this complexity in the individual case files provided as part of the consolidated SIPP data files. At any wave in the interview, details for up to two different forms of self-employment are recorded. In addition, each form of self-employment for an individual is assigned a unique number, so that if a person changes business activity from one interview to the next, each business receives a unique code number.

While this provides useful information for the unit of analysis based on the individual, it leads to complications if the unit of analysis is the business venture. In this project, analysis of the characteristics of business entities and those associated with them required reorganization of the data where the unit of analysis is the business entity. To provide for such analysis, the following procedure was implemented.

1. For each interview wave, files based on individual respondents were modified to provide a unique identification number for each self-employment (business) activity. This was done for both primary and secondary business ventures.
2. Data on each unique business activity for each of the seven waves of data were extracted into separate files, one for primary ventures and another for secondary ventures.
3. Data from all waves that related to each unique business activity were aggregated into a file with the business as the unit of analysis. This may include data from one or more interviews on the same business. This was done separately for primary and secondary ventures.
4. The primary and secondary venture files were added together to create *the business entity file*.

5. The business entity file was the basis for developing descriptions of each business venture, related to its economic sector, hours of work, legal status, firm profits, duration of operation and so forth. Duration of operation was based on the number of interviews completed using the same business identification number.
6. Each venture with a unique identification number was extracted into a separate file with the relevant firm variables.
7. The ventures were then aggregated in relation to the respondent identification number, adding all ventures associated with each respondent to their case record, the *enhanced data file of individuals*.
8. Information on the timing of all interviews and the occurrence of data on business characteristics, including the implementation of a unique business identification number, was the basis for identifying respondents involved in firm management (a business venture that was reported on in the first interview) or firm creation (a business venture first reported at least 365 days after the first interview).

Analysis: Assessment of different aspects of veteran/non-veteran comparisons utilizes different versions of the SIPP data:

- a) Comparisons of veterans and non-veterans and their participation in firm creation and ownership were completed with the enhanced individual data file.
- b) Comparisons associated with the types of business associated with veterans and non-veterans were completed with the business entity file.

While the operational indicators of all major variables and characteristics are harmonized across the various data files, because of missing data and various features of the transformations the number of cases available for analysis varies for different data files and comparisons.

Appendix C: Comments on SIPP Data Limitations

This project was developed to assess the role of veterans and non-veterans in self-employment or business management, including both start-up entrepreneurial activity and sustained business ownership. Initial assessments of the SIPP datasets suggested that they would be suitable for this purpose. Attempts to utilize the SIPP data for this purpose were complicated by a variety of features related to the collection of data and development of public use datasets. These included:

- 1) The lack of a “business venture” file, which had to be constructed for the analysis, as discussed in Appendix B.
- 2) Shifts over the 13 panels of the procedure and in details of data collected on veterans.
- 3) Shifts over the 13 panels in the procedures and in details of data collected on respondent race and ethnicity.
- 4) Shifts over the 13 panels in the way educational attainment was identified and classified.
- 5) The decision to collect detailed data on exact employment provided by each firm, but to provide only gross categories in the public dataset. Also, the categories provided in 1996 and later years are very broad – under 25 jobs, 25-99 jobs, and 100 or more jobs – as to make analysis difficult. The size of the samples, with data on thousands of business ventures, would make it difficult to justify this practice to ensure firm anonymity.
- 6) The decision not to include information about firm owners that reside outside the household. This would affect the capacity of the family members to rely on the firm as a source of household income. Although this may be relevant for less than 20% of the business ventures, these ventures can be expected to be the largest and most successful firms providing the greatest amount of household income.
- 7) Questions on the dates at which business ventures were “started” and “terminated” allowed the respondents to define these events, providing opportunities for substantial diversity in individual responses. Items which included criteria for starting or terminating business ventures, such as a minimal number of hours devoted to the business or the minimum levels of revenue or profits, would substantially reduce subjective diversity in individual responses based on personal criteria.

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