Financial Viability and Retirement Assets: A Look at Small Business Owners and Private Sector Workers

by

Jules Lichtenstein, Ph.D.
Senior Economist
Office of Advocacy
U.S. Small Business Administration

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Contents

Executive Summary

One's status as a business owner or wage and salary worker may have implications for income security during retirement. Compared with private wage and salary workers, business owners may have differential patterns of asset accumulation based on their business experience, participation in individual-based retirement plans, or as a result of differential coverage of owners and workers by employer-sponsored retirement benefits during their careers.

This study uses the Census Bureau's 2008 Survey of Income and Program Participation (SIPP) to compare the individual account retirement plan assets held by business owners and private sector workers. It carefully examines the behavior of small business owners who earn a high percentage of their income and hold a high percentage of their net worth in business income and assets, respectively. It also analyzes the retirement assets of business owners and private sector workers who have underwater residential mortgages and compares them with owners and workers who have positive mortgage equity.

Specifically, the study asks the following key questions:

- Are business owners more likely to hold retirement assets (IRA and 401(k)) than private wage and salary workers?
- Do business owners have retirement assets of greater value than private wage and salary workers?
- Does negative housing equity have a significant impact on business owners' and private wage and salary workers' retirement assets?
- Does financial vulnerability have a significant impact on whether business owners hold retirement assets, and on the value of such assets?

The results suggest that business owners are significantly less likely to hold retirement assets than private sector wage and salary workers, controlling for firm size and other factors. An important concern emerges with respect to small business owners. Financially vulnerable small business owners—those who hold a high percentage of their net worth in business assets—are less likely to invest in retirement assets than owners who are less net worth vulnerable. On the other hand, vulnerability with respect to income does not have a significant impact on whether a small business owner has a retirement plan. Both net worth and income vulnerability, though, have a significant effect on the amount of retirement assets accumulated by small business owners. On both dimensions, financially vulnerable small business owners are significantly more likely to hold a smaller amount of money in these assets than less financially vulnerable small business owners.

Having an underwater mortgage does not have a significant effect on the likelihood that a small business owner has invested in retirement assets or on the amount of retirement assets accumulated by small business owners. On the other hand, having an underwater mortgage increases the likelihood that private sector workers have a retirement account and increases the amount that these workers invest in retirement accounts. Owners of smaller businesses with fewer than 25 workers are significantly less likely to invest in retirement assets and have lower amounts of retirement assets than owners of larger firms. Private wage and salary worker retirement plan behavior exhibits a similar pattern with respect to employment in smaller versus larger firms.

Introduction

One's private sector employment—whether one is a business owner or a wage and salary worker—may have implications for income security during retirement. Compared with private wage and salary workers, business owners may have differential patterns of asset accumulation based on their business experience, participation in individual-based retirement plans, or differential coverage of owners and workers by employer-sponsored retirement benefits during their work careers. Business success may lead to high wealth accumulation for some owners, but many others may not experience such accumulation. The relative success of business owners has consequences for their retirement security. Business owners as well as wage and salary workers planning to start a new business may draw down assets in order to finance an existing or new business. There is some evidence that business owners tend to retire from the workforce later than their wage and salary counterparts and are also less likely to have employment-based pension plans (Zissimopoulos and Karoly 2007).

This study examines the wealth of business owners and private sector wage and salary workers, with a particular emphasis on small business owners. The focus is on types of assets that were established for retirement purposes, specifically, individual account retirement plan assets (including IRA and Keogh accounts as well as 401(k) and Thrift accounts) accumulated by business owners and private sector wage and salary workers.[1] These retirement assets can be those accumulated from a current job/business as well as from prior jobs and businesses.

The report examines several important issues related to the financial viability of business owners and private sector wage and salary workers:

- The characteristics of business owners and private sector wage and salary workers, including their demographics, employment characteristics, and wealth accumulation;
- The ownership and amount of retirement assets accumulated by business owners and private sector wage and salary workers;
- The financial viability of small business owners, as well as whether they have accumulated retirement assets and how much; and
- The financial viability of private wage and salary workers and their ownership and amount of retirement assets accumulated.

The Census Bureau's 2008 Panel of the Survey of Income and Program Participation (SIPP) is used to examine how small business owners and wage and salary workers differ in their retirement assets. A key focus of the analysis is the influence of wealth holdings[2] on retirement assets. The SIPP has information about business owners as well as about the business owned by an individual. For example, firm size and firm age are available. SIPP's Assets and Liabilities Topical Module and the Real Estate Topical Module also contain financial, housing, and business data. The reference period for the data is August 2009 through November 2009, a period one month after the official end of the Great Recession. This study will emphasize the

[1] Individual Retirement Accounts (IRAs) were established in 1974 to provide a tax-preferred private retirement savings vehicle for workers without pension plans. The accounts featured tax-deductible contributions and tax-free earnings. Keogh accounts are a form of tax-deferred savings for business owners and the self-employed. 401(k) plans and Thrift plans are a form of tax-preferred defined contribution plan for both workers and business owners.

[2] Wealth or net worth is defined as total assets less total liabilities.

retirement assets of small business owners.[3] Small businesses are particularly vulnerable during downturns because they have fewer assets than larger businesses and therefore have more difficulty obtaining financing for start-up and growth. The market has a particularly severe impact on them as their assets, income, and profitability decline.

The report also looks at wealth reported for several different property and financial assets including homes, businesses, vehicles, real estate (not including the subject's own home), interest-earning assets in banks and other institutions, stocks and mutual fund shares, and other assets. This analysis, however, is unable to measure several important categories of retirement wealth including Social Security retirement benefits and defined benefit pension plan wealth.[4]

Several measures of financial viability for business owners and private wage and salary workers are considered. Home equity is the key measure used to assess the financial health of both business owners and private workers. A measure of negative home equity, i.e., whether an owner's or worker's mortgage is "under water," is included. Negative home equity is a serious threat to the financial health and the retirement security of households, workers, and business owners; for most people, a residence is the largest asset they own and home equity is a major source of household wealth and saving.[5] Homeowners with negative equity are more likely to default on their mortgages—even in the absence of financial hardship—because mortgage repayment does not increase home equity (Nelson 2010).[6] One study indicates that one-quarter of families that owned businesses in 2009 reported using personal assets (which includes residential mortgages) as collateral or cosigning or guaranteeing loans for businesses.[7]

A major trend during the Great Recession has been falling housing values. While home equity may not be what it used to be, many families still plan to utilize their home equity during retirement.[8] Home equity is also an important source of financing to start and grow businesses and generate business wealth for owners and their families. Many workers tap into home equity to create small businesses.

A second set of measures is used to examine the financial viability of small business owners only. These measures assess the financial vulnerability of small business owners along two key dimensions: wealth vulnerability and income vulnerability.[9] In this paper business owners are considered vulnerable if more than 50 percent of their total household[10] wealth is held in business assets or if more than 50 percent of their total monthly household income is earned from the business.[11]

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[3] This study defines small business owners in two ways: 1) those owning business with fewer than 100 employees, and 2) those owning businesses with fewer than 25 employees.

[4] The SIPP data do not permit an analysis of these retirement wealth components.

[5] According to the SCF, owning a home represents almost 39 percent of aggregate assets for a typical family (excluding families with net worth of $2 million or more) (Czajka et al. 2003).

[6] This study verifies that the largest asset for both business owners and private workers is their home. More than 80 percent of business owners own their own home, as do almost 70 percent of private wage and salary workers

[7] Based on unpublished calculations from the SCF panel that were done by SCF staff. Cited by Traci Mach at SBA's Office of Advocacy Symposium on the "Small Business Capital Crunch: Debt and Equity" held at the Senate Capital Visitors' Center, September 15, 2011. These personal assets can but do not necessarily include a residential mortgage.

[8] One common way in which consumers can extract equity from their homes is through a reverse mortgage.

[9] Wealth (net worth) should be considered in conjunction with income in order to get a better understanding of economic health and well being (Orzechowski and Sepielli 2003).

[10] In SIPP, a household is defined as all people living or staying at an address. Income and wealth data are collected for each adult household.

[11] A similar specification of vulnerability was used by Gutter and Saleem (2005). Others have used 75 percent rather than 50 percent (Haynes and Haynes 2011).

Literature Review

Little is known about the retirement assets of small business owners. In addition, there has been relatively little research comparing business owner and private wage and salary retirement asset holdings and accumulations. Most studies have been focused on the demographic and employment differences between these two classes of private workers. Studies have found, on average, that business owners work more hours per week and more weeks per year than wage and salary workers. Business owners and the self-employed are concentrated in certain industries and occupations such as construction, retail trade, and services. Incorporated business owners tend to earn more than wage and salary workers, but wage and salary workers earn more than unincorporated business owners on average (U.S. Small Business Administration 1986).

Research shows that only half the work force is covered by an employer-sponsored pension plan and that this percentage has not changed for almost three decades. Seventy-one percent of firms with fewer than 25 workers do not sponsor a retirement plan (U.S. Government Accountability Office 2009). A large proportion of the uncovered are employed in small businesses and they are also the self-employed. Only 19.5 percent of workers in small private firms with fewer than 100 workers report participating in a retirement plan (Kobe 2010).[12] According to Copeland (November 2009) there are over 9 million self-employed individuals without retirement plan coverage. Other analysis indicates that IRA ownership for business owners is only about 36 percent, and only one-third of business owners with an IRA contributed for the 2005 tax year. Fewer than 2 percent of business owners own a Keogh plan and only about 18 percent participate in a 401(k)/Thrift plan (Lichtenstein 2010).

Some studies have examined retirement asset holdings of business owners and wage and salary workers. De Vaney and Chiremba (2005), using data from the 2001 Survey of Consumer Finances (SCF), find that self-employed heads of households were less likely to hold a retirement account than those who were wage and salary workers. They postulate that self-employed people are less likely to save for retirement in a tax-deferred retirement savings option because they prefer to have their assets for their business. Some owners intend to sell their business in order to retire (De Vaney et al. 1998). In a paper using 2004 SCF data, Haynes and Haynes (2011) found that small business households were not more likely to hold retirement assets or hold larger amounts of retirement assets than other households.[13]

In a study comparing retirement plan participation of the self-employed and wage and salary workers De Vaney and Chien (2001) found that both self-employed and wage and salary workers who were white, had higher incomes, and had a graduate degree were more likely to participate in a formal retirement plan than their counterparts who were nonwhite, with less income and education.

There is evidence that older self-employed individuals are much less likely than wage and salary workers to have pensions or retirement plans on their current job (Zissimopoulos and Karoly 2007). Data from the Health and Retirement Study (HRS) indicate that 60.8 percent of wage and salary workers over age 50 were covered by any employer-sponsored pension on their current job compared with 9.6 percent of the self-employed. The proportion of the self-employed with defined contribution (DC) plans was significantly higher than that of wage and salary

[12] Recent data from a Census survey (Survey of Income and Program Participation) when merged with W-2 tax records and corrected for reporting error indicates that a substantially larger proportion of workers in small firms have access to some type of pension than is commonly believed based on survey reports (Dushi, Iams, and Lichtenstein 2011).

[13] This study did not compare small business households to private wage and salary worker households.

workers. The vast majority of both the self-employed and wage and salary workers expected to receive Social Security income (91 percent and 94 percent, respectively).

Becoming a business owner or self-employed can significantly affect retirement plan ownership and contributions. Examining the relationship between self-employment and age, Karoly and Zissimopoulos (2004) found that workers who became self-employed at age 50 or after had lower household income and wealth than those who became self-employed prior to age 50. One exception was that those who entered self-employment at or after age 50 had higher wealth in IRA and Keogh accounts as a result of rollovers of prior DC accounts.

The importance of home equity to both business finances and retirement security has been addressed by several researchers. Schweitzer and Shane (2010) have suggested that the magnitude of the effect of home prices on small business finances is large enough to be a real constraint on growth but that the degree to which home price declines are hindering the growth of small businesses is difficult to fully quantify. Declines in housing prices may also affect business financing.[14] Gentry and Hubbard (2000) found that wealthier entrepreneurs[15] borrow more than wealthier nonentrepreneurs and have larger mortgages, larger mortgage-to-value ratios, and are more likely to have non-mortgage debt.

Additional work has examined housing wealth and its relationship to retirement assets. Few studies examine attitudes to housing wealth in the context of retirement planning. Questions about the relationship between pension decisionmaking and the consumption of housing wealth to fund retirement have taken on increased importance with the decline of defined benefit pension plans (Lusardi and Mitchell 2006).[16] Researchers have pointed out that differences in homeownership may suggest differences in wealth available at retirement (Zissimopoulos and Karoly 2007). Other researchers point out that as a result of inadequate savings rates, declines in Social Security replacement rates, increased life expectancy, and the decline of traditional defined benefit pensions, an increasing number of families will need to tap their housing wealth in order to maintain their standard of living in retirement (Sun et al. 2007). VanDerhei (2011) used the EBRI Retirement Security Projection Model to deal with the prospect of a household using net equity in the house as a means of supporting retirement expenditures by simulating whether households would be expected to have net housing equity at retirement and, if so, its expected value.

Risk tolerance of business owners compared with wage and salary workers has also gained some attention. Researchers have noted that risk tolerance has important implications for how owners and workers invest and whether alternative investment approaches affect preparedness for retirement. Zissmopoulos and Karoly (2007) found that the older self-employed are more likely to hold risky assets such as stocks, and such riskier assets are a higher percentage of the nonpension wealth portfolio of the self-employed compared with that of older wage and salary workers. Other researchers have also found business owners to be more risk tolerant than others (Xaio, Alhabeeb, Hong and Haynes, 2001; Cramer, Hartog, Jonker and Van Praag 2002) and they have been shown to have relatively optimistic views of business success in the future

[14] Small business owners may rely heavily on the value of their homes to finance businesses (through mortgages or home equity lines); the fall in housing prices may be one of the causes for the difficulty they are experiencing obtaining the financing they need.

[15] An entrepreneur is defined by these researchers as a household in the Survey of Consumer Finances that reports owning one or more active businesses with a total market value of at least $5,000.

[16] However, reverse mortgage and equity drawdown products are still used by only a small percentage of retirees (Strauss 2008). For a discussion of whether a reverse mortgage should be taken as a line of credit or as a lifetime-income option, see Sun et al. (2007).

(Palich and Bagby 1995). In contrast, Tami Gurley-Calvez (2010) found that entrepreneurs are financially conservative; they are motivated to achieve higher returns in the entrepreneurial sector, but are likely to choose options with less financial risk.

One way to reduce investment risk is through diversification of assets. Research on small business households has looked at risk along two dimensions—income and wealth (which are being used to measure "financial vulnerability" in this paper). Business owners are financially vulnerable when they are overly reliant on the business for their income and overly invested in the assets of the small business (Gutter and Saleem 2005). Gutter and Saleem found that these types of owners may have insufficient diversification when they rely on the business as an asset fund for their retirement. In a study using the 2007 SCF, Haynes and Haynes' (2011) findings suggest that small business owner households are as likely to hold retirement assets as non-small business owning households. They also found that financially vulnerable small business households are less likely to have retirement assets and have accumulated smaller asset amounts than non-financially vulnerable households.[17]

Risk tolerance may affect the holding of retirement assets. A business owner with a high risk tolerance may be willing to invest substantial portions of their assets in the business, while the business owner with a low risk tolerance may plan for the longer term and invest less in the business and more in retirement assets. This study will measure risk tolerance in terms of the ownership of stocks.

Data and Methodology

Data

This study examines how business owners differ from private sector workers in holding and accumulating retirement assets using the 2008 Panel of the Survey of Income and Program Participation (SIPP). A key focus of the analysis is the influence of wealth holdings[18] on retirement assets. The SIPP is a national survey of approximately 45,000 households (including almost 93,000 individuals) conducted by the Census Bureau. SIPP is a longitudinal survey in which each sampled household is re-interviewed at four-month intervals over a period of roughly four years. The sample of households in SIPP is divided into four interview groups of random subsamples, called "rotation groups." Each month, one of the four rotation groups is interviewed about the previous four months (the reference period)—the reference period for the questions is the four-month period preceding the interview month. Each cycle of interviews from all four groups using the same questionnaire is called a "wave."

SIPP includes a core survey as well as topical modules that focus on areas of specific interest. Data analyzed here are from the core and three topical modules included in Wave 4—the Asset and Liabilities Topical Module, the Real Estate Topical Module, and the Stocks and

[17] This analysis focused on a subgroup of individual account retirement plans, i.e., IRA and Keogh plans. 401(k)/Thrift plans were not analyzed. Also, the household was the unit of analysis, not the business owner. A small business household was defined as financially vulnerable if more than 75 percent of their total household wealth was held in business assets or if more than 75 percent of their total monthly household income was earned from the business.

[18] Wealth or net worth, is defined as total assets less total liabilities. With the detail available in the SIPP and the SCF, it is possible to separate assets from liabilities (Czajka et al. 2003).

Mutual Funds Topical Module. Core questions are repeated at each interview over the life of the panel. Topical module questions are asked only in certain waves.[19] This study uses the fourth interview month (December 2009); therefore, the four-month reference period for these data is August 2009 through November 2009, a period beginning a month after the technical end of the Great Recession. Certain data pertain to 2008 and will be noted as such.

SIPP's annual Asset and Liabilities Topical Module includes questions on individual account retirement plans, i.e., IRA and Keogh accounts as well as 401(k), 403(b), and Thrift plans. Information about the ownership and market value of these plans is provided in the topical module. In addition, SIPP's annual Real Estate Topical Module includes household-level questions on business equity, home equity, total wealth, total net worth, total monthly household income, and home market value.[20]

The core survey includes questions on basic socio-demographic characteristics of owners and characteristics of their businesses (Appendix Table 1).

Comparison of SIPP and SCF[21]

The SCF is a triennial survey of U.S. families sponsored by the Federal Reserve Board with the cooperation of the U.S. Department of the Treasury. It is the nation's most exhaustive survey of wealth[22] (Czajka et al. 2003). Both SIPP and SCF are intended to represent the entire non-institutional population, but each collects data from a different unit of observation. The SCF is designed to provide detailed information about U.S. families on their balance sheets and their use of financial services, as well as on their pensions, labor force participation, and demographic characteristics. SIPP collects liability and asset data as a supplement to its core questions about labor force participation, income demographic characteristics, and program participation (Orzechowski and Sepielli 2003). The SCF collects its most detailed data on the "primary economic unit," which includes the economically dominant individual or couple and all other financially dependent individuals. The SCF collects limited information on the remaining individuals in the household. The SIPP collects wealth data from each adult member (15 and older) of the sample household. With these data it is possible to construct alternative units of analysis. SIPP's strength is its large sample, which permits analysis of key subpopulations.

The SIPP and SCF measures of wealth differ, partially because the SCF contains a high income supplement, which gives the SCF a sample of the observations from the upper end of the income distribution where wealth is highly concentrated.[23] If the families with net worth of $2 million or more are removed from the SCF, the SIPP estimates are closer to the SCF estimates by varying amounts, reflecting differences in their distribution.

SIPP Sample of Business Owners and Private Wage and Salary Workers

[19] There are 13 waves in the SIPP 2008 Panel.

[20] Researchers have developed various typologies of wealth components, which separate assets and liabilities. One typology recognizes nine types of financial assets, four types of property assets, and four types of non-financial assets other than those listed under property such as jewelry and precious metals, art, other types of collections, and cemetery plots. In this typology the four property assets are the family's own home, all other real estate, motor vehicles, and business equity (Czajka et al. 2003).

[21] Other important surveys of wealth, not discussed here, are the Panel Study of Income Dynamics (PSID) and the Health and Retirement Study (HRS).

[22] Wealth, or net worth, is defined as total assets less total liabilities . With the detail captured in the SIPP (and SCF) it is possible to construct estimates of total assets and total liabilities (Czajka et al. 2003).

[23] In the SIPP (and SCF) only the wealth associated with certain financial assets and with an unincorporated business are counted in the asset column as equity, with no associated liability.. Both SIPP and SCF measure retirement wealth about equally well. SCF collects more detail than SIPP on assets and liabilities (Czajka et al. 2003).

Note that there are 4,773 observations for business owners in the sample (Table 1). More than 96 percent of these owners could be classified as owning a very small business because their firms have fewer than 25 employees. Weighted, the sample represents almost 16.2 million owners. This study defines small business owners in two ways for analytic purposes. First, in one approach, small business owners are those with a business having fewer than 100 employees—99.9 percent of the sample. Second, in comparing smaller and larger businesses (because of the small sample size for owners of large firms—those with 100 or more employees) this study divides owners into two other groups—those owning the smallest businesses with fewer than 25 workers, and those owning a firm with 25 or more workers.[24]

There are 31,512 observations for private sector wage and salary workers (Table 1). More than 31 percent of these workers are employed in small firms with fewer than 100 workers; almost one-quarter (24.3 percent) are employed in firms with fewer than 25 workers. Weighted, this sample represents more than 108 million private wage and salary workers.

The total sample of 36,285 business owners (4,773) and private wage and salary workers (31,512) represents a private sector work force of more than 124 million in 2009. About 13.2 percent are business owners, the vast majority of whom own small businesses.

Methodology

Hypotheses

This study tests the following three hypotheses relating to business owner and private wage and salary worker retirement assets:

H1: Business owners are less likely to hold individual account retirement plan assets and more likely to have lower asset accumulations than private wage and salary workers.

H2: Financially viable small business owners are more likely to hold individual account retirement plan assets and have higher asset accumulations than non-financially viable owners.

H3: Negative mortgage equity has a significant negative effect on both the ownership of individual account retirement plan assets and the asset accumulations of both business owners and private wage and salary workers.

Variables

Dependent Variables

- Ownership of individual account retirement plans
- Accumulation of individual account retirement plan assets

Independent Variables

[24] SIPP data by firm size for both business owners and workers is provided for three employment size categories: fewer than 25, 25 to 99, and 100 or more workers.

Financial Viability Variables

- Financial vulnerability[25] measured along two dimensions (small business owners):
  - Wealth vulnerability
  - Income vulnerability
- Negative mortgage equity, i.e., having an "underwater" mortgage (business owners and private wage and salary workers)

Income/Wealth Level Variables (owners/workers)

- High income
- High wealth

Measure of Risk-taking Variable (owners/workers)

- Ownership of stocks and mutual funds

Control Variables

Individual Characteristics (owners/workers)

- Age
- Sex
- Race
- Hispanic
- Marital status
- Children
- Educational attainment
- Veteran
- Citizen
- Metropolitan location
- Homeownership

Job Characteristics

- Ownership of more than one business (owners)
- Business age (owners)
- Business/firm size (number of employees) (owners/workers)
- Legal organization (partnership, sole proprietorship, subchapter S corporation, regular corporation, and limited partnership/limited liability company)[26] (owners)
- Industry (goods producing versus service producing)[27] (owners)

[25] Wealth vulnerability is defined in terms of business owners who have 50 percent or more of their total household net worth in business equity; income vulnerability is a characteristic of business owners who receive 50 percent or more of their monthly household income from monthly business income.

[26] As indicated earlier, only the wealth associated with certain financial assets and with an unincorporated business must be counted in the asset column as equity, with no associated liability, because that is how they are reported in either the SCF or SIPP (Czajka et al. 2003).

- Part-time status (working fewer than 35 hours per week in a business or job) (owners/workers)

Models

This study examines the retirement assets of business owners and private sector wage and salary workers using three models:

- The first model analyzes factors affecting the individual account retirement plan assets held by both all business owners and private sector wage and salary workers, i.e., the entire private sector work force.[28]
- The second model analyzes only small business owners (those owning businesses with fewer than 100 workers) and focuses on the effect of small business owner financial viability on the holding and accumulated value of individual account retirement plan assets. Specifically, it deals with two aspects of financial viability—financial vulnerability (wealth and income) and home equity status. It analyzes whether the financial viability of small business owners is positively associated with the holding of individual account retirement plan assets.
- The third model analyzes the ownership and accumulation of individual account retirement plan assets of private sector wage and salary workers only.

Each model has two stages:

- The first stage analyzes the holding of individual account retirement plan assets.
- The second stage examines the value of these accumulated assets.

The dependent variable in stage 1 of each model is the ownership or holding of individual account retirement plan assets. It is coded as a dummy variable and is analyzed using logistic regression.[29] The dependent variable in stage 2 of each model is the log normal amount of accumulated assets in individual account retirement plans and is coded as a continuous variable (Appendix Table 1) and analyzed using least squares multiple regression. The dependent and independent variables in each model are listed in Appendix Table 2.[30] The SIPP 2008 Panel variable names, datasets, and topics selected from the public use files available in DataFerrett are outlined in Appendix Table 1.

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[27] Industry can only be measured separately for small business owners and private sector workers; it is not possible to obtain comparable industry data for both business owners and private sector workers in the SIPP data analyzed.

[28] The distinction between owning and managing a business can be made using the Survey of Consumer Finances. This information is not available in SIPP; instead we defined a part-time owner (or worker) as an individual who works less than 35 hours at their business (or job).

[29] STATA/SE was used to produce the logit regression. The STAT/SE logit regression procedure automatically drops variables because of collinearity. The regressions are calculated with (see Charts) and without (see Tables) odds ratios. The odds ratios (i.e., Exp(β) defined as the exponential of coefficients) generated by STATA/SE were converted into expected probabilities using the following method: Expected Probability = Exp(β)* Initial Odds/(1+Exp(β)*Initial Odds), where Initial Odds = Initial Probability/(1-Initial Probability). (Verma 2004).

[30] This analytic approach is similar to that taken by Haynes and Haynes (2011).

Model 1: Private Sector Work Force (all business owners and private wage and salary workers)

It is assumed that the individual account retirement plan behavior of the private sector work force (all business owners and private wage and salary workers) can be estimated using the following function:

$$AH = \alpha + \beta BO + \beta HE + \beta IC + \beta HC + \beta BC + \varepsilon$$

Where,

AH = holding individual account retirement assets (IRA/ Keogh Accounts, 401(k)/Thrift Plans)—the dependent variable
BO = business owner (yes/no)
HE = negative home equity status (yes/no)
IC = vector of individual characteristics
HC = vector of household characteristics, and
BC = vector of business characteristics
ε = model error term

The second stage of Model 1 utilizes the same set of independent variables specified in stage 1; however, the dependent variable is the log (natural) transformed value[31] of total individual account retirement plan assets owned by a member of the private sector work force.

Where,

logAV = natural log of the total value of individual account retirement plan assets (IRA/ Keogh Accounts, 401(k)/Thrift Plans) owned by a member of the private sector work force (a business owner or worker), and all other variables are the same as defined above.

Model 2: Small Business Owners (owning firms having fewer than 100 workers)

Model 2 examines the likelihood of small business owners (businesses with fewer than 100 workers) holding individual account retirement assets (IRA, Keogh, 401(k), and Thrift plans) and the value of these retirement assets. This model assesses the effect of financial health, i.e., financial vulnerability and home equity, on the likelihood that small business owners hold individual account retirement assets and the amount of assets they hold.[32] The two stages of the model are specified as follows:

In the first stage, the holding of individual account retirement assets by small business owners is specified as follows:

[31] We use the log transformation because it transforms a skewed distribution into one more closely approximating a normal distribution.
[32] Vulnerability of business owners is measured in terms of the vulnerability of their household because the variables are based on household totals—with the exception of income that is a business owner's income (in the calculation, the numerator is an owner's income from a business; total household income is the denominator).

$$AH_{SB} = \alpha + \beta SI + \beta SW + \beta SI*SW + \beta HE + \beta IC + \beta HC + \beta BC + \varepsilon$$

Where,

AH = holds individual account retirement plan assets
SI = share of household monthly income earned from a business
SW = share of total household net worth held in small business assets
*SI*SW* = the interaction of SI and SW
HE = negative home equity status (yes/no)
IC = vector of individual characteristics
HC = vector of household characteristics, and
BC = vector of business characteristics
ε = model error term

The second stage—the value of these individual account retirement plan assets held by small business owners—is the same set of independent variables specified in stage 1:

Where,

$logAV_{SB}$ = natural log of the total value of individual account retirement plan assets (i.e., IRA/ Keogh Accounts, 401(k)/Thrift Plans) held by each small business owner; and all other variables are the same as those defined above.

Model 3: Private Wage and Salary Workers

The third empirical model is specified for private wage and salary workers as follows:

$$AH = \alpha + \beta HE + \beta IC + \beta HC + \beta BC + \varepsilon$$

Where,

AH = holding individual account retirement plan assets (IRA/ Keogh Accounts, 401(k)/Thrift Plans)
HE = negative home equity status (yes/no)
IC = a vector of individual characteristics
HC = a vector of household characteristics, and
BC = a vector of business characteristics
ε = model error term

The second stage of Model 3 utilizes the same set of independent variables specified in stage 1; however, the dependent variable is the log (natural) transformed value of total individual account retirement plan assets owned by each private wage and salary worker. This empirical model is the same as specified in stage 1:

Where,

logAV = natural log of the total value of individual account retirement plan assets (i.e., IRA/ Keogh Accounts, 401(k)/Thrift Plans) owned by each private wage and salary worker, and all other variables are the same as those defined in stage 1.

Regression Analysis with Odds Ratios

To better isolate the effects of specific demographic, job, and financial characteristics on an owner's or worker's individual account retirement plan asset ownership, logistic regressions with odds ratios[33] were run in the stage 1 analyses. These calculations were used to generate the predicted probabilities (Charts 1 through 3). The proportion of the private work force (business owners and/or wage and salary workers) holding individual account retirement plan assets (i.e., IRA/Keogh, 401(k)/Thrift plans) is the initial proportion, or initial probability. This is the expected probability of holding these assets (prior to estimating the logistic model) if someone had no knowledge of a business owner's or private sector wage and salary worker's characteristics. Only the "best fit" models are presented in Charts 1 through 3, with only the significant explanatory variables shown (each variable is significant to at least the 95 percent level, except where noted).

Results

Descriptive Results: Business Owners versus Private Wage and Salary Workers

Table 1 shows the distribution of business owners and private wage and salary workers for the reference period August to November 2009. The sample of business owners is 4,773 and the weighted population is over 16 million owners.[34] The sample of private wage and salary workers is 31,512 and the weighted population is 108.3 million workers. The total private sector work force sampled is 36,285—equal to a weighted private work force population of 124.5 million.

The profile of business owners differs significantly from that of private wage and salary workers (Table 2). Business owners are older, more likely to be married, white, non-Hispanic, and have higher education levels; they are also more likely to be homeowners than private wage and salary workers. Business owners have different job and financial characteristics than private wage and salary workers (Table 3). They are more likely to work in very small firms and work on a part-time basis than wage and salary workers. In addition, business owners are more likely to have higher wealth than their private sector wage and salary counterparts, but they are as likely as private wage and salary workers to have high income levels (Table 3).

About 23 percent of small business owners are income vulnerable because they earn more than 50 percent of their total household monthly income from the business; about 22 percent of small business households are wealth vulnerable because they hold more than 50 percent of their household's total net worth in business assets. About 6 percent of households are both income and wealth vulnerable. About 7 percent of the private sector work force (both

[33] As noted earlier, the odds ratio (i.e., Exp(β) is defined as the exponential of coefficients generated by STATA/SE were converted into expected probabilities using the following method: Expected Probability = Exp(β)* Initial Odds/(1+Exp(β)*Initial Odds), where Initial Odds = Initial Probability/(1-Initial Probability). (Verma 2004).

[34] Note that 98.8 percent of business owners own firms with fewer than 100 employees. This means that for all intents and purposes "all owners" can be considered "small business owners."

business owners and private wage and salary workers) owning homes have underwater mortgages—negative home equity (Table 3).

Asset Ownership

The percentage of private wage and salary workers and business owners who own or have equity in 10 asset types is shown in Table 4. Overall, business owners are significantly more likely than private wage and salary workers to own or have equity in any of the asset types. The one exception is 401(k) and Thrift plans, which business owners are less likely to have than are wage and salary workers. Almost 55 percent of wage and salary workers have a 401(k)/Thrift plan compared with only 22.2 percent of business owners. Business owners are also more likely to own stocks and mutual funds (28.0 percent versus 19.0 percent) which might indicate they are less risk averse than private wage and salary workers. Table 5 compares the wealth of business owners whose firms have fewer than 25 workers to owners of larger firms with 25 or more workers. Overall, there is little difference in the proportion of households owning a particular asset type by the size of the firm owned by household members.[35]

Table 6 examines in greater detail the retirement asset types held by private wage and salary workers and business owners—focusing on different business characteristics, such as the size of the firm and legal form of business, with the following results:

- Private sector workers are slightly more likely than business owners to hold any type of retirement asset examined (i.e., IRA, Keogh, 401(k), 403(b), or Thrift Plan)—46.5 percent versus 43.3 percent, respectively (Table 6).
- Business owners are more likely than private sector wage and salary workers to hold an IRA—34.2 percent versus 20.5 percent. This may be the result of rollovers from prior defined contribution accounts (Zissimopoulos and Karoly 2007).
- On the other hand, private sector wage and salary workers are more likely to hold a 401(k), 403(b), or Thrift plan than business owners—40.8 percent versus 22.8 percent.
- In addition, as expected, business owners are more likely to hold Keogh accounts than are wage and salary workers (2.3 percent versus 1.4 percent).
- Owners of larger incorporated firms and owners with multiple businesses are more likely than their smaller, unincorporated, and single business owner counterparts to have any individual account retirement plan assets.

Business owners may own more nonhousing real estate than private wage and salary workers because they may own their business property. Again, differences in homeownership (81.2 percent for business owners versus 69.2 percent for private wage and salary workers) may suggest differences in wealth available at retirement (Table 2).

Wealth Value

[35] The asset value was calculated using information provided for all adults 15 or older in the household, but the final value was written to the records of all household members.

Table 4 shows the net value (in mean and median dollars) of the components of wealth for business owners and private sector wage and salary workers.[36] Note that in all cases the mean value is greater than the median. For most components the median value is zero.[37] With one exception, 401K/Thrift plans, the average net value of every asset type is larger for business owners than for private sector wage and salary workers. On average, the largest asset for business owners and private wage and salary worker households is their home equity ($132,000 and $77,000, respectively). The second largest asset for business owners is business equity ($127,000); the second largest asset for private wage and salary workers is their 401(k)/Thrift plan ($37,000).

In terms of asset values, households in which business owners have firms with 25 or more workers have higher values for each asset type, compared with business owner households with firms having fewer than 25 workers (Table 5).[38] On average, the largest asset for business owner households with firms of fewer than 25 workers is their home equity ($134,000), while for those with larger firms of 25 or more workers, business equity is the largest household asset ($219,967) and stock/mutual funds are the second largest asset ($198,880). Home equity is the third most important asset ($181,128).

The composition and level of wealth holdings will affect the standard of living that business owners and wage and salary workers can expect in retirement. For example, holding riskier financial assets such as stocks and mutual funds is likely to mean that the wealth available at retirement will vary with these markets. On the other hand, if housing constitutes the majority of wealth holdings, using this wealth in retirement may mean the sale of the house and downsizing living arrangements.[39]

Table 7 examines in greater detail the types of retirement asset wealth held in individual account retirement assets by private wage and salary workers and business owners in their own name—focusing on different business characteristics, such as firm size and legal form of business. Owners of larger, incorporated firms and those with multiple businesses are more likely to have higher wealth levels in their individual account retirement plans compared with their smaller, unincorporated, and single-business owner counterparts.

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[36] The wealth reported for several different property and financial wealth components is reported net of any debt. This is non-pension wealth since the value of both Social Security retirement benefits and employer-sponsored traditional defined benefit plans are excluded. Note, however, that some of the non-pension wealth may have directly come from traditional defined benefit employer-sponsored pension plans (Zissimopoulos and Karoly 2007). It is not surprising to find that older wage and salary workers hold less wealth than older business owners because they are also much more likely to hold pension wealth. Zissimopoulos and Karoly (2007) hypothesize that those business owners may also be more likely to have a desire to leave wealth to their heirs.

[37] In SIPP, a zero coding indicates "none or not in the universe." If the calculations of the mean and median exclude zero values, the resulting values of asset types would differ significantly from the calculations of asset values that include zero values. In all cases, as when zero values are included, the mean is larger than the median. With zero values excluded, business owner households have larger asset values than private wage and salary worker households for all asset types (measured by either mean or median). The largest asset type for both business owners and private wage and salary worker households is real estate equity (not home) rather than home equity (with zero values included).

[38] In all cases, as when zero values are included, the mean is larger than the median. With zero values excluded, business owner households owning firms with 25 or more workers have larger asset values than business owner households owning smaller firms with fewer than 25 workers, for all asset types (measured by either mean or median). The largest asset type for business owner households owning any size firm is stock/mutual funds (mean) and real estate equity (not home) (median). With zero values included, for households owning smaller firms, home equity is the largest asset type (when measured by both mean and median) while for households owning larger firms (25 or more workers), as noted above, business equity is the largest asset (mean), while home equity is the largest asset when measured by the median.

[39] As noted earlier, one common way in which consumers can extract equity from their homes without selling the house and moving is through a reverse mortgage.

Table 7 shows the mean net amount of retirement assets held by private sector wage and salary workers and business owners. Owners of a business hold significantly higher average IRA balances than private sector wage and salary workers (over $19,000 versus almost $9,000, respectively). On the other hand, wage and salary workers hold significantly higher average balances in their 401(k), 403(b), or Thrift plans than business owners ($19,001 versus $15,527). In addition, business owners hold more than twice as much in average Keogh balances ($1,058) than private wage and salary workers ($450). Overall, business owners have higher total individual account retirement plan assets in their own name than wage and salary workers ($35,857 versus $28,278).[40]

Regression Results

Table 8 describes the results of regression analyses (logistic) (model 1) to determine if business owners are less likely to hold individual account retirement assets and less likely to hold larger amounts of retirement assets than private wage and salary workers (linear) when demographic, financial, and job characteristics are held constant. The regression results support Hypothesis 1: business owners are less likely to hold individual account retirement assets and more likely to hold lower amounts of individual account retirement plan assets than private sector wage and salary workers, all else equal. Several control variables warrant some discussion. An owner or worker is more likely to hold individual account retirement assets if he or she is older, more educated, non-minority, a homeowner, a stock owner, and has high income and high wealth, all else equal. Owners and workers are more likely to hold larger amounts of retirement assets if they have the characteristics discussed above in terms of asset ownership.

Table 8 also shows that negative home equity (an underwater mortgage) significantly reduces the likelihood of holding retirement assets and also reduces the level of accumulated retirement assets for the private sector work force as a whole (all business owners and private wage and salary workers).

Chart 1 indicates that having a high level of education (bachelor's degree or higher) is the most significant independent variable affecting the holding of individual account retirement plan assets by those in the private sector work force. This factor increased the probability of holding assets from 46.5 percent to 76.3 percent, all else equal. Holding stocks and having high wealth increased the probability to over 60 percent. Owning a home and having high income increased the probability to over 50 percent. Having an underwater mortgage increased the probability slightly to 48.9 percent (however, this variable was significant only at the 90 percent level). Being younger (under age 35), Hispanic, nonwhite, and working part-time significantly decreased the likelihood of holding retirement assets to less than 40 percent.

Working in a firm or owning a firm with fewer than 25 employees was the most important characteristic reducing the probability of holding retirement plan assets for the private sector work force—the probability of holding assets declined from 46.5 percent to 26.1 percent, all else equal.

Table 9 examines the results of model 2, which analyzes small business owner[41] financial viability and retirement assets (Hypothesis 2). This model focuses on the effect of the financial viability of small business owners on holding and accumulating individual account retirement

[40] The home equity variable is significant to the .10 percent level for holding assets, but is significant at the .01 percent level for amount of assets held.

[41] Defined as an owner of a business with fewer than 100 workers.

assets. The question addressed is whether financially viable small business owners are more likely to own retirement assets and have more individual account retirement assets than financially vulnerable small business owners (those owners with 50 percent or more of their household wealth held in business assets and/or with 50 percent or more of their household income from a business), all else equal.

The results in Table 9 partially confirm Hypothesis 2. Net worth or wealth vulnerable small business owners have a lower probability of holding retirement assets than net worth viable small business owners. However, income vulnerability is not a significant factor affecting small business owner retirement asset ownership.

The results measuring the effect of financial viability on the level of retirement assets accumulated by small business owners confirm Hypothesis 2. Small business owners who are wealth vulnerable (have 50 percent or more of household wealth held in business assets) are significantly more likely to hold lower amounts of retirement assets than business owners who are not wealth vulnerable; similarly, those who are net income vulnerable (with 50 percent or more of their household income from a business) are significantly more likely to hold lower amounts of retirement assets than business owners who are not income vulnerable. Financial viability may increase a taste for saving among certain small business owners, possibly those with subchapter S corporations, which permit owners to save large amounts. The interaction term is not significant in either the logistic or the ordinary least squares regression.

Having an underwater mortgage is not a significant factor affecting a small business owner's retirement asset ownership or asset accumulation level, all else equal. This finding contradicts Hypothesis 3 for business owners.

Table 10 shows the regression results for private wage and salary workers. Having an underwater mortgage is positively related to the ownership of individual account retirement assets as well as asset amounts. Again, this contradicts the expectations in Hypothesis 3. Such a contradictory result may be related to rational behavior on the part of workers since these retirement assets are protected by federal law in bankruptcy and foreclosure proceedings.[42] As noted above, this outcome differs from the findings of small business owners where neither ownership nor retirement asset accumulation was significantly related to the owner having an underwater mortgage.

Conclusion

The type of private sector employment—whether an individual is a business owner or a private wage and salary worker—may have implications for income security during retirement. Compared with private wage and salary workers, business owners may have different asset accumulation patterns as a result of their business experience or as a result of differential coverage of owners and workers by employer-sponsored retirement benefits during their work careers. This study compares the individual account retirement assets held by business owners and private sector workers utilizing the 2008 Survey of Income and Program Participation (SIPP) conducted by the Census Bureau.

The results suggest that business owners are significantly less likely than private sector wage and salary workers to hold retirement assets, controlling for firm size and other factors. An important result emerges with respect to small business owners only. Financially vulnerable

[42] The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 created a bankruptcy exemption for IRAs and other tax-exempt retirement programs without considerations of the needs of the participants (Marshall 2006).

small business owners—those who hold 50 percent or more of their net worth in business assets—are less likely to hold retirement assets than owners who are not net worth vulnerable. On the other hand, income vulnerability does not have a significant impact on whether small business owners hold retirement assets.

Findings differ for level of retirement asset accumulation. Both net worth and income vulnerability had a significant effect on retirement asset amounts accumulated by small business owners. On both dimensions, financially vulnerable small business owners were significantly more likely to hold lower retirement asset amounts than small business owners who are not financially vulnerable.

Underwater mortgages affect small business owners and wage and salary workers differently. Having an underwater mortgage does not have a significant effect on either the likelihood that a small business owner invested in retirement assets or on the amount of retirement assets accumulated by these owners. On the other hand, having an underwater mortgage increases both the likelihood that private sector wage and salary workers had a retirement account and the amount workers have invested in retirement accounts. This may indicate that workers are risk averse and understand that IRAs and other tax-exempt accounts are exempt from bankruptcy proceedings.

Policymakers have implemented many options to help small businesses overcome the obstacles to sponsoring retirement plans and acquiring retirement assets. Unfortunately, despite their availability for many years, these simplified options, for example, Simplified Employee Pension (SEP) plans and Savings Incentive Match Plans for Employees (SIMPLE), have produced only minor gains in plan sponsorship (Kobe 2010). The Obama administration has proposed new policies to expand retirement savings. It is estimated that through a program of automatic individual retirement accounts (IRAs), approximately 75 million workers not currently offered a plan at work would be able to save through automatic IRAs (Iwry and John 2007).

Policymakers have also examined the use of retirement assets to help deal with the issue of underwater mortgages and homeowners facing imminent foreclosures. Recently, policies have been proposed to amend the tax code to allow homeowners who have 401(k) retirement plans to pull out money to save their houses from foreclosure without the usual tax penalties (Harney 2011).[43]

Federal rules and regulations have also been written to equalize the benefits within companies between workers and highly compensated individuals/owners.[44] The study's findings suggest the need to reexamine these rules to help both business owners and wage and salary workers increase their ownership and accumulation of individual account retirement assets. In addition, new policies to expand automatic enrollment to owners as well as workers may need to be considered.

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[43] Not only does this proposal deplete the tax-deferred savings an owner or worker sets aside, but in the case of hardship withdrawals, they are prohibited by IRS rules from making new contributions to their plans for six months.

[44] These federal rules and regulations require that retirement plans promote equity and inclusiveness. In 2010, at about $84 billion, tax preferences for pension plans are the largest "tax expenditure," exceeding those for either home mortgages or health benefits. The purpose of these tax preferences is to raise private savings for worker retirement. They are structured to strike a balance between providing incentives for employers to start and maintain voluntary, tax-preference-qualified plans and ensuring that employees receive an equitable share of the tax-subsidized benefits. Two sets of rules address required apportionment of contributions and benefits, and both generally apply to all private employers' plans—rules on nondiscrimination in contributions and benefits, and the "top-heavy" rules. Top-heavy rules require plans to provide "workers"—as contrasted with owners and officers—higher minimum benefits and earlier rights to those benefits than would otherwise be required under the general qualification rules (U.S. Government Accountability Office 2000).

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Table 1—Business Owners and Private Sector Wage and Salary Workers by Employment Size of Business or Firm, 2009

	Total	Employment Size of Business or Firm			
		< 25	25-99	<100	100+
Business Owners					
Sample	4,773	4,591	125	4,716	57
Weighted Sample	16,173,263	15,572, 813	403,815	15,976,628	196,635
Private Sector Wage and Salary Workers					
Sample	31,512	7,661	4,198	11,859	19,653
Weighted Sample	108,319,429	26,320,411	14,548,093	40,868,504	67,450,947
Total, Owners and Workers					
Sample	36, 285	12,252	4,323	16,575	19,710
Weighted Sample	124,492,692	41,893,224	14.951,908	56,845,132	67,647,562

Source: Author's calculation of Bureau of the Census, 2008 SIPP Wave 4 data (data are for 2009).

Table 2 – Comparison of Socio-Demographic Characteristics of Business Owners and Private Sector Wage and Salary Workers, 2009 (Percent)		
Characteristics	Private Sector Wage and Salary Workers	Business Owners
Age, Total	100.0%	100.0%
Under 35	37.6%	15.8%
35 to 49	33.5%	35.9%
50 to 64	25.0%	37.6%
65+	3.9%	10.6%
Sex, Total	100.0%	100.0%
Male	51.2%	64.4%
Female	48.8%	35.6%
Race, Total	100.0%	100.0%
White	81.6%	86.9%
Nonwhite	18.4%	13.1%
Origin, Total	100.0%	100.0%
Hispanic	12.5%	7.9%
NonHispanic	87.5%	92.1%
Marital Status, Total	100.0%	100.0%
Married	53.8%	68.1%
Not married	46.2%	31.9%
Kids, Total	100.0%	100.0%
Yes	43.7%	38.1%
No	56.3%	61.9%
Education, Total	100.0%	100.0%
High school or less	37.5%	29.6%
Some College	36.2%	33.1%
College Degree (4 yr. +)	26.3%	37.3%
Veteran, Total	100.0%	100.0%
Yes	10.5%	7.0%
No	89.5%	93.0%
Citizen, Total	100.0%	100.0%
Yes	91.6%	93.1%
No	8.4%	6.9%
Homeowner, Total	100.0%	100.0%
Yes	69.2%	81.2%
No	30.8%	18.8%
Metropolitan Location, Total	100.0%	100.0%
Yes	78.6%	82.0%
No	21.4%	18.0%
Source: Bureau of the Census, 2008 SIPP Wave 4. The sample in each wave consists of 4 rotation groups, each interviewed in a different month. For Wave 4, in each rotation, the 4th reference months were from August 2009 to November 2009.		

Table 3 – Comparison of Employment and Financial Characteristics of Business Owners and Private Sector Wage and Salary Workers, 2009 (Percent)		
Characteristics	Private Sector Wage and Salary Workers	Business Owners
Financial Viability		
Wealth Vulnerable	NA	22.3%
Income Vulnerable	NA	23.1%
Wealth/Income Interaction	NA	6.0%
Negative Home Equity	7.2%	7.0%
Wealth/Income/Risk Factors		
High Wealth ($100,000+)	46.8%	69.9%
High Income ($6,000+/month)	44.2%	43.1%
Stocks	19.6%	28.0%
Job Characteristics		
Firm Size		
Fewer than 25	24.3%	96.2%
25 to 99	13.3%	2.6%
Fewer than 100	37.6%	98.8%
100 or more	62.4%	1.2%
Firm Age (3+ years)	NA	74.5%
No. of Businesses Owned (1)	NA	90.8%
Incorporated	NA	31.4%
Sole Proprietorship	NA	44.6%
Industry (goods)	NA[1]	25.7%
Hours Worked	100.0%	100.0%
Part-time (<35 hrs/wk)	20.3%	28.9%
Full-time (35+ hrs/wk)	79.7%	71.1%
Own Retirement Assets	47.4%	42.8%
Mean Retirement Asset Owned	$28,279	$35,857

Source: Bureau of the Census, 2008 SIPP Wave 4. The sample in each wave consists of 4 rotation groups, each interviewed in a different month. For Wave 4, in each rotation, the 4th reference months were from August 2009 to November 2009.

[1] SIPP industry codes for business owners and workers are not comparable.

Table 4 - Distribution of Components of Equity Wealth: Business Owner Households and Private Sector Wage and Salary Worker Households in 2009

Asset type	Business owner households			Private wage and salary worker households		
	Total (Percent of households that own asset type)	Value of assets (dollars)		Total (Percent of households that own asset type)	Value of assets (dollars)	
		Mean[a]	Median[a]		Mean[a]	Median[a]
Home equity	73.0	132,365	76,000	59.7	76,583	23,299
Vehicle equity	80.6	9,119	6,683	75.1	6,428	4,550
Business equity	72.4	127,115	8,000	7.9	11,884	0
Interest earning assets (banks)	73.0	18,669	1,600	68.9	11,753	760
Interest earning assets (other inst.)	3.8	5,498	0	1.9	1,678	0
Stock/Mutual funds	27.8	74,304	0	19.0	31,074	0
Real estate equity (not home)	21.6	53,225	0	9.2	17,133	0
Other asset equity	46.5	11,807	0	43.6	4,365	0
IRA/Keogh	33.0	33,026	0	29.9	19,155	0
401(k)/Thrift	22.2	31,321	0	54.6	37,056	1,889
Total wealth	NA	496,455	254,940	NA	217,112	78,750

[a]Note: Calculations of means and medians include zero values. A zero value can mean "none or not in the universe." The asset value was calculated using information provided for all adults 15 or older in the household, but the final value was written to the records of all household members. Thus, it is possible for private wage and salary worker households to also have business equity.
Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

Table 5 - Distribution of Components of Equity Wealth: Business Owner Households by Firm Size in 2009

Asset type	Firms with fewer than 25 workers			Firms with 25+ workers		
	Total (Percent of households that own asset type)	Value of assets (dollars)		Total (Percent of households that own asset type)	Value of assets (dollars)	
		Mean[a]	Median[a]		Mean[a]	Median[a]
Home equity	74.1	134,000	80,000	73.0	181,128	147,999
Vehicle equity	81.1	9,260	6,683	80.6	14,941	12,813
Business equity	72.6	128,470	9,000	72.4	219,967	21,250
Interest earning assets (banks)	73.5	18,998	1,800	73.0	34,631	6,000
Interest earning assets (other inst.)	3.8	5,696	0	3.8	15,081	0
Stock/Mutual funds	27.9	77,733	0	27.8	198,880	0
Real estate equity (not home)	22.3	56,120	0	21.6	87,319	0
Other asset equity	46.8	12,738	0	46.5	18,416	0
IRA/Keogh	41.8	32,931	0	41.3	68,387	12,000
401(k)/Thrift	39.1	29,961	0	39.8	84,931	30,000
Total wealth	NA	506,711	262,229	NA	923,685	584,623

[a]Note: Calculations of mean and median include zero values. A zero value can mean "none or not in the universe." The asset value was calculated using information provided for all adults 15 or older in the household, but the final value was written to the records of all household members.

Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

Table 6 Proportion of Business Owners and Private Sector Workers Holding Individual Account Retirement Assets (Percent)									
Retirement Asset	Private Sector Wage and Salary Workers	Business Owners							
					Total				
		Total Business Owners	Large Business 100+	Small Business <100	One Business Only	2+ Businesses	Incorporated	Sole Proprietors	Partnership
IRA	20.5	34.2	47.4	34.0	30.9	41.0	43.5	27.9	30.4
Keogh	1.4	2.3	8.8	2.2	2.0	4.4	3.4	1.9	0.8
Any IRA or Keogh	20.9	34.8	50.9	34.6	31.5	41.8	44.2	28.4	30.8
401(k), 403(b), or Thrift Plan	40.8	22.8	57.9	22.4	21.6	24.9	29.7	18.2	21.1
Any of Above Retirement Assets	46.5	43.3	63.2	43.1	40.2	48.9	52.5	36.2	38.3
Number of Observations	31,717	4,773	57	4,716	5,339	522	1,799	2,582	493
Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)									

Table 7 Mean Individual Account Retirement Assets of Business Owners and Private Sector Workers in Their Own Name, 2009 (Dollars) (Note: median retirement assets are zero for everyone)

Individual Account Retirement Asset	Private Sector Workers	Business Owners							
					Total				
		Total Business Owners	Large Business 100+	Small Business <100	One Business Only	2+ Businesses	Incorporated	Sole Proprietors	Partnership
Keogh	450	1,058	2,350	1,042	1,016	1,823	1,319	1,057	110
IRA	8,827	19,272	44,982	18,951	16,764	26,061	27,882	13,407	18,568
401(k), 403(b) or Thrift Plan	19,001	15,527	79,883	14,735	13,974	16,727	22,479	10,929	14,238
All Above Retirement Assets	28,278	35,857	127,215	34,728	31,754	44,611	51,680	25,393	32,916
Number of Observations	31,515	4,874	60	4,814	5,339	522	1,799	2,582	493

Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

Table 8 Determinants of Holding Individual Account Retirement Assets for Business Owners and Private Sector Wage and Salary Workers: Logistic and Linear Regressions

Characteristics	Logistic Regression (Assets Held)				Linear Regression (Asset Value)			
	Coef.	Std. Err.	z	P>z	Coef.	Std. Err.	t	P>t
Constant	-2.00609	0.092875	-21.6	0	0.333367	0.112574	2.96	0.003
Business owner	-0.35522	0.040779	-8.71	0	-0.78741	0.070643	-11.15	0
Underwater mortgage	0.09197	0.05105	1.8	0.072	0.339886	0.091267	3.72	0
Age <35	-0.54296	0.063554	-8.54	0	(dropped)			
Age 35-49	0.332634	0.062045	5.36	0	1.731506	0.057132	30.31	0
Age 50-64	0.376013	0.060227	6.24	0	2.070083	0.065278	31.71	0
Age 65 and over	(dropped)				1.359914	0.11403	11.93	0
Female	-0.01897	0.026829	-0.71	0.479	-0.27229	0.046566	-5.85	0
Nonwhite	-0.41737	0.034705	-12.03	0	-0.86746	0.060127	-14.43	0
Hispanic	-0.67566	0.047275	-14.29	0	-1.0401	0.076804	-13.54	0
Married	0.489021	0.029005	16.86	0	0.8151	0.05144	15.85	0
Children	-0.14641	0.029657	-4.94	0	-0.15921	0.051115	-3.11	0.002
Education <= HS	(dropped)				(dropped)			
Education - college	0.501205	0.030232	16.58	0	0.806585	0.053727	15.01	0
Education – BA+	1.303532	0.034841	37.41	0	2.451479	0.061222	40.04	0
Veteran	0.091873	0.049407	1.86	0.063	0.185394	0.088253	2.1	0.036
Citizen	0.966456	0.060138	16.07	0	1.049613	0.088085	11.92	0
Own home	0.265578	0.034552	7.69	0	0.203803	0.06058	3.36	0.001
Metro location	0.066462	0.030913	2.15	0.032	0.174199	0.054379	3.2	0.001
High income	0.303699	0.02813	10.8	0	0.809001	0.05103	15.85	0
High wealth	0.607432	0.032517	18.68	0	1.829804	0.059297	30.86	0
Own stocks	0.69428	0.034755	19.98	0	1.49542	0.059955	24.94	0
Firm size <25 workers	-0.90289	0.031643	-28.53	0	-1.49938	0.053319	-28.12	0
Part-time <35 hrs	-0.72263	0.033192	-21.77	0	-1.12817	0.056114	-20.1	0
Number of observations = 35,611					Number of observations = 35,611			
LR chi2 (21) = 12049.32					F(21, 35589) = 858.61			
Probability > chi2 = 0.0000					Probability > F = 0.0000			
Pseudo R2 = .2445					R-squared = 0.3363			
Log likelihood = -18614.447					Adjusted R-squared = 0.3359			
					Root MSE = 4.1573			

Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

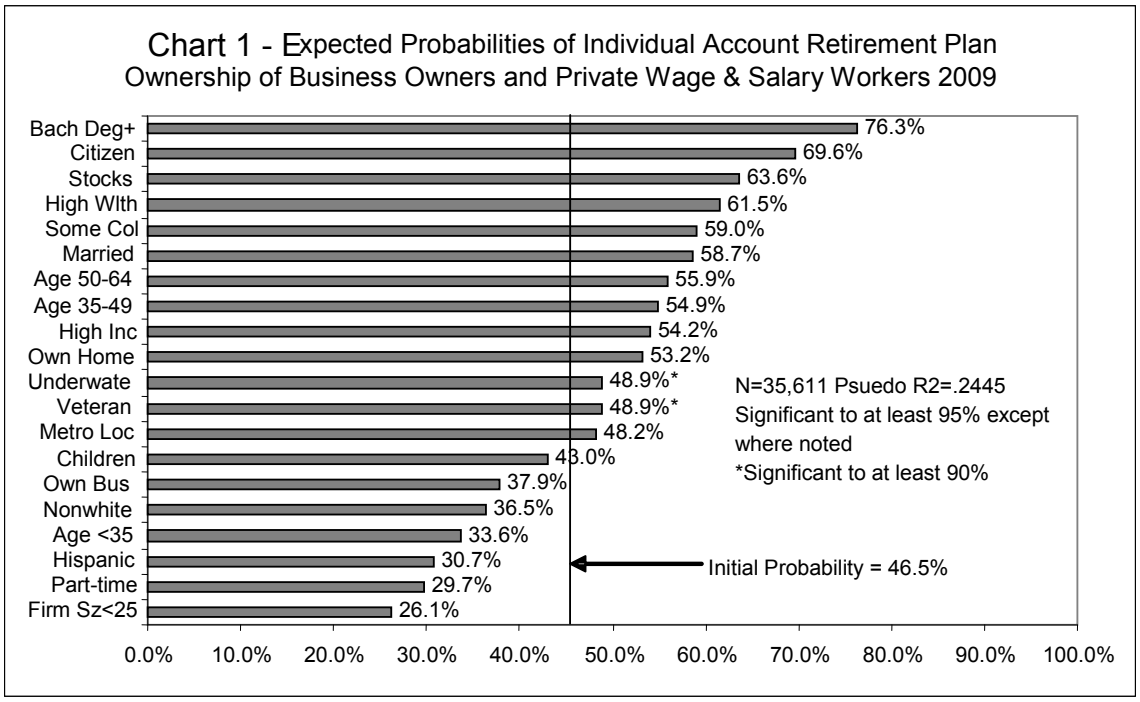
Chart 1 - Expected Probabilities of Individual Account Retirement Plan
Ownership of Business Owners and Private Wage & Salary Workers 2009
Bach Deg+
Citizen
Stocks
High Wlth
Some Col
Married
Age 50-64
Age 35-49
High Inc
Own Home
Underwate
Veteran
Metro Loc
Children
Own Bus
Nonwhite
Age <35
Hispanic
Part-time
Firm Sz<25
76.3%
69.6%
63.6%
61.5%
59.0%
58.7%
55.9%
54.9%
54.2%
53.2%
48.9%*
48.9%*
48.2%
43.0%
37.9%
36.5%
33.6%
30.7%
29.7%
26.1%
N=35,611 Psuedo R2=.2445
Significant to at least 95% except where noted
*Significant to at least 90%
Initial Probability = 46.5%
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%
80.0%
90.0%
100.0%

Table 9 Determinants of Holding Individual Account Retirement Assets for Small Business Owners: Logistic and Linear Regressions

Characteristics	Logistic Regression (Assets Held)				Linear Regression (Asset Value)			
	Coef.	Std. Err.	z	P>z	Coef.	Std. Err.	t	P>t
Constant	-2.33252	0.394737	-5.91	0	0.343365	0.670623	0.51	0.609
Net worth vulnerable	-0.44317	0.101559	-4.36	0	-1.40915	0.183668	-7.67	0
Income vulnerable	0.148787	0.102351	1.45	0.146	-0.4019	0.188163	-2.14	0.033
Interaction nw-inc vul.	-0.02892	0.192054	-0.15	0.88	0.150151	0.350163	0.43	0.668
Underwater mortgage	0.05326	0.152206	0.35	0.726	0.312276	0.268514	1.16	0.245
Age <35	0.023339	0.16566	0.14	0.888	1.192658	0.302937	3.94	0
Age 35-49	0.312377	0.13611	2.3	0.022	1.224021	0.25655	4.77	0
Age 50-64	0.391904	0.121634	3.22	0.001	1.200505	0.231597	5.18	0
Age 65+	(dropped)				(dropped)			
Female	-0.15295	0.079573	-1.92	0.055	-0.15081	0.146963	-1.03	0.305
Nonwhite	-0.64396	0.112306	-5.73	0	-1.16774	0.198671	-5.88	0
Hispanic	-0.78093	0.173743	-4.49	0	-1.68567	0.268301	-6.28	0
Married	0.028074	0.085912	0.33	0.744	0.910632	0.157905	5.77	0
Kids	-0.08887	0.087682	-1.01	0.311	-0.39785	0.160248	-2.48	0.013
Education <=HS	-0.55711	0.09277	-6.01	0	-0.74124	0.168227	-4.41	0
Education – college	(dropped)				(dropped)			
Education - BA+	0.53329	0.082578	6.46	0	0.920358	0.160136	5.75	0
Veteran	0.036609	0.116025	0.32	0.752	0.223863	0.219445	1.02	0.308
Citizen	1.007928	0.202918	4.97	0	1.145157	0.288839	3.96	0
Owns home	0.133635	0.118148	1.13	0.258	0.337119	0.203825	1.65	0.098
Metro location	0.113786	0.082771	1.37	0.169	0.417868	0.154745	2.7	0.007
High income	0.4165	0.073025	5.7	0	1.886461	0.140765	13.4	0
High wealth	1.130543	0.103548	10.92	0	2.845992	0.181491	15.68	0
Owns stocks	0.890189	0.079	11.27	0	2.199561	0.155002	14.19	0
Incorporated	0.436184	0.125269	3.48	0	0.653392	0.234416	2.79	0.005
Sole proprietor	0.058265	0.119279	0.49	0.625	0.345179	0.222119	1.55	0.12
Business age <3 yrs	0.009572	0.090236	0.11	0.916	-0.2449	0.162623	-1.51	0.132
Goods industry	-0.12548	0.085981	-1.46	0.144	-0.44896	0.158544	-2.83	0.005
Number bus. >1	-0.056	0.11577	-0.48	0.629	0.611957	0.218256	2.8	0.005
Firm size <25	-0.70523	0.229132	-3.08	0.002	-1.27075	0.402613	-3.16	0.002
Part-time <35 hrs	0.349436	0.081158	4.31	0	0.564107	0.149699	3.77	0
Number of observations	= 4,711				Number of observations	= 4,711		
					F(28, 4682)	= 71.15		
LR chi2 (28)	= 1438.66				Probability > F	= 0.0000		
Probability > chi2	= 0.0000				R-squared	= 0.2985		
Pseudo R2	= .2224				Adjusted R-squared	= 0.2943		
Log likelihood	= -2515.1836				Root MSE	= 4.3836		

Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

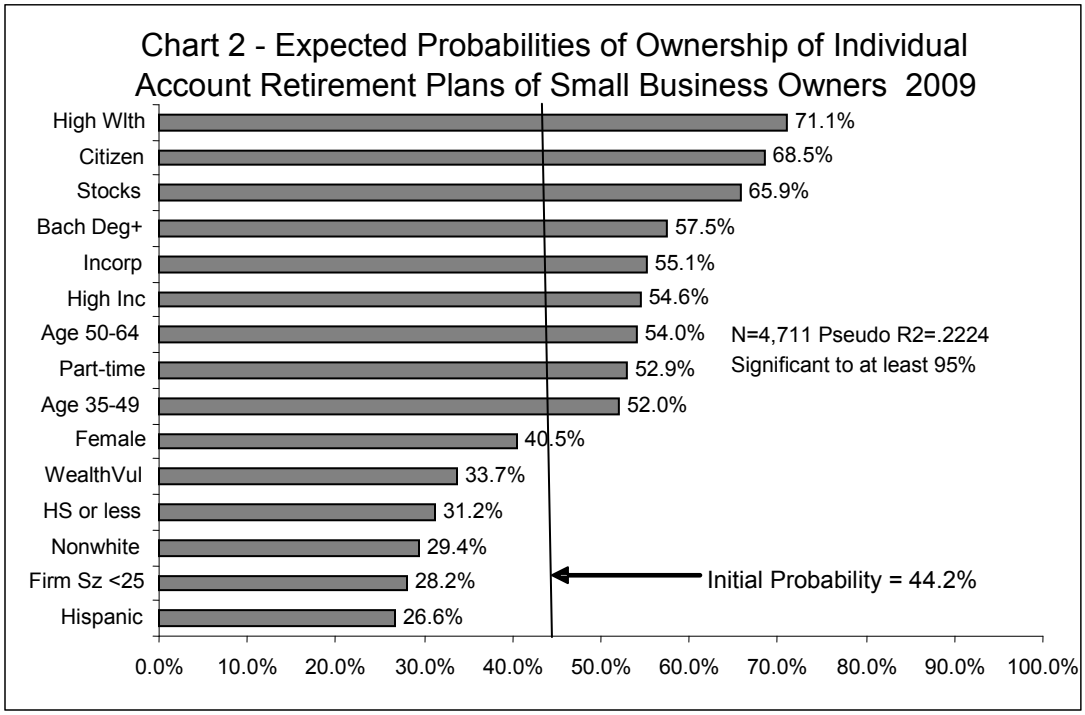
Chart 2 - Expected Probabilities of Ownership of Individual Account Retirement Plans of Small Business Owners 2009
High Wlth
Citizen
Stocks
Bach Deg+
Incorp
High Inc
Age 50-64
Part-time
Age 35-49
Female
WealthVul
HS or less
Nonwhite
Firm Sz <25
Hispanic
71.1%
68.5%
65.9%
57.5%
55.1%
54.6%
54.0%
52.9%
52.0%
40.5%
33.7%
31.2%
29.4%
28.2%
26.6%
N=4,711 Pseudo R2=.2224
Significant to at least 95%
Initial Probability = 44.2%
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%
80.0%
90.0%
100.0%

Table 10 Determinants of Holding Individual Account Retirement Assets for Private Sector Workers: Logistic and Linear Regressions

Characteristics	Logistic Regression (Assets Held)				Linear Regression (Asset Value)			
	Coef.	Std. Err.	z	P>z	Coef.	Std. Err.	t	P>t
Constant	-0.61724	0.106809	-5.78	0	0.437645	0.11791	3.71	0
Underwater mort.	0.115431	0.055015	2.1	0.036	0.425331	0.096363	4.41	0
Age <35	-0.58971	0.074647	-7.9	0	(dropped)			
Age 35-49	0.274552	0.074053	3.71	0	1.728743	0.059203	29.2	0
Age 50-64	0.323659	0.073016	4.43	0	2.091159	0.06843	30.56	0
Age 65 and over	(dropped)				1.383401	0.129969	10.64	0
Female	0.019586	0.028957	0.68	0.499	-0.21466	0.048984	-4.38	0
Nonwhite	-0.39246	0.036834	-10.65	0	-0.81187	0.06262	-12.97	0
Hispanic	-0.67842	0.049545	-13.69	0	-1.06113	0.079677	-13.32	0
Married	0.532859	0.031243	17.06	0	0.881508	0.054265	16.24	0
Kids	-0.16392	0.031841	-5.15	0	-0.17891	0.053505	-3.34	0.001
Education <= HS	-1.27853	0.03821	-33.46	0	(dropped)			
Education - college	-0.78863	0.036168	-21.8	0	0.778333	0.05637	13.81	0
Education - BA+	(dropped)				2.347664	0.065357	35.92	0
Veteran	0.089945	0.055516	1.62	0.105	0.173061	0.096227	1.8	0.072
Citizen	0.9717	0.063445	15.32	0	1.082508	0.092199	11.74	0
Own home	0.281215	0.036519	7.7	0	0.221555	0.063117	3.51	0
Metro location	0.049082	0.033825	1.45	0.147	0.136467	0.057933	2.36	0.018
High income	0.250929	0.030828	8.14	0	0.709373	0.05447	13.02	0
High wealth	0.604738	0.03489	17.33	0	1.885401	0.062481	30.18	0
Owns stocks	0.639879	0.039019	16.4	0	1.314644	0.064561	20.36	0
Firm Size <25	-0.97453	0.033777	-28.85	0	-1.57778	0.055606	-28.37	0
Part-time <35 hrs	-1.01085	0.038106	-26.53	0	-1.5862	0.061326	-25.86	0

Number of observations	= 30,827	Number of observations	= 30,827
		F(20, 33806)	= 843.61
Probability > chi2	= 0.0000	Probability > F	= 0.0000
LR chi2 (20)	= 11020.46	R-squared	= 0.3539
Pseudo R2	= .2580	Adjusted R-squared	= 0.3535
Log likelihood	= -12844.307	Root MSE	= 4.0918

Source: Author's calculations of 2008 SIPP, Wave 4 (2009 data)

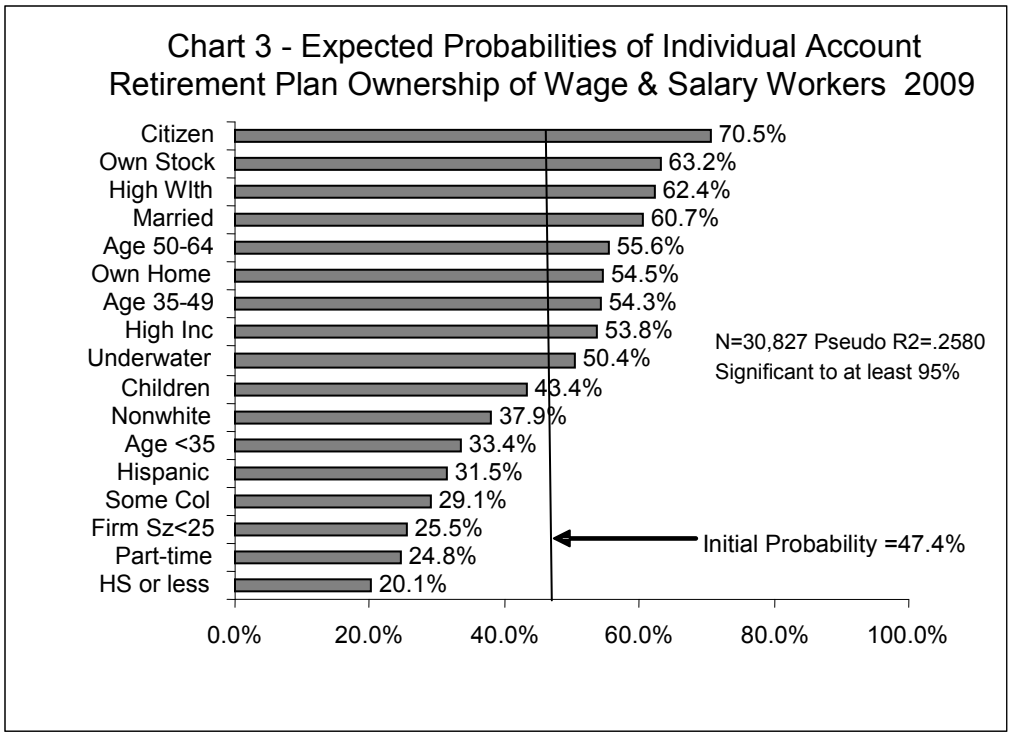
Chart 3 - Expected Probabilities of Individual Account Retirement Plan Ownership of Wage & Salary Workers 2009
Citizen 70.5%
Own Stock 63.2%
High WIth 62.4%
Married 60.7%
Age 50-64 55.6%
Own Home 54.5%
Age 35-49 54.3%
High Inc 53.8%
Underwater 50.4%
Children 43.4%
Nonwhite 37.9%
Age <35 33.4%
Hispanic 31.5%
Some Col 29.1%
Firm Sz<25 25.5%
Part-time 24.8%
HS or less 20.1%
N=30,827 Pseudo R2=.2580
Significant to at least 95%
Initial Probability =47.4%
0.0% 20.0% 40.0% 60.0% 80.0% 100.0%

Appendix Table 1 - Coding of Variables 2008 SIPP Wave 4			
Variables		Coding	Variable Name
Dependent Variables			
Holding individual account retirement assets		1 if yes; 0 if otherwise	AH
(IRA/Keogh, 401(k)/Thrift plan) EALK+EALR+EALT			
Total value of individual account retirement assets		Value in dollars	logAV
(IRA/Keogh, 401(k)/Thrift plan) TALKB+TALRB+TALTB			
Independent Variables			
Financial Viability			
Wealth vulnerable	THHBEQ/ THHTWLTH => .50	1 if yes; 0 if otherwise	Wlthvul
Income vulnerable	TBSUM1/ THTOTINC => .50	1 if yes; 0 if otherwise	Incvul
Interaction – Wealth vulnerable+Income vulnerable		1 if yes; 0 if otherwise	Interaction
Home equity negative	THHTHEQ <0	1 if yes; 0 if otherwise	underwater
Wealth/Income/Risk Factors			
High wealth	THTOTINC ($100,000+/year)	1 if yes; 0 if otherwise	Highwlth
High income	TBSUM1 ($6,000+/month)	1 if yes; 0 if otherwise	Highinc
Stocks	ESMI + ESMJ	1 if yes; 0 if otherwise	Stocks
Control Variables			
Age:	TAGE Less than 35	1 if yes; 0 if otherwise	age<35
	35 to 49	1 if yes; 0 if otherwise	age3549
	50-64	1 if yes; 0 if otherwise	age5064
	65+	1 if yes; 0 if otherwise	age65+
Sex:	ESEX Female	1 if yes; 0 if otherwise	female
Race:	ERACE Nonwhite	1 if yes; 0 if otherwise	nonwhite
Origin:	EORIGIN Hispanic	1 if yes; 0 if otherwise	hispanic
Marital Status:	EMS Married	1 if yes; 0 if otherwise	married
Children	RFNKIDS One or more	1 if yes; 0 if otherwise	kids
Education:	EEDUCATE High School or less	1 if yes; 0 if otherwise	hsorless
	Some College	1 if yes; 0 if otherwise	somecol
	Bachelor's degree plus	1 if yes; 0 if otherwise	ba+
Veteran's Status	EFEVER Veteran	1 if yes; 0 if otherwise	veteran
Citizenship	ECITIZEN Citizen	1 if yes; 0 if otherwise	citizen
Homeownership	ETENURE Homeowner	1 if yes; 0 if otherwise	homeown
Metro location	TMETRO Metro location	1 if yes; 0 if otherwise	metro
Business/Worker Characteristics			
Business owner	EBIZOWN1	1 if yes; 0 if otherwise	busown
Worker	ECLWRK1	1 if yes; 0 if otherwise	worker
Business Size (bus)	TEMPB1 <25 workers	1 if yes; 0 if otherwise	bussz
	TEMPSZ1 <25 workers	1 if yes; 0 if otherwise	bussz
	TEMPALL1 <25 workers	1 if yes; 0 if otherwise	bussz
Source: 2008 SIPP, Wave 4 (2009 data), Census Bureau, DataFerrett documentation			

Appendix Table 1 - Coding of Variables 2008 SIPP Wave 4 (continued)			
Variables		Coding	Variable Name
Firm Age	TSBDATE1 3+ years	1 if yes; 0 if otherwise	busage
No. Businesses Owned	EBUSCNTR One	1 if yes; 0 if otherwise	onebus
Incorporated	EINCBP1 Incorporated	1 if yes; 0 if otherwise	incorp
Proprietorship Type	EPROPB Sole Proprietor	1 if yes; 0 if otherwise	soleprop
Industry Sector (Bus)	TSBIND1 Goods	1 if yes; 0 if otherwise	goods
Hours worked/week (Bus)	EHRSBS1 <35hrs/wk	1 if yes; 0 if otherwise	part-time
Hours worked/week (worker)	EJOBHRS1 <35hrs/wk	1 if yes; 0 if otherwise	part-time
Monthly Business Income	TBSUM1 <$6,000/mon	1 if yes; 0 if otherwise	MBI<$6K
Source: 2008 SIPP, Wave 4 (2009 data), Census Bureau, DataFerrett documentation			

Appendix Table 2 – SIPP Variable Names , Datasets and Topics Core Variables		
Variables for Regression Analysis	SIPP Variable Name	Dataset/Topic (Topical Module) Variables
Individual Retirement Account Variables[1]		
Keogh account(s) in own name	EALK	Assets and Liabilities Topical Module
IRA account(s) in own name	EALR	Assets and Liabilities Topical Module
401k, 403b or Thrift Plans in own name	EALT	Assets and Liabilities Topical Module
Market value of Keogh account(s)	TALKB	Assets and Liabilities Topical Module
Market value of IRA accounts(s)	TALRB	Assets and Liabilities Topical Module
Market value of 401k, 403b or Thrift plans in own name	TALTB	Assets and Liabilities Topical Module
Wealth Equity Categories[2]		
Home Equity (HH)	THHTHEQ	Real Estate Topical Module
Business Equity (HH)	THHBEQ	Real Estate Topical Module
Interest earning assets (banks)	THHINTBK	Real Estate Topical Module
Interest earning assets (other institutions)	THHINTOT	Real Estate Topical Module
Equity in stock and mutual funds (HH)	RHHSTK	Real Estate Topical Module
Real Estate Equity (not home)	THHORE	Real Estate Topical Module
Other asset equity	THHOTAST	Real Estate Topical Module
Equity in IRA and Keogh accounts (HH)	THHIRA	Real Estate Topical Module
Equity in 401k and Thrift saving accounts (HH)	THHTHRIF	Real Estate Topical Module
Total wealth (HH)	THHTWLTH	Real Estate Topical Module
Total income (HH)	THTOTINC	Real Estate Topical Module
Stocks or funds owned in own name	ESMI	Stocks and Mutual Funds Topical Module
Stocks owned jointly with spouse	ESMJ	Stocks and Mutual Funds Topical Module
Socio-demographic Characteristics		
Sex	ESEX	Core/Demographic Variables
Age	TAGE	Core/Demographic Variables
Race	ERACE	Core/Demographic Variables
Hispanic	EORIGIN	Core/Demographic Variables
Marital Status	EMS	Core/Demographic Variables
Children	RFNKIDS	Core/Family Variables
Education	EEDUCATE	Core/Demographic Variables
Veteran	EAFEVER	Core/Demographic Variables
Citizen	ECITIZEN	Core/Demographic Variables
Homeownership	ETENURE	Core/Demographic Variables
Metropolitan Location	TMETRO	Core/Demographic Variables

Source: 2008 SIPP, Wave 4 (2009 data), Census Bureau, DataFerrett documentation
[1]Data are for individual business owner or worker
[2] Data are for households

Appendix Table 2 – SIPP Variable Names , Datasets and Topics Core Variables (continued)		
Variables for Regression Analysis	SIPP Variable Name	Dataset/Topic (Topical Module) Variables
Business/Worker Characteristics (continued)		
Ownership of business	EBIZNOW1	Core/Business Variables
Class of worker	ECLWRK1	Core/Job Variables
Firm Size (business)	TEMPB1	Core/Business Variables
Firm Size (worker)	TEMPSZ1	Core/Job Variables
Firm Size (worker)	TEMPALL1	Core/Job Variables
Firm Age	TSBDATE1	Core/Business Variables
Number of Businesses Owned	EBUSCNTR	Core/Labor Force Variables
Incorporated business	EINCPB1	Core/Business Variables
Type of Proprietorship (sole proprietor/partner)	EPROPB1	Core/Business Variables
Industry Sector (business)	TBSIND1	Core/Business Variables
Usual hours worked this week (business)	EHRSBS1	Core/Business Variables
Usual hours worker per week at this job (worker)	EJBHRS1	Core/Job Variables
Income received this month (business owner)	TBSUM1	Core/Business Variables
Source: 2008 SIPP, Wave 4 (2009 data), Census Bureau, DataFerrett documentation		

Appendix Table 2 – SIPP Variable Names , Datasets and Topics Core Variables		
Variables for Regression Analysis	SIPP Variable Name	Dataset/Topic (Topical Module) Variables
Individual Retirement Account Variables[1]		
Keogh account(s) in own name	EALK	Assets and Liabilities Topical Module
IRA account(s) in own name	EALR	Assets and Liabilities Topical Module
401k, 403b or Thrift Plans in own name	EALT	Assets and Liabilities Topical Module
Market value of Keogh account(s)	TALKB	Assets and Liabilities Topical Module
Market value of IRA accounts(s)	TALRB	Assets and Liabilities Topical Module
Market value of 401k, 403b or Thrift plans in own name	TALTB	Assets and Liabilities Topical Module
Wealth Equity Categories[2]		
Home Equity (HH)	THHTHEQ	Real Estate Topical Module
Business Equity (HH)	THHBEQ	Real Estate Topical Module
Interest earning assets (banks)	THHINTBK	Real Estate Topical Module
Interest earning assets (other institutions)	THHINTOT	Real Estate Topical Module
Equity in stock and mutual funds (HH)	RHHSTK	Real Estate Topical Module
Real Estate Equity (not home)	THHORE	Real Estate Topical Module
Other asset equity	THHOTAST	Real Estate Topical Module
Equity in IRA and Keogh accounts (HH)	THHIRA	Real Estate Topical Module
Equity in 401k and Thrift saving accounts (HH)	THHTHRIF	Real Estate Topical Module
Total wealth (HH)	THHTWLTH	Real Estate Topical Module
Total income (HH)	THTOTINC	Real Estate Topical Module
Stocks or funds owned in own name	ESMI	Stocks and Mutual Funds Topical Module
Stocks owned jointly with spouse	ESMJ	Stocks and Mutual Funds Topical Module
Socio-demographic Characteristics		
Sex	ESEX	Core/Demographic Variables
Age	TAGE	Core/Demographic Variables
Race	ERACE	Core/Demographic Variables
Hispanic	EORIGIN	Core/Demographic Variables
Marital Status	EMS	Core/Demographic Variables
Children	RFNKIDS	Core/Family Variables
Education	EEDUCATE	Core/Demographic Variables
Veteran	EAFEVER	Core/Demographic Variables
Citizen	ECITIZEN	Core/Demographic Variables
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Appendix Table 2 – SIPP Variable Names , Datasets and Topics Core Variables (continued)		
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