

## **Financially Vulnerable Small Businesses and their Retirement Assets**

This study examines the retirement assets held by small business owners, who own and manage the business and have fewer than 500 employees, utilizing the 2007 Survey of Consumer Finance. The study compares the retirement assets held by small business households and other households not owning a small business. Most importantly, the study 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. The results suggest that small business owners have a very similar likelihood of holding retirement assets as households not owning a small business. When examining only small business households an important concern emerges. Financially vulnerable small business households are less likely to invest in retirement assets and they hold a smaller amount of money in these assets than less financially vulnerable small business households.

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### **Introduction**

The recent global economic downturn has focused more attention on retirement savings. This study examines how households owning small businesses differ from other households in holding retirement assets using the 2007 Survey of Consumer Finances. Family businesses are particularly vulnerable because they participate in the economy as consumers and producers; hence, a downturn in the market impacts them as consumers when their income declines and as a producer when business profitability declines. This study is focused on examining the retirement resources of households with a high percentage of their income earned in the business and high percentage of their total wealth held in business assets (hereafter, these are called financially vulnerable small businesses).

In some instances, employees of large companies investing a high percentage of their retirement assets in the business have lost their retirement assets. Some of the same logic has been applied to small business owners, who largely depend on the small business for their income and wealth. However, the information asymmetry that exists in larger businesses between executives and other employees may not be important in the small business case. The small business owner/manager is acutely aware of the financial position of the business (in most cases) and makes decisions involving retirement assets based on that knowledge. Therefore, small business owners with a large percentage of their income earned and wealth held by the business may be more likely to protect their retirement assets.

This paper will examine the following two research questions: (1) Are households owning a small business more likely to hold retirement assets (IRA, Keogh and other assets) than other households not owning a business; and (2) are financially vulnerable small business households more likely to hold retirement assets than other small business households with similar levels of risk tolerance.

### **Literature Review**

Retirement income is essentially a three-legged stool, where Social Security provides about three-quarters of retirement income with the remainder comprised of income from private savings and employer-sponsored pension plans (Munnell & Sunden, 2006). Interestingly, about one-third of small business owners and self-employed individuals have no retirement plan. Recent studies found that self-employed persons were less likely to have a retirement account than wage and salary workers (DeVaney & Chremba, 2005; Zissimopoulos & Karoly, 2007).

Entrepreneurs and small business owners are special case to consider because of their unique place in the market as consumers and producers. Business owners are often assumed to be more risk tolerant than others (Xiao, Alhabeeb, Hong & Haynes, 2001; Cramer, Hartog, Jonker & Van Praag, 2002) and they have been shown to have relatively optimistic views of business success in the future (Palich & Bagby, 1995). These studies suggest that these business owners are more likely to assume more financial risk. Small business households can assume additional risk by being over-reliant on the business for their income and being over-invested in assets of the small business (Gutter & Saleem, 2005). Gutter and Saleem found that these types of owners may have insufficient diversification when relying on the business as an asset fund their retirement. This study extends the work of Gutter and Saleem by examining a subset of small business owners, those owning and managing their business, and considers the impact of financial vulnerability on the retirement assets held by the small business owner.

It's an important empirical question whether this additional risk tolerance is manifest in the holding of fewer or more retirement assets. A financially risky small business owner with a high discount rate for the future may be willing to invest all of their assets in the business, while a financially risky small business owner with a lower discount rate for the future may be more likely to plan for the longer term and invest less in the business and more in retirement assets.

### **Empirical Model**

#### Data

This study utilizes the 2007 Survey of Consumer Finances (SCF). The 2007 SCF was designed by the Federal Reserve Board and the survey data were collected by the National Opinion Research Center (NORC) at the University of Chicago. The survey is designed to supply detailed and reliable information on balance sheets, use of financial services, pensions, labor force participation, cash income and demographic characteristics of U.S. households. The SCF utilizes a dual frame sample to provide adequate coverage of the population. One frame is a multistage area probability sample, which provides adequate coverage of widely held assets and liabilities. The second frame is a list design employed to over-sample relatively wealthy households. Response rates for the area probability and list samples in 2007 were approximately 70 and 30 percent, respectively (Bucks, Kennickell, Mach & Moore, 2009).

Research conducted by the Federal Reserve Bank suggests that non-response is positively correlated with wealth. This study is primarily interested in examining small business owning households. However, the entire sample is employed to assess the differences between business owning and non-business owning households. The SCF survey asks respondents about the previous year, hence the SCF for 2007 actually gathers information about finances of the household and business in 2006.

The variables of interest in this study include the value of retirement assets (IRAs, Keogh Accounts and others); household income and wealth; age, educational attainment, minority status and marital status of the household head; ownership of stocks, bonds and houses by the household head; dummy variables for households owning and managing more than one small business, business age, business size (number of employees and gross sales), legal organization (partnership, sole proprietorship, subchapter s corporation, regular corporation and limited partnership/limited liability company, founding status (bought/invested, started, or inherited), and industry (agricultural related; mining and construction; manufacturing; wholesale and retail trade; finance, insurance and real estate; and service). A variable for small business vulnerability is created for businesses with more than 75% of their total income earned from the business or more than 75% of their total wealth held in business assets.

The sampling frame for this analysis is U.S. households. Personal and demographic characteristics are those characteristics of the respondent interviewed, typically the household head. If the respondent or someone in the household owns and manages a business, this study is referring to the largest business. No business information is reported in the SCF for businesses owned, but not managed, by the respondent or respondents indicating that they or their spouse is self-employed.

This study focuses on households owning and managing at least one small business, where the small business includes 500 or fewer employees. Although, business owners in this study include those owning and managing businesses with more than 500 employees, business owners, who have no management responsibilities (hereafter, called owners only) and household with a self-employed person are identified in the SCF. The analysis utilizes the first implicate of the Survey of Consumer Finances for 2007 and employs the population weights. The sample includes 4,418 observations representing over 116.1 million households.

#### Models

This study is focused on whether financially vulnerable small business households are more likely to hold retirement assets than other small businesses. The first section of the analysis compares the likelihood and value of retirement assets held by households owning and managing small business and other households. The second section of the analysis focuses on the small business sample only and examines the behavior of financial vulnerable small businesses.

The empirical models used in the first section examine whether small business households are more likely to hold each type of retirement asset (IRA, Keogh and other) and whether small business households hold a higher value of these retirement assets than other households. The first empirical model in the first section is specified as follows:

$$RA = \alpha_0 + \alpha_1 SBH + \alpha_2 HC + \alpha_3 BC + \varepsilon$$

where,  
 RA = probability of holding retirement assets;  
 SBH = small business household (yes or no);  
 HC = household characteristics; and,  
 BC = business characteristics.

The second empirical model in the first section utilizes the same set of independent variables, however the dependent variable is the log transformed value of total retirement assets. This empirical model is specified as follows:

$$RAV = \alpha_0 + \alpha_1 SBH + \alpha_2 HC + \alpha_3 BC + \varepsilon$$

where,  
 RAV = total value of retirement assets; and  
 all other variables are the same as defined above.

The empirical models in the second section examine the likelihood of holding retirement assets (IRA, Keogh and other) and the value of these retirement assets by vulnerable small business households. This hurdle model will assess whether vulnerable small business household are more likely to hold retirement assets (stage 1) and whether those holding retirement assets hold larger amounts (stage 2). The two stages of the hurdle model are specified as follows:

$$RA_i = \alpha_0 + \alpha_1 SI + \alpha_2 SW + \alpha_3 SI*SW + \alpha_4 HC + \alpha_5 BC + \varepsilon_{\text{stage 1}}$$

where,  
 RA<sub>i</sub> = probability of holding retirement assets (IRA or Keogh);  
 SI = share of income earned from small business;  
 SW = share of total net worth held in small business assets;  
 HC = household characteristics; and,  
 BC = business characteristics

$$RAV_i = \alpha_0 + \alpha_1 SI + \alpha_2 SW + \alpha_3 SI*SW + \alpha_4 HC + \alpha_5 BC + \varepsilon_{\text{stage 2}}$$

where,  
 RAV<sub>i</sub> = total value of retirement assets (IRA or Keogh); and  
 all other variables are the same as defined above.

### Results

Table 1 examines whether households with small businesses are more likely to hold retirement assets than households without any businesses, where the households with no business is the reference group. Households owning and managing a small business (43.9% for single owner and 64.9% for multiple owners), are more likely to hold any IRA than a household not owning a business (27.2%). This relationship holds for all types of IRA accounts, where households owning and managing small businesses are significantly more likely to hold a Roth IRA, Rollover IRA and Regular IRA than households not owning a business. In addition, households owning and managing a small business are more likely to hold Keogh accounts than households not owning a small business.

No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only
Roth IRA	0.088	0.143	0.097	0.145 **	0.183 **	0.096
Rollover IRA	0.094	0.232	0.090	0.151 **	0.193 **	0.258 **
Regular IRA	0.149	0.703 **	0.154	0.282 **	0.462 **	0.426 **
Any IRA	0.272	0.886 *	0.265	0.439 **	0.649 **	0.673 **
Keogh	0.003	0.046	0.026 **	0.025 **	0.037 **	0.049 **
Any IRA or Keogh	0.274	0.890 *	0.276	0.447 **	0.654 **	0.673 **
Current	0.007	0.005	0.000	0.010	0.006	0.053 **
Future	0.047	0.013	0.052	0.065	0.072	0.116 **
Any retirement assets	0.307	0.901 *	0.309	0.477 **	0.685 **	0.702 **
No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only
Roth IRA	2,208	24,728	4,545	4,849 **	15,895 **	2,706
Rollover IRA	11,951	59,362	14,919	31,878 **	54,969 **	120,971
Regular IRA	11,210	103,223 **	13,917	26,191 **	96,245 **	68,269 **
All IRAs	25,368	187,314 **	33,381	62,917 **	167,109 **	191,945 **

Table 1 Proportion of Households Holding Retirement Assets

Number of observation 2,865 82 136 733 467 135

\* denotes level of significance less than equal to 0.10; \*\* denotes level of significance less than 0.05

Table 2 examines the mean amount of retirement assets held by households with and without a business. Households owning and managing a small business (nearly \$63,000 for single owner and over \$167,000 for multiple owners) hold

No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only
Roth IRA	0.088	0.143	0.097	0.145 **	0.183 **	0.096
Rollover IRA	0.094	0.232	0.090	0.151 **	0.193 **	0.258 **
Regular IRA	0.149	0.703 **	0.154	0.282 **	0.462 **	0.426 **
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significantly higher average IRA balances than households not owning a small business (just over \$25,000). In addition, household owning and managing a small business (nearly \$1,800 for single owner and nearly \$13,000 for multiple owners) hold significantly higher average Keogh balances than households not owning a small business (\$205).

Table 2 Mean Retirement Assets by Household Type (note: median retirement assets are zero for everyone)

Number of observation 2,865 82 136 733 467 135

Table 3 utilizes logistic and linear regression analyses to determine if small business households are more likely to hold retirement assets (and hold larger amounts of retirements assets than households not owning a small

Table 3		No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Own	
		Roth IRA	0.088	0.143	0.097	0.145 **	0.183 **	0.09	
No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only			
Roth IRA	0.088	0.143	0.097	0.145 **	0.183 **	0.096			
Rollover IRA	0.094	0.232	0.090	0.151 **	0.193 **	0.258 **			
Regular IRA	0.149	0.703 **	0.154	0.282 **	0.462 **	0.426 **			
Any IRA	0.272	0.886 *	0.265	0.439 **	0.649 **	0.673 **			
Keogh	0.003	0.046	0.026 **	0.025 **	0.037 **	0.049 **			
Any IRA or Keogh	0.274	0.890 *	0.276	0.447 **	0.654 **	0.673 **			
Current	0.007	0.005	0.000	0.010	0.006	0.053 **			
Future	0.047	0.013	0.052	0.065	0.072	0.116 **			
Any retirement assets	0.307	0.901 *	0.309	0.477 **	0.685 **	0.702 **			
No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only			
Roth IRA	2,208	24,728	4,545	4,849 **	15,895 **	2,706			
Rollover IRA	11,951	59,362	14,919	31,878 **	54,969 **	120,971			
Regular IRA	11,210	103,223 **	13,917	26,191 **	96,245 **	68,269 **			
All IRAs	25,368	187,314 **	33,381	62,917 **	167,109 **	191,945 **			
Keogh	205	20,422	4,448 **	1,795 **	12,779 **	14,359 **			
All IRAs and Keoghs	25,573	207,736	37,829 **	64,712 **	179,888 **	206,304 **			
Current	1,218	1,956	65	4,648	3,999	27,319			
Future	4,063	4,250	3,395	10,773	15,010	19,214			
All retirement assets	30,854	213,942	41,289 **	80,133 **	198,896 **	252,836 **			
		Logistic Regression			Linear Regression				
		Parameter	Standard	p-value	Parameter	Standard	p-value		
Characteristic	Estimate	Error	p-value	Estimate	Error	p-value			
Intercept		-2.9856	0.5352	0.0001	0.2213	0.8704	0.7993		
Small business household		-0.2212	0.4984	0.6573	-0.3245	0.8507	0.7029		
Owner age, 35 - 44		0.2932	0.1334	0.0280	0.4908	0.1969	0.0127		
Owner age, 45 - 54		0.5533	0.1308	0.0001	1.0022	0.1984	0.0001		
Owner age, 55 - 64		0.7309	0.1378	0.0001	1.4730	0.2131	0.0001		
Owner age, 65 - 74		1.2568	0.1578	0.0001	2.4425	0.2487	0.0001		
Owner age, 75 or older		0.8616	0.1681	0.0001	1.3895	0.2559	0.0001		
Education, high school diploma		0.5216	0.1668	0.0018	0.3105	0.2040	0.1282		
Education, some college		0.7987	0.1782	0.0001	0.6660	0.2320	0.0041		
Education, college degree or more		1.3795	0.1689	0.0001	1.9431	0.2230	0.0001		
Minority householder		-0.7427	0.1047	0.0001	-0.9671	0.1489	0.0001		
Male led		-0.0897	0.1212	0.4591	-0.1656	0.1809	0.3600		
Married		0.1185	0.1085	0.2746	0.3785	0.1684	0.0246		
Owns house		0.7317	0.1091	0.0001	0.8368	0.1571	0.0001		
Owns stocks		0.6478	0.0966	0.0001	1.3603	0.1770	0.0001		
Owns bonds		0.5125	0.3156	0.1044	1.3873	0.5068	0.0062		
Business age, 5 to 9		-0.6081	0.2968	0.0404	-0.9113	0.5093	0.0736		
Business age, 10 to 19		-0.4515	0.2739	0.0992	-0.5741	0.4728	0.2247		
Business age, 20 and older		-0.2040	0.2996	0.4960	0.0734	0.5107	0.8858		
Business size, 2 to 4		0.0782	0.2428	0.7475	-0.0637	0.4230	0.8803		

Determinants of holding retirement assets for small business

owner-managers, logistic regression

Table 4 Determinants of holding retirement assets for financial vulnerable small business owner-managers Hurdle Model  
(logistic and linear regressions)

No Retirement Asset	Business	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only	
Roth IRA	0.088	0.143	0.097	0.145 **	0.183 **	0.096	
Rollover IRA	0.094	0.232	0.090	0.151 **	0.193 **	0.258 **	
Regular IRA	0.149	0.703 **	0.154	0.282 **	0.462 **	0.426 **	
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Keogh	0.003	0.046	0.026 **	0.025 **	0.037 **	0.049 **	
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No Retirement Asset	Businesses	Large Business	Self employed	Small Business 1 Business	Owner Manager 2 + Businesses	Owner Only	
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All IRAs	25,368	187,314 **	33,381	62,917 **	167,109 **	191,945 **	
Keogh	205	20,422	4,448 **	1,795 **	12,779 **	14,359 **	
All IRAs and Keoghs	25,573	207,736	37,829 **	64,712 **	179,888 **	206,304 **	
Current	1,218	1,956	65	4,648	3,999	27,319	
Future	4,063	4,250	3,395	10,773	15,010	19,214	
All retirement assets	30,854	213,942	41,289 **	80,133 **	198,896 **	252,836 **	
		Logistic Regression		Linear Regression			
	Parameter	Standard		Parameter	Standard	p-value	
Characteristic	Estimate	Error	p-value	Estimate	Error		
Intercept		-2.9856	0.5352	0.0001	0.2213	0.8704	0.7993
Small business household		-0.2212	0.4984	0.6573	-0.3245	0.8507	0.7029
Owner age, 35 - 44		0.2932	0.1334	0.0280	0.4908	0.1969	0.0127
Owner age, 45 - 54		0.5533	0.1308	0.0001	1.0022	0.1984	0.0001
Owner age, 55 - 64		0.7309	0.1378	0.0001	1.4730	0.2131	0.0001
Owner age, 65 - 74		1.2568	0.1578	0.0001	2.4425	0.2487	0.0001
Owner age, 75 or older		0.8616	0.1681	0.0001	1.3895	0.2559	0.0001
Education, high school diploma		0.5216	0.1668	0.0018	0.3105	0.2040	0.1282
Education, some college		0.7987	0.1782	0.0001	0.6660	0.2320	0.0041
Education, college degree or more		1.3795	0.1689	0.0001	1.9431	0.2230	0.0001
Minority householder		-0.7427	0.1047	0.0001	-0.9671	0.1489	0.0001
Male led		-0.0897	0.1212	0.4591	-0.1656	0.1809	0.3600
Married		0.1185	0.1085	0.2746	0.3785	0.1684	0.0246
Owens house		0.7317	0.1091	0.0001	0.8368	0.1571	0.0001
Owens stocks		0.6478	0.0966	0.0001	1.3603	0.1770	0.0001
Owens bonds		0.5125	0.3156	0.1044	1.3873	0.5068	0.0062
Business age, 5 to 9		-0.6081	0.2968	0.0404	-0.9113	0.5093	0.0736
Business age, 10 to 19		-0.4515	0.2739	0.0992	-0.5741	0.4728	0.2247
Business age, 20 and older		-0.2040	0.2996	0.4960	0.0734	0.5107	0.8858
Business size, 2 to 4		0.0782	0.2428	0.7475	-0.0637	0.4230	0.8803
Business size, 5 to 9		-0.1590	0.3738	0.6705	-0.6397	0.6341	0.3131
Business size, 10 and larger		-0.4348	0.3520	0.2168	-1.2743	0.6025	0.0345
Sole proprietorship		-0.0280	0.3374	0.9340	-0.2403	0.5917	0.6847
Sub-chapter S corporation		0.6612	0.3890	0.0892	1.1793	0.6783	0.0822
Regular corporation		0.7908	0.4770 <sup>56</sup>	0.0973	1.5992	0.8103	0.0485
LLP/LLC		0.2193	0.3815	0.5655	0.4781	0.6769	0.4800
Started		-0.3332	0.2859	0.2439	-0.7641	0.4968	0.1241



business. Small business households are not more likely to hold retirement assets or hold larger amounts of retirement assets than other households. Several control variables warrant some discussion. Households more likely to hold retirement assets are characterized by the following: older, more educated, less likely to be a minority, owns a home, owns stocks, high income, high wealth and willing to take some financial risk (as opposed to no financial risk). Households owning a larger amount of retirement assets are characterized by the same characteristics discussed above and other characteristics including the following: Own bonds and incorporated and manufacturing businesses.

Tables 4 examines the results of hurdle model examining whether financially vulnerable small business households are more likely to hold retirement assets; and for those households holding retirement assets, whether financially vulnerable small business households have a larger amount of retirement assets than other small business households not financially vulnerable. About 22% of small business households are *income* vulnerable because they earn more than 75% of their total income from the business; and about 14.5% of small business households are *net worth* vulnerable because they hold more than 75% of their total net worth in business assets. Less 4% of households are vulnerability because they are both income and net worth vulnerable. Small businesses households with a higher percentage of wealth held in business assets have a lower probability of holding retirement assets. When considering only those small business households with retirement assets the story becomes more complex. Small business owners who are *income* vulnerable hold lower amounts of retirement assets than business owners with a lower percentage of income earned from the business; and those small business owners who are *net income* vulnerable hold lower amounts of retirement assets than business owners with a lower percentage of wealth held in business assets. The interaction term wasn't significant in either the logistic or ordinary least squares regression analyses.

### Conclusions

An extensive literature examines the financial risk faced by corporate workers whose retirement assets are primarily held in company stock. This study examines a similar case, where small business owners have a large percentage of their income and wealth closely attached to the business. In some respects, the small business owner is in the same situation as the corporate workers. While earlier work by Gutter and Saleem (2005) suggests that business owners have insufficient diversification, this analysis suggests that those small business owners with a higher percentage of net worth held by the business are less likely to invest in retirement assets. More importantly, those financially vulnerable small business owners who hold retirement assets hold a smaller amount of retirement assets than less vulnerable small business owners.

Since a relatively high percentage of small business owners are either income or net worth vulnerable, they warrant attention from policy makers because a business failure for these households means high individual and social costs. Most importantly, these firms will require protection under federal bankruptcy laws, but they will be dependents of the state and federal government when they reach retirement age because they have no retirement assets.

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## Endnotes

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