FINANCIAL SERVICES REVIEW

Financial Services Review 14 (2005) 133–147

Financial vulnerability of small business owners

Michael S. Gutter*, Tabassum Saleem

Department of Consumer Science, University of Wisconsin-Madison, 1300 Linden Drive, Madison, WI 53706, USA

Abstract

This study examines the financial vulnerability of small business owners using data from the 2001 Survey of Consumer Finances. Financial vulnerability is determined by the extent to which income and wealth are derived from the same source. The findings suggest that business owners face unique financial vulnerability because of their reliance on the business as both a source of income and wealth. Business owners may have insufficient diversification when relying on the business as an asset to fund retirement. Among business owners, farmers are the most vulnerable; their proportions of total income and total portfolio attributable to the business are higher than other business types.

JEL classification: D12; D14

Keywords: Financial vulnerability; Small business owners; Survey of consumer finances; Risk tolerance; Resource allocation

1. Introduction

Household financial security, its ability to meet ongoing consumption needs and prepare for future objectives, depends on the stability of financial resources. The stability of income and wealth allow a household to maintain a level of living. A loss of either one can greatly undermine household financial security. If these two are tied together, the vulnerability is even more pronounced. Further, the stronger the relationship is between the two, the greater the risk.

Employees of publicly traded companies who own stock in their employer face this

* Corresponding author. Tel.: +1-608-262-5498; fax: +1-608-265-6048.
E-mail address: msgutter@wisc.edu (M.S. Gutter).

1057-0810/05/$ – see front matter

possibility. If the firm does poorly, their income may suffer from loss of bonus or simply from salary cuts. If the firm is doing poorly the value of the stock may also decrease. To insulate a portfolio from risk it is necessary to allocate the wealth to various assets whose returns are not excessively correlated; this is known as diversification. A well-diversified portfolio is one that achieves the goal of reducing the level of the idiosyncratic risk of the portfolio to a negligible amount. However, systematic risk cannot be fully diversified away and as such is justification for a greater expected return.

Small business ownership should be viewed as one element of a household's income and wealth portfolio. As such the small business owner has a greater vulnerability because the business is likely an important income source and portfolio component. In other words, if a business is doing poorly, income from the business may not be stable. If this continues the business might fold. If a business owner only has the business in the portfolio, then there is no other component offsetting any potential losses the business may suffer. Thus, the overall long-term return of the portfolio may suffer. A household may still have debt on the business or at the very least may lose asset value. The business failure risk for the small business owner is not as easily diversifiable. Further, the business owner is not as mobile in the labor force as others are.

The concept of diversification is of particular importance to small business owners. The ownership of the business introduces its own idiosyncratic risk into the overall portfolio. This risk extends to both wealth and income flows. If there is no management of this risk, then the overall portfolio is not properly diversified. This does not guarantee that the households will face a financial crisis; however, it clearly leaves them vulnerable to one.

The vulnerability of small business owners has important implications for their financial security in retirement. This is because households may plan to sell the business or collect income leaving it as a going concern; business failure can be catastrophic if business owners do not have other assets accumulating for retirement. Thus, an important question this study asks is whether business owners diversify their financial portfolios and income sources as one means of addressing the potential greater risk of business ownership.

This study will examine the level of financial vulnerability inherent in the financial resources of small business owners. Financial vulnerability can be thought of in terms of having high shares of total income or of the total investment portfolio attributable to the business. There are two central research questions asked in this study. (1) Do business owners have greater financial vulnerability of financial resources than others do? (2) Are there differences among types of business owners in their financial vulnerability? This study will identify the characteristics of business owners who are more vulnerable to financial resource shocks.

2. Portfolio allocation

2.1. Diversification and the business owner

Portfolio allocation is the distributing of wealth among various asset classes, including stocks, bonds, real estate, and cash. Most studies of financial portfolios have only considered these assets because they have historical series allowing for the use of mean variance

approaches, in determining the efficient portfolio (Markowitz, 1952). Data on business ownership is less reliably available and businesses are more difficult to value. This does not exclude their importance in making portfolio decisions (Kaplan, 1985).

Portfolio theory assumes that investors are risk averse and rational (Markowitz, 1952). Further, investors prefer an efficient portfolio; one that obtains the highest expected return for the acceptable level of risk. Business owners are often assumed to be a group more willing than other investors to accept financial risk (Cramer, Hartog, Jonker, & Van Praag, 2002). However, Palich & Bagby (1995) assert that entrepreneurs have relatively optimistic views of business outcomes. Their behavior may reflect more accurate information rather than acceptance of higher risk. Entrepreneurs may be more likely than non-entrepreneurs to have business-specific education or prior experience. This would lead an entrepreneur to assess business opportunities and firms' financial risks differently than would a non-entrepreneur (Norton & Moore, 2002). Entrepreneurial behavior can also be explained using the alertness perspective—entrepreneurs have a different perspective of the future, which allows them to look at opportunities that non-entrepreneurs overlook (Norton & Moore, 2002).

2.2. Factors relating to portfolio allocation

Most studies on portfolio behavior have ignored the unique situation of the business owners save for a select few. Studies that have addressed this such as Gutter, Fox, and Montalto (1999), have included businesses when examining risky asset ownership. Kaplan (1985), using data from Ibbotson on security returns and the USDA on farm households, examines the returns among various asset classes including stocks and farms. Kaplan showed that a farm, when considered as an element of a portfolio, provides diversification and enhances overall returns. However, Kaplan's conclusions assume farm households would also hold assets other than the farm in the portfolio.

The value of the business and other assets fluctuates over time, yet the allocation at any one point may still be reflective of the overall portfolio choices made by the portfolio holder. Portfolio allocation is influenced by a household's characteristics, including the cultural context for evaluation choices (Haliassos & Bertaut, 1995). Tienda (1995) mentions the importance of culture and ethnic identity in understanding behavioral patterns and stresses the importance of considering each ethnic or racial group as having specific values.

Household composition plays an important role in portfolio decisions. Zhong and Xiao (1995) show that, holding other factors constant, age is positively associated with likelihood of stock ownership. Similarly, Wang and Hanna (1997) found that, all other things being equal, the proportion of risky assets to total wealth always increased with age but at a decreasing rate. They also find that married couples have a higher proportion of their total wealth invested in risky assets than otherwise similar non-married couples, when controlling for other factors such as race. Bertaut and Starr-McCluer (2000) show that while married couples are more likely to own risky assets, they have fewer holdings than unmarried households. This may or may not relate to the gender of the decision-maker.

Education and household finances are also related to portfolio allocation. Haliassos and Bertaut (1995), Zhong and Xiao (1995), and Bertaut and Starr-McCluer (2000) find that increased education is associated with higher levels of bond and stock holdings when

controlling for other factors. Household income and net worth are also related to portfolio allocation (Gutter et al., 1999; Zhong & Xiao, 1995; Bertaut & Starr-McCluer, 2000)

The purpose of this study is to determine the level of financial vulnerability that small business owners face. In guiding this research, this study proposes several hypotheses tied to the research questions. (1) Because business owners are likely to have more faith in their own business than others, they should be likely to have lower shares of the financial portfolio allocated to traditional retirement accounts; relying instead on the business. (2) Business owners have greater financial vulnerability than non-business owners do. (3) Among business owners, the greater the proportion of household income from the business, the more likely the business represents a greater share of the portfolio. (4) Among business owners, those with blue-collar services and farms should have greater concentrations of business assets and thus fewer financial assets for retirement because of a greater investment in physical assets such as land or tools.

3. Methods

The data for this study come from the 2001 Survey of Consumer Finances. The Federal Reserve conducts the triennial survey with cooperation from the Department of Treasury; this sample has 4305 households; of which 1156 have a business owner in it. The SCF has dual sample design that includes a list sample of high-income households so that better data are obtained on assets and liabilities. The data can be weighted to adjust the sample for this over-sampling of high-income households. An additional consideration is that the SCF uses a multiple imputation technique to address missing data; resulting in the generation of five implicates of the dataset. A repeated imputation inference procedure (RII) will be used to combine the results from across implicates, and adjust for between-implicate error (Montalto, 1998a; Montalto, 1998b; Montalto & Sung, 1996). The RII procedure is used in estimating the descriptive statistics for this study, but at this time has not been possible with the tobit procedure in SAS. However, the tobit uses pooled data from across the implicates to address the issue of imputation error. Its estimates of standard error are adjusted for tests of significance using the adjustment suggested by Kennickell (2003).

3.1. Examining financial vulnerability between business owners and non-business owners

This study will first contrast business owners and non-business owners to determine possible differences in financial vulnerability. Two measurements are considered in determining vulnerability. The proportion of the financial asset portfolio allocated to retirement assets illustrates potential vulnerability in meeting long-run objectives—retirement. Retirement assets include the balances in employer-provided defined contribution plans, Keoghs, and Individual Retirement Accounts. The level of risky assets is estimated as the value of all stock investments, but this ratio is not analyzed beyond the bivariate analysis, as it is not a measure of vulnerability. The proportion of the financial asset portfolio allocated to liquid assets is used to identify vulnerability in meeting current needs. The examination of financial

portfolio allocations will require the use of a tobit analysis because of the censored nature of the sample; many households in the sample have no retirement assets.

3.2. Examining financial vulnerability among business owners

The second element of the paper will address differences among business owners. The sample for this study will consist only of households where the head or spouse is an active owner manager of a small business. To address the issue of vulnerability, two dependent variables are estimated for business owners. The first measure is the percentage of the total household portfolio allocated to the business. The second measure is the percentage of total household income attributable to the business.

The independent variables include not only household characteristics, but also characteristics of the businesses. One such factor is the household composition, which considers issues such as marital status, age, and the presence of dependents. Other factors impacting preferences include the gender and race of the respondent. The education of the respondent is included to represent the level of understanding one may have about both the business opportunity and investing fundamentals. Household preferences and expectations will also influence financial behavior, therefore, the risk tolerance and economic outlook are also included as potential determinants of resource allocations.

It is important to account for differences in the businesses themselves since one measure of vulnerability is the relative level of business assets in the financial portfolio. These include the type of business and its age.

The hypotheses are tested using multivariate analysis. The first hypotheses will be tested by the significance and sign of the indicator for being a business owner in the tobit analyses that are used to estimate the proportion of financial assets, which are liquid assets and the proportion that is for retirement. In each procedure the model is estimated with and without interaction terms. The interaction terms allow the relationships of other explanatory variables on the dependent variables to differ between business owners and non-business owners. This allows for determination of whether there is a constant effect of being a business owner on these measures or if there are coefficient effects. This procedure is described in more detail by Jackson and Lindley (1989).

The second hypothesis is tested using OLS regression; two models are estimated. The first dependent variable is the proportion of the financial portfolio that the business comprises. The second dependent variable is the proportion of total household income attributable to the business. In each instance the other dependent variable is included as an explanatory variable with significance and sign being used as the hypothesis test. Finally the hypotheses regarding business types and financial vulnerability are determined using both OLS regressions. The hypothesis is proven using the significance and sign of the indicators of business type.

4. Results and discussion

4.1. Business owners versus non-business owners

The profile of business owners differs somewhat than that of non-business owner households (Table 1). Business owners are younger, more likely to be married, and to have

Table 1 Comparison of household characteristics between households by whether there is a business owner in the household

Variables	Non-business owners	Business owners
Respondent's age***	48.90	47.70
Respondent is male***	69.30%	92.70%
Respondent's race:		
White***	76.20%	89.60%
Black***	12.80%	5.00%
Other***	11.10%	5.40%
Marital status		
Married***	48.90%	76.00%
Cohabitating**	6.30%	7.00%
Never married***	11.40%	6.20%
Divorced***	13.40%	7.00%
Widowed***	11.40%	1.30%
Separated**	3.90%	2.40%
Number of dependents***	.80	1.00
Years of education***	12.90	14.20
Household finances		
Total income (all sources)***	$45,177	$127,702
Net worth***	$190,023	$984,307
One month liquidity threshold***	48.00%	55.40%
Six month liquidity threshold*	19.50%	18.10%
Portfolio of financial assets		
Risky assets (financial)***	$38,742	$123,812
Liquid assets***	$12,651	$34,792
Total portfolio***	$109,547	$709,941
Business/portfolio***	.36%	50.00%
Risky (financial)/portfolio***	17.20%	13.60%
Liquid/portfolio***	36.40%	11.70%
Retirement/portfolio***	25.26%	19.26%
Economic outlook		
Better***	25.30%	20.00%
Neutral	26.30%	50.50%
Worse*	48.40%	29.50%
Subjective risk tolerance		
No risk***	41.30%	19.50%
Average risk	37.40%	46.70%
Above-average risk***	21.30%	33.90%

** $p < .05$, ** $p < .01$, *** $p < .001$.

children than non-business owner households; they are less likely to be a minority member. Business owners have greater income and wealth. They are also more educated, which would be a requirement for many of the white-collar services. Business owners are more willing to accept financial risk when investing.

The composition and level of wealth varies between business owners and non-business owner households (Table 1). Business owners tend to have higher levels of financial resources such as income and net worth. Business owners have lower allocation to risky financial assets (13.6%) than non-business owners (17.2%). However, excluding the business from the denominator changes this substantially; business owners have a much higher proportion of their non-business portfolio in risky assets. The majority of households meet

a one-month liquidity measure but only 18% of the households had six months of income saved up in financial assets. This would mean that typically these households could weather short-term fluctuations in income but not necessarily intermediate or longer-term income shocks. This in turn may influence a household's investment selection since households may prefer to have some level of liquid assets before allocation resources to less liquid assets such as retirement accounts or stocks. The proportion of the portfolio that is comprised of retirement accounts is higher for non-business owners; 25.3% versus 19.3%. However, this measure does not consider the business as part of this share. Business owners tend to have greater liquid assets but have less liquidity in their financial portfolio.

4.2. Comparing financial vulnerability between business owners and non-business owners

Financial vulnerability was considered on two dimensions, the allocation of financial resources to fund ongoing needs and the allocation of resources to fund retirement. Two tobit models were estimated for each dependent variable; a reduced model and a full interaction model were used. The reduced model tests for an overall or constant effect of being an owner on these resource allocation measures. The full model tested whether the relationship of independent variables varied by whether the household had an active owner or manger present. This comparison used a likelihood ratio test that confirmed the interaction model as the significant model. The interaction model, in both instances is the significant model. This shows that the relationship of several explanatory variables on the liquid asset shares and the retirement share of the household's financial portfolio differs for business owners. These results can be seen in Table 2A and B; they will be discussed next.

The tobit analyses do confirm that overall business owners are more vulnerable; they have relatively lower shares of their financial portfolios in either retirement accounts or in liquid assets. This constant effect of being a business owner is then decomposed in the full model into several significant coefficient effects.

There are some differences in the determinants of each financial portfolio share measure. Age increases the share of retirement assets, but at a decreasing rate; age is not related to the share of liquid assets. The more time a household has for its planning purposes, the greater the share of liquid assets; this positive relationship is less strong for business owners.

While there are some differences in the determinants of the retirement share and liquidity share, the same three variables have significant interaction terms: race, education, and net worth. Race is positively related to the share of financial portfolio that is retirement assets, but this is not significant for non-business owners. Whites are more likely to have greater shares of liquid assets, but the positive relationship of being White is more pronounced for business owners. More educated households tend to have lower shares of financial wealth in retirement assets; however, the opposite is true for business owners. Education is positively related to the retirement share, but negatively related to the share of liquid assets for business owners. Net worth is negatively related to both the share of the financial portfolio that is for retirement and the liquid share. The decrease in retirement share with net worth is substantially stronger for business owners than non-business owners. The decrease in share of liquid assets is actually lower for business owners.

Finally, the effect of willingness to take financial risk on the liquid assets share of the

Table 2 (A) Results from Tobit analysis on percent of the total portfolio allocated to retirement assets

Variables			Full interaction model			
	Reduced model		Main effects		Interaction effects	
	Coefficient	*p*-value*	Coefficient	*p*-value**	Coefficient	*p*-value***
Intercept	−1.1002	.0001	−1.2092	.0001		
Age	.0897	.0001	.0819	.0001	.0351	.1397
Age-squared	−.0008	.0001	−.0008	.0001	.0001	.7216
Male	.1860	.0151	.0877	.2765	.3507	.0736
White	.0931	.1452	.0058	.9314	.4500	.0026
Married	.0819	.1769	.0461	.4979	−.0214	.8672
Number of dependents	−.0116	.5438	−.0167	.4639	.0243	.5315
Level of education (years)	.0324	.0006	−.0190	.0742	.1812	.0001
Household net worth	−.2295	.0001	−.1013	.0001	−.4147	.0001
Respondent is active manager or owner	−.5870	.0001	−.4639	.4960		
Economic outlook						
Better	−.0283	.5826	−.0351	.5445	−.0446	.6619
Neutral						
Worse	.0226	.6233	−.0173	.7509	.1135	.2150
Subjective risk tolerance						
No risk	.0232	.7059	.0702	.2856	−.1622	.2588
Average risk						
Above-average risk	.0358	.4136	−.0249	.6391	.1386	.1040
Planning horizon	.0004	.9135	−.0034	.4545	−.0124	.1082

** $p < .05$, ** $p < .01$, *** $p < .001$.
Bold words denote reference variable.

financial portfolio differed between business owners and non-business owners; these were not significantly related to the retirement share. Willingness to take risk is only significant as a determinant of the liquid assets share of financial assets, for business owners. Those willing to take above-average risks are more likely to have a larger share in liquid assets than those unwilling to take risk. This may imply that business owners willing to take above-average risks may want more liquidity to seize opportunities as they arise.

These results support the propositions proposed by the first two hypotheses. Business owners have lower shares of their portfolios in retirement assets when excluding the business as a retirement asset; this supports the first hypothesis. Business owners are likely to count the business as an asset when planning for retirement thus their long run financial security will depend on stability of the business. Business owners also tend to have lower proportions of their portfolio in liquid assets; this represents a short-term vulnerability. Therefore, business owners are more financially vulnerable than non-business owners when controlling for other factors; this confirms the second hypothesis.

4.3. Business owners

There is a variety of business types included in the sample (Table 3). Almost all (95%) of the businesses were respondent initiated and in three fourth of the businesses, the respondent could be liable for business debts. The most common category of business was white-collar

Table 2 (B) Results from Tobit analysis on percent of the total portfolio allocated to liquid assets

Variables	Reduced model		Full interaction model			
			Main effects		Interaction effects variable × active manager or owner = 1	
	Coefficient	*p*-value	Coefficient	*p*-value	Coefficient	*p*-value
Intercept	1.1584	.0001	.7815	.6173		
Age	−.0231	.0045	.0122	.7916	−.0191	.4327
Age-squared	.0002	.0046	.0002	.6403	.0000	.9762
Male	.0078	.9087	−.0191	.9629	−.0249	.9079
White	−.0044	.9410	.8367	.0100	.4396	.0105
Married	−.0726	.2187	−.1558	.5557	−.0348	.8093
Number of dependents	−.0074	.6951	.0083	.9116	−.0080	.8501
Level of education (years)	−.0495	.0001	.0657	.0799	−.0633	.0021
Household net worth	−.1108	.0001	−.2938	.0001	.0100	.0001
Respondent is active manager or owner	−.6865	.0001	−1.4440	.1043	—	—
Economic outlook						
Better	.0201	.6967	−.2345	.2667	−.1393	.2378
Neutral						
Worse	.0944	.0539	.1335	.4842	.0221	.8380
Subjective risk tolerance						
No risk	.3678	.0001	−.2569	.3486	−.3321	.0238
Average risk						
Above-average risk	−.0666	.1854	.2720	.1273	.2097	.0446
Planning horizon	−.0033	.4269	.0385	.0124	−.0240	.0059

Bold words denote reference variable.

service, which included attorneys, doctors, and so forth. Other common categories represented included farms (10.3%), restaurants (17.6%), retail (20%), construction (24.2%), white-collar service (34%), and blue-collar service such as plumbing (9.6%). The average age of a business in the sample was 4.3 years.

Table 3 Characteristics of family business

Variables	Mean
Type of business	
Farm	10.3%
Restaurant	17.6%
Retail	20.1%
Construction	24.2%
Blue-collar service	9.6%
White-collar service	34.0%
Age of business (years)	4.3
Started by respondent	95.3%
Income from business	$37,456
Business income ratio[a]	22.8%
Business value (all businesses)	$423,586
Business value/total NW	33.2%

[a] Denotes business income as percentage of total household income.

Table 4 Business finances and portfolio makeup by type of business

Business related finances	Farm	Restaurant	Retail	Construction	Blue collar service	White collar service
Income from business**	$20,825	$26,099	$36,294	$54,081	$25,218	$49,368
Business income ratio[a]	22.9%	23.3%	16.5%	22.2%	12.9%	23.0%
Business net worth (all business)***	$573,269	$281,319	$464,895	$796,869	$616,976	$361,290
Business value/NW*	54.8%	39.0%	33.8%	33.1%	30.3%	28.3%
Risky assets (financial)	$75,006	$75,172	$85,056	$206,741	$129,115	$155,556
Liquid assets	$47,141	$21,870	$22,843	$63,705	$58,397	$41,586
Total portfolio***	$748,116	$435,897	$663,232	$1,209,957	$954,545	$763,902
Business/portfolio***	72.7%	53.5%	57.9%	49.5%	51.3%	41.8%
Risky (financial)/ portfolio***	5.9%	11.8%	12.4%	14.3%	13.9%	14.9%
Liquid/portfolio	5.0%	13.7%	9.7%	11.5%	16.6%	11.9%
Retirement/portfolio***	15.3%	19.3%	17%	18.4%	13.4%	22.4%

** $p < .05$, ** $p < .01$, *** $p < .001$.

[a] Denotes business income as percentage of total household income.

4.4. Financial profile of business owners

The percentage of total income represented by the business is an important indicator of financial vulnerability. However, in examining this measure, there does not appear to be differences in the business income ratio when looking at business type (Table 4). On average the business income produced was $37,456 accounting for an average of about 21% of total household income. The greater this percentage the more the current financial well being of the household is dependent on the stability of the business.

The portfolio breakdowns by business type are in Table 4. Farmers have almost three-fourths of their financial portfolios (72.7%) allocated to the business. This heavy investment is probably because for most farm owners, their farms serve as their only (or major) source of livelihood. In addition to farm owners, restaurant owners and retail business owners also have more than half of their investments (53.5% and 57.9%, respectively) assigned to their business.

Farmers have the least liquidity; any other business has at least double the percentage of liquidity in its financial portfolio. This in fact may reduce any willingness to take financial risks. In contrast to farmers, restaurant owners and retail business owners have relatively higher percentages of risky financial assets and liquid assets, which gives them some advantage over farmers in case of any relevant changes in the economy. However, restaurant owners and retailers may experience reduced sales and hence reduced income from their business during an economic downturn—consumers may reduce their consumption during this period and also divert their consumption to cheaper alternatives. Owners of white-collar service firms, in contrast to the aforementioned business owners (farm owners, restaurant owners, and retailers), have a portfolio wherein a huge part of their investments are not allocated to the business alone; white collar services have the highest retirement asset portfolio share.

Table 5 Breakdown of business owners with high income and portfolio shares by business type

Variables	Business income/total income >50%	Portfolio allocation to business >50%	Business income share and portfolio share both >50%
All businesses	18.2%	51.6%	12.2%
Farms	16.3%	78.6%	15.9%
Restaurants	24.5%	55.4%	11.8%
Retail	13.4%	61.6%	12.3%
Construction	19.3%	49.0%	13.6%
Blue-collar service	11.0%	55.3%	5.9%
White collar service	19.2%	41.9%	12.1%
Chi-square for difference among business types	37.56***	166.40***	12.41*

** $p < .05$, ** $p < .01$, *** $p < .001$.

Households where the business share represents 50% or more of the financial portfolio and 50% of household income are most vulnerable (Table 5). Restaurant owners have the highest percentage (24.5%) in the sample that meet the high share criteria for income. Farmers have the highest percentage in the sample that meet the high share criteria for the financial portfolio. Farmers are also the most likely group (15.9%) to have high shares in both categories. Overall, the majority of business owners do not have both high income and portfolio shares for the business.

4.5. Financial vulnerability of business owners

Two regressions were conducted, one estimating the business share of the financial portfolio, and the other estimating the business share of household income; the results are in Table 6. The results suggest several interesting relationships between household characteristics and the business share of the financial portfolio. There are fewer such relationships with the business income share. The age of the respondent is negatively related to the business allocation. This is consistent with the idea that older households might be working on a succession plan as part of pre-retirement or post-retirement planning. Married households had lower allocations for business than non-married households, perhaps married couples may have more opportunities to increase diversification of financial portfolios since there are two possible account holders. This would be consistent with the fact that married couples have lower business income share, and married couples are more likely to have multiple income sources. The level of education is negatively related to the business allocation. Higher education may mean that the individual is more aware of investment fundamentals or at least that they know enough to ask. While higher education may also be related to the type of business one would be in, business type is controlled for in the multivariate analysis.

Individuals not willing to accept any risk tended to have higher allocations to the business. This finding is consistent with the notion proposed by Norton and Moore (2002) in that the entrepreneur does not see the business as risky and perhaps has more “faith” in their own

Table 6 Results from OLS regression of income share and the percent of the total portfolio allocated to business(es)

	Business share of financial portfolio		Business share of total household income	
Variables	Coefficient	*t*-value	Coefficient	*t*-value
Intercept	.7018	6.7887***	.0195	.1208
Age	−.0072	−7.1324***	.0026	1.5061
Male	.0511	1.0471	.0867	1.1518
White	−.0270	−.7576	−.1040	−1.7440
Married	−.0556	−1.9549*	−.1362	−2.8789**
Number of dependents	.0155	1.8220	.0017	.1208
Level of education (years)	−.0263	−5.9180***	.0144	1.9594*
Household net worth	.0346	7.3467***	−.0024	−.2876
Economic outlook				
Better	.0477	1.8802	−.0002	−.0050
Neutral				
Worse	.0035	.1592	−.0005	−.0146
Subjective risk tolerance				
No risk	.1063	3.1921**	−.0347	−.6745
Average risk				
Above-average risk	−.0225	−1.1200	.0176	.5617
Time horizon	−.0040	−1.9523	−.0001	−.0411
Type of Business				
Farm	.1654	4.7968***	−.0192	−.3583
Restaurant	.0523	1.7682	−.0678	−1.2479
Retail/store	.1127	4.1708***	−.0424	−1.0725
Construction	.0756	3.4379**	−.0124	−.6381
Blue collar service	.0850	2.6287**	−.0633	−1.3623
White collar service				
Age of business	.0094	4.1433***	.0046	1.2857
Business income ratio[a]	.0234	1.6014	—	—
Business financial portfolio ratio	—	—	.1868	4.0731***

** $p < .05$, ** $p < .01$, *** $p < .001$.

[a] Denotes business income as percentage of total household income.

Bold words denote reference variable.

business than investing in others; this may actually be a detriment if the business suffers a downfall.

Business characteristics play an important role as a determinant of business portfolios share. While business type is related to portfolio share, the type of business is not related to the income share when controlling for other factors. This is consistent with previous bivariate comparisons. Farmers have the greatest business financial portfolio share compared to white collar business owners. In fact the magnitude of this relationship is stronger than other business types with only retail owners being close. In addition, the longer the business has been established the greater the allocation to the business. This can be attributed to several issues. One is that the individual has a better understanding of the fluctuations in the business and feels it is the better opportunity. The other issue is that an individual is not monitoring his, her, or their portfolio and may not be aware of the allocation or how it might have changed over the years and is in need of professional assistance in maintaining portfolio

allocation. While the business income share was not significantly related to the business portfolio share, greater portfolio shares of the business are related to greater business income shares.

4.6. Discussion and implications

The business income share is not significantly related to the business portfolio share, yet the reverse is true. This does not support the third hypothesis, which proposed that the relationship between the share of income from the business and the business share of the portfolio would be bi-directional. Farmers and retail storeowners are the most vulnerable; they have the highest proportion of their portfolios attributable to the business. Business type is not significantly related to business income share. However, it is related to portfolio share, which in turn is related to the business income share. This is indicative of vulnerability for these business types.

The unique situation of business owners and the vulnerability that this situation introduces needs to be considered by financial consultants. Planners should consider the effect of the business on various financial resources and consider the idiosyncratic nature of the risk that business owners face. One suggestion for planners is to ensure that the retirement scenario for business owners includes non-business retirement assets as well. Because no one can know the future of any business including his or her own, it is important to reduce the impact of losses in any component of wealth. Currently, there are numerous vehicles business owners can use to save additional capital such as a Simplified Employee Pension (SEP) or a Savings Incentive Match Plan for Employees (SIMPLE). These plans can provide tax advantages to business owners making use of them to save for their retirement.

Considerations should be made for households where the majority of income comes from the business. This may mean a contingency plan for business failure or diversifying income sources through investing or family member labor force participation.

The findings of this study suggest that it might be beneficial to increase educational outreach efforts to business owners, especially to farmers and blue-collar business owners about these types of plans and about fundamental investment concepts such as diversification. Through this effort, business owners may improve the level of diversification in their overall portfolios and be better prepared to weather any downturns to the business both before and at retirement. These results also provide information to financial planners who should consider how the client frames the business risk and whether their financial resources (income and wealth) are too closely tied together. This would not presume that this can be undone only that the risk could be managed. For instance, farmers, being the most vulnerable, may need to use instruments such as futures contracts to provide stability to income and hedge downside price risk.

5. Conclusions

This study examines the financial resource vulnerability of small business owners. Business owners allocate less of their wealth to retirement assets than non-business owners;

instead the business comprises the bulk of their wealth. The lack of other retirement assets does not provide sufficient diversification against the idiosyncratic risk that the business introduces into the household portfolio. Without proper diversification, which should include holdings in other companies, this risk can prove to be detrimental to long term financial security. Specifically, it places well being during retirement in jeopardy. Such diversification could be achieved using mutual funds held in Keoghs or other retirement vehicles. This implied reliance on the business for funding retirement confirms our hypothesis that business owners have greater financial resource vulnerability than others.

There are varying levels of vulnerability among business owners. Farmers, followed by retail storeowners, are the most vulnerable among business types. Almost 16% of farmers have both high income and high portfolio shares. The fact that income and wealth are provided by one source introduces vulnerability to the long-run financial stability of farmers. This also suggests that farmers and retailers face greater short-term vulnerability should the business experience a setback, even a temporary one. Business setbacks can be the result of external factors such as weather or change in market prices for a good or service. Without proper risk-management strategies, business owners, such as farmers, may succumb to price changes or other factors impacting profitability.

References

Bertaut, C., & Starr-McCluer, M. (2000). Household portfolios in the United States. Working paper. Available at: http://www.federalreserve.gov/pubs/feds/2000/200026/200026pap.pdf. Accessed November 2, 2003.

Cramer, J. S., Hartog, J., Jonker, N., & Van Praag, C. M. (2002). Low risk aversion encourages the choice for entrepreneurship: an empirical test of a truism. *Journal of Economics and Organization*, *48*, 29–36.

Gutter, M. S., Fox, J. J., & Montalto, C. P. (1999). Racial differences in investor decision making. *Financial Services Review*, *8*, 149–162.

Haliassos, M., & Bertaut, C. (1995). Why do so few hold stocks? *The Economic Journal*, *105*, 1110–1129.

Jackson, J., & Lindley, J. (1989). Measuring the extent of wage discrimination: a statistical test and a caveat. *Applied Economics*, *21*, 515–540.

Kaplan, H. M. (1985). Farmland as a portfolio investment. *Journal of Portfolio Management*, *11*, 73–78.

Kennickell, A. (2003). Codebook for 2001 Survey of Consumer Finances. Available at: http://www.federalreserve.gov/pubs/oss/oss2/2001/codebk2001.txt. Accessed October 2, 2003.

Markowitz, H. (1952). Portfolio selection. *Journal of Finance*, *7*, 77–91.

Montalto, C. P. (1998a). Everything you always wanted to know about the Survey of Consumer Finances. Available at: http://www.hec.ohio-state.edu/scf/cmassi98.htm. Accessed November 1, 2003.

Montalto, C. P. (1998b). Practical issues and challenges from a user's perspective. *Consumer Interests Annual*, *44*, 232–233.

Montalto, C. P., & Sung, J. (1996). Multiple imputations in the 1992 Survey of ConsumerFinances. *Financial Counseling and Planning*, *7*, 133–146.

Norton, W. I., Jr., & Moore, W. T. (2002). Entrepreneurial risk: have we been asking the wrong question? *Small Business Economics*, *18*, 281–287.

Palich, L. E., & Bagby, D. R. (1995). Using cognitive theory to explain entrepreneurial risk-taking: challenging conventional wisdom. *Journal of Business Venturing*, *10*, 425–438.

Ramaswami, S., Srivastava, R., & McInish, T. (1992). An exploratory study of portfolio objectives and assets holdings. *Journal of Economic Behavior and Organization*, *19*, 285–306.

Tienda, M. (1995). Latinos and the American pie: can Latinos achieve economic parity? *Hispanic Journal of Behavioral Sciences*, *17*:403–429.

Wang, H., & Hanna, S. (1997). Does risk tolerance decrease with age? *Financial Counseling and Planning*, *8*:27–31.

Zhong, L., & Xiao, J. (1995). Determinants of family bond and stock holdings. *Financial Counseling and Planning*, *6*, 107–114.