

Financial Well-being of Chinese American Households

Rui Yao*

Abstract

Financial counseling and education becomes more important in the recent economic crisis. Financial ratios quantify household financial well-being and can provide a quick and easy way to identify household financial strengths and weaknesses. Using the survey method, this study investigates the balance sheet ratios of 149 Chinese American households in five Midwestern states in the Northwest Central Region. Results showed that the majority of the Chinese American households did not save at least 3 months income in their emergency fund and 31.1% of them had more liabilities than assets. However, an overwhelming majority of the households held over half of their net worth in investment assets. Chi-square test results showed that those who expected the economy to perform worse in the future were less likely to meet the 3-month emergency fund ratio guideline and homeowners were more likely than renters to be insolvent. The number of Chinese Americans continues to rise. Not meeting financial ratio guidelines could lead them to various financial problems. Financial education may help these households improve their understanding of the operation of U.S. financial and investment markets and increase their ability to achieve financial goals.

Keywords: Chinese American, emergency fund, financial ratio

Introduction and Background

As the unprecedented crisis oozes its way into all facets of the economy and many seasoned investors cashing out of the stock market, the need for financial counseling and education becomes more important. Moving to cash affects household financial well-being; and whether it is appropriate depends on individual household economic situations. Financial ratios quantify many such economic aspects of a household. They have been used by researchers as numerical benchmarks to simplify the assessment of household financial strengths and weaknesses. They are calculated by dividing a selected numerical value taken from financial statements by another. Due to this nature of ratios, individual household situations are often taken into consideration when examining financial ratios.

Although there has been no rigorous theoretical foundation for the financial ratio guidelines, many researchers believe that financial ratios should be used to analyze and interpret personal financial statements and to help households appropriately allocate resources to reach financial goals (e.g. Baek & DeVaney, 2004; Greninger, Hampton, Kitt, & Achacoso, 1996; Griffith, 1985; Lytton, Garman & Porter, 1991; Prather, 1990). Financial ratios objectively measure household financial well-being and can provide a quick and easy way to identify household financial situations (Greninger et al., 1996). They can provide

* Assistant Professor, University of Missouri Personal Financial Planning Department

households with recommendations concerning their future financial behavior as well as identification of their current financial status. Repeated measures of household financial ratios can also depict the trajectories of household financial progress over time (Lytton et al., 1991).

Understanding their financial position is essential for households in the development of their financial plans. Chinese Americans are the largest Asian group in the United States and could benefit from financial education regarding financial resource management in order to develop appropriate consumption, saving, and investment plans to better achieve their financial goals. Of the total U.S. population, 4.2% describe themselves to be Asian only (U. S. Census Bureau, 2007), among which, 23.4% are Chinese. Given the size of this population, Chinese Americans have not drawn much attention from researchers. Almost no national public dataset differentiate Asian Americans from other race/ethnicity groups, let alone separating Chinese Americans from other Asian American populations. For example, the Survey of Consumer Finances records race as "White," "Black," and "other", where "other" combines many races including Asians. Undoubtedly, the types of households included in "other" race represent many different cultures. Treating them as if they were part of the same race category can yield misleading results. Race often serves as a visible indicator of factors, such as culture and beliefs, that can directly influence individual economic well-being. To conduct research on Chinese Americans as a separate group, data must be collected (e.g. Xiao,

Newman, Prochaska, Leon, Bassett, & Johnson, 2004). Whether due to a lack of interest or the data limitation, how Chinese Americans are doing financially and what are some of the financial issues they face are not studied adequately.

The current study uses original survey data to investigate the financial well-being of Chinese American households. A comprehensive assessment of the balance sheet ratios of these households is provided and the determinants of their financial wellness are examined. Findings from this study extend understanding of the financial well-being of the Chinese American population in the U. S., which can serve the purpose of developing counseling and education programs that target the unique financial needs and concerns of this demographic group.

A Financial Snapshot of Chinese Americans

Data

To be consistent with the U.S. Census Bureau (U. S. Census Bureau, 2008), in this study, "Chinese American households" refer to households with a Chinese heritage that are currently living in the U.S., regardless of their citizenship and immigration status. A survey was designed to collect balance sheet information of Chinese American households using relevant questions from the 2004 Survey of Consumer Finances. The survey was prepared in both English and Chinese in an effort to allow those with low English proficiency to participate in this study. Sample Chinese households were selected from the two most populated cities (without adjusting for area) in each of the five Midwestern states in

the Northwest Central Region. The DEX online phone book (DEX, 2006) was used to identify target households that had a Chinese last name listed. A random sample of 979 households was selected and phone calls were made to invite them to participate in the study. Three hundred and forty-one households agreed to participate in the research over the phone. One survey was mailed to each of these households. A \$10 Wal-Mart gift card was offered as an incentive to complete the questionnaire. The total number of respondents who provided a valid survey was 149.

Data were collected at the individual and the household level. Most demographic variables in this study (such as age, gender, education, marital status, and employment status) and opinion variables including inheritance expectation, self-perceived health status, risk tolerance, expectation of economic performance, savings horizon, expectation of income growth, and perceived retirement adequacy were measured at the individual level. Household-level variables included balance sheet information (i.e. assets and liabilities), presence of children under age 18, home ownership, and overspending.

One of the households reported an annual income of \$2 million, which appeared to be an apparent outlier. No data entry errors were found after reviewing the original survey; therefore, this household was included in the data analyses.

Asset and Debt Ownership

Most Chinese American households owned some financial assets and some nonfinancial

assets (Table 1). The amount of liquid assets owned by Chinese American households ranged from \$0 to \$265,000 with a mean of \$27,034 for those who had liquid assets (Table 2). On average, Chinese American households held \$300,464 in investment assets. Nonfinancial assets ranged from \$0 to \$1.1 million with a mean value of \$40,120 for households holding such assets. Most households (80.5%) owned some debt, 71.8% reported a mortgage balance, and only 26.2% had an auto loan (Table 1). Mean mortgage balance for those who had a mortgage was \$185,016 (Table 2). For all types of assets, debts, and net worth, the mean was higher than the median, indicating the distributions were skewed to the right due to the relatively large values in each asset category.

Asset ownership increased with age except for nonfinancial assets, where the percent ownership was slightly reversed in the middle two age groups (Table 1). Table 2 shows that mean investment assets and net worth had a positive relationship with age. Older respondents (age 55 or above) saved an average of \$57,773 in liquid assets, which was the highest among all age groups. These households also owned an average of \$756,667 in investment assets. Ownership of mortgage displayed an inverse U-shape as age increased, while auto loan ownership showed a negative relationship with age (Table 1). Those who were age 55 or above held the highest average amount of mortgage but were free from auto loans (Table 2). Ownership and holdings of investment assets were positively related to education, with those whose respondent obtained a

graduate degree holding an average of \$309,456 in investment assets (Tables 1 and 2). Although the percent ownership of investment assets were the lowest for households whose respondent did not earn a bachelor's degree, such ownership still reached a high percentage of 83.3% for these households. The percent ownership of mortgage (80.0%) and auto loan (40.0%) was the highest for households whose respondent had a bachelor's degree. However, as shown in Table 2, these households held the least amount of auto loan on average (\$8,700). Asset and debt ownership did not differ substantially between households whose respondent was a male and those with a female respondent (Table 1); however, on average, households with a male respondent held more liquid assets, nonfinancial assets, mortgage, auto loan, and net worth (Table 2). Although ownership of assets did not vary substantially between those who were married or living with a partner and those who did not, the former group accumulated a substantially higher level of liquid assets, investment assets, and nonfinancial assets. These households' ownership and holdings of total debt was also considerably higher (83.3% vs. 58.8% and \$176,825 vs. \$132,672). The percent ownership of a mortgage for households with at least one minor child almost doubled that for those without.

As revealed by Table 2, those who were not currently working when interviewed held the highest average amount (\$31,127) of liquid assets. Households whose respondent was self-employed held the highest average amount of investment assets (\$514,375), nonfinancial assets (\$234,500),

mortgage (\$311,083), auto loan (\$21,689), and other debts (\$95,900). However, average amount of net worth held by these households was second to those whose respondent worked for someone else (Table 2). Asset and debt ownership for homeowners were higher than renters except for liquid assets; and average amount of asset and debt holdings were also substantially higher for homeowners. On average, over-spenders had a negative net worth (-\$10,167) and their percent ownership of any type of debt was higher than those who did not spend more than they received. The average holding of investment assets for those who overspent (\$146,056) was also less than half of that of those who did not (\$310,834).

Although only six households indicated an expectation to receive substantial inheritance in the future, their average holdings of assets, debt and net worth were substantially higher than those who did not have such an expectation (Tables 1 and 2). Ownership of assets and debt did not vary considerably across the self-perceived health groups. However, those who perceived their health to be less than good owned the least average amount of nonfinancial assets (\$26,848), auto loan (\$5,455), and other debts (\$23,636). Ownership and mean holdings of investment assets and mortgage debt showed a positive relationship with risk tolerance. Percent ownership of assets and debt did not vary largely by expectation of economic performance. However, the average amount of liquid assets and investment assets held was substantially higher for those who expected the economy to perform better

or the same in the future. Asset ownership did not vary considerably by savings horizon and households with a short saving horizon (less than one year) accumulated an average of \$40,911 in liquid assets and \$247,533 in investment assets. Asset and debt ownership did not differ substantially by expectation of income growth relative to prices, except that only 59.3% of those who expected income to increase less than prices owned a mortgage while 74.6% of the households who expected the opposite had a mortgage. On average, households that believed they were on track of retirement preparation had more liquid assets, investment assets, and net worth.

Ratio Analyses

Businesses adopted ratio analyses to evaluate their performance in the 1930's (Altman, 1968) and financial ratios were found to be able to predict business failures (Tamari, 1966). Griffith (1985) was the first to suggest the use of financial ratios to evaluate the overall financial well-being of households and proposed 16 financial ratios for this purpose with recommended benchmarks. Since then, research has been done on the application of financial ratios to household strengths and weaknesses. Previous research provides similar definitions and measurements of the elements to be included in financial ratios. Table 3 summaries balance sheet ratios and benchmarks suggested by previous research (DeVaney, 2006; Greninger et al., 1996; Lytton et al., 1991; Winger & Frasca, 2000).

Emergency Fund Ratio

The emergency fund ratio is calculated by dividing liquid assets by monthly income. Liquid assets refer to assets that can be relatively quickly converted to cash for immediate use with a minimum risk of loss in value (Lytton et al., 1991). Therefore, liquid assets include balances in checking accounts, savings accounts, brokerage accounts, money market accounts, money market mutual funds, and cash value of life insurance. Since the purpose of life insurance is to manage income loss risks due to death, cash value of life insurance is usually not recommended to be used to fund daily expenses in financial emergencies. The emergency fund ratio guideline implies that the household should have liquid assets to meet income needs for 2.5 to 3 months. The rationale behind this guideline is that should an individual loses his job, this amount of time represents a reasonable time period for him to find a new job (Greninger et al., 1996) and having an adequate level of liquid assets would cover his monthly expenses during the employment interruption period.

In modern economic theory, saving is defined as the residual of income from current consumption. Individuals maximize their utility as a function of current and future consumption given certain resources. According to the life-cycle hypothesis, the most influential theory on saving, households allocate their lifetime resources by borrowing and saving to maximize their utility (Ando & Modigliani, 1963). Friedman's (1957) permanent income hypothesis postulates that family consumption is determined by permanent income, the perpetual annuity of family net

worth. These two income hypotheses assume household future income streams are certain. However, this assumption is inconsistent with reality. Some researchers incorporated uncertainty in the analysis of household saving and proposed precautionary saving models (Carroll, 1997; Hubbard, Skinner, & Zeldes, 1994; Kimball, 1990; Lusardi, 1988; Skinner, 1988). According to these models, households are motivated to save to smooth future consumption; however, due to the uncertainty of future income, they save to buffer the risk of future income shocks.

If the motivation of emergency fund saving is to prepare for possible job loss or extra spending needs due to emergencies, then the following relationships should be expected: if a household expects its real income to decrease in the future then the household should be more likely to save an adequate level of emergency fund. Conversely, if the opposite relationship between income and future prices is expected (real income does not decrease), the household would be less likely to save enough funds for precautionary purposes.

Table 4 demonstrates the chi-square test results on percent distributions of meeting each financial ratio guidelines by household characteristics. The majority of the Chinese American households did not meet either of the two emergency fund ratio guidelines. Expectation of income growth relative to price increases was not significantly related to having an adequate level of emergency fund, which is inconsistent with the hypothesis. The majority of the respondents (82.6%) received a graduate degree,

but only less than two fifths of them met the emergency fund ratio guidelines. About two thirds of the households with a female respondent did not meet either emergency fund ratio guideline. Among those who expected income to grow less than prices, only 29.6% saved at least 3-months of income in an emergency fund. Only 21.4% of households that expected the economy to be worse in the future saved at least three months income to cover expenditures in financially emergent situations. Most of the rest of the households were saving money in a riskier form (92.9% of households with such expectation met the 50% capital accumulation ratio and all of them met the 25% guideline).

Solvency Ratio

The solvency ratio demonstrates the relationship between a household's total assets and total liabilities and it is calculated by dividing the total amount of assets owned by the total amount of liabilities owed. When a household cannot pay off the outstanding balance of all debts by liquidating all assets, the household is insolvent by definition and therefore, is likely to declare bankruptcy (Lytton et al., 1991). DeVaney (2006) suggested that the solvency ratio should be no less than 1. However, Winger and Frasca (2000) recommended that total liabilities should not exceed $\frac{1}{2}$ of total assets. Total liabilities include all short-term and long-term liabilities such as mortgage debts, auto loans, and personal debts. Total assets are the sum of tangible assets and intangible assets. Intangible assets include cash and cash equivalents (or liquid assets, as defined

above) that have minimum risk of losing value and risky assets such as stocks and bonds, with a higher probability of losing value. Tangible assets refer to assets such as home, other real estate assets, auto, furniture, and collections. Fair market value is usually used to denote the value of all assets. When calculating the solvency ratios, if a household did not have any liabilities, its debt level was set to be \$1 so that the denominator was not zero.

The majority of the Chinese American households met the lower solvency ratio guideline but not the higher guideline (Table 4). All households with a respondent aged 55 or older met both solvency ratio guidelines, indicating a total debt level no higher than half of total assets, while over half of the households with a middle-aged respondent (the 35-55 age groups) did not meet the higher solvency ratio guideline. The majority of the respondents received a graduate degree, but only about half (52.0%) of them had total liabilities amounted to less than $\frac{1}{2}$ of their total assets. About half (52.9%) of the households with a male respondent did not meet the higher solvency ratio guideline, while such percentage for those with a female respondent was 46.7%. Respondents who were married or living with a partner were significantly less likely to meet the higher solvency ratio guideline than those in other relationships (percent meeting such guideline being 46.5% and 76.5%, respectively). However, there was no significant variation between them in meeting the lower guideline. Households without a minor child were found to be significantly more likely to meet the higher solvency

ratio guideline. Renters were significantly more likely than homeowners to meet both solvency ratio guidelines.

Capital Accumulation Ratio

The capital accumulation ratio reveals the degree of a household's market participation. This ratio compares the fair market value of investment assets with net worth. DeVaney (2006) and Lytton et al. (1991) suggested that households should hold at least 25% of their net worth in investment assets. However, Greninger et al. (1996) advised a minimum of 50% of net worth to be invested in order for households to achieve an adequate retirement and reach other financial goals. The argument for such ratio guidelines was that over the long run, investments are expected to grow faster than inflation; and therefore, in order to achieve long-term financial goals such as retirement, households should invest a substantial proportion of the net worth. Meeting the capital accumulation ratio guidelines was considered by previous research, such as DeVaney (1995), to be related to staying on track in retirement preparation. Older individuals were recommended to have a higher ratio than younger household (Lytton et al., 1991).

Investment assets refer to stocks, bonds, savings bonds, long-term certificates of deposit, value of own business, and value of other substantial assets other than own home. Mutual funds and retirement accounts may be in the form of liquid assets, investment assets, or a combination of the two. In this study, these accounts were included in the investment asset category. Net

worth is equal to total assets minus total debt. When calculating the capital accumulation ratios, zero net worth was set to be \$1 so that the denominator was not zero. It is possible that a household has some investment assets but, at the same time, have more liabilities than assets (negative net worth). Since a negative ratio does not provide practical information, a negative net worth was given a value of \$1.

Households whose respondent received a graduate degree were significantly more likely than other households to meet both capital accumulation ratio guidelines (Table 4). Compared with households with a male respondent, those with a female respondent were less likely to meet the capital accumulation ratio guidelines. An overwhelming majority (97.5%) of homeowners met both capital accumulation ratio guidelines. However, only 89.3% of renters met the 25% guideline and 75.0% met the 50% guideline. Risk tolerance was found to be positively related to meeting the capital accumulation ratio guidelines.

Discussion and Implications

By examining their balance sheet information, this study evaluated the financial well-being of Chinese American households. The frequency results showed that only 39.8% of graduate degree holders met the 2.5 emergency fund ratio guideline but almost all of them met the 50% capital accumulation ratio guideline. This result suggests that members of these households may have more secure jobs, understand investments and risks better, and have invested a higher

proportion of net worth. However, if a job loss should happen in a down market, many of these households would likely have to cash a proportion of their investments and take a sizable loss. Moreover, by holding a high proportion of net worth in investments, households may experience swings in wealth larger than they are able to manage, which could lead to financial stress and irrational financial behaviors. Homeowners were less likely than renters to meet the solvency ratio, but were more likely to meet the capital accumulation ratio guidelines. In a financial emergency, homeowners would be more likely than renters to liquidate investments to keep up with loan payments. The likelihood of meeting the capital accumulation ratio guidelines showed a positive relationship with willingness to take financial risks and even 82.8% of the non-risk takers met the capital accumulation ratio guidelines. Since the denominator of the ratio (net worth) was set to be 1 when its value was zero or negative, it is possible that some of the non-risk takers also had non-positive net worth, forcing their ratio to be high if they held any amount of investment assets.

Chi-square test results indicated that households that expected the economy to be worse in the future were less likely to meet the 3-month emergency fund ratio guideline (Table 3). Moreover, having an adequate level of emergency fund was found to be unrelated to expectation of income growth relative to price increases. If households expect a lower level of real income in the future, they should put enough money into their emergency fund to supplement future

daily expenses if their utility is maximized by a smooth life-cycle consumption level. If the self-forecasted future economic performance is not so positive, unless a household expects a stable job and a positive growth in real income, the household should rationally save enough funds to buffer the risk of income losses and other financial emergencies. When emergency happens in a market when security prices are low, these households might have to take a loss and cash out of the stock market in order to meet the household expenditure needs. However, it cannot be assumed that those who saved enough money in liquid forms are preparing for financial emergencies. Their so called “emergency fund” may be waiting for the right investment opportunities to come. In other words, these households may not be consciously saving for financial hard times and their emergency fund only appeared to be adequate because they have not determined how to invest the funds.

Meeting the higher solvency ratio guideline (total assets \geq total liabilities \times 2) enables households to pay off their total debt by liquidating less than half of their total assets. Households without a minor child were significantly more likely to meet the higher solvency ratio guideline. Renters were significantly more likely than homeowners to meet both solvency ratio guidelines. In an economy such as one that started in 2007, homeowners that do not meet the solvency ratio would be more likely to be exposed to the serious financial problem of being unable to keep up with their mortgage payments if they experience an income loss. Likewise, in such

an economic environment, children would likely to suffer financially should their parents experience an income loss while having a heavy debt burden.

An overwhelming percentage of the households met both of the capital accumulation ratio guidelines. Since retirement accounts were considered as investment assets, the high proportion of households meeting this ratio guideline may be due to the construction of the ratio. Moreover, for the 46 households who had negative or no net worth, technically, if they had any investment assets, they were considered to have met the capital accumulation ratio. This may be another reason why the vast majority of the households met this ratio guideline.

Chinese Americans are the largest Asian American population in the U.S., and their number continues to rise (Bernstein, 2004). Not meeting the emergency fund ratios or the solvency ratio could lead these households to financial problems during an economic recession, where people lose jobs and become unable to pay their bills. Financial education may help these households improve their understanding of the operation of U.S. financial and investment markets so that they can better allocate their financial resources to achieve financial goals. Lessons learned in the economic crisis may change household financial behavior. Future research should continue to investigate the financial status and behavior of Chinese American households, as well as comparing them with other racial and ethnic groups.

References

- Ando, A., & Modigliani, F. (1963). The life cycle hypothesis of saving: Aggregate implications and tests. *American Economic Review*, 53(1), 55-84.
- Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23(4), 589-609.
- Baek, E. & DeVaney, S.A. (2004). Assessing the baby boomers' financial wellness using financial ratios and a subjective measure. *Family and consumer Sciences Research Journal*, 32(4), 321-348.
- Bernstein, R. (2004). Hispanic and Asian Americans increasing faster than overall population. Retrieved February 15, 2009, from <http://www.census.gov/Press-Release/www/releases/archives/race/001839.html>
- Carroll, C. D. (1997). Buffer-stock saving and the life cycle/permanent income hypothesis. *The Quarterly Journal of Economics*, 112 (1), 1-55.
- DeVaney, S.A. (1995). Retirement preparation of older and younger baby boomers. *Financial Counseling and Planning*, 6, 25-34.
- DeVaney, S. A. (2006). Using financial ratios. In E. T. Garman, J. J. Xiao, & B. H. Brunson (Eds.), *The mathematics of personal finance: Using calculators and computers* (3rd ed., pp. 147-161). Mason, OH: Cengage Learning.
- DEX (2006). DEX Knows. Local Search. Retrieved June 2006 from <http://www.dexknows.com/>
- Friedman, M. (1957). *A theory of the consumption function*. Princeton: Princeton University Press.
- Greninger, S. A., Hampton, V. L., Kitt, K. A., & Achacoso, J. A. (1996). Ratios and benchmarks for measuring the financial well-being of families and individuals. *Financial Services Review*, 5(1), 57-70.
- Griffith, R. (1985). Personal financial statement analysis: A modest beginning. In G. Langrehr (Ed.), *Proceedings, Third Annual Conference of the Association of Financial Counseling and Planning Education*, 3, 123-131.
- Hubbard, R., Skinner, J., & Zeldes, S. P. (1994). Expanding the life-cycle model: Precautionary saving and public policy. *American Economic Review*, 84(2), 174-179.
- Kimball, M. (1990). Precautionary saving in the small and in the large. *Econometrica*, 38, 53-73.
- Lusardi, A. (1988). On the importance of the precautionary saving motive. *The American Economic Review*, 88(2), 449-453.
- Lytton, R. H., Garman, E. T., & Porter, N. M. (1991). How to use financial ratios when advising clients. *Financial Counseling and Planning*, 2, 3-23.
- Prather, C. G. (1990). The ratio analysis technique applied to personal financial statements: Development of household norms. *Financial Counseling and Planning*, 1, 53-69.
- Skinner, J. (1988). Risky income, life-cycle consumption, and precautionary savings. *Journal of Monetary Economics*, 22, 237-255.
- Tamari, M. (1966). Financial ratios as a means of forecasting bankruptcy. *Management International Review*, 4, 15-21.
- U.S. Census Bureau. (2007). The American Community - Asians: 2004. Retrieved February 17, 2009, from <http://www.2010census.biz/prod/2007pubs/acs-05.pdf>
- U. S. Census Bureau (2008). Racial and ethnic classifications used in the 2000 Census and beyond. Retrieved February 16, 2009 from <http://www.census.gov/population/www/socdemo/race/racefactcb.html>
- Winger, B. J. & Frasca, R. R. (2000). *Personal finance: An integrated planning approach* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Xiao, J. J., Newman, B. M., Prochaska, J. M., Leon, B.,

Bassett, R. L., & Johnson, J. L. (2004). Applying the transtheoretical model of change to consumer debt behavior. *Financial Counseling and Planning*, 15(2), 89-100.

Table 1 Percent Asset and Debt Ownership by Selected Characteristics

Household Characteristic	Count	Liquid Assets	Investment Assets	Non-financial Assets	Mortgage	Auto Loan	Other Debts	Total Debt
All Households	149	98.7	96.0	98.0	71.8	26.2	14.8	80.5
Age								
Age < 35	25	96.0	92.0	92.0	52.0	32.0	12.0	60.0
35 ≥ Age < 45	76	98.7	96.1	100.0	79.0	29.0	13.2	88.2
45 ≥ Age < 55	42	100.0	97.6	97.6	78.6	21.4	16.7	85.7
Age ≥ 55	6	100.0	100.0	100.0	16.7	0.0	33.3	33.3
Highest Education								
No Bachelor's degree	6	100.0	83.3	100.0	50.0	16.7	33.3	66.7
Bachelor's degree	20	95.0	85.0	95.0	80.0	40.0	30.0	95.0
Graduate degree	123	99.2	98.4	98.4	71.5	24.4	11.4	78.9
Gender								
Male	104	100.0	97.1	99.0	72.1	27.9	16.4	80.8
Female	45	95.6	93.3	95.6	71.1	22.2	11.1	80.0
Marital Status								
Married/Partnered	132	98.5	96.2	99.2	75.8	27.3	15.2	83.3
Single	17	100.0	94.1	88.2	41.2	17.6	11.8	58.8
With children under 18								
Yes	108	99.1	96.3	99.1	82.4	26.9	13.0	90.7
No	41	97.6	95.1	95.1	43.9	24.4	19.5	53.7
Employment Status								
Employee	134	99.3	96.3	98.5	70.9	26.1	12.7	79.1
Self-employed	8	100.0	100.0	100.0	75.0	37.5	62.5	100.0
Not currently working	7	85.7	85.7	85.7	85.7	14.3	0.0	85.7
Home Ownership								
Homeowner	121	98.4	97.5	98.4	88.4	27.3	15.7	92.6
Renter	28	100.0	89.3	96.4	0.0	21.4	10.7	28.6
Overspending								
Overspent	9	100.0	100.0	88.9	88.9	55.6	33.3	100.0
Not overspent	140	98.6	95.7	98.6	70.7	24.3	13.6	79.3
Inheritance Expectation								
Expecting inheritance	6	100.0	100.0	100.0	50.0	16.7	16.7	66.7
Not expecting	143	98.6	95.8	97.9	72.7	26.6	14.7	81.1
Self-perceived Health Status								
Excellent health	67	98.5	97.0	97.0	68.7	32.8	13.4	80.6
Good health	71	98.6	95.8	100.0	74.7	21.1	15.5	80.3
Fair/Poor health	11	100.0	90.9	90.9	72.7	18.2	18.2	81.8
Risk Tolerance								
Substantial risk	13	100.0	100.0	100.0	53.9	23.1	7.7	69.2
Above average risk	42	100.0	100.0	97.6	81.0	31.0	11.9	83.3
Average risk	65	98.5	98.5	98.5	72.3	27.7	15.4	83.1
No risk	29	96.6	82.8	96.6	65.5	17.2	20.7	75.9
Expectation of Economic Performance								
Better/About the same	121	98.3	95.0	98.3	71.1	26.4	15.7	80.2
Worse	28	100.0	100.0	96.4	75.0	25.0	10.7	82.1
Savings Horizon								
Within 1 year	21	100.0	100.0	95.2	81.0	19.0	14.3	81.0
Next few years	53	100.0	96.2	98.1	60.4	18.9	15.1	75.5
Next 5-10 years	28	92.9	89.3	96.4	78.6	28.6	14.3	82.1
Longer than 10 years	47	100.0	97.9	100.0	76.6	36.2	14.9	85.1
Expectation of Income Growth								
Up no less than prices	122	98.4	96.7	99.2	74.6	26.2	14.8	82.0
Up less than prices	27	100.0	92.6	92.6	59.3	25.9	14.8	74.1
Perceived Retirement Adequacy								
Satisfactory	54	98.1	98.1	98.1	74.1	25.9	18.5	79.6
Not satisfactory	95	99.0	94.7	97.9	70.5	26.3	12.6	81.1

Table 2 Mean Value of Asset/Debt for Households Holding Particular Asset/Debt

Household Characteristic	Liquid Assets	Investment Assets	Non-financial Assets	Mortgage	Auto Loan	Other Debts	Net Worth
	<i>Mean value of holdings for households holding asset/debt</i>						
All Households	27,034	300,464	40,120	185,016	13,128	43,723	171,788
Age							
Age < 35	17,263	122,604	21,943	182,615	11,906	9,000	47,707
35 ≥ Age < 45	28,303	285,200	46,882	187,964	14,767	65,390	146,957
45 ≥ Age < 55	25,959	360,655	37,849	171,935	10,207	34,429	214,080
Age ≥ 55	57,773	756,667	39,667	471,000	0	20,000	707,273
Highest Education							
No Bachelor's degree	11,658	108,583	76,500	236,250	23,000	9,000	-7,092
Bachelor's degree	24,158	286,505	96,342	214,250	8,700	29,083	82,607
Graduate degree	28,238	309,456	29,488	176,405	13,213	54,671	195,014
Gender							
Male	29,284	299,509	46,034	189,157	13,587	30,465	186,911
Female	21,591	302,760	25,953	175,311	11,797	88,800	136,835
Marital Status							
Married/Partnered	29,387	313,455	43,635	186,414	13,558	47,245	176,825
Single	9,040	191,752	9,430	184,526	7,976	8,706	132,672
With children under 18							
Yes	29,396	314,455	43,222	183,782	13,760	58,743	169,626
No	20,715	263,153	31,608	191,115	11,295	17,438	177,481
Employment Status							
Employee	27,110	289,713	29,292	177,918	12,483	28,376	177,595
Self-employed	23,126	514,375	234,500	311,083	21,689	95,900	153,743
Not currently working	31,127	225,154	18,771	146,857	8,571	0	81,249
Home Ownership							
Homeowner	30,118	333,546	44,986	185,016	14,115	48,811	177,445
Renter	13,926	144,316	18,674	0	7,700	11,500	147,339
Overspending							
Overspent	25,778	146,056	35,500	166,875	15,400	63,333	-10,167
Not overspent	27,116	310,834	40,388	186,482	12,794	40,626	183,485
Inheritance Expectation							
Expecting inheritance	37,503	1,040,583	45,533	333,333	32,000	400,000	518,286
Not expecting	26,588	268,050	39,888	180,737	12,631	26,757	157,249
Self-perceived Health Status							
Excellent health	25,305	278,095	41,054	195,606	15,260	55,589	149,106
Good health	25,157	322,691	41,115	177,851	10,951	37,236	192,017
Fair/Poor health	49,348	296,181	26,848	170,481	5,455	23,636	179,375
Risk Tolerance							
Substantial risk	23,041	454,612	104,000	343,429	14,367	20,000	326,491
Above average risk	29,639	444,447	43,885	190,772	15,817	7,560	305,149
Average risk	31,877	232,848	26,636	162,511	10,789	76,260	118,638
No risk	13,909	145,304	35,768	172,021	13,813	23,583	28,423
Expectation of Economic Performance							
Better/About the same	28,523	324,745	34,544	181,261	13,040	46,833	192,140
Worse	21,021	201,936	64,704	205,728	13,293	29,667	83,837
Savings Horizon							
Within 1 year	40,911	247,533	41,700	132,910	15,300	4,889	194,915
Next few years	19,713	186,095	23,542	170,688	8,160	20,263	93,931
Next 5-10 years	33,020	354,446	27,093	156,629	15,883	51,000	216,045
Longer than 10 years	25,777	422,089	65,389	239,024	14,278	81,114	222,884
Expectation of Income Growth							
Up no less than prices	28,341	303,547	39,468	191,500	13,118	48,828	164,024
Up less than prices	20,800	288,735	43,412	148,273	13,003	30,375	206,866
Perceived Retirement Adequacy							
Satisfactory	33,668	352,641	36,678	189,813	13,240	58,983	195,293
Not satisfactory	23,271	268,107	41,957	186,650	13,007	24,782	158,427

Table 3 Ratios and Suggested Benchmarks

Ratio	Benchmark
Emergency fund Ratio = $\frac{\text{Liquid Assets}}{\text{Monthly Income}}$	≥ 2.5; ≥ 3
Solvency Ratio = $\frac{\text{Total Assets}}{\text{Total Liabilities}}$	≥ 1; ≥ 2
Capital Accumulation Ratio = $\frac{\text{Investment Assets}}{\text{Networth}}$	≥ 25%; ≥ 50%

Table 4 Percentage Meeting Ratio Guidelines by Household Characteristics

Household Characteristic	Count	Emergency fund Ratio		Solvency Ratio		Capital Accumulation Ratio	
		≥ 2.5	≥ 3	≥ 1	≥ 2	≥ 25%	≥ 50%
All Households	149	43.6	36.9	68.9	49.0	96.0	93.3
Age							
Age < 35	25	48.0	32.0	72.0	52.0	92.0	84.0
35 ≥ Age < 45	76	42.1	36.8	68.0	44.7	96.1	94.7
45 ≥ Age < 55	42	45.2	40.5	64.3	47.6	97.6	95.2
Age ≥ 55	6	33.3	33.3	100.0	100.0	100.0	100.0
Highest Education						**	*
No Bachelor's degree	6	66.7	50.0	50.0	50.0	83.3	83.3
Bachelor's degree	20	60.0	45.0	45.0	30.0	85.0	80.0
Graduate degree	123	39.8	35.0	73.2	52.0	98.4	95.9
Gender							*
Male	104	48.1	39.4	70.5	47.1	97.1	96.2
Female	45	33.3	31.1	68.3	53.3	93.3	86.7
Marital Status					*		
Married/Living with a partner	132	44.7	37.9	67.2	45.5	96.2	93.9
Single	17	35.3	29.4	82.4	76.5	94.1	88.2
With children under 18					*		
Yes	108	42.6	35.2	75.6	42.6	96.3	94.4
No	41	46.3	41.5	66.4	65.9	95.1	90.2
Employment Status							
Employee	134	42.5	36.6	70.9	51.5	96.3	93.3
Self-employed	8	75.0	50.0	37.5	37.5	100.0	100.0
Not currently working	7	28.6	28.6	57.1	14.3	85.7	85.7
Home Ownership				***	***	*	***
Homeowner	121	42.2	35.5	61.7	37.5	97.5	97.5
Renter	28	50.0	42.9	100.0	100.0	89.3	75.0
Overspending							
Overspent	9	55.6	55.6	69.1	22.2	100.0	100.0
Not overspent	140	42.9	35.7	66.7	50.7	95.7	92.9
Inheritance Expectation							
Expecting inheritance	6	50.0	33.3	67.8	66.7	100.0	83.3
Not expecting	143	43.4	37.1	100.0	48.3	95.8	93.7
Self-perceived Health Status							
Excellent health	67	38.8	35.8	66.7	47.8	97.0	95.5
Good health	71	46.5	35.2	70.4	50.7	95.8	93.0
Fair/Poor health	11	54.6	54.6	72.7	45.5	90.9	81.8
Risk Tolerance						***	*
Substantial risk	13	53.9	46.2	76.9	69.2	100.0	100.0
Above average risk	42	33.3	28.6	73.8	52.4	100.0	100.0
Average risk	65	47.7	41.5	67.2	43.1	98.5	92.3
No risk	29	44.8	34.5	62.1	48.3	82.8	82.8
Expectation of Economic Performance		*					
Better/About the same	121	46.3	40.5	69.4	50.4	95.0	93.4
Worse	28	32.1	21.4	64.3	42.9	100.0	92.9
Savings Horizon							
Within 1 year	21	57.1	52.4	66.7	52.4	100.0	100.0
Next few years	53	45.3	39.6	75.5	50.9	96.2	90.6
Next 5-10 years	28	35.7	28.6	71.4	46.4	89.3	89.3
Longer than 10 years	47	40.4	31.9	60.9	46.8	97.9	95.7
Expectation of Income Growth							
Up no less than prices	122	45.9	38.5	68.9	46.7	96.7	93.4
Up less than prices	27	33.3	29.6	66.7	59.3	92.6	92.6
Perceived Retirement Adequacy							
Not satisfactory	95	44.2	36.8	69.5	50.5	94.7	91.6
Satisfactory	54	42.6	37.0	66.7	46.3	98.2	96.3

Note: * Chi-sq test p -value <.05; ** Chi-sq test p -value <.01; *** Chi-sq test p -value <.001