An Exploratory Study of Chinese Americans' Debt Holding

Abstract

Research concerning the financial well-being of Chinese American households is extremely limited. This article examines factors that affect the probability that Chinese American households will hold debt. Analysis of data from a survey of Chinese Americans in five Midwestern states in the U.S. indicated that 80.5% of the sample households held some type of debt. Factors associated with the probability that a Chinese American household would be a debtor included age, presence of children under 18, health, annual income, and amount of financial and non-financial assets.

Keywords

Chinese American, Debt, Financial Well-being, Race

Introduction

U.S. consumers are heavy users of debt. In 2008, total household debt in the United States topped out at $13.9 trillion, almost twice the amount recorded in 2000 (Lynch 2009). Failures in the subprime mortgage market in the 2000s precipitated the tightening of credit markets, which, in turn, triggered the worst economic downturn since the Great Depression. In the wake of a deepening recession, consumers have become painfully aware of the fact that high debt levels and credit mismanagement contribute to financial insecurity.

Nationally representative surveys of consumer financial attitudes, status, and behavior have greatly enriched researchers' understanding of consumers' use of debt and the effect that consumer debt holdings can have on consumer finances. The structure of these surveys, however, limits their usefulness in the study of racial difference in consumer finance. National surveys such as the Survey of Consumer Finances (SCF) or the Panel Study of Income Dynamics (PSID) classify an individual's race as "White," "Black," or "other," where "other" is a heterogeneous category that combines Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander and any other race not specified. Recently, some national surveys, such as the Survey of Consumer Finances, have begun reporting Hispanic origin either as an additional category of race or as an ethnicity that is separate from race.

Use of "other race" to learn more about the financial behavior of non-White or non-Black individuals is problematic. Individuals classified in "other race" can come from many different cultures. Treating these individuals as a homogeneous group would not generate meaningful analytical results. As a result, some researchers have excluded individuals of "other race" from analysis of financial characteristics, focusing simply on households headed by White and Black individuals (e.g. Chien and DeVaney 2001; Godwin 1998). Other researchers have separated

Black from White and other races (e.g. Lee et al. 2007; Price 2004; Spencer and Fan 2002).

Thus, although race and ethnicity have been consistently found to have an effect on consumer

debt holdings (Duca and Rosenthal 1993; Crook 2001; Spencer and Fan 2002; Price 2004;

Yilmazer and DeVaney 2005), it is largely a Black and White difference that has been measured.

Other minority groups have not received adequate attention.

Growing ethnic diversity in the United States makes it important to expand understanding

of racial differences in financial characteristics and practice beyond White and Black. Toward

this end, Asian Americans are an important group to study. Currently, Asian Americans are

second only to Hispanics as the fastest growing minority in the United States (U.S. Census

Bureau 2010)

According to the 2010 U.S. Census, 4.6% of the total U.S. population (or 14.0 million

individuals) identified themselves as Asian only (U.S. Census Bureau 2010). These numbers do

not include those who reported more than one race, but include those with and without a

Hispanic background. Asian Americans are a very diverse group, having immigrated to the U.S.

from countries such as China, Japan, Korea, Philippines, Vietnam, Cambodia, Thailand, Laos,

India, and Pakistan. Although they share similar cultures in "Confucian Dynamism" (Hofstede

and Bond 1988), each of these countries have unique language, life style, cultural values and

beliefs (Kim et al. 2001).

Prior research on the demographic, social, and economic characteristics of Asians affirms

the diversity present among Asian subgroups (e.g. Lien et al. 2003; Segal et al. 2002). Sharpe

and Abdel-Ghany (2006) note that this diversity, coupled with different histories in the United

States, gives each Asian subgroup a unique cultural heritage, which may contribute to dissimilar

economic status. They studied the economic status of six large Asian subgroups residing in the

U.S. and found that, after controlling for differences in human capital and demographic

characteristics, significant and unique differences remained among the Asian subgroups as well

as between the Asian subgroups and Whites and African-Americans.

Race and ethnicity often serve as a visible indicator or correlate of such things as culture

and beliefs, which are factors that can directly influence personal economic well-being. Thus,

when seeking to learn more about the financial practice of Asians in the United States, it may be

best to initially concentrate on a single Asian subgroup. According to the 2009 American

Community Survey, Chinese are the largest Asian ethnic group in the United States (U.S. Census

Bureau 2010) and thus, an important initial group among Asians to investigate.

This exploratory study uses original survey data to investigate the debt ownership of

Chinese Americans, and to assess factors contributing to their probability of being a debtor. This

particular Asian group was selected because it is the largest Asian group within the U.S. (U.S.

Census Bureau 2010). In addition, focus on this one segment of the Asian population in the U.S.

acknowledges differences among the various Asian groups within the U.S. Findings from this

exploratory study extend understanding of the consumer financial behavior of the largest Asian

American group in the U.S. and form a basis for further study of this group on a larger scale. In

addition, these findings may be helpful in developing educational programs that target the unique

financial needs and concerns of this demographic group.

Literature Review

Financial Well-being of Asian Americans

Differences in the financial well-being of households with various racial/ethnic

backgrounds have been noted in prior research. Using 2000 Census data, Sharpe and Abdel-

Ghany (2006) compared the income level of six Asian groups in the U.S. They found that, as

compared with White households, Japanese American households had significantly more income whereas Chinese, Filipinos, Korean and Vietnamese immigrant households had significantly less income. Poverty rates for Asian American groups vary, ranging from a low of 8.2% for Filipinos to a high of 14.2% of Koreans as compared with a 13.1% rate of poverty for the U.S. population as a whole. Households headed by someone aged 65 and older tend to fare less well. Poverty rates for older households range between a high of 19.2% for Koreans to a low of 5.9% for Japanese as compared with a 7.2% rate for the older population as a whole (DeNavas-Walt et al. 2006; Reeves and Bennett 2004).

Darity (1999) notes that, historically, Whites have held more financial wealth than minorities have held. Ulker (2009) also found that Whites hold a higher level of net worth as compared with minority groups, including Asian Americans. Cobb-Clark and Hildebrand (2006) pooled six Survey of Income and Program Participation datasets to study the wealth of U.S. households. The authors concluded that immigrant households from European and Asian countries had substantially more wealth than did the average immigrant household.

Differences in spending patterns and debt management may contribute to wealth inequality between races. Those researching racial difference in spending patterns have discovered that even after controlling for other potentially influential factors, as compared with other races, Asian Americans display significantly different expenditure patterns. Compared with otherwise similar White households, Asian Americans spent more on education (Fan 1997) and housing (Fontes and Fan 2006); however, they spent less on items such as fuel, utilities, household equipment, alcohol, and tobacco products (Fan 1997). Fan and Koonce-Lewis (1999) found that compared with African-Americans, Asian Americans spent more on food away from

home, entertainment, shelter, transportation, and health care and less on apparel, fuel, and

utilities.

In 2000, the homeownership rate for Asian Americans was 53%, which, according to the

2007 report of the Asian Real Estate Association of America (AREAA), was lower than the 65%

homeownership rate of the total population (Nakanishi 2007). According to the U.S. Census

Bureau (2007), by 2004, Asian American homeownership had increased considerably to 62.8%,

but it was still 4.3 percentage points lower than that of the total population (67.1%) and 11.1

percentage points lower than that of non-Hispanic White households (73.9%). AREAA found

that in 18 metropolitan areas, 25% or more of Asian American households had language barriers,

a factor which could affect their ability to understand mortgage loan terms as well as the

structure and function of the housing market as a whole.

Chi and Laquatra (1998) analyzed factors that affected housing cost burden and found

that Asian American households were more likely than otherwise similar non-Hispanic White

households to have a higher risk of having excessive housing costs, even after controlling for

housing tenure. It may be that Asian Americans tend to reside in areas in the U.S. where housing

costs are high, such as the West and East coast. It is also possible that Asian American

households tend to view their home as an investment, and thus are willing to shoulder a

relatively greater housing cost burden. Coulson (1999) investigated factors that affected the low

home ownership rates of immigrant and non-immigrant Asian Americans and found that being

an immigrant substantially lowered Asian American households' probability of homeownership.

Some studies of homeownership have differentiated among Asian American groups. Painter et

al. (2003) found that most Asian American groups were as likely as otherwise similar Whites to

own a home; however, Chinese American households were significantly more likely to own a home as compared with other Asian American groups.

Factors Contributing to Debt Use

Much has been written about factors that affect household borrowing behavior. Researchers have generally agreed that the likelihood of borrowing declines with age. Some differences have been found, however, regarding the age at which the decline begins to occur. Cox and Jappelli (1993) used the 1983 SCF data to examine factors that affected the stock of consumer liabilities. They found that debt levels were higher for successively older age groups until the household head reached mid-thirties and then debt levels declined. Crook (2001) examined data from the 1995 SCF and found that households headed by an individual over age 55 had a reduced demand for total debt (measured as sum of mortgages, home equity loans, credit card and installment debt). Livingstone and Lunt (1992) examined factors that predict personal debt using survey data collected in the U.K. The authors found that younger households were more likely to be in debt than other households. Spencer and Fan (2002) used the 1995 SCF data to examine the probability that a household would be a saver, debtor, or a saver and debtor simultaneously. They found that the probability of being a debtor decreased over the life cycle. Lee et al. (2007) used data from the 2000 Health and Retirement Study to examine the probability of older Americans holding consumer and mortgage debt. Age was found to have a negative effect on the probability of holding total debt, consumer debt, and mortgage debt.

Previous research was consistent in finding that female household heads were more likely to have more total debt than either male household heads or two-parent households (e.g. Lea et al. 1995; Livingstone and Lunt 1992; Lee et al. 2007). Crook (2001) found family size was positively related to the demand for debt. Duca and Rosenthal (1993) found a positive

relationship between family size and demand for credit by young households. Using a survey

method to investigate factors correlated to consumer debt, Lea et al. (1995) found that

households with younger children and families with more children living in the household had

more debt.

The effect of income on demand for debt was found to be positive by most researchers,

but evidence of nonlinear effects also exists. Cox and Jappelli (1993) noted that the demand for

credit was positively related to permanent earnings and negatively related to current income.

Duca and Rosenthal (1993) used the 1983 SCF to study the extent to which borrowing

constraints restricted household access to debt. They learned that the demand for credit by young

households was positively related to income. Lee et al. (2007) found that the demand for total

debt and mortgage debt increased with income. However, in a study of household debt demand

using 1995 SCF data, Crook (2001) found a non-linear relationship between income and debt;

current income was positively related to the desired amount of debt, but current income squared

had a negative effect. Chien and DeVaney (2001) used 1998 SCF data to examine factors that

influenced credit card debt and learned that income was negatively associated with the amount of

credit card balance. Baek and Hong (2004) used 1998 SCF data to study factors related to

holding consumer debts and the amount of consumer debts held. The probability of having

installment debt was found to decrease with income; and financial assets had a negative effect on

ownership of installment debt and credit card debt. Non-financial assets had a positive effect on

installment debt ownership but a negative effect on credit card ownership. Cox and Jappelli

(1993) found a positive relationship between net worth and demand for credit. Duca and

Rosenthal (1993) also found wealth to be positively related to the demand for credit. These

findings suggest that less wealthy households are more likely to be credit constrained. However,

Crook (2001) and Lee et al. (2007) concluded that net worth was negatively related to the

demand for debt.

Crook (2001) noted that risk aversion was negatively related to the demand for debt. That

is, households with higher risk tolerance were more likely to demand higher levels of debt. In a

study of the probability of older Americans to hold debt, Lee et al. (2007) found self-perceived

health had an effect on debt ownership. Those who reported having fair, poor or good health

were less likely to hold mortgage debt than were otherwise similar respondents who reported

excellent health. However, Grafova (2007), who used the Panel Study of Income Dynamics to

study the relationship between non-collateralized debt and health behaviors, found that

respondents who had less healthy lifestyles were more likely to hold non-collateralized debt.

Controlling for other variables, household consumption level was higher if children between 7

and 22 years were present as compared with households that did not have children (Lee and Huh

2004).

Debt Management of Asians and Asian Americans

Only a few studies of the debt status and debt management of Asians and Asian

Americans have been conducted. By analyzing data collected in 15 Chinese cities in 2008, Liao

et al. (2010) developed an overview of the financial well-being of Chinese households. Results

indicated that only 11.1% of urban Chinese households had any kind of debt. They concluded

that the credit market in China was underdeveloped and Chinese households were generally

reluctant to borrow. Wang and Moll (2010) studied education financing of rural Chinese

households. They found that private savings, rather than formal loans, was dominant in

financing children's education.

In a study of student loan borrowers in repayment, Baum and O'Malley (2003) examined the influence of debt burdens on repayment for student loan borrowers who had at least one federal student loan in the previous year. The authors found that Asian American students felt less burdened with their educational debt although they did not have significantly higher or lower undergraduate debt or total debt than White students had. Compared with students from other races, Asian American students were the least likely to state a willingness to opt for lower payments, which implied they would repay their loans in a relatively shorter time frame resulting in lower overall cost. Whether Asian American students are better at debt management than students of other races is unclear because the authors also found that Asian American students also had the highest current earnings as compared with other students.

Lyons (2004) sent an online random survey to 2,650 students at the University of Illinois to collect data to identify financially at-risk college students. White students and Asian students did not significantly differ in their likelihood to have credit card debt of $1,000 or more, to carry a credit card balance, or to be late in payments. Among those who had at least one credit card, Asian and Hispanic students were more likely to not pay their credit card balance in full than White students were. More research is needed to explore the reasons why Asian American students were more likely than White students to carry a credit card balance.

In summary, there is evidence that the income and wealth levels of Asian Americans differ significantly from that of the White majority as well as the African-American minority in the U.S. Prior research suggests that dissimilar patterns of spending and debt management may be a contributing factor in these differences in economic status. Research concerning the financial well-being of the Asian American population is extremely limited. In existing studies, the number of such households surveyed for national databases is typically too small for

statistical analysis as a separate group. This article fills in an important research gap by collecting data from a survey of Chinese American households residing in Midwestern states and investigating the debt management behavior of the Chinese, the largest Asian American group in the U.S.

Theoretical Framework

The Life-Cycle/Permanent Income Hypothesis proposes that current household consumption does not reflect current income. Rather, it is based on a fraction of household permanent income (Friedman 1957) or wealth (Ando and Modigliani 1963). Households are assumed to be forward-looking and able to estimate their ability to consume over the long run, thereby choosing a smooth level of consumption over their life time that will maximize utility.

Hall (1978) suggested that, given rational expectations, the Life-Cycle/Permanent Income Hypothesis implies past income is not significantly related to consumption; consumers change consumption in response to news about future income. Flavin (1981) used a time-series analysis to quantify the magnitude of the adjustment in permanent income implied by a simultaneous change in current income. He found that the observed sensitivity of consumption to current income is greater than that predicted by Life Cycle/Permanent Income Hypothesis. In fact, consumption was found to be "excessively sensitive" to current income. This result can be interpreted as presenting evidence that for a credit-constrained consumer who is unable to borrow the amount needed to fund their optimal consumption level, consumption will be limited by current income.

Implicit in this theoretical framework is the assumption that households focus on consumption and are willing to utilize debt to smooth their life-cycle consumption. This idea may be shaped by culture. Chinese Americans, influenced by the Chinese culture of being

thrifty, conservative, and debt-free (Fan 2000) may instead focus on savings and self reliance and, thus, engage in debt behaviors that are different from other American households. Given this cultural difference in attitude toward debt, it is important to study the debt holding of Chinese American households.

Hypotheses

According to Life Cycle/Permanent Income Hypothesis, households should borrow when their income is low and pay down debt when their income is high in order to smooth their consumption level over their life cycle. Therefore, income is expected to have a negative effect on the probability that a household will maintain debt.

Hall's (1978) random walk model of consumption suggests that future income expectations will affect consumption. Better economic performance is likely to be associated with higher job security and higher income. People who expect income to be higher in the future and seek smooth life-cycle consumption are more likely to use debt as a way of funding additional current consumption needs. Therefore, those who expect the economy to be better in the future are hypothesized to be more likely to have debt.

Younger people are more likely to have limited capacity to borrow. When people face a borrowing constraint, they are less likely to acquire and therefore less likely to maintain debt. As people advance through their life cycle and move toward retirement, they would expect a significant drop in income to occur. Therefore, debt should be gradually paid off. Age, then, is expected to have a nonlinear relationship with probability of a household having debt; positive at relatively younger ages, but negative at relatively older ages.

The amount of non-financial assets held increases a household's probability to acquire debt and would therefore be expected to increase its likelihood to maintain debt. Financial risk

tolerance level is expected to be positively related to likelihood of having debt. Risk tolerant

households are more likely to invest in risky assets that provide a higher return than the rates

they pay on their debt, and therefore would be expected to be less likely to pay off their debt.

Method

Chinese American Households

Three major categories of U.S. households have a Chinese heritage: households whose

members are Chinese citizens; households with a mixture of citizenships but with a Chinese

heritage; and households whose members are U.S. citizens but with a Chinese heritage. In this

study, the term *Chinese American household* includes households in any one of these three

categories, identifying those households with a Chinese heritage, regardless of citizenship or

immigration status.

Data

Studying Asians in America presents challenges. Existing national data on household

financial status and behavior such as the Survey of Consumer Finances aggregates "Asian" with

"other" in the public data release. Even if one could disaggregate Asian from other groups, the

problem remains that "Asian" includes several different Asian ethnic groups which are not

necessarily homogeneous. Consequently, original data were collected in the 2006 Survey of

Chinese American Financial Well-Being to attempt to learn more about a specific Asian ethnic

group, the Chinese.

To learn about the debt behavior of Chinese-American households, selected questions

from the 2004 Survey of Consumer Finances were used to develop a survey. Authorization from

the Federal Reserve Board was obtained to use the selected questions. Other information

collected in the survey included household demographic characteristics (e.g. age, marital status),

economic characteristics (e.g. income, assets, debts), and expectations regarding future events (e.g. self-perceived life expectancy).

Data were collected from Chinese households located in five Midwestern states in the Northwest Central Region. The two largest cities (defined as the most populated without adjusting for area) in each of the five states were selected. Focus on this region of the country was mandated by the funding agency. Admittedly, restricting data collection to the Midwest could be considered a limitation of this study inasmuch as the Asian population in the United States tends to cluster on the East and West coast (Barnes and Bennett 2002). The goal of this exploratory study, however, was to initiate study of the financial well-being of Chinese American households and to extend a call for further studies, at a national level, on this racial group.

Although Dillman (1978) is a respected source of guidance for sampling methods, he gives little guidance on sampling rare populations. Consequently, guidelines given by Kalton and Anderson (1986) for sampling a rare population were used. Consistent with those guidelines, the DEX white pages online phone book (DEX 2008) was used to identify the households that had a Chinese surname. Mainland Chinese surnames are distinctly different from those of other nationalities. Further, the selection of surnames was vetted by a Chinese national.

A total of 1,957 Chinese American households were identified as the population: 1,463 in Minnesota, 272 in Nebraska, 160 in Iowa, 36 in South Dakota, and 26 in North Dakota. From this total population, every other household was selected, resulting in an initial random draw of 979 households (half of the total population of identified Chinese American households in the region). Phone calls were made to invite them to participate in the study. A $10 Wal-Mart gift card was offered as an incentive to complete the survey.

Out of the households contacted, 242 households could not be reached due to reasons such as a number not in service, number disconnected, wrong number, fax number, no answer, or number always busy. Households that could not be reached on a first try due to no answer or a busy line were contacted two more times at a different time on a different day. To maintain the sample size of half of the population, additional phone calls were made to randomly selected households from the remaining population until a total of 979 households were contacted.

Since language barriers were expected, a Chinese version of the survey was prepared. Thirty-two households were not able to speak English. For these households, a Chinese-speaking person made follow-up phone calls to invite them to participate in the study. Only eleven such households were reached and, of those, only three expressed willingness to complete the survey.

A total of 341 households (including the three Chinese-only households) agreed to participate in the research over the phone. One survey was mailed to each of these households. A Chinese version survey was mailed to those who spoke Chinese only. Among the households that received a survey, 158 households completed and returned a survey. None of these completed surveys were from the three Chinese-only households. Among the completed surveys, nine did not provide vital information such as level of income or market value of home; therefore, these surveys were not used in this analysis. The total number of respondents in this study was 149.

Variables

The dependent variable was a dichotomous indicator of whether the household had any

kind of debt, including mortgage loans, installment loans, credit card debt, and all other loans (1

if yes, 0 otherwise).

Independent variables were drawn from both economic theory and prior research.

Demographic characteristics included the age and gender of the respondent and the presence of a

related child(ren) under 18 in the household. Age was measured as a continuous variable. Since

age was expected to have a non-linear effect on the likelihood of having debt, both age and age-

squared were included in the logistic model. Very few respondents indicated a marital status of

never married, separated or divorced, or widowed. Since most respondents were married,

marital status was not included in the multivariate analysis.

Economic characteristics included amount of financial and nonfinancial assets, and

amount of income. Because the distribution of these variables was right-skewed, a log

transformation was used in the empirical analysis. Relatively few respondents were retired, not

currently working, or self-employed. Consequently, employment status was not included in the

multivariate analysis.

Expectation variables included self-evaluated health status (excellent, good, fair, or poor),

expectation of future economic performance (better, about the same, worse in next 5 years), and

financial risk tolerance. Those who believed themselves to be in excellent or good health were

treated as one group and those who considered their health to be fair or poor were treated as

another group. In the multivariate analysis, those with fair or poor health were the comparison

group. Respondents that expected future economic performance to be better than the past five

years were grouped together. Those who expected future economic performance to either be the

same as or worse than the past five years were placed into another group. The pessimistic group

was the comparison group. The risk tolerance level of respondents was categorized as either no

risk or some risk. No risk was the comparison group. Expectation of a substantial amount of

inheritance or asset transfers in the future was not included in the multivariate analysis due to the

small number of respondents who expected to receive such assets in the future.

Data Analyses

Univariate and frequency analyses were used to describe the characteristics of the

respondent households and their debt holdings. Since the dependent variable was dichotomous, a

logistic model was used for multivariate analysis. The model examines the extent to which

household demographic and economic characteristics, expectations of future economic

conditions and risk tolerance affect the likelihood that respondents will have debt. It should be

noted that one household reported an annual income of $2 million, making it an apparent

outlier. The original survey was reviewed and no data entry errors were found. Multivariate

analysis conducted with and without this particular household did not produce significantly

different results; therefore, this household was retained in the data analyses. SAS software,

version 9.1, was used for statistical analyses.

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Results

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Sample Households Characteristics

As shown in Table 1, respondent age ranged between 24 to 77 years old. The mean and

median age of 42 was somewhat older than the median age of 37 for the U.S. Chinese American

population (U.S. Census Bureau 2007). The average household size of 3 matches the U.S.

Chinese American population (U.S. Census Bureau 2007). Mean financial and nonfinancial

assets had a broad range ($4,191 to $1.4 million and $0 to $1.1 million, respectively). For both

types of assets, the mean exceeded the median, doubtless due to relatively large top values in each asset category.

At $85,000, sample median household income was considerably higher than national median income of U.S. Chinese Americans ($57,433) (U.S. Census Bureau 2007). The sample income distribution was highly skewed due to one respondent's report of $2,000,000 annual income.

The majority of the respondents (81.5%) had some kind of debt, including mortgage and installment loans, credit card debt, and margin loans. Means for each type of debt exceeded medians, indicating one or more relatively high top values. For example, the average mortgage debt was $132,864, but the median was $120,000.

Type of debt by respondent characteristics is detailed in Table 2. In general, debt holdings appear to be a result of lifecycle stage, need and resources. Close to three-quarters of the sample (71.8%) held a mortgage debt. Among those with a mortgage, a relatively higher proportion was married and had minor-aged children, reflecting a typical pattern of home ownership during the child-rearing years. Close to one-fifth of the sample (19.5%) reported no debt holdings. A little over 5% held auto debt and 3.4% reported other debt.

Study respondents were well educated; over 80% had a graduate degree. The educational attainment level of this sample is higher than the total Chinese American population in the U.S. (50.2% with a Bachelor's degree or higher) (U.S. Census Bureau 2007). This finding may reflect sampling in locations where a college and university existed. A higher proportion of those with a bachelor's degree or graduate degree held debt as compared with those with lower education levels. For these individuals, mortgage debt was the most common type of debt held.

There were 45 female respondents and 104 male respondents. The majority of the respondents (88.6%) were married or living with a partner. The married and previously married (divorced or separated) typically held mortgage debt. Interestingly, a large proportion of the never married reported no debt. About three quarters (71.8%) of the total respondents had at least one related child under age 18 living with them. Among those with children, mortgage debt was the most common type of debt held (59.7%)

The majority worked for someone else. These individuals typically held mortgage, auto, and other debt, whereas the self employed tended to have mortgage and other debt. The not working held mortgage debt. The retired held no debt. Small sample size limits generalizability of these results, however.

Homeowners accounted for 81.2% of the total respondents. Homeowners held auto and other debt as well as mortgage debt. As expected, renters held no mortgage debt, but did hold auto and other debt.

Overall, respondents appeared to believe their financial future would depend on their own choices and efforts as only 4.0% expected to receive an inheritance. Most were optimistic about their future. Three quarters (74.5%) of the respondents were in excellent or good health and had a debt; 18.1% were in excellent or good health and were debt-free. Over half of the respondents were of the opinion that, as compared with the past five years, the U.S. economy would perform equally well or better in the next five years. Close to three-quarters of the sample (71.8%) were willing to take on average or above average risk for average or above average returns; 8.7% would take high risk for high returns. About 20% of the sample was not willing to take any risk. Respondents at every level of risk tolerance held some debt, most commonly mortgage debt.

Multivariate Results

After controlling for other variables, the relationship between age and likelihood of Chinese American households to have debt was nonlinear, first increasing with age, and then subsequently decreasing with age. This result was consistent with research on other types of American households (Cox and Jappelli 1993) and confirmed our hypothesis. Unlike other American households (Lea et al. 1995), Chinese American households with related children under 18 were 90.7% less likely to have debt than otherwise similar households without young children.

Amount of financial assets was significantly and negatively related to the likelihood of households holding debt. On the other hand, the amount of non-financial assets was significantly and positively related to household being a debtor. These results were consistent with results found for other American households (Beak and Hong 2004). Consistent with most previous literature (e.g. Duca and Rosenthal 1993; Lee et al. 2007), income had a significant positive effect on a household's likelihood to borrow.

In contrast to other American households (Lee et al. 2007), Chinese American households whose respondents perceived themselves to be in excellent or good health were 56.9% less likely to be a debtor as otherwise similar households whose respondents were in fair or poor health. All else equal, gender and risk tolerance were not significant factors in debt holdings of Chinese American households. These findings are unique for Chinese Americans. Previous research that studied American households found that females were more likely than males to have more total debt (Lea et al. 1995; Livingstone and Lunt 1992; Lee et al. 2007) and risk tolerance had a positive effect on debt holding (Crook 2011).

Discussion and Implications

Previous research on the financial well-being of Asian Americans is extremely limited. This article fills in an important research gap by investigating the debt management behavior of the Chinese, the largest Asian American group in the U.S., using data collected from a survey of Chinese American households residing in five Midwestern states. Univariate and frequency analyses were used to describe the characteristics of the respondent households and their debt holdings. A logistic model was used to identify factors that significantly affected the probability of a Chinese American household to borrow. These factors included age, presence of children under 18, health, annual income, and amount of financial and non-financial assets.

Hypothesized and actual test results are summarized in Table 4. As hypothesized, the relationship between age and likelihood of having debt is nonlinear. As age increases, likelihood of holding debt also increases, but only to a point. For younger individuals, it may be as Flavin (1981) implies, credit constraints prevent them from borrowing as much as desired, and thus these individuals can only spend from current financial resources. Typically, as a person ages, earning capacity also grows. Toward midlife, credit constraints may relax since access to greater financial resources increases his or her capacity to repay debt. At older ages, need for debt may decrease and financial behavior may turn to repayment of prior debt and saving for retirement.

As hypothesized, financial assets are negatively related to and non-financial assets are positively related to the likelihood of Chinese American households having debt. Controlling for other factors, having a large amount of financial assets decreases the need for a household to borrow. Having a sizable amount of non-financial assets increases such need. The relationship between various types of assets and debt may also reflect relying on debt to purchase non-financial assets, for example, using a mortgage to purchase a home.

Contrary to expectations, income level was positively related to debt holding. This result may reflect some unique aspects of the Chinese culture. Credit and debt are relatively new concepts to Chinese citizens (Chen 2004; Liao et al. 2010). Having ties to a country where most purchases are made with cash, debt may not be an acceptable option for low income households who are aware that debt needs to be repaid with interest in the future. It may also be that high levels of debt for those with relatively higher income reflect relatively higher mortgage balances.

In a study of Chinese cultural values, Fan (2000) concludes that there are "certain core cultural values that are held in common by the Chinese people, no matter where they live" (p. 4). Among these core cultural values are moderation, thrift, prudence, being conservative, and taking a long range view (Fan 2000; Liao et al. 2010). These values would be consistent with borrowing to fund long term investments such as a home purchase in contrast to using debt to finance short term consumer spending. Indeed, we find in the results of this survey that almost 72% of the survey respondents were homeowners with mortgage debt. Only 5% of the sample held an auto loan. And, only about 3% of the sample had other types of consumer debt.

Regarding survey respondents with little to no debt holdings, it is possible that some survey respondents were Chinese university students that planned to return to China when their education was complete. Individuals in this group might be relatively less likely to hold debt especially for a long term purchase such as a home, due to their short expected residency. As one respondent commented on the survey, "We will go back to China after we receive our graduate degrees. We don't plan to invest in stocks or buy a house."

Expectations of future economic performance and financial risk tolerance were found to have no significant effect on the likelihood of Chinese American households owning debt. This finding supports the notion that, regardless of expectations of future economic performance and

individual risk tolerance, living debt-free or with debt limited to long term investments such as a

home reflects Chinese culture.

This study has several limitations. One is the lack of knowledge regarding respondent

immigration status, duration of U.S. residence, and level of English proficiency. Another

limitation is that the sample was chosen according to last name listed on the DEX white pages

online phone book. Households with no landlines or households with Chinese residents that

listed a non-Chinese household member's surname in the phone book could not be identified nor

contacted. Given the limited variation in marital status, it was not possible to investigate the

relationship between marital status and debt holdings. It is also a relatively small sample

collected in one section of the U.S. Funding for data collection carried the mandate that the

findings benefit a localized region. Admittedly, this mandate limits the generalizability of the

results of this study. Nonetheless, this exploratory study takes an initial step into the

investigation of Chinese American households' financial status, debt holdings, and financial risk

tolerance and provides a basis for further study at a national level.

The Chinese American population is the largest Asian American group in the U.S. and

their numbers continue to rise (Bernstein 2004). Those among this group that have little

experience in the American economy could benefit from financial education related to operation

of U.S. financial markets. Financial services could be designed to help Chinese Americans plan

for their financial future in a manner consistent with Chinese cultural values.

The historic aversion of the Chinese to debt could be both a strength and a weakness in

the U.S. economy. It is a strength insofar as it enables them to build a strong financial base that

is not threatened by excessive amounts of consumer debt or subject to loss in uncertain financial

times. It may be a weakness, however, if it limits home acquisition, since most home buyers

would need a mortgage. Financial education may help them improve their understanding of the ways that debt leverage can help smooth consumption over the life cycle. Appropriate use of debt can help households improve their quality of life as well as spur economic growth through an increase in market purchases. At the same time, excessive debt can become a financial burden to households and lenders, as proven by the recent sub-prime lending crisis.

Chinese individuals who have been taught the Chinese culture of being thrifty, conservative, and debt-free living in the American culture of consumption on credit must choose which life style to live. Consequently, issues of whether to borrow and how much to borrow have become practical questions for Chinese American households. Financial planners can help these households determine answers to some of these questions. Being reluctant to borrow can impose opportunity costs to Chinese American households because the cost of debt may be lower than the returns from investments. Chinese American households may benefit from education on investments and their associated risks so that they can optimize their investment portfolio, accumulate more wealth faster, and achieve their financial goals.

Future research should continue to investigate the financial status and behavior of Chinese American households. It would be especially helpful to gather data from Chinese residents in the large urban areas of the U.S., such as New York, Los Angeles, or San Francisco. Conducting such research in various regions of the U.S. would enrich understanding of the financial behavior of Chinese Americans. It would also make it possible to further evaluate whether or not Fan's (2000) assertion that Chinese cultural values transcend location holds across regions in the U.S. Larger sample sizes that identified immigration status would allow comparison of the financial behavior of recent immigrants and U.S. born Chinese Americans, improving understanding of the role that enculturation may play in financial behavior.

Comparisons of Chinese Americans should also be made with other Asian sub-groups as well as with households that have other racial and ethnic backgrounds. Reasons for similarity and difference in debt acquisition and management among various racial and ethnic groups should continue to be pursued to increase our understanding of the role that race and culture play in financial behavior and improve our ability to help households increase their financial security in a country that is becoming increasingly racially and ethnically diverse.

References

Ando, A., & Modigliani, F. (1963). The life cycle hypothesis of saving: Aggregate implications and tests. *American Economic Review, 53*(1), 55-84.

Baek, F., & Hong, G. (2004). Effects of family life-cycle stages on consumer debts. *Journal of Family and Economic Issues, 25*, 359–385.

Barnes, J. S., & Bennett, C. E. (2002) .The Asian population: 2000. U.S. Census Bureau. Retrieved February 10, 2010, from http://www.census.gov/prod/2002pubs/c2kbr01-16.pdf

Baum, S., & O'Malley, M. (2003). College on Credit: How borrowers perceive their education debt. *NASFAA Journal of Student Financial Aid, 33*(3), 7-19.

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

Chen, W. (2004). Comparison of Chinese and U.S. credit system and suggestions. *Study on China Administration for Industry and Commerce, 13*(8), 8-12.

Chi, P. S. K., & Laquatra, J. (1998). Profiles of housing cost burden in the United States. *Journal of Family and Economic Issues, 19*(2), 175-193.

Chien, Y., & DeVaney, S. A. (2001). The effects of credit attitude and socioeconomic factors on credit card and installment debt. *Journal of Consumer Affairs, 35*(1), 162-179.

Cobb-Clark, D. A., & Hildebrand, A. A. (2006). The wealth and asset holdings of U.S.-born and foreign-born households: Evidence from SIPP data. *Review of Income and Wealth, 52*(1), 17–42.

Coulson, N. E. (1999). Why are Hispanic- and Asian American home-ownership rates so low?: Immigration and other factors, *Journal of Urban Economics, 45*(2), 209–227.

Cox, D., & Jappelli, T. (1993). The effect of borrowing constraints on consumer liabilities. *Journal of Money, Credit and Banking, 25*, 197–213.

Crook, J. (2001). The demand for household debt in the USA: Evidence from the 1995 Survey of Consumer Finance. *Applied Financial Economics, 11*, 83–91.

Darity, W. Jr. (1999). History, discrimination, and racial inequality. In Spriggs, W. (Ed), *The state of black America. The impact of color-consciousness in the United States*. New York: National Urban League, pp. 153-166.

DeNavas-Walt, C., Proctor, B. D., & Lee, C. H. (2006). U.S. Census Bureau, Current Population Reports, P60-231, *Income, Poverty, and Health Insurance Coverage in the United States: 2005*, U.S. Government Printing Office, Washington, DC, 2006.

DEX (2008). DEX Knows. Local Search. Retrieved June 2006 from http://www.dexknows.com/

Dillman, D. A. (1978). Mail and telephone surveys: The total design method. New York, NY: John Wiley & Sons. S

Duca, J. V., & Rosenthal, S. S. (1993). Borrowing constraints, household debt, and racial discrimination in loan markets. *Journal of Financial Intermediation, 3*, 77-103.

Fan, J. X. (1997). Expenditure patterns of Asian American: Evidence from the U.S. Consumer Expenditure Survey, 1980-1992. *Family and Consumer Science Research Journal, 25*(4), 339-368.

Fan, Y. (2000). A classification of Chinese culture. *Cross Cultural Management: An International Journal, 7*(2), 3-10.

Fan, J. X., & Koonce-Lewis, J. (1999). Budget Allocation patterns of African Americans. *Journal of Consumer Affairs, 33*(1), 134-164.

Flavin, M.A. (1981). The adjustment of consumption to changing expectations about future

    income. *Journal of Political Economy, 89*(5), 974-1009.

Fontes, A., & Fan, J. X. (2006). The effects of ethnic identity on household budget allocation to

    status conveying goods. *Journal of Family and Economic Issues, 27*, 643-663.

Friedman, M. (1957). A theory of the consumption function. Princeton: Princeton University

    Press.

Godwin, D. D. (1998). Household debt quintiles: Explaining changes 1983-1989. *Journal of*

    Consumer Affairs, 32(2), 369-393.

Grafova. I. B. (2007). Your money or your life: Managing health, managing money. *Journal of*

    Family Economic Issues, 28, 285-303.

Hall, R. E. (1978). Stochastic implications of the life-cycle-permanent income hypothesis:

    Theory and evidence. *Journal of Political Economy, 86,* 971-987.

Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to

    economic growth. *Organizational Dynamics, 16,* 5-21.

Kalton, G., & Anderson, D. W. (1986). Sampling rare populations. *Journal of the Royal*

    Statistical Society, A(149), 65-82.

Kim, B. S. K., Yang, P. H., Atkinson, D. R., Wolfe, M. M., & Hong, S. (2001). Cultural value

    similarities and differences among Asian American Ethnic Groups. *Cultural Diversity and*

    Ethnic Minority Psychology, 7(4), 343-361.

Lea, S., Webley, P., & Walker, C. (1995). Psychological factors in consumer debt: Money

    management, economic socialization and credit use. *Journal of Economic Psychology 16*,

    681–701.

Lee, Y. G., & Huh, E. (2004) Consumption and saving behavior of older and younger baby

    boomers in Korea. *Journal of Family and Economic Issues, 25*(4), 507-526.

Lee, Y. G., Lown, J. M., & Sharpe, D. L. (2007). Predictors of holding consumer and mortgage

    debt among older Americans. *Journal of Family and Economic Issues, 28*, 305–320.

Liao, L., Huang, N., & Yao, R. (2010). Family Finances in Urban China: Evidence from a

    National Survey. *Journal of Family and Economic Issue, 31*, 259-279.

Lien, P., Conway, M. M., & Wong, J. (2003). The contours and sources of ethnic identity

    choices among Asian Americans. *Social Science Quarterly, 84*(2), 461–481.

Livingstone, S. M., & Lunt, P. K. (1992). Savers and borrowers: Strategies of personal financial

    management. *Human Relations, 46*, 963–985.

Lynch, D. L. (2009). U.S. debt shrinking at glacial pace. USA Today. Retrieved February 10,

    2010, from http://www.usatoday.com/money/perfi/credit/2009-07-06-usa-spending-

    debt_N.htm

Lyons, A. C. (2004). A profile of financially at-risk college students. *Journal of Consumer*

    Affairs, 38(1), 56-80.

Nakanishi, D. (2007) Following the path to Asian American home ownership. Retrieved March

    30, 2009 from http://www.areaa.org/cms/AREAA_UCLA_2007b.pdf

Painter, G., Yang, L., & Yu, Z. (2003). Heterogeneity in Asian American home-ownership: The

    impact of household endowments and immigrant status. *Urban Studies, 40*(3), 505-530.

Price, D. V. (2004). Educational debt burden among student borrowers: An analysis of the

    Baccalaureate & beyond penal, 1997 follow up. *Research in Higher Education, 45*(7), 701-

    737.

Reeves, T., & Bennett, C. E. (2004). We the people: Asians in the United States. Washington, D.C.: U.S. Census Bureau.

Segal, E. A., Kilty, K. M., & Kim, R. Y. (2002). Social and economic inequality and Asian Americans in the United States. *Journal of Poverty, 6*(4), 5–21.

Sharpe, D. L., & Abdel-Ghany, M. (2006). Determinants of income differentials: Comparing Asians with Whites and Blacks. *Journal of Family and Economic Issues, 27*(4), 588-600.

Spencer, H. L., & Fan, J. X. (2002). Savers, debtors, and simultaneous debtors and savers. *Financial Counseling and Planning, 13*(1), 25-39.

Ulker, A. (2009). Wealth holdings and portfolio allocation of the elderly: The role of marital history. *Journal of Family and Economic Issues, 30*(1), 90-108.

U.S. Census Bureau. (2007). The American Community – Asians: 2004. Retrieved February 8, 2010, from http://www.census.gov/prod/2007pubs/acs-05.pdf

U.S. Census Bureau. (2010). The Asian Alone Population in the United States: 2010. Retrieved August 8, 2011, from http://www.census.gov/population/www/socdemo/race/ppl-aa10.html

Wang, H., & Moll, H. (2010). Education Financing of Rural Households in China. *Journal of Family and Economic Issues, 31*, 353-360.

Yilmazer. T., & DeVaney. S. A. (2005). Household debt over the life cycle. *Financial Services Review, 14*, 285-304.

Table 1

Age, Household Size, Financial Assets, Non-financial Assets, and Annual Income of Respondent

	Minimum	**Maximum**	**Mean**	**Median**
Age	24	77	42	42
Household Size	1	5	3	3
Financial Assets	$4,191	$1,391,247	$189,508	$86,093
Non-financial Assets	$0	$1,100,000	$39,312	$20,000
Annual Income	$10,900	$2,000,000	$105,976	$85,000
Mortgage Debt	$0	$790,000	$132,864	$120,000
Auto Loan	$0	$46,000	$3,436	$0
Other Debt	$0	$400,000	$6,456	$0

Note. Total number of respondent = 149.

Table 2

Being a Debtor by Respondent Characteristics

Household Characteristics	Mortgage	Auto Loan	Other	No Debt	Total
Education of Respondents					
Less than High School Diploma	0.00%	0.00%	0.00%	0.67%	0.67%
High School Diploma	1.34%	0.00%	0.00%	0.67%	2.01%
Associate Degree or Some College	0.67%	0.00%	0.67%	0.00%	1.34%
Bachelor's Degree	10.74%	0.67%	1.34%	0.67%	13.42%
Graduate Degree	59.06%	4.70%	1.34%	17.45%	82.55%
Gender of Respondents					
Male	50.34%	4.03%	2.01%	13.42%	69.80%
Female	21.48%	1.34%	1.34%	6.04%	30.20%
Marital Status					
Married/Living with Partner	67.11%	4.03%	2.68%	14.77%	88.59%
Divorced or Separated	4.03%	0.67%	0.67%	0.67%	6.04%
Never Married	0.67%	0.67%	0.00%	4.03%	5.37%
Presence of Related Children < 18					
Yes	59.73%	4.03%	1.34%	6.71%	71.81%
No	12.08%	1.34%	2.01%	12.75%	28.18%
Employment Status					
Working for Someone Else	63.76%	5.37%	2.01%	18.79%	89.93%
Self-employed	4.03%	0.00%	1.34%	0.00%	5.37%
Not Currently Working	4.03%	0.00%	0.00%	0.00%	4.03%
Retired	0.00%	0.00%	0.00%	0.67%	0.67%
Home Ownership					
Homeowner	71.81%	1.34%	2.01%	6.04%	81.20%
Renter	0.00%	4.03%	1.34%	13.42%	18.79%
Self-reported Health Status					
Excellent	30.87%	2.68%	2.68%	8.72%	44.95%
Good	35.57%	2.01%	0.67%	9.40%	47.65%
Fair	4.70%	0.67%	0.00%	1.34%	6.71%
Poor	0.67%	0.00%	0.00%	0.00%	0.67%
Expecting Substantial Amount of Inheritance or Asset Transfer					
Yes	2.01%	0.00%	0.67%	1.34%	4.02%
No	69.80%	5.37%	2.68%	18.12%	95.97%
Expectation of Economy Performance					
Better	24.16%	2.01%	2.01%	8.72%	36.90%
Same as Now	14.09%	1.34%	0.00%	3.36%	18.79%

Worse	33.56%	2.01%	1.34%	7.38%	44.29%
Financial Risk Tolerance					
No Risk	12.75%	0.00%	2.01%	4.70%	19.46%
Average	31.54%	3.36%	1.34%	7.38%	43.62%
Above Average	22.82%	0.67%	0.00%	4.70%	28.19%
High	4.70%	1.34%	0.00%	2.68%	8.72%
Total	71.81%	5.37%	3.36%	19.46%	100.00%

Note. Total number of respondent = 149.

Table 3

Logistic Analysis of the Likelihood of having Debt

Parameter	Coefficient		Odds Ratio
Intercept	-24.890	**	
Age	0.1067	*	1.113
Age^2	-1.7874	†	0.167
Male	-0.3586		0.699
With child(ren) under 18	-2.3755	**	0.093
Ln(financial assets)	-0.6511	*	0.521
Ln(non-financial assets)	1.4907	**	4.440
Ln(annual income)	1.2101	†	3.354
Good health	-0.8408	†	0.431
Expect economy to be better	0.2051		1.228
Some risk	0.0386		1.039
Concordance	88.4%		
Chi-square test of the likelihood ratio	42.2873 < .0001		

† p < .10, * p < .05, ** p < .01

Table 4

Hypotheses Test Results

Variable	Hypothesized Effect	Actual Effect
Age	+	+
Age^2	-	-
Income	-	+
Financial assets	-	-
Non-financial assets	+	+
Expect economy to be better	+	NS
Tolerate some risk	+	NS

Note: + positive effect, - negative effect, NS not significant