Effects of Age on Saving Motives of Chinese Urban Consumers

Abstract

The Chinese maintain one of the highest saving rates in the world. Although saving is generally regarded as a good practice, in a market economy, extremely high saving rates can constrain welfare enhancing consumption and growth of gross domestic product. Prior research on the saving behavior of Chinese consumers gives indirect evidence of various saving motives. This study, in contrast, examines factors associated with saving motives that are directly reported by consumers in a national survey in China. Findings indicate the three most frequently reported motives are saving for emergency, children's education, and retirement. Mediation analysis results indicate that saving motives reported directly by Chinese survey participants have obvious life cycle patterns.

Keywords: China, precautionary saving, retirement, saving motive, saving rate, wealth preservation

INTRODUCTION

A noteworthy aspect of China's economy is its high consumer saving rate. Household-level data indicate that the average urban household saving rate in China rose from 14.8% in 1990 to 22.4% in 2008 (Chamon & Prasad, 2010). After adjusting for differences in calculating household savings rates between the U.S. and China, Qin and Ren (2008) concluded that the average household savings rate between 1992 and 2004 was 22.9% in China, more than four times the 5.4% average U.S. household savings rate during the same period. At a macro level, high savings rates provide the financial capital needed to build infrastructure and can enhance broad financial and social stability. However, exceptionally high saving rates also suggest that household consumption may be repressed, which would inhibit expansion of domestic demand, in turn negatively affecting economic growth and consumer welfare.

China has had sustained phenomenal economic growth since its economic reform in 1978. Persistence of high savings rates in light of this growth has generated interest of researchers and policy-makers in the saving behavior of Chinese consumers. Much of this work has focused on macro level factors as potential explanations of the high rate of saving. For example, researchers have pointed to the rapid development of China's financial sector as that provides options for savings (Kraay, 2000), the positive income growth rate that could provide a surplus to save (Horioka & Wan, 2007), the uncertainty of future income due to pension reform (Chamon et al., 2010), as well as the rapid rise in housing and educational costs due to reforms and market conditions (Qin, 2003). To date, however, little is known about the personal motives that underlie household saving behavior.

Previous research on saving behavior of Chinese households provides indirect evidence of several saving motives, such as a desire to smooth the level of consumption over the life-cycle

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(e.g. saving in mid-life to fund retirement; Modigliani & Cao, 2004), a precautionary motive

(e.g. saving for emergencies; Chamon & Prasad, 2010; Qin, 2003), or a competitive motive (e.g.

saving for children's wedding; Wei & Zhang, 2011). However, direct research on saving motives

is limited.

Saving motives influence saving behaviors (Wärneryd, 1999). Thus, investigation of savings

motives, which are largely internal and unobserved, can advance understanding of the potential

or probable drivers of observed saving behavior. This knowledge can inform educational efforts

or government policies designed to encourage Chinese consumers to pursue socially desirable

goals such as achieving a financially secure retirement or funding children's education. For

example, do Chinese savings motives simply reflect strong adherence to the Confucian teaching

that savings is a virtue? If so, distinct and important cultural differences may exist between

those with and without Chinese heritage. If cultural values change, the savings rate may change

as well. If the high savings rate is a response to financial uncertainty in the wake of economic

reform, savings rates may moderate or decline if sustained market stability or social programs

improve ability to predict future economic needs and resources. If saving motives reflect typical

individual and family life-cycle needs across time, Chinese saving behavior would be linked to

demographics and the size of age groups. Is saving behavior dominated by one motive or

connected to several motives? What factors affect saving motives? To begin to address these

issues, this research focused on examining the age effect on major saving motives reported by

Chinese urban consumers.

LITERATURE REVIEW

Saving Motives Embedded in Saving Theories

In modern economic theory, saving is defined as the residual of income from current consumption. Thus, theory of saving is technically a theory of consumption (for a recent review, see Attanasio & Weber, 2010). Taking this perspective, the main motive behind an individual's behavior is the maximization of his/her utility from consumption. However, Katona argued that saving is "not merely a consequence of not spending but rather the result of substantial pressures directed toward achieving highly valued goals of life" (Katona, 1960 p.101), which implies that individuals have motives to save for goals other than current consumption (for example inheritance to children and donations to charity).

Various economic theories suggest some specific saving motives. The Life-Cycle Hypothesis proposes that current household consumption is based on a portion of wealth (Ando & Modigliani, 1963). Households are assumed to estimate their ability to consume over their lifetime and smooth the level of consumption over their lifetime. This hypothesis implies a life-cycle saving motive. That is, the purpose for which one saves is tied to an age-related event such as saving to fund retirement. The Permanent Income Hypothesis suggests households only consume a portion of household permanent income (Friedman, 1957), suggesting a bequest motive. Barro (1974) and Kurz (1984) proposed the inter-generational transfer model, which assumes that households are not only concerned about their own consumption but are also concerned about the welfare of their offspring. So, this model implies a bequest saving motive. Other researchers have incorporated uncertainty in the analysis of household saving and proposed precautionary saving as a saving motive (Carroll, 1997; Hubbard et al., 1995; Kimball, 1990; Lusardi, 1988; Skinner, 1988).

Even though several major saving theories imply a household will have a primary saving motive, some economists propose multiplicity as one characteristic of saving motives. These

economists argue that it is impossible for saving behaviors of all members of a population at a given time to be explained by a single saving motive (Browning & Lusardi, 1996). Maslow's (1943) human needs theory suggests that human needs are not only multiple but also hierarchical (a higher level of need emerges when a lower level of need is fulfilled), providing another possible characteristic of saving motives. Several empirical studies have supported the multiplicity and hierarchical nature of saving motives (Canova et al., 2005; DeVaney et al., 2007; Xiao & Fan, 2002; Xiao & Noring, 1994; Haron et al., 2012).

Complexity is another characteristic of saving motives. In economic theories, all components of wealth are typically assumed to be fungible. Taking a counter perspective, Shefrin and Thaler (1988) developed the behavioral life-cycle hypothesis. This hypothesis assumes households consider different components of their wealth as nonfungible. Propensities to save in different mental accounts are not the same, which implies various asset categories are associated with distinct and varied saving motives. Adding to the complexity of saving motives, Angeletos et al. (2001) developed a hyperbolic consumption model that suggests consumers act patiently for their long-term goals but rather impatiently for their short-term goals.

In summary, various economic theories of consumption and savings have attempted to explain saving behavior under certain conditions. Constraints and saving motives are implied, but not specifically identified by these theories. Since saving motives significantly affect saving behaviors, it becomes important and useful to identify consumer saving motives and factors associated with these motives. Findings from this type of inquiry can inform development of economic and psychological theory as well as education and policy directives.

Factors Associated With Saving Motives

There have been relatively few studies on factors associated with saving motives. In existing research, household demographics, economic characteristics, and expectations, together with culture and economic environments, were found to significantly affect household saving motives.

Age Saving motives differ with household life-cycle stage (Xiao & Noring, 1994; Wärneryd, 1999). Previous research has found that age was significantly related to saving motives such as retirement (Xiao & Fan, 2002; Xiao & Noring, 1994).

Other Demographic Characteristics Prior research found that factors positively related to reporting a retirement motive include education (Xiao & Fan, 2002; Xiao & Noring, 1994), being a male, and being married (Xiao & Noring, 1994). The odds of saving for children's education was found to be higher for those with fewer children (Yilmazer, 2008), those with a higher education, and those who were Asian or Hispanic (Lee et al., 1997). The findings of Xiao and Fan (2002) indicated that U.S. households were more likely than Chinese households to report a saving motive for major purchases when household size increased.

Economic Factors Higher-level needs emerge after lower-level needs are gratified (Maslow, 1943). Oleson (2004) noted that hierarchical human needs are associated with various money attitudes that may affect saving motives. An increase in financial resources allows financial needs to expand from a lower level to a higher level. Income and wealth are indicators of household financial resources. Both of these have been found to have an effect on the advancement of household saving motives (DeVaney et al., 2007; Xiao & Fan, 2002; Xiao & Noring, 1994). For example, middle income households were more likely to save for emergencies. High income households were more likely to save for retirement (Xiao & Noring, 1994). Katona (1975) stated that "the worse the current situation, the greater looms the need to

maintain reserves for future emergency" (p. 233), suggesting that a having a relatively lower

financial status can induce household motivation to save for emergencies. Self-employed

individuals were found to be more likely to save for daily expenses, and homeowners were more

likely to save for retirement and children (Xiao & Fan, 2002; Xiao & Noring, 1994).

Culture, Uncertainty, and Economic Conditions Saving motives in China may be different

from western countries such as the U.S.. Social psychologists have explored cultural variability

in several saving behavior related concepts such as temporal discounting (Du, Green, &

Myerson, 2002; Takahashi, et al., 2009), risk-aversion (Hsee & Weber, 1999; Weber & Hsee,

1998), affective forecasting and decision making (Lam, Buehler, McFarland, Ross, & Cheung,

2005; Fong & Wyer, 2003; Falk, Dunn, & Norenzayan, 2010), and perception of past/future

events feeling subjectively closer/farther away (Ji, et al., 2009).

These observed differences may be caused by cultural differences in attitudes toward delay

or probability (Weber & Hsee, 1998). For example, the "cushion hypothesis" (Hsee & Weber,

1999) states that in the socially-collectivist culture in China, the close social network serves as a

"cushion" that would support its members in case they "fell". In contrast, the culture in the U.S.

is individualistic. Consequently, American's perception toward time and risk in the U.S. may

differ from the Chinese, which, in turn, could lead to differences in choices and preferences such

as motivations to save.

Empirical studies also document differences in saving motives between Chinese and western

consumers. For example, Chinese students were more likely than American students to report

saving for abstract goals (Fan et al., 1998). Chinese most frequently reported saving for

supporting children as a motive, whereas for American workers saving for retirement was the

most frequently reported motive (Xiao & Fan, 2002). Based on both aggregate and household-

level data and on the imbalance in the ratio of men to women in China, Wei and Zhang (2011) argued that the primary saving motive for Chinese is a competitive motive, in which parents of sons compete to save for sons' marriages in hopes of securing a high quality bride.

Modigliani and Cao (2004) argued that China's high household savings was related to the increase in its economic growth generated by recent economic reforms and the one-child policy. These events contributed to an increase in the employment rate and changes in the old-age support system. Following this argument, China's high household savings rate would not be related to culture. In a similar vein, Chamon and Prasad (2010) suggested that the increasing burden at the household level for expenditures related health, education, and housing due to economic reform in China contributed to increase in household motives of saving for these expenses, emphasizing a precautionary motive.

Previous research on saving motives discovered substantial heterogeneity of saving motives. To understand the high savings rate in China, it is important to examine the heterogeneity of saving motives. In prior work, demographic characteristics, financial resources, culture, uncertainty, and economic conditions have all been significant factors in reasons to save.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

Based on the literature review, we assume saving motives reflect the saving goals of consumers and these goals are closely related to saving behaviors (Wärneryd, 1999). Over their lifespan, consumers strive to smooth consumption and save for various goals. If goals are divided between short term and long term, a rational consumer would save for shorter term goals first, then longer term goals. Also, saving motives are closely related to life cycle stages. Some motives relate to certain stages more than others. Consequently, given a certain level of economic resources, we would expect consumer saving motives to be related to age and family

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composition since these two variables are most relevant to life cycle stages (Attanasio & Weber, 2010).

Saving motives have hierarchical characteristics similar to Maslow's (1943) theory of human needs, in which higher level motives emerge when lower level saving goals are achieved. Consider a lifespan simplified to three main stages: a young adult launching a career with increasing income, a middle-aged adult at mid-career with stable income and an older adult who is retired with a fixed income. Clearly, the saving motives for these three types of consumers should be different, as their needs and aspirations at their lifecycle stage would influence their reasons to save.

Saving motives may also be different between western and oriental cultures. Social psychological research indicates cultural differences exist in saving behavior related factors. For example, Chinese attend to a greater range of past information than Canadians do (Ji et al., 2009). Chinese are more risk seeking than Americans in the investment domain (Hsee & Weber, 1999). Cultural differences between Chinese and Americans have also been found for risk perceptions (Weber & Hsee, 1998). In an experiment concerning investment decisions, Chinese participants reported being influenced by the opinions of others to a greater extent than Americans did (Fong & Wyer, 2003). Americans discount probabilistic rewards more than Chinese do (Du et al., 2002). Westerners are more impulsive and inconsistent in intertemporal choice and more steeply discount delayed monetary losses as compared with Easterners (Takahashi et al., 2009). East Asians are less susceptible to focalism (predictors focusing attention narrowly on an upcoming target event) and, consequently, to the impact bias (Lam et al., 2005). East Asians are less likely than Euro-Canadians to choose an enjoyable activity over a useful one and place less weight on expected enjoyment when making hypothetical choices (Falk

et al., 2010). These findings suggest that Chinese, like other Eastern Asians, may be more likely than western people such as Americans and Canadians to save, given economic resource levels.

Keynes (1936) proposed several conceptual models of saving motives (see also Browning & Lusardi, 1996). Recent empirical studies have examined various saving motives using American data (DeVaney, et al., 2007; Xiao & Noring, 1994) and Chinese data (Yao, et al. 2011; Xiao & Fan, 2002). Use of a secondary dataset in this study constrained the types of saving motives that could be examined (saving for emergency, buying a home, buying a car or other durable goods, children's education, retirement, and wealth preservation).

Young consumers are at the start of their career and in a transition period to adulthood in which they have a relatively greater need for current consumption. Specifically, they need to save to achieve short term goals related to current consumption such as a home, a car, and other durables. Saving for short term goals is more important for Chinese consumers than consumers in developed countries since the credit market in China is emerging and loans are not as readily available as in developed countries.

Middle-aged consumers are more likely than their younger counterparts to have achieved the goals of owning a home and cars and consequently transfer their attention to longer term saving goals, such as retirement. Saving for retirement has recently become more important for the Chinese because working environments in China have transitioned to requiring workers to take more responsibility for meeting their retirement needs.

In China, the official normal retirement ages are 60 for males, 55 for female officers and 50 for female workers, although the age cutoffs for high-rank government officials may be extended. Compared with younger consumers, older consumers (61 and above) are more likely to be retired and more likely to be concerned about how to preserve their wealth for a financially

secure retirement life. As compared with younger respondents, they should be more likely to save for wealth preservation. Saving for emergency should be important for all age groups. According to the recommendation of consumer economists, all consumers should have emergency funds before saving for other goals. If consumers have multiple saving motives, Maslow's theory suggests they prioritize them and focus on the ones higher on their priority list. Older consumers may be more likely to save for emergencies since the younger groups have other competing saving motives such as saving to support children and buying a home. Older consumers may be less likely to save for children's education since they may be less likely to have dependent children at home.

It is likely that other demographic and economic characteristics covary with age. For example, a certain age group may be more or less likely to have related children at home or to have certain economic resources and concerns. The purpose of this study is to examine age differences in saving motives; the effects of other factors on saving motives are not the main focus of this study. Based on the above discussions, we propose following hypotheses.

H1: Young consumers are the most likely among all age groups to save for (H1a) purchasing a home and (H1b) a car and other durables.

H2: Middle aged consumers are the most likely among all age groups to save for retirement.

H3: Older consumers are the most likely among all age groups to save for (H3a) emergency and (H3b) wealth preservation.

H4: Older consumers are the least likely among all age groups to save for children's education.

STATISTICAL METHODOLOGY

Data

In 2008, the China Center for Financial Research at Tsinghua University designed and conducted the first Survey of Chinese Consumer Finance and Investor Education. Fifteen cities located in East, Middle, West and Northeast China were selected to represent urban areas in China. Based on the population distribution in each district in these cities, households were randomly selected from each district. Face-to-face interviews were conducted with a total of 2,095 urban households. The survey asked for information on household demographic characteristics, assets, liabilities, income, expenses, savings, investments, credit management, retirement, and estate plans. The respondent in each household was the person most knowledgeable about the household finances and who made the household financial decisions. The survey and the data are described in detail in Liao et al. (2010).

Saving Motives (Dependent Variables)

In the survey, respondents were asked to select up to three saving motives from the following list: (a) precautionary (including emergency and medical expenses), (b) retirement, (c) children's education, (d) home (purchase and decoration), (e) wealth preservation and interest income, (f) vehicle and other durable goods, and (g) other (unspecified). Respondents were not asked to rank the motives. The dependent variables in this study were dichotomous variables that indicate whether the respondent indicated a certain saving motive. Because "other" motives were unspecified, this category of motives was excluded from this study.

Independent Variable and Mediators

The independent variable used in the multivariate analysis was age of the respondent (25 or younger [reference], 25-34, 35-40, 41-50, 51-60, and 61+). The correlation between age and each of the other variables (respondent and household demographic characteristics, and household socio-economic situations, and perceptions about future medical and retirement

adequacy) was statistically significant. Therefore, the other variables served as the mediators in the statistical analysis.

The degree of concern about future medical costs had three categories: light (reference), average, and heavy. Respondents were asked to specify whether they had an employer-sponsored pension and/or an individual retirement account. Those with a pension were also asked to estimate whether the pension would be sufficient to support their retirement needs. Based on the responses of their financial respondent, households were categorized into three groups: have an adequate amount of pension (reference), have an inadequate pension but have individual retirement accounts, and do not have a pension or an individual retirement account.

Demographic variables included household type (married couples [reference], unmarried males, and unmarried females), and presence of related children (1=yes; 0=no [reference]). Financial variables included respondent employment status (salary earner [reference], self-employed, and not working), household annual income, and household net worth. Income and net worth were divided into quartiles with the lowest quartile being the reference group in the multivariate analysis.

Method of Analysis

Households that did not provide information for the variables used in the analyses were excluded from this study. As a result, the total sample size was 2,079. Univariate analyses were conducted to identify the percentage distribution of households that selected each of the saving motives. Cross-tabulations of the saving motives by household characteristics were performed to examine the percentage distribution of each of the six saving motives for different households. Chi-square tests were used to examine the significance of associations between saving motives and household characteristics.

It was likely that several factors covary with age and, therefore, take away its predictive power on reporting saving motives. A mediation analysis was conducted to test whether age elicited the probability of respondents to report certain saving motives indirectly through other factors. Since all variables were categorical and several mediation effects were tested, a mediation analysis on categorical variables (Iacobucci, 2012) was conducted to investigate the direct and indirect effect of age on the odds of reporting certain saving motives in multiple mediator models (Preacher & Hayes, 2008). The relationship between age and each saving motive was tested for statistical significance as the first step in investigating the existence of the overall effect that may be mediated by other factors. Next, the relationship between age and other factors was tested for statistical significance to identify factors that potentially mediate the effect of age on saving motives. As the next step, multiple mediators were introduced to and controlled for in the multivariate model (Preacher & Hayes, 2008). Finally, standardized z-tests (Iacobucci, 2012) were conducted to indicate whether a mediation effect existed.

RESULTS

Saving Motives by Sample Characteristics

The three most frequently reported saving motives by Chinese respondents are saving for emergency (precautionary), children's education, and retirement (Table 1). The majority of respondents reported each of the three saving motives. Approximately one-third (33.4%) of the respondents reported a motive to preserve wealth, 28.5% of the respondents reported a home purchase and decoration saving motive, and 18.4% reported a motive to save for auto and major durables.

[Insert Table 1 about here]

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Table 2 presents sample characteristics and Chi-square test results between saving motives and potentially associated factors. The majority (72.7%) of the respondents were between 25 and 50 years of age. Only 4.0% were older than 60. Most respondents did not go to college (18.6% had a less than high school education and 43.8% completed high school). Only 1.9% had a graduate degree. An overwhelming majority (77.2%) of the respondents were married. The percentage of unmarried males and unmarried females were about the same (11.1% and 11.7%, respectively). About three-fifths (59.4%) of the respondents had dependent children. Most respondents worked for others (58.4%). The majority of the respondents reported an average level of concern about future medical costs (53.3%) and felt that their retirement income from pensions was inadequate (68.9%).

[Insert Table 2 about here]

The precautionary saving motive appeared to be the most popular motive for all age groups. More than two-thirds (67.2-74.0%) of respondents that were older than 40 reported this saving motive. Among the youngest respondents, more than 56.8% did so. For respondents older than 40, the next most reported saving motive was retirement, followed by wealth preservation; whereas younger respondents favored children's education (80.4% for the 35-40 age group and 64.6% for the 25-34 age group). Children's education was the first saving priority (80.2%) for those with dependent children. The next most reported saving motive for these parents was precautionary (61.2%) and retirement (54.3%).

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The percentage of respondents who reported home as a saving motive generally decreased with age, with the percentage ranging from 43.2% for the youngest age group (<25) to 8.4% for the oldest group (>60). The same was true for the auto and major durables. The majority of respondents aged 35 or older reported retirement as a saving motive. Surprisingly, 56.6% of the oldest respondents also reported such a saving motive. As expected, older respondents appeared most likely to report a motive to save for emergencies (73.5%). In contrast, they were the least likely among all age groups to report saving for children's education, home, and auto and major durables. An overwhelming majority (80.2%) of those who had dependent children in the household chose to save for children's education.

Mediation Analysis Results

Table 3 shows the direct and indirect effects of age on respondents' odds of reporting each saving motive. After finding a significant indirect effect, there remained significant direct effects of age on five out of six saving motives. Therefore, the mediators partially mediated the effect of age on these motives: precautionary, children's education, retirement, home, and auto and major durables. However, there was no longer a significant direct effect of age on the wealth preservation saving motive. In other words, the mediators perfectly mediated the effect of age on the wealth preservation saving motive.

[Insert Table 3 about here]

Independent of their age differences in all mediators, the odds of those in older age groups (except for the 51-60 group) reporting a precautionary saving motive were as large as the reference group (younger than 25). This result was partially consistent with hypotheses 3a.

However, age difference in respondents affected their odds of reporting a precautionary saving motive through the age differences in the mediators. For example, the odds of the 25-34 and the 35-40 age groups reporting a precautionary saving motive would be 2.2 times as large as the reference group had their difference in the odds of being in the highest net worth quartile been due to their difference in age. For the 41-50 age group, this indirect effect was 1.9 times as large. The odds of those in the 51-60 age group to report a precautionary saving motive were 2.9 times as large as the reference group, independent of their age differences in all mediators. The age difference between these two groups was passed to their odds to report a precautionary saving motive via their difference in concerns about future medical cost, income and net worth. For example, the odds of the 51-60 age group to report a precautionary saving motive would be 2.4 times as large as the reference group had their difference in the odds of being heavily concerned about future medical cost been due to their difference in age.

Consistent with hypotheses 4, the 51-60 and 60+ groups were the least likely likely to report an education saving motive (odds ratios were 0.6 and 0.3, respectively), regardless of their age differences in all mediators. The age difference between these groups and the reference group also affected their odds of reporting an education saving motive through their age differences in the presence of children, household type, income and net worth. For the 25-34 and 35-40 age groups, had their difference in the odds of having related children at home been due to their age differences from the reference group, their odds of reporting an education saving motive would have been 380.7% and 44.1% higher, respectively. Their age differences also affected the odds of reporting an education saving motive via their differences in having an unmarried male respondent (odds ratio were 6.0 and 24.7, respectively) and having an unmarried female respondent (odds ratio were 14.5 and 83.7, respectively).

Partially consistent with hypotheses 2, age appeared to have a positive direct effect on the odds of reporting a retirement saving motive, except that the odds ratio of the 60+ group (1.8) was similar to that of the 35-40 group (1.9). The effect of age on reporting a retirement saving motive was mediated by other factors. For example, the odds of reporting a retirement saving motive would be, 1.5 times for the 25-34 age group, 1.3 times for the 35-40 age group, 1.4 times for the 41-50 age group and 2.0 times for the 51-60 age group, as large as the reference group had their difference in the odds of being in the second net worth quartile been due to their difference in age. For the 25-34 group, odds to report a retirement saving motive were 1.3 times as large as the reference group, had their difference in perceiving an inadequate retirement and without a retirement plan been due to their age difference. The age difference between the reference group and the three older groups (41-50, 51-60, and 60+) was also passed to their odds to report a retirement saving motive via their difference in concerns about future medical cost and their perceived retirement adequacy. For example, the odds of these three groups of reporting a retirement saving motive would be 1.7 times as large as the reference group had their difference in the odds of being heavily concerned about future medical cost been due to their difference in age.

After finding a significant indirect effect, there was no longer a significant direct effect of age on the wealth preservation saving motive. This result was inconsistent with hypotheses 3b. The effect of age was completely mediated by other factors. The indirect age effect through inadequate perceived retirement without a retirement plan on the wealth preservation saving motive was 1.5 for the 25-34 age group, 1.4 for the 35-40 group, 1.8 for the 41-50 and the 60+ groups, and 1.9 for the 51-60 group. The indirect effect of age through being in the third net

worth quartile on the wealth preservation saving motive was 1.5 for the 25-34 and the 41-50 age groups, 1.6 for the 35-40 group, and 2.1 for the 51-60 group.

Consistent with hypotheses 1a, the three oldest age groups were less likely to report a home purchase and decoration saving motive as compared with the reference group (odds ratios ranged from 0.2 to 0.6), independent of the respondents' age differences in all mediators. However, age difference in respondents affected their odds of reporting such saving motive through age differences in the perceived retirement adequacy, presence of related children, household type, income and net worth. For example, the odds of the 25-34 age group to report a home purchase and decoration saving motive would be 1.3 times as large as the reference group had their difference in the odds of perceiving an inadequate retirement and without a retirement plan been due to their difference in age. This indirect effect was 1.6 times for the three oldest age groups. The odds ratios of the middle-aged groups (35-40 and 41-50) to report a home purchase and decoration saving motive would be significantly higher (1.4 and 1.1, respectively) than the reference group, had their difference in the odds of having related children at home been due to their difference in age.

Consistent with hypotheses 1b, the three oldest age groups were less likely to report an auto and major durables saving motive as compared with the reference group (odds ratios ranged from 0.1 to 0.5), regardless of the respondents' age differences in all mediators. Concerns about future medical costs and net worth partially mediated the age effect on reporting such saving motive. The indirect effect of age through being in the highest net worth quartile was twice as likely as the reference group for the 25-34 and the 35-40 age groups, 1.7 times as likely as the reference group for the 41-50 age group, and 2.5 times as likely as the reference group for the 51-60 age group. The indirect effect of age through being heavily concerned about future

medical costs was 0.4 as likely as the reference group for the three oldest age groups and 0.5 times as likely as the reference group for the 35-40 age group.

DISCUSSION AND IMPLICATIONS

This study examined self-reported saving motives of urban Chinese consumers, using data from a national survey conducted in China in 2008. The three most frequently reported saving motives were saving for emergency, children's education, and retirement. It is interesting that these three motives are all connected to prudence, foresight, personal responsibility versus enhancing future consumption.

Mediation analysis results supported the hypotheses that 1) young consumers are the most likely among all age groups to save for purchasing a home and a car and other durables; and 2) older consumers are the least likely to save for children's education among all age groups. Results from the mediation analysis also partially supported the hypotheses that 1) middle-aged consumers are the most likely among all age groups to save for retirement; and 2) older consumers are the most likely to save for emergency. The results that different age groups save for different reasons supported Maslow's (1943) theory on hierarchical human needs. Saving motives were found to track traditional life-cycle stages in a modern economy in a hierarchical fashion. Acquisitions of the youth (home, auto and major durable goods) provide a foundation for the aged and older consumers no longer seek what the young seek.

Mediation analysis results indicated that age indirectly affected the precautionary saving motive through concerns about future medical costs, presence of related children, income, and net worth. Presence of related children, household type, income, and net worth mediated the effect of age on saving for children's education. Factors that mediated the age effect on the retirement saving motive included concerns about future medical costs, perceived retirement

adequacy, and net worth. Age also indirectly affected the motive to save for purchasing a home

through perceived retirement adequacy, presence of related children, and net worth. Concerns

about future medical costs and net worth mediated the effect of age on saving for purchasing a

car.

Implications for Theory

The main purpose of this research was to advance our understanding of saving motives of

Chinese consumers, which, to date, received little attention from social psychologists. Little is

known about why Chinese consumers save so much and how saving motives differ among

different age groups. The present research aims to make some headway in this respect.

This paper is the first to employ Chinese national survey data to investigate urban household

saving motives and their determinants. Findings from this study extend understanding of urban

Chinese household saving motives and form a basis for further study of this population. Results

from this study showed that saving motives reflect typical individual and family life-cycle needs.

Chinese saving behavior should be related to demographics and the size of age groups. As China

develops into an old-age society, emergencies and retirement would be the main drive to save.

Social psychologists interested in expanding knowledge on saving motives could conduct cross-

cultural studies to investigate whether distinct and important cultural differences exist between

those with and without Chinese heritage.

The "cushion hypothesis" (Hsee & Weber, 1999) works in the socially-collectivist culture in

China when members of the close social network are not only willing to but also able to serves as

a "cushion" in case other members "fell". Results from this study showed that the most

frequently reported saving motive for all age groups was emergencies. Rapid social-economic

changes in China, especially during the past decade, may have increased concerns about future

financial stability for most consumers and, therefore, may have financially disabled them to serve as a "cushion" for others. The one-child policy implemented since 1980s may have led to a culture shift. The view as being a financial cushion or relying on one may have changed. Social psychologists interested in expanding knowledge on saving motives could further investigate whether the rapid changes in recent Chinese economy has caused a cultural shift to a certain extent and how this shift has influenced consumer saving motives.

Implications for Policy-makers

In the mid-1990s, the Chinese government enforced a series of economic policies to transform the planned economy into a market economy. Job security decreased thereafter. The current flexible system of income distribution and employment structure has been widely accepted. The state no longer guarantees a job for college graduates and market competition has increased significantly. As a result, individual income has increased and the level of living has been improved. At the same time, however, uncertainty regarding future income and expenses has also increased. Health care and education expenses that used to be taken care of by the government or employers have now become partial responsibilities of consumers.

Results from this study showed that concerns about future medical costs and perceived retirement adequacy influenced the precautionary and retirement saving motives, which were the most reported by older consumers. As the proportion of older consumers increase in China, policies should be made to enhance sustained market stability and/or improve social programs in order to improve ability to predict future economic needs and resources and, consequently, help moderate or reduce the high consumer saving rate in the current economy.

Implications for Practice

Future research could continue to investigate the saving motives and saving behavior of Chinese consumers. Although most Chinese citizens live in rural areas, information regarding Chinese rural households was not collected in the 2008 Survey of Chinese Consumer Finance and Investor Education. It would be helpful to collect data on rural households in future studies to investigate the similarities and differences between rural and urban Chinese households, which could provide implications to researchers and Chinese policy makers.

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Table 1

Percentage Indicating Each of the Saving Motives

Saving Motive	Number of Households	Percent
Precautionary	1,336	63.8%
Education	1,258	60.0%
Retirement	1,139	54.4%
Wealth preservation	699	33.4%
Home purchase and decoration	597	28.5%
Auto and major durables	386	18.4%
Other	42	2.0%

Note. $N = 2{,}079$. Multiple responses are allowed for saving motive questions.

Table 2

Sample Characteristics and Percent Distribution of Households Selecting Each Motive (numbers in percentage)

Sample Characteristics	Total Households	Precautionary	Education	Retirement	Wealth Preservation	Home	Auto & Major Durables
Age	***	**	***	***	***	***	***
< 25	12.8	56.8	41.0	42.5	39.1	43.2	29.0
25-34	30.2	61.7	64.6	43.1	37.3	33.5	24.9
35-40	20.1	60.5	80.4	58.9	27.0	26.1	16.5
41-50	22.4	67.2	65.2	65.2	30.9	21.2	13.7
51-60	10.5	74.0	33.8	68.5	34.3	23.3	6.9
> 60	4.0	73.5	22.9	56.6	28.9	8.4	2.4
Education	***		**	***		***	***
Less than High School	18.6	67.7	53.5	51.9	30.5	20.4	9.3
High school	43.8	65.2	64.4	59.8	31.9	27.0	17.0
Bachelor or Some College	35.7	60.5	58.1	49.7	36.4	33.6	24.5
Graduate Degree	1.9	57.5	57.5	40.0	40.0	42.5	25.0
Household Type	***		***	***	**	***	***
Unmarried Male	11.1	60.0	40.0	44.8	41.3	40.4	29.1
Unmarried Female	11.7	62.3	35.7	46.3	38.9	42.2	26.6
Married Couples	77.2	64.6	66.5	57.0	31.4	24.6	15.6
Presence of Related Children	***	**	***		***	***	*
Yes	59.4	61.2	80.2	54.3	28.8	25.4	16.9
No	40.6	67.7	30.5	54.4	40.1	32.9	20.6
Employment Status	***	***	***			***	
Salary Earner	58.4	64.1	59.8	54.0	34.6	31.4	19.4
Self-employed	25.9	58.2	67.1	53.9	33.8	26.4	19.0
Not Working	15.7	72.2	48.9	56.3	28.1	20.8	14.1
Income	***	***	***			**	***
Lowest Quartile	22.5	69.4	52.1	49.8	31.2	22.2	11.8
Second Quartile	31.1	65.3	62.9	57.6	34.1	29.1	15.8
Third Quartile	26.5	63.8	66.2	52.9	32.6	32.2	22.9
Highest Quartile	20.0	55.2	56.1	56.4	35.9	29.4	24.1
Net Worth	***		*	***	*		**
Lowest Quartile	25.2	61.5	59.2	45.4	29.4	30.7	15.1
Second Quartile	29.4	64.2	61.2	57.8	31.6	29.5	16.4

Third Quartile	24.3	64.4	64.2	57.4	37.6	27.1	19.4
Highest Quartile	21.1	65.6	54.4	56.7	35.8	25.7	24.2
Concerned about Future Medical Cost	***	***	*	***	**	**	***
Light	33.5	56.2	59.5	51.7	37.1	28.9	43.9
Average	53.3	65.6	62.0	53.4	32.9	30.2	49.1
Heavy	13.3	76.1	53.3	64.9	26.1	20.3	7.1
Perceived Retirement Adequacy	***		**	***	***	*	
Adequate	31.1	63.2	58.3	56.7	37.4	31.7	17.8
Inadequate with Plans	40.2	62.6	57.4	58.6	35.9	28.4	19.5
Inadequate without Plans	28.7	66.3	65.4	45.8	25.5	25.0	17.6

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note. Sample size = 2,079

Table 3

Mediation of the Effect of Age on Each Saving Motive through Other Factors (numbers in odds ratio)

Age	Mediators	Precautionary		Education		Retirement		Wealth Preservation		Home		Auto & Major Durables	
						Direct Effect							
Age (reference category: <25)													
25-34		1.354		1.599	*	0.943		0.925		0.836		0.872	
35-40		1.276		1.666	*	1.862	**	0.677		0.709		0.611	
41-50		1.514		1.083		2.344	***	0.734		0.517	**	0.525	*
51-60		1.741	*	0.552	*	2.706	***	0.719		0.586	*	0.219	***
>60		1.639		0.343	**	1.842	*	0.596		0.194	***	0.090	**
						Indirect Effect							
Age 25-34	**Concerned about Future Medical Cost (reference category: Light)**												
	Average	0.990		1.001		1.001		1.003		0.994		1.009	
	Heavy	0.952		1.023		0.971		1.022		1.012		1.056	
	Perceived Retirement Adequacy (reference category: Adequate)												
	Inadequate with Plans	0.972		1.122		0.908		1.039		1.116		0.982	
	Inadequate without Plans	0.852		0.887		1.278	*	1.463	*	1.335	*	0.912	
	Presence of Related Children	0.800	*	4.807	***	0.938		0.674	**	0.800	*	0.794	
	Household Type (reference category: Married Couple)												
	Unmarried Male	0.920		6.009	**	1.028		0.763		0.387		0.626	
	Unmarried Female	0.807		14.508	***	0.985		0.869		0.232	*	0.629	
	Income (reference category: Lowest Quartile)												
	Second Quartile	0.932		1.105		1.086		1.001		1.102		1.040	
	Third Quartile	0.954		1.083		1.017		0.968		1.067		1.063	
	Highest Quartile	0.572	*	1.122		1.274		0.879		1.281		1.191	
	Net Worth (reference category: Lowest Quartile)												
	Second Quartile	1.155		1.081		1.461	*	1.128		0.909		1.242	
	Third Quartile	1.321		0.964		1.215		1.462	*	0.762		1.286	

	1	2	3	4	5	6
Highest Quartile	2.218 **	0.533 *	1.288	1.594	0.515 *	1.985 *

Age 35-40 **Concerned about Future Medical Cost (reference category: Light)**

	1	2	3	4	5	6
Average	1.150	0.980	0.990	0.963	1.084	0.877
Heavy	1.741 *	0.773	1.388	0.780	0.877	0.546 *

Perceived Retirement Adequacy (reference category: Adequate)

	1	2	3	4	5	6
Inadequate with Plans	0.964	1.160	0.884	1.051	1.152	0.976
Inadequate without Plans	0.878	0.907	1.221	1.363 *	1.265	0.927
Presence of Related Children	1.207 *	1.441 ***	2.010	0.783 ***	1.413 *	2.159

Household Type (reference category: Married Couple)

	1	2	3	4	5	6
Unmarried Male	0.861	24.732 **	1.050	0.617	0.183	0.432
Unmarried Female	0.702	83.696 ***	0.975	0.793	0.089 *	0.464

Income (reference category: Lowest Quartile)

	1	2	3	4	5	6
Second Quartile	0.928	1.111	1.091	1.001	1.108	1.042
Third Quartile	0.888	1.222	1.044	0.920	1.179	1.168
Highest Quartile	0.689	1.080	1.175	0.917	1.179	1.123

Net Worth (reference category: Lowest Quartile)

	1	2	3	4	5	6
Second Quartile	1.115	1.061	1.331 *	1.095	0.931	1.178
Third Quartile	1.429 *	0.954	1.284	1.629 *	0.705	1.382
Highest Quartile	2.230 **	0.531 *	1.290	1.599	0.513 *	1.994 *

Age 41-50 **Concerned about Future Medical Cost (reference category: Light)**

	1	2	3	4	5	6
Average	1.327 **	0.961	0.980	0.926	1.178	0.767 *
Heavy	2.377 **	0.669	1.669 *	0.678	0.814	0.389 **

Perceived Retirement Adequacy (reference category: Adequate)

	1	2	3	4	5	6
Inadequate with Plans	0.954	1.211	0.852	1.066	1.200	0.970
Inadequate without Plans	0.781	0.831	1.459 *	1.797 **	1.560 *	0.867
Presence of Related Children	1.078 *	1.197 ***	1.206	0.864 ***	1.118 *	1.525

Household Type (reference category: Married Couple)

	1	2	3	4	5	6
Unmarried Male	0.849	33.572 **	1.055	0.589	0.156	0.399
Unmarried Female	0.734	48.265 ***	0.978	0.816	0.121 *	0.510

Income (reference category: Lowest Quartile)

	1	2	3	4	5	6
Second Quartile	1.003	0.996	0.997	1.000	0.996	0.999

	Col1	Col2	Col3	Col4	Col5	Col6
Third Quartile	1.128	0.816	0.958	1.088	0.846	0.854
Highest Quartile	1.393	0.934	0.866	1.080	0.863	0.902
Net Worth (reference category: Lowest Quartile)						
Second Quartile	1.131	1.069	1.383 *	1.108	0.922	1.204
Third Quartile	1.372 *	0.959	1.248	1.540 *	0.734	1.331
Highest Quartile	1.902 **	0.602 *	1.227	1.457	0.586 *	1.739 *
Concerned about Future Medical Cost (reference category: Light)						
Average	1.168	0.978	0.989	0.959	1.094	0.865
Heavy	2.394 **	0.667	1.676 *	0.676	0.813	0.386 *
Perceived Retirement Adequacy (reference category: Adequate)						
Inadequate with Plans	0.939	1.294	0.806	1.089	1.278	0.959
Inadequate without Plans	0.767	0.819	1.499 *	1.875 **	1.611 *	0.858
Presence of Related Children	1.001	1.119 *	1.187	0.946 *	0.741	0.868
Household Type (reference category: Married Couple)						
Unmarried Male	0.825	62.800 **	1.065	0.536	0.112	0.339
Unmarried Female	0.742	41.839 ***	0.979	0.823	0.130 *	0.523
Income (reference category: Lowest Quartile)						
Second Quartile	1.044	0.942	0.951	0.999	0.943	0.977
Third Quartile	1.266	0.673 *	0.919	1.179	0.722	0.735
Highest Quartile	1.699 *	0.896	0.795	1.130	0.791	0.848
Net Worth (reference category: Lowest Quartile)						
Second Quartile	1.299	1.152	1.988 **	1.244	0.841	1.482
Third Quartile	1.730 *	0.93	1.468	2.115 **	0.585	1.642
Highest Quartile	2.873 **	0.435 *	1.398	1.854	0.416 *	2.480 *
Concerned about Future Medical Cost (reference category: Light)						
Average	0.942	1.008	1.004	1.016	0.966	1.057
Heavy	2.467 **	0.658	1.706 *	0.667	0.807	0.373 *
Perceived Retirement Adequacy (reference category: Adequate)						
Inadequate with Plans	0.941	1.283	0.812	1.086	1.268	0.961
Inadequate without Plans	0.775	0.826	1.475 *	1.828 *	1.581 *	0.863
Presence of Related Children	0.983	1.457 *	1.006	0.945	0.819	0.906

Age 51-60 (spanning from Concerned about Future Medical Cost through first set)

Age >60 (spanning from second Concerned about Future Medical Cost through Presence of Related Children)

Household Type (reference category: Married Couple)

Unmarried Male	0.883	14.394 **	1.042	0.669	0.244	0.498
Unmarried Female	0.776	23.722 **	0.982	0.847	0.178 *	0.577

Income (reference category: Lowest Quartile)

Second Quartile	1.390	0.629	0.681	0.995	0.637	0.834
Third Quartile	1.874	0.348 *	0.799	1.552	0.420 *	0.441
Highest Quartile	4.327 **	0.739	0.530	1.404	0.523	0.633

Net Worth (reference category: Lowest Quartile)

Second Quartile	1.125	1.066	1.363	1.103	0.925	1.194
Third Quartile	1.165	0.980	1.113	1.232	0.861	1.148
Highest Quartile	0.936	1.053	0.979	0.962	1.056	0.945

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note. Sample size = 2,079