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Household Savings in Korea:

Effects of Socio-Economic Environments and Savings Motive

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ABSTRACT

Using the 1998 Korean Household Panel Study (KHPS), this study examines the factors that impact the household savings rate in Korea. About 69% of households save, and, on average, they save about 24% of their household income. The savings rate is related positively to household income and the number of earners in the household. The relationship between the savings rate and the age of household head is bimodal with high rates of saving among those young and old household heads and lower rates of saving among middle-aged household heads. The savings rate is higher for households saving for children or retirement than those saving for emergencies or as a precautionary measure. Policy implications are discussed based upon the findings of this study.

Introduction

In 1996, Koreans on average saved about 22.8% of their incomes (The Bank of Korea, 1997). In 1997, when only the households with an employed head and those living in urban areas were included in the study, the savings rate was much higher at 29.6% (Korea National Statistical Office, 1997). As the life cycle income hypothesis suggests (Ando & Modigliani, 1963), individuals save a portion of their income to smooth out their current and future spending with one's income, which varies across one's lifetime. Individuals have different motives for saving. According to a report from the Korea National Statistical Office (1999), about 73% of Korean households are savers. Motives for saving among savers include preparing for retirement (30.2%), education for children (18.8%), buying a home (17.6%), precautionary reasons (14.1%), marriage and funeral (9.4%), and other (9.9%).

Compared to the savings rate of the United States, which was 4.1% in 1994 (U.S. Department of Commerce, 1995), Korean households have a much higher savings rate. The higher savings rate in Korea may reflect the social and financial environment in Korean society. Most Korean households use private saving vehicles to prepare for their own retirement because pension plans

provided by the government have been available only in very recent years, and employer provided pension plans are not available for all workers. Companies provide pension benefits to a limited number of workers upon retirement.

Most Korean parents pay college tuition for their children from their private savings. Part-time work is not popular among college students in Korea, and college loans are not widely available. Moreover, most parents pay for private tutoring for specific subjects such as English and math for their children before their children go to college. Paying for graduate education, obtained in Korea or outside Korea, also is the responsibility of Korean parents.

In the housing market, since monthly rentals are scarce in Korea (*wolsei*), people often rent homes with about one-third to one-half of the home value as a deposit for a fixed time (*cheonsei*). Thus, even renting a home requires a significant amount of savings. Furthermore, pay-back periods for home mortgage loans are relatively short in Korea so households tend to save money to buy a home rather than obtain a mortgage to buy a home. Relative to housing, parents often help their adult children purchase a home after marriage. Due to these unique social and financial situations, Korean households are highly motivated to save.

Research about the household savings rate in Korea is scarce, and existing studies are exploratory in nature. Previous studies (e.g. Johnson, 1999, see Johnson to see more in detail information) tried to explain the different saving pattern by identifying the different cultural background. However, the different saving pattern may be more closely associated with different social and financial related situation than cultural background of certain ethnic group. The social and financial related situation can lead different motives for saving, and the impact of different motives for saving on saving behavior has not been fully investigated in previous research. This study was designed to fill this gap in the literature and to enhance our understanding of saving behavior among Korean households. This study has two specific objectives: (a) to examine the characteristics of savers among Korean households; and (b) to identify the factors influencing the household savings rate in Korea. A model is developed by incorporating the life cycle income hypothesis, previous research, and information about saving motives. Including saving motive as an independent variable is intended to reflect the financial environment in Korea and household preferences regarding saving behaviors.

Literature Review

Economic Theory

The life cycle income hypothesis (Ando & Modigliani, 1963) and the permanent income hypothesis (Friedman, 1957) suggest that one's savings level is determined by one's current disposable income and anticipated future income. Individuals strive to maintain a constant consumption level throughout their lifetimes. Therefore, they borrow and save less in the early stages of their life cycle, and they save more when their incomes increase with their age.

Therefore, household saving increases to a certain point and decreases with age as illustrated by Deaton (1992). Deaton explained the relationship between saving and growth from a macro economics perspective. Both hypotheses imply that the savings rate and the savings amount increase with income, especially among individuals who perceive that changes in their incomes are likely to be short-term (i.e., transitory).

Empirical studies tried to support the life-cycle saving-consumption hypothesis. Bernheim, Skinner, and Weinberg (1997) included the time preference rate, risk tolerance, exposure to uncertainty, relative tastes relative tastes for work and leisure at advanced ages, income replacement rates, and age variables in the economic model. Enge, Gale, and Uccelo (1999) included mortality risk, retirement age, age-earning profiles, earning shocks, income and payroll taxes, after-tax real rate of return, coefficient of relative risk aversion, replacement rates of social security and defined benefit pensions, and time preference rate in the life-cycle economic model. Age and income related variables showed a consistent result suggested by a life-cycle hypothesis.

Contributing Factors to Saving Behavior

Previous studies on household savings behavior can be summarized by three categories according to the data set used, the definition of savings, and the methodology employed. First, previous studies on savings used micro data or macro data depending on the purpose of study. Some studies employed micro data used cross sectional data, and some of them used panel data. Second, the definitions of savings are varied across the studies, but can be categorized either of two definitions of savings: income minus consumption or first differences of wealth. Some studies defined the saving as the income minus consumption. Some studies used the accumulated wealth as a definition of saving. Third, the methodology employed in previous studies is related to the definition of saving and the data set employed. Some studies used panel analysis to investigate the change in saving behavior. Some of these studies analyzed the behavior of cohort and compared the different two cohorts. Some studies showed a simulation result rather than explaining the determinants of savings.

Previous studies employed the life cycle income hypothesis focused on the variables such as age, income, wealth, education, and household composition to examine the saving behavior of households. Some studies included saving motives to explain the saving behavior more specifically, such as the savings amount needed and the time horizon for saving the needed amount.

Many studies found a positive relationship between savings and age (e.g., Chang, 1994; Johnson & Widdows, 1985). Saving increases as age increases until the retirement. So previous studies referred it as hump shaped age-saving profiles. Therefore, some previous studies regarded the age structure of the population is the critical variables to consider in a life cycle model, and they analyzed cohort effect in the empirical analysis (e.g. Attanasio, 1998).

Another important factor is income. Using the 1983-1986 panels of the Survey of Consumer Finances, Chang (1994) studied household savings, which is defined as the change in real net non-housing assets. Higher initial income was associated with higher savings. Avery and Kennickell (1991) found that an overwhelming proportion of total saving was due to the top income decile of families. The same finding was reproduced in Bosworth, Burtless, and Sabelhaus (1991). They find that saving was usually negative for the first and second income quintile and highest in the top quintile. Browning and Lusardi (1996) explained this inconsistent result with two possible reasons. First some of the observed correlation between income and saving was attributable to measurement error in income if saving was defined as income and minus consumption. Second, any consumption smoothing story would give a positive correlation between current and saving because transitory income shocks would lead to higher current income and to more saving. Davis and Schumm (1987) found a strong relationship between family income and saving behavior. Family income was positively related to the savings of families with high income, but no significant relationship was found between income and savings among low-income families.

Browning and Lusardi (1996) suggested that the education was an important variable when researcher can check out the cross section variation in income variable. Lewis (1996) analyzed the 1983-1986 panels of the Survey of Consumer Finances to study household savings, and defined saving as the change in real net worth. Education level was significantly related to the level of savings (Hefferan, 1982). It also had a positive impact on total savings (Davis & Schumm, 1987; Xiao & Maloutu, 1994; Xiao, 1994). Both average and marginal propensities to save tended to rise with the education level of the respondent (Chang, 1994; Solmon, 1975). The distribution of saving across education groups also shows a distinct pattern of higher saving for higher education groups (Avery and Kennickell 1991, Attanasio 1993).

Previous studies used household net worth, which includes housing equity, to explain the saving behavior of households. Xiao and Maloutu (1994) found positive relationships between net worth and the likelihood of being a saver, and between net worth and the total amount of saving. The saving was typically higher for homeowners and among those who hold stocks and bonds (Bosworth, Burtless, and Sabelhaus 1991, Avery and Kennickell 1991).

In the studies of Chang (1994) and Lewis (1996), a negative relationship between the initial net worth and change in real net assets was found. Based upon these studies, the present study uses home ownership as an independent variable to examine the relationship between financial status and savings rate.

Job status may have an effect on the savings rate. As suggested in the permanent income hypothesis, income stability influences savings rate. This study included job status in the empirical model. The number of earners positively impacted the savings rate. Marital status (DeVaney, Su, Kratzer, & Sharpe) and region (Xiao & Malroutu, 1994) also were found to be related to savings rate. Ewing and Payne (1998) investigated the relationship between

personal savings rate and consumer sentiment. Job status positively impacted saving behavior. They explained that stable employment tends to provide individuals with stable incomes throughout different stages in their life. Stable income thus leads to higher levels of savings.

From the Health and Retirement Survey (HRS), Engen, Gale, and Uccello (1999) found the positive relationship between the college degrees, self-employed, having pension coverage, and received a large inheritance and

Saving Motives and Savings

Two savings motives were most frequently investigated in the previous studies: retirement motives and precautionary motives. A few studies focused on the savings motives for education separately (Souleles, 2000). Why savings motives are considered in the empirical studies. Retirement motives (education), precautionary motives A positive relationship between saving motives and savings rate was found in many studies (Kennicke, Starr-McCluer, & Sunden, 1997; Xiao & Malroutu, 1994; Xiao & Noring, 1994). Some studies focused on a specific saving motive such as saving for retirement and saving for one's children's college (DeVaney, Su, Kratzer, & Sharpe, 1997; Hanna & Chen, 1996; Lee, Hanna, & Siregar, 1997) to estimate the savings amount needed and examined the factors that explained those saving motives. Households saving for retirement had a higher savings rate than those with other motives.

Data and Descriptive Analysis

Unlike previous studies employed life-cycle saving-consumption Hypothesis, this study investigates the households savings rate using one-period of micro cross-sectional data. So this study does not need to set the model to explain two period or time-series saving-consumption behavior.

Data and Sample

Data used in this study are from the 1998 Korean Household Panel Study (KHPS) which was conducted by Daewoo Economic Research Institute. The 1998 KHPS interviewed 2,468 households (household data) and 5,875 household members (individual data), and it included information about demographic characteristics, family income, savings rate, and saving motives. Because the purpose of this study is to examine the factors that impact household savings rate, household data are used. A sample with a total of 2,345 households was used for this study after deleting the missing cases. Among the total sample of 2,345 households, about 69.3% of households had a positive household savings rate.

Variables and Hypotheses

Dependent variable. The 1998 KHPS includes the question, “How much does your household save from your household income on a monthly basis?” The households reported the actual amount that they saved each month on average. The dependent variable, household savings rate, is obtained by dividing the amount of total monthly household saving by the total monthly household income. Among 2,345 households, 69.3% saved. The average savings rate of the total sample was 16.33% for the total sample, but among savers, the savings rate was 23.58%.

Independent variables. The selection of independent variables is guided by previous research. Independent variables include life cycle stage (i.e., age, age², and number of children under age 18), financial (i.e., family income, home ownership, number of earners, and saving motive), employment-related (i.e., job status), and socio-demographic factors (i.e., educational attainment of household head, gender and marital status of household head, and region). Table 1 summarizes the description of all variables.

Age was a continuous variable and measured the age of the household head in years. Age squared also is included to capture the possible non-linearity of the relationship between age and saving behavior. The number of children under age 18 was a continuous variable reflecting the consumption needs of children. The savings rate is expected to be high for those who are young, those who are old, and those with relatively few children.

Family income was a continuous variable measured by the total monthly household income. Number of earners was a continuous variable, which reflects the earning potential of households. Homeownership was measured using four dummy variables: own one's home, rent with required deposit, rent with monthly rental fee, and others. The saving motives are measured using five dummy variables: saving for precautionary reasons, saving for children (i.e., education, marriage, and inheritance), saving for retirement, saving to buy something (i.e., home, car, furniture, and durable goods), and no response. It is expected that households with higher incomes, those living in rental homes, and those saving for retirement and children are likely to have a higher savings rate than their counterparts.

The job status of the household head was measured using four dummy variables: regular worker, self-employed, contingent worker, and not paid or no work. Both regular workers and contingent workers work for others. The differences between these two groups are: (a) being compensated, and (b) stability of the job. Regular workers have full benefits from the employer, but contingent workers do not have benefits.

Education was measured using four dummy variables: less than high school, high school graduate, some college, and college or more than college. Region was measured using a dichotomous variable and was coded 1 if living in Seoul and 0 if living in other areas. The gender variable was dichotomous and was coded 1 if female and 0 if male. The marital status of the household head was measured using three dummy variables: married, never married, and

single (i.e., divorced, separated, or widowed). The savings rate is hypothesized to be high among household heads with higher education, those living in Seoul, those headed by males, and those who are married.

Sample Characteristics

Frequencies and means were computed for the total sample and for those who had a positive household savings rate. T-tests were used to examine whether significant differences existed between the mean values of the continuous variables between saving households and not-saving households. Chi-squared tests were performed to test the differences for the categorical variables between savers and not-savers.

Table 2 summarizes descriptive statistics of the total sample, and dichotomized sample of savers and not-savers. The average age of the household head was 49, and about 42% had at least a high school education. About 25% lived in Seoul, and about 12% of the household heads were female. The majority of household heads were married (85%) and home-owners (70%). About 21% of household heads were not paid workers or not working, and about 40% were self-employed. The average number of earners in a household was 1.3, and the sample households included one child on average.

The average monthly household income was 1,726,366 won (approximately equivalent to \$1,720) which is a little bit higher than the average monthly family income reported by the 1998 Korea Labor and Income Panel Study (KLIPS), which is 1,570,000 won. About 52% of the household heads did not respond to the question about the saving motive. Among those who responded to the question, about 16% reported a precautionary saving motive, followed by retirement (14.5%) and children (11.1%).

The test statistics of mean differences between savers and not-savers were presented in the last column of Table 2. Among the 2,345 households, 1,624 households were savers and 721 households were not-savers. There were significant differences between savers and not-savers for all the independent variables used in this study: age, number of children under age 18, household income, number of earners, home ownership, job status, education, living in Seoul, female head, marital status.

More households with younger, married, regularly working, and more educated household head were saved while more female headed households and households headed by single marital status were not saved. More households with children under age 18 at home were saved than those without children under age 18. More households with owned a home were saved than household with a rented home. More households lived in Seoul were saved than those lived in other than Seoul. Households with positive savings rate have more earners in a household than households without positive savings rate. Households with positive savings rate have more than twice total household income (about 2,098,000 won) than households without a positive savings rate (about 889,300 won).

Characteristics of Households with a Positive Savings Rate

Table 3 presents the proportion of saving households and savings rate of households with a positive savings rate by each categorized group of characteristics. Compared to Table 2, Table 3 provided different information in categorical variables because of different way of calculation. For example, households with owned a home were saved than households with a rented home in both savers group and not-savers group. But in Tables 3, the proportion of savers was larger among the households with a rented home than it was among the household with owned a home.

On average, about 69.3% households are savers and they save about 23.58% of their monthly income each month. The proportion of savers was 85.8% among the households headed by ages of 30 and 40 while it is 40.3% among the households headed by ages of 60 or over 60. The pattern of average savings rate had a little bit different feature. Contrast to the proportion of savers, the households headed by those ages 60 or older than 60 saved a little bit more portion of their income than age groups of 40 and 50, or ages of 50 and 60. The households headed by those younger than age 30 saved the largest portion of their incomes (29.18%), and the households headed by ages of 30 and 40 was the next largest saving group (24.96%). The average savings rates of these two groups were above the average savings rate of the total sample. These findings reflect the consumption needs among needs among the households headed by middle-aged individuals. They are likely to have school-aged children, and their educational expenses may be high so savings will be less. The savings rates in terms of the number of children in the household also show similar patterns. The savings rate decreases as the number of children in the household increases: 22.49% of income is saved among those with one child and 17.87% of income is saved among those with four children. The proportion of savers is lowest among the households without children under age 18 (52.2%), but they saved the largest portion of their incomes (24.91%).

The patterns of proportion of savers and savings rate are similar in the household income. Both proportion of savers and savings rate increase with the level of household incomes. The household savings rate is higher for households with higher incomes: 22.14% of income is saved among households with incomes of less than 100,000 won, and 30.42% of income is saved among households with incomes of more than 500,000 won. The proportion of saver is lowest among the households with less than 100,000 won households income (29.1%). This proportion is dramatically lower than those of other income groups (80.1% to 94.1%). This implies that the households with household income less than 100,000 won also would be in the inadequate income in the late of their life-cycle. This situation is closely connected with the number of earners in the households. The proportion of savers is 15.8% among the households with no earners, which is dramatically lower proportion than the households with at least one earner (68.8% to 89.1%). The household savings rate is the highest among the households with three earners (25.86%).

Households living in a rental home with a deposit have a higher

savings rate (26.48%) than home owners (22.51%) or those living in a rental home with a monthly rental fee (24.10%). Among those who responded to the saving motive question, those who save to buy major expense items have the highest savings rate (28.62%).

The proportion of savers is 90.3% among the households headed by regular workers while it is 12.4% among the households heads who are not (paid) working. Compared to this dramatically big difference in the proportion savers, savings rates of the households with a positive saving are similar across different job status. The households headed by contingent workers saved the largest portion of their incomes (24.69%). Contingent workers may have saved more because they may feel uncertain about their jobs and the future. The proportion of savers is 50.5% among the households headed by those with less than high school education while the proportion of savers is 88.7% among the households headed by those with some college education. Households with household heads with some college saved the largest portion of their incomes (25.26%). Households headed by those with less than high school education had the lowest savings rate (22.42%). Households residing in Seoul have a higher savings rate (29%) compared to the average savings rate (23.56%).

The proportion of savers is 73.9% among the households headed those who married while that is 39.8% among the households with divorced, separated, or widowed household heads. Households with divorced, separated, or widowed household heads (21.45%) save less of their income than household heads who were married (23.56%), and households with heads of household who had never been married have the highest savings rate (32.84%).

Empirical Analysis

To examine the factors contributing to household savings rate, a Tobit analysis was performed. A tobit analysis commonly is used when the dependent variable is censored. About 30.7% of households reported having no household savings. The use of linear functions, such as OLS, leads to biased and inconsistent estimates of the coefficients in this type of situation (Greene, 1994). Since the coefficient from the tobit analysis does not provide information of the magnitude of change in dependent variable by each independent variable, this study performs a marginal probability analysis to provide information on the amount of change of the savings rate in each unit of change.

Factors Contributing to Household Savings Rate

The result of a Tobit regression analysis and marginal probability are presented in Table 4. Significant relationships were found between household savings rate and the following variables: age, age², household income, number of earners, saving for children and retirement, having a college education or more than college education, living in Seoul, and being single. The marginal probabilities show a statistically significant result in those variables.

Age and age squared significantly impacted the household savings rate.

Age had a negative effect on the household savings rate, and age squared had a positive effect on the household savings rate, indicating a bimodal curve. When age increases, the household savings rate decreases until a certain point, then the savings rate increases with age. According to the life cycle income hypothesis, income increases with age until a certain point and then decreases. Individuals strive to smooth out their consumption by saving or borrowing money from the future. Therefore, the savings rate may be in the shape of a bimodal curve. In this context, this finding supports the life cycle income hypothesis: the savings rate is higher in earlier stages and decreases while households raise children, and the savings rate increases again when children leave the household and establish households of their own. When age increases by 10 years, the savings rate decrease by 10.

The number of children under age 18 significantly and negatively impacted the household savings rate. When the number of children increases, the household savings rate decreases. This result implies that the number of children increases household expenses. The cost of private education for each child may be an especially large financial burden for Korean households. When households have one more child, the savings rate decreases by 8.8%.

Household income was significantly and positively related to household savings rate, with a higher household income being related to a higher savings rate, holding other factors constant. The number of earners had a significant and positive effect on the household savings rate. Households with more earners have a higher income per individual household member that leads to a higher household savings rate.

Households living in rental homes requiring a deposit had a higher household savings rate than households that owned their own homes, holding other variables constant. When households have one more earner, household savings rate increases by 3.5. Households living in a rental home requiring a deposit do not pay monthly rent, and they usually plan to buy their own home later. They are more likely to save to buy a home later, which in turn leads to a higher savings rate.

Households saving for children and retirement had a higher household savings rate than those saving for precautionary reasons. Households who did not respond to the saving motive question or reported other motive had a lower household savings rate than households saving for precautionary reasons. This finding confirms that Korean families prepare for their retirement and their children's education through their savings. Korean parents may save to pay for the expenses related to their children's marriage, or they may want to leave money for their children when they die.

Households with heads who have college degrees had a lower household savings rate than households headed by high school graduates. In general, workers with college education have higher wages and their wages decrease much later in life compared to workers who are high school graduates. The expectation that they will have higher wages later in life may influence the saving behavior of college graduates, with lower savings for their retirement,

children, and other goals than households headed by high school graduates.

Households living in Seoul had a higher household savings rate than others, holding other factors constant. Seoul is a large city, and there are many banks and financial institutions in Seoul. Individuals living in Seoul are more likely to have access to various financial services than those residing in other areas. Accessibility of information and financial institutions may have contributed to a higher savings rate among households residing in Seoul. Alternatively, this finding may reflect wage differences among the regions. Average wages in Seoul are higher on other areas.

The household savings rate of households headed by single individuals was lower than the household savings rate of households headed by married individuals. This finding may reflect the lower household incomes of the households headed by single individuals.

Summary and Conclusions

What are different points between the U.S. results and Korean results? This study examined factors that impact the savings rate of Korean households. About 69% of the households had positive savings rates, and they saved about 24% of their household incomes each month. Household income, age squared, living in Seoul, number of earners, living in a rental home requiring a deposit, and saving for children and retirement are related positively to savings rate. Two variables are associated negatively with household savings: having a relatively large number of children and being headed by single individuals.

This study supported the life cycle income hypothesis and permanent income hypothesis with statistically significant effects of age, age², and household income. The effects of age suggest that young households need to be encouraged to save as much as they can to prepare for later in life when the expenses of their children are high. Households headed by college graduates have a lower savings rate than those headed by high school graduates. In general, individuals with college education tend to have stable employment and higher earnings as they gain more experience in the labor market. However, even college graduates are not immune to job loss in Korea's unstable economy. The importance of saving should be emphasized for all households, especially those headed by college graduates.

This study confirms the role of saving motive in explaining the savings rate. Households saving for children or retirement had a higher savings rate than households saving for precautionary reasons (i.e., emergency). Saving for retirement is the most frequently mentioned saving motive in the U. S. and other countries. However, the positive and significant relationship between one saving motive (i.e., saving for children) and savings rate may reflect the different social, cultural, and financial situations faced by Korean households. Korean parents often are expected to support their children beyond a college education. Children's weddings are very costly. Helping married children buy a home is also part of the Korean parent's responsibility. To meet social and

children's expectations, parents save for the future for their children. Parents also hope that their children will be able to take care of them when they need assistance during the later stage of their lives.

The findings of this study enhance our understanding of the changing patterns of saving behavior among Korean households. The recent economic success in Korea influenced consumption patterns of Korean households, which, in turn, affect saving behavior. This study is the first glimpse of saving behavior using national household data. Financial educators, financial counselors and planners, and policy makers can use the information generated from this study. Future research in this area will benefit from using panel data to explain saving behavior over time.

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Table 1
Measurement of Variables

Variables	Measurements
<i>Dependent Variable</i>	
Household savings rate	Continuous variable Rate of total household savings to total household income (%)
<i>Independent Variables</i>	
<u>Continuous variables</u>	
Age	Age of the household head in years
# of children under age 18	Number of children in a household
Household Income	Total household income (unit: 10,000 won/month)
Number of earners	Number of earners in a household
<u>Categorical variables</u>	
Home ownership	
Home owner	1 if home owned, 0 otherwise
Rent with deposit only	1 if rented house with deposit only, 0 otherwise
Rent with rental fee	1 if rented house with monthly rental fee, 0 otherwise
Others	1 if others, 0 otherwise
Saving motives	
Precautionary	1 if precautionary, 0 otherwise
Children	1 if child education, child marriage, inheritance, 0 otherwise
Retirement	1 if retirement income, 0 otherwise
Buying	1 if buy car, furniture, durable goods, 0 otherwise
Others or no response	1 if no response or others, 0 otherwise
Job status	
Regular worker	1 if work for others & regular worker, 0 otherwise
Self-employed	1 if self-employed, 0 otherwise
Contingent worker	1 if work for others & contingent (non-regular) worker, 0 otherwise
Not paid work or no work	1 if not paid work or no work, 0 otherwise
Education	
Less than high school	1 if less than high school, 0 otherwise
High School graduate	1 if high school graduate, 0 otherwise
Some college	1 if some college, 0 otherwise
College & more college	1 if college or more than college, 0 otherwise
Seoul	1 if living in Seoul, 0 otherwise
Female head	1 if female household head, 0 otherwise
Marital Status	
Married	1 if married, 0 otherwise
Never married	1 if never married, 0 otherwise
Single	1 if single (divorced, separated, widowed), 0 otherwise

Data: 1998 Korean Household Panel Study (KHPS)

Table 2
Sample Statistics for Total Sample and Two Subgroups of Saving Households
and Not-saving Households

Variables	Total (N=2,345)		Saving Household (N=1,624)		Not-saving Household (N=721)		Test Statistics for saver vs. not-saver ²
	Mean	S.D.	Mean	S.D.	Mean	S.D.	T-test
<i>Dependent Variable</i>							
Household savings rate	16.33	17.00	23.5	15.68	NA	NA	NA
<i>Independent variables</i>							
<u>Continuous</u>							
Age	49.30	12.92	46.02	11.59	56.69	12.72	19.27***
# of children under age 18	1.07	1.04	1.26	1.00	0.63	0.98	-14.10***
Household income ¹	172.64	137.20	209.80	140.86	88.93	80.15	-26.30***
Number of earners	1.33	0.77	1.49	0.73	0.96	0.72	-16.29***
<u>Categorical</u>							
	Freq.	%	Freq.	%	Freq.	%	Chi-squared
<u>Home ownership</u>							
Home owner	1,639	69.9	1,092	67.2	547	75.9	30.08***
Rent with deposit only	531	22.6	418	25.7	113	15.7	
Rent with rental fee	109	4.7	68	4.2	41	5.7	
Others	66	2.8	46	2.8	20	2.8	
<u>Saving motives</u>							
Precautionary	366	15.6	362	22.3	4	0.6	899.96***
Children	261	11.0	259	15.9	2	0.3	
Retirement	340	14.5	337	20.8	3	0.4	
Buying	158	6.8	156	9.6	2	0.3	
Others or no response	1,220	52.0	510	31.4	710	98.5	
<u>Job status</u>							
Regular worker	754	32.2	681	41.9	73	10.1	351.02***
Self-employed	922	39.3	632	38.9	290	40.2	
Contingent worker	176	7.5	111	6.8	65	9.0	
Not paid work/no work	493	21.0	200	12.3	293	40.6	
<u>Education</u>							
Less than high school	1,001	42.7	505	31.1	496	68.8	293.45***
High school graduate	832	35.5	680	41.9	152	21.1	
Some college	168	7.2	149	9.2	19	2.6	
College & more college	344	14.6	290	17.9	54	7.5	
<u>Living in Seoul</u>							
Yes	540	23.0	402	24.8	138	19.1	8.88**
No	1,805	77.0	1,222	75.2	583	80.9	
<u>Female head</u>							
Yes	282	12.0	117	7.2	165	22.9	116.05***
No	2,063	88.0	1,507	92.8	556	77.1	
<u>Marital status</u>							
Married	1,994	85.0	1,473	90.7	521	72.3	144.45***
Never married	47	2.0	30	1.8	17	2.4	
Single	304	13.0	121	7.5	183	25.4	

Note: ¹ Unit: 10,000 won/month

² T-test for continuous variables, and chi-squared test for categorical variables.

p<.01., *p<.001.

Data: 1998 Korean Household Panel Study (KHPS)

Table 3
Characteristics of Saving Households and Savings Rate of Households with a Positive Savings Rate

Variables	Non-saving Household (N=721)	Saving Household (N=1,624)		
	Percent	Percent	Mean	S.D.
Overall savings rate	30.7	69.3	23.58	15.68
<i>Life-cycle stage :</i>				
<i>Age:</i>				
Less than 30	20.0	80.0	29.18	15.66
30<=age<40	14.2	85.8	24.96	15.77
40<=age<50	18.6	81.4	22.51	14.77
50<=age<60	28.8	71.2	22.59	15.49
age=>60	59.7	40.3	22.60	16.99
<i># of children under age 18:</i>				
0	47.8	52.2	24.91	16.68
1	21.6	78.4	22.49	14.43
2	15.4	84.6	23.91	15.72
3	21.9	78.1	18.39	12.58
4 and more	44.4	55.6	17.87	12.15
<i>Financial:</i>				
<i>Household income (unit: 10,000 won)</i>				
Less than 100	70.9	29.1	22.14	17.61
100<=income<200	19.9	80.1	22.02	14.96
200<=income<300	10.8	89.2	23.61	14.36
300<=income<500	5.9	94.1	27.69	16.94
income=>500	6.0	94.0	30.42	18.14
<i>Number of earners:</i>				
0	84.2	15.8	19.80	17.42
1	31.2	68.8	22.82	15.86
2	17.1	82.9	24.72	15.53
3	10.9	89.1	25.86	14.96
4 and more	11.8	88.2	22.61	11.11
<i>Home ownership:</i>				
Home owner	33.4	66.6	22.51	15.09
Rent with deposit only	21.3	78.7	26.48	16.45
Rent with monthly rental fee	37.6	62.4	24.10	17.62
Others	30.3	69.7	21.87	16.53
<i>Saving motives:</i>				
Precautionary	1.1	98.9	21.71	15.33
Children	0.8	99.2	26.18	14.89
Retirement	0.9	99.1	26.64	16.22
Buying	1.3	98.7	28.62	15.45
Others or no response	58.2	41.8	20.01	15.05
<i>Employment-related:</i>				
<i>Job status:</i>				
Regular worker	9.7	90.3	23.51	14.31
Self-employed	31.5	68.5	23.91	16.56

Contingent worker	36.9	63.1	24.69	17.78
Not paid work or no work	59.4	40.6	22.13	16.12
<i>Socio-demographic:</i>				
Education:				
Less than high school	49.5	50.5	22.42	16.35
High school graduate	18.3	81.7	23.63	15.52
Some college	11.3	88.7	25.26	15.14
College and more than college	15.7	84.3	24.59	15.06
Living in Seoul				
Yes	25.6	74.4	29.00	16.73
No	32.3	67.7	21.79	14.91
Female head				
Yes	58.5	41.5	24.34	16.25
No	27.0	73.0	23.52	15.64
Marital status:				
Married	26.1	73.9	23.56	15.66
Never married	36.2	63.8	32.84	17.08
Single	60.2	39.8	21.45	14.87

Data: 1998 Korean Household Panel Study (KHPS)

Table 4
Contributing Factors to Household Savings Rate: Tobit Estimates and Marginal probability (N=2,345)

Variable	Tobit estimation		Marginal probability	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
<i>Life-cycle stage:</i>				
Age/10	-10.4652 ***	3.0597	-7.6442 ***	2.2371
Age ² /10	8.9211 **	3.0747	6.5164 **	2.2479
Number of children	-8.8451 +	0.4785	-6.1728 +	0.3497
<i>Financial:</i>				
Family income (log value)	8.3047 ***	0.7164	6.0661 ***	0.5164
Homeownership (home owned)				
Rent with deposit only	1.8243 +	1.0669	1.3325 +	0.7794
Rent with monthly rental fee	0.0436	2.0127	0.0319	1.4702
Others	2.0474	2.4801	1.4955	1.8115
Number of earners	3.5410 ***	0.6164	2.5865 ***	0.4500
Saving motives (precautionary)				
Children	3.2757 *	1.4698	2.3927 *	1.0745
Retirement	3.9319 **	1.3645	2.8720 **	0.9977
Buying	2.8081	1.7700	2.0512	1.2937
Others or no response	-17.1777 ***	1.1705	-12.5474 ***	0.8485
<i>Employment-related:</i>				
Job status (regular worker)				
Self-employed	0.7797	1.0020	0.5695	0.7320
Contingent worker	2.7365	1.7138	1.9989	1.2518
Not paid work or no work	1.6440	1.4768	0.2008	1.0789
<i>Socio-demographic:</i>				
Education (high school graduate)				
Less than high school	-0.7517	1.1254	-0.5490	0.8221
Some college	0.0686	1.5795	0.0501	1.1537
College or more than college	-2.6463 *	1.2246	-1.9330 *	0.8942
Living in Seoul	4.9999 ***	0.9713	3.6522 ***	0.7107
Female head	3.5770	2.2205	2.6128	1.6222
Marital status (married)				
Never married	-2.8703	3.2039	-2.0966	2.3401
Single	-5.0459 *	2.1740	-3.6857 *	1.5875
Constant	1.5904	7.7377	1.1617	5.6536
Sigma	17.8813 ***	0.3275	NA	
Log-likelihood	-7393.155		NA	

Note: reference category in parentheses.

+p<.10., *p<.05., **p<.01., ***p<.001.