

# Housing Market Changes in Aging Korea and Implications for Tax Policy: Focusing on the Baby Boomer Generation

December 2014 | Ro, Younghoon

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# Contents ■ ■ ■

<b>I . Introduction: Aging Society and Retirement .....</b>	<b>7</b>
<b>II . Baby Boomer Generation and Changes in Housing Demand .....</b>	<b>12</b>
1. Aging of the baby boomer generation .....	12
2. Aging-associated changes in housing demand .....	14
A. Age profile of home ownership and demand .....	14
B. Implications of demographic changes for housing demand .....	16
3. Literature survey .....	18
A. Impact on the return rates and prices of assets .....	18
B. Impact on home ownership and occupancy patterns .....	20
C. Departure from the established literature .....	22
<b>III. Economic Situation of Baby Boomer Households .....</b>	<b>23</b>
1. Real estate property portfolios and home-related debts .....	23
2. Home ownership and occupancy patterns of baby boomer households .....	27
A. Data .....	27
B. Theoretical model on home ownership and housing tenure behavior .....	31
C. Changes in home ownership and occupancy behavior .....	34
3. Housing-related debts and the financial stability of baby boomer households .....	36

Housing Market Changes in Aging Korea and Implications for Tax Policy:  
Focusing on the Baby Boomer Generation

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<b>IV. Housing Pension and Other Alternative Assets for Baby Boomers: Implications for Tax Policy .....</b>	<b>47</b>
1. Housing equity as a source of post-retirement income .....	47
2. Reverse mortgage and the Housing Pension in Korea .....	50
3. Implications of housing market changes for tax policy .....	56
<b>V. Conclusion .....</b>	<b>62</b>
<b>Bibliography .....</b>	<b>67</b>

## List of Tables ■ ■ ■

<Table III-1> Baby Boomer Households Balance Sheet(B/S) for each income quintile(Born in 1955-1963), 2013 .....	24
<Table III-2> T-Test Results: Baby Boomer Households vs. the Rest .....	29
<Table III-3> Model Test based on Single Probit Parameter values .....	30
<Table III-4> Model Test based on Ordered and Single Probit Parameter Values ...	32
<Table III-5> Changing Home Ownership and Occupancy Behavior of Baby Boomer Households .....	35
<Table III-6> Ratios of Households with Housing-Related Debts, 2013 .....	38
<Table III-7> B/S of Baby Boomer Households Owning only current residence (Group I) .....	39
<Table III-8> B/S of Baby Boomer Households Owner-occupiers with other house ownership elsewhere(Group II) .....	41
<Table III-9> B/S of Baby Boomer Renter Households with owning houses elsewhere(Group III) .....	42
<Table III-10> B/S of Baby Boomer Renter Households with owning a house elsewhere(Group III') .....	44
<Table III-11> B/S of Baby Boomer Renter Households(Group IV) .....	45
<Table III-12> Financial Positions of Baby Boomer Households: Housing-related Debt indicator by 4 Sub-tenures .....	46
<Table IV-1> Housing Pension Overview .....	53
<Table IV-2> Housing Pension Benefits Paid and Balances .....	55

## List of Figures ■ ■ ■

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[Figure II-1]	Number of Koreans Born Each Year(Alive as of 2010) .....	13
[Figure II-2]	Changing Patterns of Home Owner Occupancy in Different Age Cohorts(1990-2010) .....	15
[Figure II-3]	Proportion of Age Group (Home Owners) 40-59 in the Total Population(of Home Owners) .....	17
[Figure III-1]	Home Ownership and Home Owner Occupancy Rates among Different Age Groups, 2013 .....	26
[Figure III-2]	Distributions of All Households and Baby Boomer Households by Home Ownership Type, 2013 .....	28
[Figure III-3]	Housing Subtenure Choice .....	31
[Figure VI-1]	Equity release schemes .....	48
[Figure VI-2]	Sources of Income for the Elderly in OECD Member States in the 21st Century .....	49



# I

## Introduction: Aging Society and Retirement

No one can dispute the increasingly important nature of the population aging issue in Korea. The aging population is understood as the phenomenon in which the proportion of the elderly in a given society's population exceeds a certain level and continues to grow. The term "aging society" is used to refer to a society in which the elderly at or above the age of 65 make up 7 percent or more of the total population. "Aged society" is the term for a society where the elderly make up 14 percent or more of the total population, and "post-aged society" for a society where the elderly make up 20 percent or more of the total population. In its long-term population projections in 2010, Statistics Korea speculated that South Korea would enter the phases of aging, aged, and post-aged societies by 2000, 2017, and 2026, respectively. In other words, Korea is likely to evolve from an aging society into a post-aged society in an unprecedentedly short span of just 26 years.<sup>1)</sup>

The age cohort known as the "baby boomer generation" refers to those born in the immediate aftermath of war, a time when the birth rate surged dramatically. The baby boomer generation in Korea includes persons who were born in the years 1955 through 1963, immediately following the Korean War period of

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1) See Choi(2005), pp. 29–34. Although aging is a universal phenomenon today, the degree and pace of its progress differ from nation to nation. According to the United Nation's world population forecasts, it took France and the United States 115 years and 75 years, respectively, for the proportion of the elderly in the two countries' national populations to increase from 7 percent to 14 percent. China, struggling with the problem of aging as a side effect of the strict birth control policy it began to enforce in 1979, is expected to become an aged society by 2026, in just 25 years of entering the league of aging societies.

1950-1953. In 2014, these baby boomers had reached the age of between 51 and 59. The retirement rate among baby boomers in the private sector began to rise noticeably around seven years ago. Korea's current mandatory retirement age is 60, and it is therefore expected that the number of baby boomer retirees will increase dramatically beginning in 2015. By 2017, when the proportion of the elderly in the total Korean population is expected to exceed the 14percent threshold, these baby boomers will be between the ages of 54 and 62, with the majority of them either having retired or near-retirement, notwithstanding the 2013 enactment of the Retirement Age Extension Act. Consequently, changes in various retirement- and senior-related laws and institutions, including public pensions, will significantly affect the flows of income and the asset portfolios of Korean baby boomers.<sup>2)</sup>

Retirement carries with it diverse socioeconomic implications. This study examines various issues focusing on the aspects that future retirees will experience significant reductions in their labor income, and that their dependency on the assets they have accumulated through savings and investment will increase concomitantly after retirement. With such aspects at focus, this study explores how well prepared Korean baby boomers are for their retirement, and how the retirement of this baby boomer generation will burden various social security programs in Korea, including the National Pension, the National Health Insurance, and the Basic Old Age Pension. We can estimate and forecast how the aging of the baby boomer generation will affect the financial and housing markets in Korea only when we identify and assess, with accuracy, whether and how baby boomers have financially prepared themselves for retirement.

The aging of society affects the flows of income of each household first and foremost by reducing the share of earned or labor income in the household's income source, and increasing, instead, the share of property income. The amount of property income is determined by the amount of one's net worth and also by the comparative makeup of one's total assets and liabilities. In this study,

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2) On April 30, 2013, the National Assembly of Korea enacted the Amended Act on Prohibition of Discrimination against the Elderly at Workplaces and Promotion of the Employment of the Elderly, fixing the mandatory retirement age to 60. The law requires businesses hiring 300 or more persons and public corporations to raise the mandatory retirement age to 60 beginning on January 1, 2016 and in 2017, respectively, so that employees born in 1958 and afterward can benefit from the law.

we divide household properties between real estate properties and financial assets, and explore how the relative composition of these two different types of wealth affects the given household's post-retirement income and spending patterns. For example, a household which already relies significantly on income from real estate properties, and which struggles to make up for the losses in earned income after the retirement of the breadwinner with income from either real estate properties or financial assets will likely consume and spend less over time. Should the household's income from financial assets (e.g., dividends and interests) and real estate properties alike remain constantly low, and there is no likelihood of significant increases in the future values of assets, the relative appeal of tax-saving assets and properties will increase, thus exerting significant impact on the future of Korea's tax policy.

Using household sample micro data in the Household Finance and Welfare Survey conducted in 2013, this study identifies the economic positions of baby-boomer households on the basis of their income and expense statements and balance sheets. This is in order to explore and analyze what the aging means for these households to have real estate-oriented asset portfolios and to hold housing-related loans. To this end, we divided the households according to modes of housing ownership/occupancy, and measure their financial stability on the basis of numerous factors, including: current levels of income and net worth; the excessive status of housing-related loans (distinguishing the so-called "under-the-water house owners," i.e., households in which the sum of the housing mortgage and the rent deposit exceed its current market value due to the long-term economic recession); and the likelihood of relying on the Housing Pension, using home ownership as collateral, in order to make up for post-retirement losses in income. Based on this analysis, this study seeks to determine how the retirement and home ownership of baby boomers will affect Korean policies in the future.<sup>3)</sup>

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3) This study draws upon the findings and conclusions of Roh(2013), who explores the housing asset portfolios and retirement-related consumption patterns of baby boomer households in Korea using microeconomic data as of 2012, and adds a new analysis based on the latest data (gathered in 2013). Much of the claims and findings put forward in this study in addition to those published in Roh (2012) have not yet been subjected to formal academic debate.

Before proceeding with our analysis, we need to clarify the definition and concept of the old-aged household that is the central subject of our study, as well as the limits on the data we have used in our analysis.

First, note the difference between a household that includes an elderly member and a household whose head is elderly. As members of a given household—aside from households of persons living alone—share the same consumption, housing, and spending patterns, households that include elderly members and households whose heads are elderly are bound to differ in decision making in regard to home ownership and occupancy. In our study “old-aged households” are defined as the households with their heads’ age 60 or 65 or more.

Second, in discussing the facts of old-aged households, one may opt to compare old-aged households against either young-aged households or all households that include old- and young-aged households. This study chooses the latter option. Dividing the sample households between old-aged and young-aged ones significantly reduces the number of households that can be categorized as the latter, particularly in analyses of income quintiles and home ownership/occupancy patterns.

Third, it should be mentioned that the Korean Housing Finance Survey (KHFS), first conducted in 2010, changed its name to the Korean Household Finance and Welfare Survey (KHFWS) in 2012, and also changed its sample design from cross-sectional to panel survey. At this point in time, however, we can apply the panel analysis method to only two years, i.e., 2012 and 2013. This study therefore utilizes cross-sectional data from certain years in order to determine the aging-related distribution of housing-related variables (e.g., ratios of house-owning and house-occupying households, areas of exclusive living spaces), and to define age cohorts on the basis of certain years, thus enabling us to analyze how the distribution of variables changes with respect to each cohort and from year to year.

This study consists of five sections. In Section II, we analyze the implications of the aging of the baby boomers for the future of the Korean housing market from a demographic perspective, and survey the findings of the previous literature published in and outside Korea. In Section III, we analyze the current economic positions of baby boomer households on the basis of the KHFWS findings. In

Section IV, we discuss the changes that are likely to occur in the asset portfolios of near-retirement baby boomer households, and whether these households are considering financial alternatives, such as reverse mortgage called as the Housing Pension in Korea, in order to maintain their future income levels at a constant after retirement. Section V summarizes the findings of this study and discusses their policy implications.

Keywords: Aging society; baby boomer generation; retirement; asset portfolio; home ownership and occupancy.

## II

# Baby Boomer Generation and Changes in Housing Demand

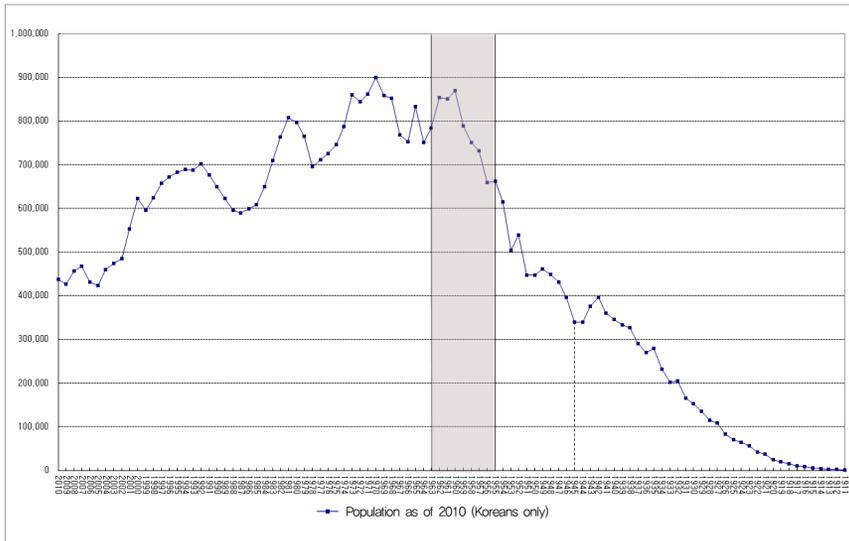
### 1 Aging of the baby boomer generation

The baby boomer generation in Korea refers to people who were born in the years 1955 through 1963, shortly after the Korean War. The shaded part of the graph in [Figure II-1] represents these years. According to the Korean Population and Housing Census of 2010, there were 6.95 million persons in total born in any of these nine years alive at the time of the census, amounting to 14.5 percent of the total national population.

This study explores the implications of the aging of the baby boomer generation for the Korean housing market and for housing policies, as the mass retirement of this generation in the next few years has the potential to exert a significant shock on the Korean housing market. It is therefore crucial to enable individual households and the government to find and implement measures that can minimize the impact of such a situation. Retirees who no longer earn fixed amounts of income from labor are naturally forced to consider disposing their accumulated assets and properties. In Korea, real estate properties (particularly homes) make up significant items in retirees' asset portfolios. As baby boomer retirees decide to sell their homes *en masse* after retirement, housing prices will plummet, shaking the Korean economy from its very foundation upwards.

[Figure II-1] Number of Koreans Born Each Year(Alive as of 2010)

(Unit: number of persons)



Source: Population and Housing Census(2010).

According to the Organization for Economic Cooperation and Development (OECD)’s analysis of the employment of various age groups in member states, 64.3 percent of people in the age group from 55 to 64 in Korea were employed as of 2013. Interestingly, 43.8 percent of people in the age group ranging from 65 to 69 in Korea were also employed. The figures are significantly higher than the OECD averages of 54.9 percent and 19.6 percent, respectively. The retirement ages for men and women in Korea were 71.1 and 69.8 years old, respectively, in 2012, second only to Mexico (72.3 years old for men) and Chile (70.4 years old for women). Contrary to most other states, the actual retirement ages of Korean men and women rose significantly over 42 years since 1970. Ironically, however, the mandatory retirement age in Korea is still 53 years old on average—the world’s lowest. From this disparity between the mandatory retirement age and the actual retirement age, we may infer that the majority of seniors at age 65 or older in Korea remain in the labor market out of the necessity to earn income to cover basic living and medical expenses. Nevertheless

Korea's poverty rate among elderly is the highest, almost reaching 50%, in OECD member countries. This is very much in contrast with their counterparts in other developed countries who at that time period in their lives are enjoying hobbies and other leisurely activities. This phenomenon carries serious implications for the future of near-retirement baby boomers in Korea.

When asked how ready and well-prepared they are for retirement, most baby boomers answer the question in terms of how *financially* ready they are, considering their savings, investments, or other forms of assets and properties they have accumulated. Those baby boomers who feel financially ready for retirement often seek to create or secure other sources of steady earned income through such things as businesses while at the same time reducing spending until and after retirement. Some retirees opt to invest in financial products that can generate steady monthly income after retirement. Others try to create the most tax-saving asset portfolios. However, we must wait and see how many baby boomers in Korea will opt to reduce the weight of their homes and related liabilities in their asset portfolios, and switch to personal pensions and other such financial products that can give them monthly income on top of meager National Pension benefits.

## 2 Aging-associated changes in housing demand

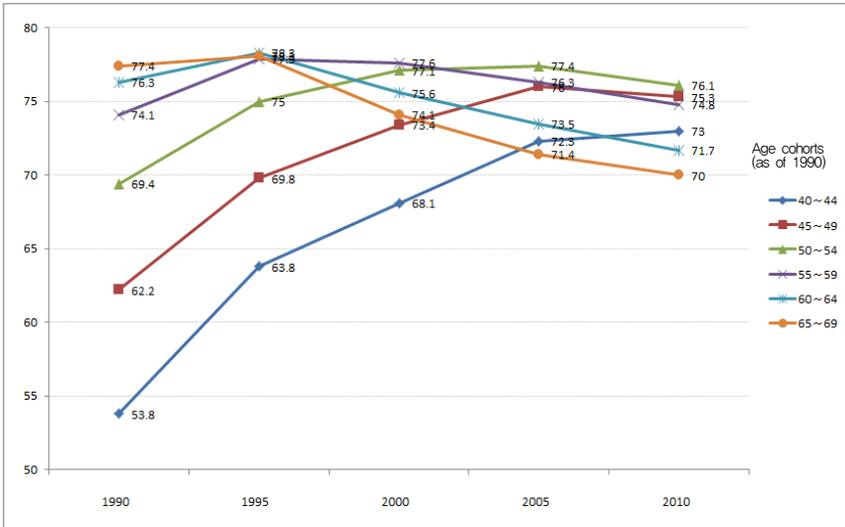
### A. Age profile of home ownership and demand

Housing stands as the most significant item in any given household's asset portfolio. The home ownership and lease market therefore closely reflects changes in the number and types of households of a given society. Baby boomers are as concerned with the question of whether and how to reduce their dependency on home ownership as other generations. Aging often means a decreasing need for a large home. Retiree couples prefer to move into smaller homes, as they no longer live with their children. However, retirees may also approach the issue of home ownership from the perspective of investment, opting to remain in large homes and/or even to make additional purchases of new homes in areas with rising or steady housing prices in expectation of additional

post-retirement income.

[Figure II-2] Changing Patterns of Home Owner Occupancy in Different Age Cohorts (1990-2010)

(Unit: %)



Source: Statistics Korea, "Changes in Demographic and Household Structures and Housing Patterns," March 21, 2012, p. 29.

[Figure II-2] shows changes in the home owner occupancy rate of each age group over 20 years, between 1990 and 2010, based on data gathered by the Population and Housing Census conducted by Statistics Korea nationwide every five years. In 1990, the home owner occupancy rate of the age cohort 40-44 was the lowest (53.8 percent) in comparison to the rates of other age cohorts. This age cohort's home owner occupancy rate, however, consistently rose over the next 20 years, reaching 73.0 percent when they belong to age cohort 60-64 in 2010, showing the greatest margin of increase. In the meantime, the home owner occupancy rate of the age cohort 50-54 in 1990 (i.e., age cohort 70-74 by 2010) reached its peak at 77.4 percent in 2005, but dropped by over 1percent to 76.1 percent by 2010. Similarly, the home owner occupancy rates in other age cohorts in the late 60s and beyond continued to decline.<sup>4)</sup>

## B. Implications of demographic changes for housing demand

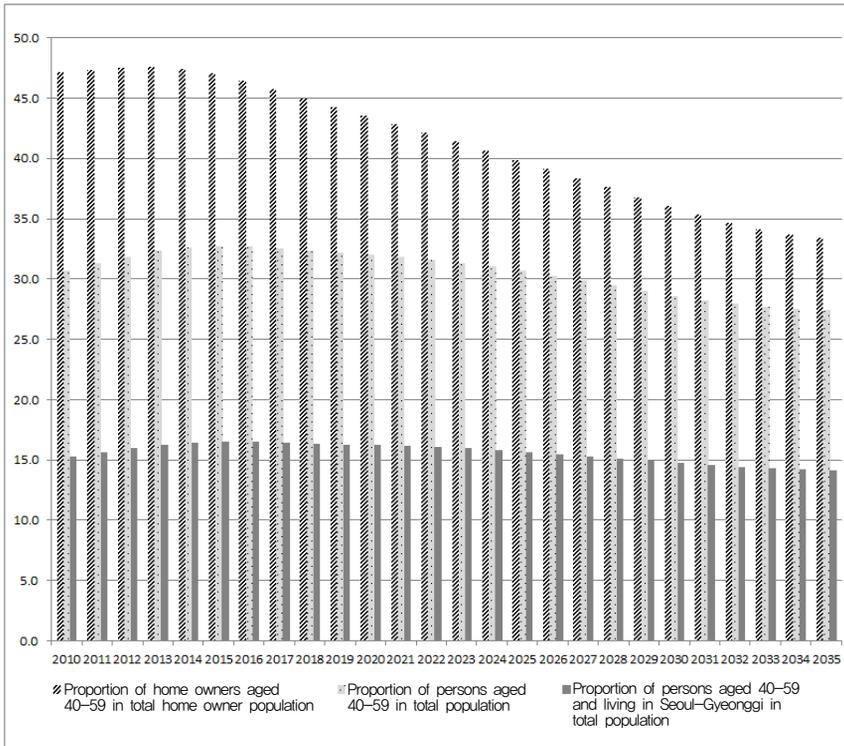
[Figure II-3] shows how the proportion of the age group 40-59 in the total population and the proportion of home owners aged 40 to 59 in the total population of home owners will likely change between 2010 and 2035, based on Statistics Korea's population and household estimates and forecasts. During the first 16 years, from 2010 to 2026, the age group 40 to 59 will form more than 30 percent of the total national population, as will the proportion of householders aged 40 to 59 among the total population of householders. Given stylized lifecycle facts, household heads in their 30s, 40s, and 50s form the core consumers of housing-related services in Korea. Householders in the age group 40 to 59 will therefore likely be reluctant to reduce their demand for home ownership and related services. Based on these assumptions, we may reasonably forecast that the demand for home ownership will likely decrease noticeably only in or after 2025 at the earliest. There are also numerous other facts that support this forecast, such as that the demand for smaller homes will increase as the average size of the household decreases, that Korean baby boomers will begin to switch to smaller homes about a decade later than their counterparts in other advanced economies, and that the introduction of the reverse mortgage like Korean Housing Pension (which will pay home owners annuity-type regular income based on the homes they put up as the secured collateral) will reduce people's need to dispose of the homes they own.

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4) According to a Statistics Korea's press release published on March 21, 2012 (pp. 20-21), a consistent pattern of decline in the homeowner occupancy rates of the elderly (at age 65 or older) was noted in both the cross-sectional analyses of age groups and the cohort analysis. In the United States, age 65 also similarly marks the turning point when people sell more than buy homes.

[Figure II-3] Proportion of Age Group (Home Owners) 40-59 in the Total Population (of Home Owners)

(Unit: %)



- Notes: 1. Based on the middle-level hypotheses, assuming that the current population growth pattern will persist into the future.  
 2. Including all residents (Koreans and non-Koreans alike) currently living in Korea.  
 3. Based on future population forecasts, updated as of December 2014.

Sources: Statistics Korea, "Future Household Forecasts: 2010-2035," April 26, 2012, pp. 51-53, and "Future Population Estimates and Forecasts by Age, City, and Province" (<http://kosis.kr/index/index.jsp>).

Korea is notorious for having a population heavily concentrated in the nation's capital and surrounding cities. The majority of the total national population is found to reside in the Seoul-Incheon-Gyeonggi region in every census.<sup>5)</sup> Statistics Korea projects that, while the total national population will reach its peak in 2020 and begin to decrease in size afterward, the size of the

population in the Seoul-Inchoeon-Gyeonggi region will continue to grow until 2029 or so, to reach its peak at 53.5 percent, before finally decreasing gradually. As the home owner occupancy rate in this region has been persistently lower than the nationwide average, the housing demand there will also decrease at a slower pace than elsewhere in Korea. [Figure II-3] illustrates forecasts on the population of the age group 40 to 59 living in the Seoul-Incheon-Gyeonggi region as well. When we confine our comparison to this region, the range of fluctuation in the population decreases more drastically than in the case of nationwide comparisons, and is therefore unlikely to exert as great an impact on the local housing market than in the nationwide case.

### 3 Literature survey

This section summarizes the findings and pertinent conclusions of various studies, conducted both in and outside Korea, regarding the impact of the change in aging structure of a given society on the given housing market. Here we discuss and review the significance and limitations of the established literature on the topic, and explore their implications for our study.

#### A. Impact on the return rates and prices of assets

Poterba(2001) surveyed the existing literature on the correlation between the age profile of a given population and the return rate of assets, with a view to assess the asset market collapse hypothesis. Poterba reached the conclusion that the pace of short-term increase in the proportion of persons aged 40 to 64, with their relatively high propensity to saving, exhibited a positive correlation to the return rates on financial assets, such as stock and bonds. There are some fatal flaws in this study limiting the applicability of its conclusions, however.

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5) The proportion of the Korean population concentrated in the Seoul-Gyeonggi region has been steadily increasing, from 46.3 percent in 2000, to 48.2 percent in 2005, to 49.1 percent in 2010, and to 50.2 percent in 2011.

The study is not only based on some unrealistic assumptions (e.g., exogenously fixed savings rates and unchanging capital supplies), but also fails to take into account the fact that changes in the age profile of a given population can induce other socioeconomic changes.

The basis of calibration in Yoo(1994) is the overlapping generations model, which assumes that consumers will live 55 years on average and continue to work until they reach the age of 45. Yoo predicted that the baby boomer economy, with its fixed supply of durable assets, would see an increase by 35 percent and upwards in the price of its assets, while the asset price increase rate would be limited to 15 percent or so in other economies capable of producing durable assets. Yoo concluded that the asset price would reach its peak 35 years after baby boomers' birth.

Mankiw and Weil(1989) and McFadden(1994) introduced models for forecasting long-term changes in housing prices using population and income estimates. Discussing how baby boomers' emergence as the main purchasers of homes and properties spearheaded significant increases in home prices in the 1970s, these authors predicted that home prices would begin to decline in the 1990s onwards due to the declining birth rate and the slowing pace of increase in housing demand. Their prediction, however, failed to materialize, leading successive generations of researchers to conclude that housing supplies and other asset market factors(e.g., rents, income, employment rates, and educational attainments) matter more than socio-demographic factors (e.g., household structures, age distribution, and gender) in determining housing demand.

Koh and Kim(1997) adopted the Mankiw-Weil model to estimate the likely effects of the slowdown in the birth rate and the changing age profile of the population in Korea. They concluded that long-term changes in the demographic structure would ultimately slow down housing demand pressure, and in consequence, lower the relative house price as well.

Hong(2013) sought to empirically determine whether there is a consistent correlation between the housing prices in different cities, counties, and districts in Korea and the age profile of the given local population, using a capital asset pricing model (CAPM). The CAPM revealed a significant and consistent negative correlation between the proportion of the local elderly population and the return rate on local housing after systematic risk factors were eliminated.

Park and Kim(2014) conducted a panel analysis of Seoul and six other metropolitan cities in Korea, using data from 2003 to 2012 and a fixed-effect model, in order to identify changes in local housing markets. Their empirical analysis revealed that, while demographic factors and income-related economic factors influenced changes in housing prices, the housing supply factor failed to show significant effects. They estimated that housing price decrease 0.12% as elderly population ratio increase 1%.

### **B. Impact on home ownership and occupancy patterns**

Based on an interpretation of cross-sectional data, Modigliani and Brumberg (1954) put forward the lifecycle hypothesis, arguing that age, wealth, and other such markers of the current position in an individual's lifecycle explain their consumption and saving patterns better than current income level. We may apply this hypothesis and assume that, until a given householder reaches a certain age, they will prefer to rent/lease their home. By the time they reach a certain age, they will prefer to own a home by investing the savings they have accumulated until then, and may opt to either occupy the home themselves or lease it to a third party and continue to live in a rented/leased home. By the time the household head becomes elderly, they will prefer to sell one of their houses or properties they own and convert it into more liquid financial assets so as to compensate for income losses after their retirement.

Tobin(1972) questioned whether all individuals or households could actually control their optimum spending patterns according to such a lifecycle. He emphasized that the propensity to consume could change dramatically when the strict liquidity constraint is added to the model, assuming that the value of an individual's assets holdings can never be negative at any point in one's lifecycle. Households subjected to this strict liquidity constraint would not be able to adjust their current spending level immediately. Therefore, the lifecycle hypothesis may not be appropriate in explaining the behavior of households whose asset portfolios predominantly include assets, like homes, that are harder to liquidate.

Artle and Varaiya(1978) focused on the fact that a home, as a property, is often the greatest investment good that a given household can purchase during its given lifecycle, and that a home is something a household cannot purchase

or sell in installments. It is on this observation that the authors base their analysis of the correlation between lifecycle consumption and home ownership. Artle and Varaiya theoretically demonstrate that it may be the most rational choice for certain households to live in rented homes throughout their given lifecycles, as home ownership often requires a significant amount of initial investment and trying to save the required amount of initial investment may present greater opportunity costs or losses of utility than benefits to certain households.

Kang(2009) provided an empirical analysis, based on Korean labor panel data, of how the Korean household's consumption, total gross wealth, and its real estate property share changes over time as the householder ages. Kang's analysis reveals that it is difficult to sustain the hypothesis that aging will reduce housing demand and thereby decrease the prices of real estate properties (including homes). He further demonstrates that aging affects the proportions of assets and real estate share only through the path of difference in income and expenditure.

Jeong(2013) similarly used Korean labor panel data, but in order to determine the decisive factors that lead home owners at age 55 or older to switch tenure from owner-occupancy to rental, applied a binary choice proportional risk model. Through his empirical analysis, Jeong concluded that hypotheses stressing the importance of different effects in disposing different types of assets better explain the behavior of middle-aged and elderly Korean household tenure change (i.e., switch from ownership to rental) than the lifecycle hypothesis.

Jeong and Lee(2013) focused on Korean householders at age 55 or older and applied the probit model in order to analyze these households' decisions regarding migration and home occupancy. Their empirical analysis of Korean labor panel data revealed that migration is often caused by demographic factors, such as the householder's educational attainments and health conditions (or deterioration thereof) as well as the decrease in the number of household members. The proportion of the householder's asset portfolio was also found to be a significant factor. In contrast, the reasons for households to migrate to a different region and occupy (rather than own) a home afterward were revealed as the householder's employment status, the significant difference between the cost of renting homes and the cost of owning homes, and the makeup of the householder's asset portfolio. The impact of the proportion of a

householder's total asset portfolio was shown to increase with the householder's age (causing a switch from home ownership to rental), while the proportion of financial assets bears a positive correlation to home ownership in households with relatively younger householder(at age 65 or younger).

### C. Departure from the established literature

Reviewing the findings of the previous literature survey, this study attempts to demonstrate, with an empirical analysis, two things: first, whether and how the aging of a given population affects the overall housing demand throughout the given economy; and second, whether and how the different age cohorts consume the homes and related services they own, and liquidate their real estate properties, in contrast to the lifecycle hypothesis, whether conventional or revised. This study is distinct from the previous studies discussed above mainly in three dimensions. First, we consider the dual aspects of housing service consumption and housing asset investment in owner-occupying household tenure decision. Second, we look into alternatives at the home owners' disposal, such as the Housing Pension and other institutional programs, which allow them to liquidate their assets without selling them. And third, we explore the implications and effects of *chonsei*, which is a dominant form of home lease unique to and prevalent in Korea, allowing the landlord and the tenant to exchange a house and a lump-sum deposit money to net-out rent and interest payments. This study divides the households included in the sample of the KHFWs into four groups depending on the modes of home ownership/tenure. We then examine the proportion of the householder's net worth in each category, and explore particular features and characteristics of baby boomer households.

# III

## Economic Situation of Baby Boomer Households

### 1 Real estate property portfolios and home-related debts

The task of envisioning and devising macroeconomic financial and housing policies on the basis of microeconomic data that indicates the status of individual households (rather than sectoral aggregates or the whole economy) requires first and foremost a careful analysis of the households included in the samples of surveys like the KHFWS. A balance sheet that indicates the assets and liabilities of each sector of a given economy provides figures like total household liabilities or aggregate amounts of household debts. However, such a household sector balance sheet does not clearly reflect the complex issues having to do with the *chonsei* deposits at the household level, as the cash loans involving this lease type among landlords and tenants tend to cancel each other out.

<Table III-1> sums up the current economic position of the baby boomer households included in the micro raw data in terms of a number of major economic variables, such as current income, gross assets and liabilities, and net worth. All the households in the sample were divided into five quintiles according to their income levels,<sup>6)</sup> before the economic position of baby boomer households in particular were calculated. While the total 9,080 sample households are evenly

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6) When we divide the sample number of households into five income quintiles, each quintile comes to have about 2,000 households on average. The dividing annual income levels are KRW 14.4 million, KRW 28.16 million, KRW 43 million, and KRW 66 million.

<Table III-1> **Baby Boomer Households Balance Sheet(B/S) for each income quintile (Born in 1955-1963), 2013**

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	2,017	245	349	386	447	590
(%)	100.0	12.1	17.3	19.1	22.2	29.3
Current income	5,651.3 (4,381.0)	911.2 (980.0)	2,083.6 (2,000.0)	3,524.8 (3,523.0)	5,418.6 (5,460.0)	11,474.9 (9,520.0)
Gross Assets	42,305.9	6,961.9	16,646.0	23,100.1	39,088.8	88,650.7
Financial Asset	11,084.0	2,186.0	3,746.8	6,010.6	10,137.9	23,553.8
(%)	26.2	31.4	22.5	26.0	25.9	26.6
Savings(Stock, Bond)	9,318.2	1,138.3	2,636.3	4,426.3	8,467.2	20,885.2
Housing Repo. Deposit	1,765.8	1,047.7	1,110.6	1,584.3	1,670.8	2,668.6
Real Property	31,221.9	4,775.9	12,899.2	17,089.6	28,950.9	65,096.9
Real Estate valuation	28,754.6	4,537.2	12,226.9	15,503.9	26,871.0	59,678.6
(%)	68.0	65.2	73.5	67.1	68.7	67.3
Home(Residence)	14,575.5	2,632.3	7,884.5	9,312.7	14,411.7	27,457.7
Other Housing Asset	6,570.4	998.8	2,185.8	2,883.6	5,056.8	15,340.9
Housing Asset	21,145.9	3,631.1	10,070.3	12,196.3	19,468.5	42,798.6
Non-Residential R.E	7,608.7	906.1	2,156.5	3,307.6	7,402.5	16,880.0
Other Physical Asset	2,467.3	238.6	672.3	1,585.7	2,079.9	5,418.2
(%)	5.8	3.4	4.0	6.9	5.3	6.1
Liabilities	8,172.9	1,620.2	3,852.3	4,345.0	7,371.2	16,849.5
Borrowings	5,461.9	1,130.8	2,606.1	3,242.0	5,447.4	10,570.6
Rental Deposit to return	2,711.0	489.5	1,246.1	1,103.0	1,923.7	6,279.0
Net Wealth	34,133.1 (19,830.0)	5,341.6 (2,180.0)	12,793.7 (6,828.0)	18,755.1 (13,531.0)	31,717.6 (24,587.0)	71,801.2 (50,032.0)
Annual Debt Payment	687.1	125.2	285.6	446.4	667.2	1,350.4
DSR	1,192	81	202	244	377	
	19.4	36.1	23.5	20.7	18.8	18.6

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

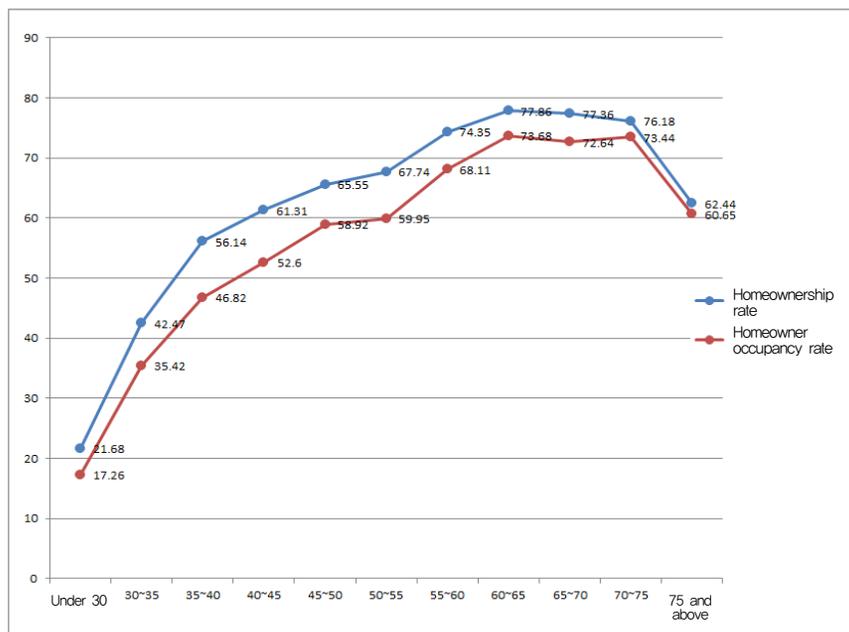
distributed among 5 income quintiles with around 1,816 observations in each quintile in <Appendix Table 9>, the number of baby boomer households included in each quintile varies from quintile to quintile. For example, it should be noted that among the 2,017 baby boomer households 590 households which is 46% more than 403(=2,107/5) households belong to the highest income group. Note also that the security deposits associated with *chonsei* or monthly rent tenure mode appear as part of the financial assets and/or liabilities on the balance sheet according to whether the householder is the landlord or the tenant. In other words, security deposits for occupying rented or leased homes is a financial asset item on the part of the tenant, while the same item is treated as a liability item on the part of landlord household.

The cross-sectional evidence on the age profile of current income and net worth distributions reveal that income level reaches its peak when an individual is in their 50s and declines abruptly afterward. In comparison, the amount of individual household's net worth peaks when one is in their 60s and onwards, before beginning to decline somewhat afterward. The fact that an individual's net worth reaches its peak around the time one is about to retire (early 60s), and declines in the subsequent decades (together with the fact that the younger householder's net worth is small) appears to confirm the lifecycle hypothesis of consumption and savings. Young head of the household have yet to reach the zenith of their income-creating capacity. Their elderly counterparts at age 65 and beyond, on the contrary, appear to have begun to consume the wealth they have accumulated.

[Figure III-1] charts the home ownership and owner-occupancy tendencies of householders in different age groups. The cross-sectional distribution as of 2013 shows that both the homeownership rate and the owner-occupancy rate begin to plummet only when the head of the household reaches the age of 75. The home ownership rate continually increases as the householder's age get larger, from under age 30 to the age group 60 to 64, and reaches its peak at about 77 percent. However, it begins to decline abruptly in the age group 75 and older to 62.4 percent. The home owner occupancy rate also falls to 60.7 percent among householders at age 75 or older, having reached its height at around 73 percent among householders in their 60s.

[Figure III-1] Home Ownership and Home Owner Occupancy Rates among Different Age Groups, 2013

(Unit: %)



Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

Another noteworthy pattern is that the gap between the home ownership rate and the home owner occupancy rate grows wider with the age of the householder to a certain point in time and then narrows down, i.e., to meager 1.8 percentage when the householder enters their late 70s. In other words, householders in Korea that own houses elsewhere while living in rental housing tend to become owner-occupiers when they get old. The practice of investing in housing asset by buying a house and leasing it elsewhere, while living in current rented homes themselves, tends to predominate among younger householders in their 30s and early 40s. By the time they enter their late 40s, however, they begin to live in homes they themselves own. In other words, as householders get older, their tendency to sell investment homes becomes stronger, as does their tendency to live in their own house.

## 2 Home ownership and tenure patterns of baby boomer households

### A. Data

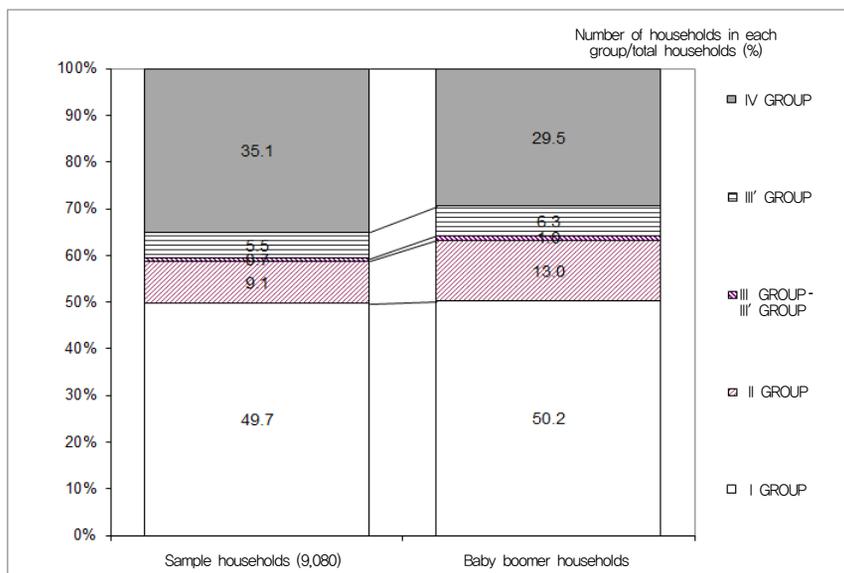
Statistics Korea, the Financial Supervisory Service (FSS), and the Bank of Korea have jointly conducted the annual KHFWS since 2010. Socio-economic factors at the household level are the bases upon which individual households decide whether to own or lease homes, or lease their homes while they own house elsewhere. Raw data for the survey provide information on the various economic positions and diverse situations households face in Korea, as well as on such key demographic factors as the average number of household members, household member distribution by gender, educational attainments, and marital status etc. As such, the richness of these raw data help this study meet its purpose of exploring and identifying factors that affect households' decision making with regard to homeownership and housing tenure choices.

Using raw data for the KHFWS of 2013, this study divides the households included in the sample into a number of groups: Group I (households owning their home only); Group II (owner-occupying and multiple house owning households); Group III (households owning houses elsewhere and currently living in rented homes); Group III' (households owning one house elsewhere and currently living in rented homes); and Group IV (renter households that do not own any homes and currently live in rented homes). Figure III-2 shows the distributions of all the households in the sample (9,080 in total) and the baby boomer households (2,017) across these groups. The baby boomer households are distributed across these groups in their share ratios of 50.2 percent to 13.0 percent to 7.3 percent (6.3 percent) to 29.5 percent. Note that all the households in the survey sample are distributed across these groups in their share ratios of 49.7 percent to 9.1 percent to 6.2 percent (5.5 percent) to 35.1 percent. In other words, while there is not much difference between all the households and the baby boomer households when it comes to the category of Group I (households owning their home only),<sup>7)</sup> the baby boomer households are 42.9

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7) The contrast becomes all the more manifest when we directly compare the homeownership situations of baby boomer bread winners with those of non-baby boomer bread winners.

[Figure III-2] Distributions of All Households and Baby Boomer Households by Home Ownership Type, 2013



Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

percent more likely to own and occupy multiple houses than households of other generations (3.9 percentage points higher); 17.7 percent more likely to own houses elsewhere (1.1 percentage point higher); and 16.0 percent less likely to live in rented homes without owning any (5.6 percentage points lower).

The contrast between baby boomer households and the rest was also apparent with respect to the distribution and composition of other real and financial assets. The proportion of financial assets in baby boomer households' asset portfolios has steadily increased over the years, from 21.1 percent in 2006 to 20.9 percent in 2010, to 23.2 percent in 2011, to 25.6 percent in 2012, and to 26.2 percent in 2013. However, it is too early to tell whether this tendency reflects the aging of the baby boomer household and their consequent willingness to switch an increasing portion of their asset portfolio to more liquid financial assets in preparation for retirement, or it reflects characteristics specific to the baby boomer generation.

<Table III-2> divides the 9,080 households in the sample between the 2,017 baby boomer households and the remaining 7,063 and indicates t-test results as to whether there exists any statistically significant difference between the two groups in terms of household net worth and current income. The t-test results with t-values amounting to -13.7708 regarding net worth and -17.5975 regarding current income, allow us to reject the null hypothesis (i.e., that there is no significant difference between the two groups with respect to the two variables) with quite a high level of statistical significance.

**<Table III-2> T-Test Results: Baby Boomer Households vs. the Rest**

Home ownership and occupancy						
Group	N	Mean	S.E.	S.D.	95% confidence interval	
Baby Boomer	2017	1.46703	.0233449	1.048444	1.421248	1.512813
Rest	7063	1.287838	.0124665	1.047703	1.2634	1.312276
Total	9080	1.327643	.0110239	1.050454	1.306034	1.349252
Difference		-.1791922	.0264546		-.2310493	-.1273352
Difference = baby boomer mean – rest mean					t = -6.7736	
Ho: Difference = 0			Degree of freedom = 9078			
Ha: Difference < 0 Pr(T < t) = 0.0000		Ha: Difference ≠ 0 Pr( T  >  t ) = 0.0000		Ha: Difference > 0 Pr(T > t) = 1.0000		
ln (net wealth) <sup>1)</sup>						
Group	N	Mean	S.E.	S.D.	95% confidence interval	
Baby Boomer	2017	1.145249	.0161098	.7235056	1.113655	1.176842
Rest	7063	.8463383	.0106481	.8948837	.8254648	.8672118
Total	908	.9127373	.0091161	.8686665	.8948676	.9306069
Difference		-.2989106	.0217062		-.3414595	-.2563616
Difference = baby boomer mean – rest mean					t = -13.7708	
Ho: Difference = 0			Degree of freedom = 9078			
Ha: Difference < 0 Pr(T < t) = 0.0000		Ha: Difference ≠ 0 Pr( T  >  t ) = 0.0000		Ha: Difference > 0 Pr(T > t) = 1.0000		
Note: 1) ln (net worth) = ln (fitted net worth)						
ln (current income)						
Group	N	Mean	S.E.	S.D.	95% confidence interval	
Baby Boomer	2017	-.8927424	.0195073	.8760929	-.930999	-.8544858
Rest	7063	-1.333892	.0121832	1.023896	-1.357774	-1.310009
Total	9080	-1.235896	.0105963	1.009714	-1.256668	-1.215125
Difference		-.4411493	.0250688		-.4902899	-.3920088
Difference = baby boomer mean – rest mean					t = -17.5975	
Ho: Difference = 0			Degree of freedom = 9078			
Ha: Difference < 0 Pr(T < t) = 0.0000		Ha: Difference ≠ 0 Pr( T  >  t ) = 0.0000		Ha: Difference > 0 Pr(T > t) = 1.0000		

In order to examine the home ownership and housing tenure characteristics unique to baby boomer households, this study combined the households in Groups II and III and applied the probit model only to households that own rental houses elsewhere other than their current residence, with the expectation that the dummy variable indicating the baby boomer household would have a statistically significant estimated coefficient, as confirmed in Table III-3. The table shows that, in the probit model on the ownership of rental houses elsewhere, the variable of the householder's educational attainment retains a statistically significant

〈Table III-3〉 Model Test based on Single Probit Parameter values

(numbers in parentheses are t-ratios)

Variable	Groups owning homes elsewhere (II + III)
Constants	-1.01208*** (-8.58994)
ln (net worth) <sup>1)</sup>	.0131207 (0.332874)
ln (current income)	.3080782*** (8.653566)
Baby boomer	.1671443*** (4.251035)
Educational attainment	.0874266*** (6.634385)
Gender	-.0502873 (-0.85351)
Marital status (married)	.2761154*** (4.518941)
Number of household members	-.0720509*** (-3.86005)
LogLik	-3594.3675
LR chi2(7)	573.86
Prob>chi2	0.0000
Pseudo R2	0.0739
N	9080

Notes: 1. ln (net worth) = ln (fitted net worth).

2. Figures in parentheses represent the t-values.

3. Single asterisks (\*) indicate a significance level of 0.1; double asterisks (\*\*), of 0.05; and triple asterisks (\*\*\*), of 0.01.

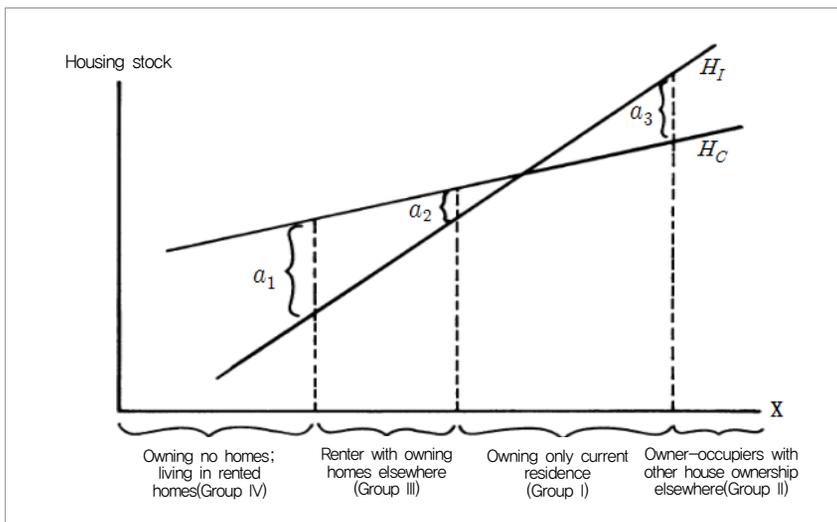
positive estimated coefficient of 0.087. This indicates that the better educated the head of the household, the more likely they are to own rental houses elsewhere for investment purposes. The probability to own houses elsewhere also rises with baby boomers, income level, marital status, and the size of household.

### B. Theoretical model on home ownership and housing tenure behavior

Using *Survey of Consumer Finances* (SCF) data of 1983, Ioannides and Rosenthal(1994) empirically demonstrated that the difference between the housing investment demand ( $H_I$ ) and in the housing service demand ( $H_C$ ) decides households' home ownership and occupancy behavior. According to their study,  $H_I$  reacts to changes in either net worth or income with greater sensitivity than does  $H_C$ , while  $H_C$  is more sensitive to other factors, such as the age and educational attainment of the household, the size of household, proximity to urban centers, and the like.

[Figure III-3] shows how the households in our four different groups react to the changing sizes of the gaps between  $H_I$  and  $H_C$ .

[Figure III-3] Housing Subtenure Choice



<Table III-4> shows the estimates obtained from the regression analysis model on the four different household groups according to the theory advanced in Ioannides and Rosenthal(1994).

<Table III-4> Model Test based on Ordered and Single Probit Parameter Values

(numbers in parentheses are t-ratios)

Variable	Ordered probit <sup>1)</sup>		Single probit		
	4-celled Ordered probit	3-celled Ordered probit	Group IV Probit	Group I Probit	Group II Probit
$\alpha_1$	-0.7838	-	-0.93308	-	-
	(10.1203)	-	(-10.5117)	-	-
$\alpha_2$	-0.60632	-0.6003	-	0.715364	-
	(-7.84116)	(-7.62635)	-	(8.231075)	-
$\alpha_3$	1.055992	1.056389	-	-	-1.22214
	(13.5743)	(13.3463)	-	-	(-8.9049)
ln (net worth) <sup>2)</sup>	0.029287*	0.026079	-0.03548*	0.035153*	0.000962
	(1.322426)	(1.159334)	(-1.48379)	(1.465867)	(0.020525)
ln (current income)	0.294466***	0.268296***	-0.34593***	0.27057***	0.309593***
	(13.07326)	(11.70581)	(-13.4196)	(10.72192)	(7.437372)
Baby boomer	0.061095**	0.053606**	-0.03782	0.00011	0.168653***
	(2.067292)	(1.778445)	(-1.06226)	(0.003216)	(3.792177)
Educational attainment	-0.10675***	-0.11618***	0.139706***	-0.17624***	0.020781*
	(-11.3014)	(-12.0488)	(12.46058)	(-16.0489)	(1.371817)
Gender	0.000453	0.001579	-0.02772	0.045277	-0.06095
	(0.011334)	(0.038562)	(-0.62328)	(1.022343)	(-0.86859)
Marital status (married)	0.576918***	0.555573***	-0.64256***	0.607608***	0.384376***
	(13.81161)	(13.01416)	(-13.7245)	(13.10337)	(5.244716)
Number of household members	-0.04096***	-0.03182***	0.053067***	-0.02587**	-0.05446***
	(-3.09379)	(-2.36091)	(3.400772)	(-1.70567)	(-2.55397)
LogLik	-9494.3024	-7992.282	-5334.3793	-5697.9595	-2587.8204
LR chi2(7)	1082.01	918.77	1096.28	912.48	354.46
Prob>chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0539	0.0544	0.0932	0.0741	0.0641
N	9080	9080	9080	9080	9080

Notes: 1) 4-celled Ordered probit: Groups I, II, III, and IV.

3-celled Ordered probit: Groups I, II and III+IV combined.

2) ln (net wealth) = ln (fitted net wealth).

3) Figures in parentheses represent the t-values.

4) Single asterisks (\*) indicate a significance level of 0.1; double asterisks (\*\*), of 0.05; and triple asterisks (\*\*\*), of 0.01.

The previous conventional housing demand model does not distinguish between housing service demand and housing investment demand. The underlying assumption is that households will rent homes when the former is smaller than the latter; owner-occupying only their homes when the former and the latter are about equivalent in size; and owning multiple houses and occupy one of them when the latter is significantly greater than the former. Researchers in the past rather simplistically equated the prices or values of owner-occupying houses with the housing, and sought to measure the effect of the aging householder using the householder's age and its square as explanatory variables. By contrast, this study adopts using the baby boomer dummy variable in the place of the age variables so as to bring out the effect of the baby boomer age cohort with greater clarity. Moreover, this study also divides the ownership and tenure status of households into four groups and diversifies the demand for home ownership into housing service demand, housing investment demand, and combined demand so as to account for the housing investment demand of households owning and occupying multiple homes, either at their current locations of residence or elsewhere. The empirical analysis has thus led to the following findings.

First, estimation using the ordered probit model shows  $\alpha_1$  and  $\alpha_2$ , indicating the excess of  $H_i$  over  $H_c$  as the tenure status moves from Group IV to Group III, to Group I, and to Group II, to be  $\alpha_2$  both negative, while  $\alpha_3$  is positive and the order  $\alpha_1 < \alpha_2 < \alpha_3$  remains intact. Therefore, the home ownership and tenure choice household behavior in Korea can be explained by the size of the difference between  $H_i$  and  $H_c$ , or the excess of the investment demand for housing over the housing service demand. This behavioral correlation between housing demand motives and ownership/occupancy status becomes all the more prominent among the baby boomer householder subset.

Second, both household's current income and net worth, with natural logarithms applied, stimulate housing investment demand more than consumption demand, and then increasing the transition probability. However, current income provides far greater explanatory power with respect to the ownership of houses than net worth.

Third, the baby boomer householder dummy variable is a good indicator of there being a significant gap between housing service demand and housing

investment demand, mainly because it is common in this age cohort to regard consumption and investment as separable in their making decisions. In the single probit regression model, baby boomer householders were much more likely than other age groups to own multiple houses with statistical significance.

Fourth, two demographic factors, i.e., marital status and the size of household, exert statistically significant positive and negative effects, respectively, on the households' whole transition phases from residing in rental housing to owning multiple houses.

Fifth, the householder's educational attainment also serves as a statistically significant demographic variable. More specifically, in the single probit regression model that involves seven levels of educational attainments (from "no formal education at all" to "postgraduate"), the higher the level of the householder's educational attainment, the more likely they are to live in a rental house and the less likely they are to become owner-occupiers. In the ordered probit model regression, educational attainment bore a negative correlation to home ownership, thus once again affirming the conclusion of the single probit model that the probability of home ownership decreases with higher education level. This is perhaps because educated householders tend to prefer to diversify their portfolios composition, and regard investment and consumption as separable when it comes to housing.

### C. Changes in home ownership and occupancy behavior

The Korean Housing Finance Survey (KHFS) was conducted for the first time in 2010, with the selected sample households changed each year until 2012. The survey was eventually renamed the "Korean Household Finance and Welfare Survey (KHFWS)," and became the longitudinally linked panel survey. It means the same 2012 households were sampled and surveyed in 2013 so as to trace household behavior over time. With only two such waves performed and available so far, we examine the households mobility among home ownership and tenure choice status.

<Table III-5> sums up how the baby boomer households belonging to each group moved between the groups over one year between 2012 and 2013. Initially

baby boomer households have a larger share of owner-occupiers with multiple house ownership (Group III) than other age groups. Of the 246 baby boomer households in Group II, for instance, 50 (20.3 percent) moved to Group I (owning and occupying their own home), showing that multi-house owners were active in selling the houses they do not need before reaching the age of 60.<sup>8)</sup> On the other hand, there were only 39 baby boomer households in total that joined Group IV (living in rental house without owning any house) in 2013, irrespective of whether or not they previously owned houses. This figure amounts to 2.0 percent of the total (1,984), and is not so divergent from the inter-group movement rate of 2.4 percent concerning all the households in the sample (9,080). Likewise, no particular pattern was observed in the rate at which under-60 baby boomer households switched from owner occupancy to rental from 2012 to 2013.

〈Table III-5〉 **Changing Home Ownership and Occupancy Behavior of Baby Boomer Households**

(Units: number of households, %)

2013 2012	Group I	Group II	Groups III - III'	Group III'	Group IV	Total
Group I	909 (90.8)	57 (5.7)	0 (0.0)	7 (0.7)	28 (2.8)	1,001 (100.0)
Group II	50 (20.3)	192 (78.0)	1 (0.4)	2 (0.8)	1 (0.4)	246 (100.0)
Groups III - III'	0 (0.0)	3 (12.5)	17 (70.8)	3 (12.5)	1 (4.2)	24 (100.0)
Group III'	9 (7.5)	7 (5.8)	1 (0.8)	94 (78.3)	9 (7.5)	120 (100.0)
Group IV	34 (5.7)	2 (0.3)	1 (0.2)	19 (3.2)	537 (90.6)	593 (100.0)
Total	1,002	261	20	125	576	1,984

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

8) Conversely, 57 baby boomer households moved from Group I to Group II in one year, at a relatively low rate of 5.7 percent.

### 3 Housing-related debts and the financial stability of baby boomer households

In this subsection, we shall address the baby boomers' housing-related household debt issues focusing on the degree of financial burdens across various house ownership/tenure status. Nearing retirement, even baby boomers with solid and sound asset portfolios (including homes they own) face an increasing pressure to sell off real estate assets they own or reduce their investment in housing in anticipation of the inevitable losses in their annual earned income after retirement. The heads of the households in the United States and elsewhere who are able to manage their fixed rate type mortgage liabilities over long period of time (e.g., 15 or 30 years) are mostly able to becoming free from their mortgage debts around the time they reach the retirement age of 60. In the meantime, their owners' equity in their own homes begins to approximate or exceed the market values of their properties around this time as well, leaving them consequently and relatively freer from housing-related debts and concerns than their Korean counterparts. In Korea, however, homes often comprise an overwhelming share of any near-retirement householder's asset portfolio, and the presence of the security deposit for the *chonsei*-type rental add even more pressure to households housing-related debts. As baby boomers become elderly, they face even greater pressures to pay off the principals and interests on their housing-related debts. The fact that multi-house owners have already begun to liquidify their owners' equity of the houses by way of *chonsei* scheme also raises significant concerns for the future of the housing market and the economy in Korea.

Now, let us proceed first by examining households with one or more of the three main types of housing-related debts: (1) loans for purchasing homes they occupy; (2) loans for purchasing homes other than the ones they occupy; and (3) loans for security deposits for *chonsei* or monthly rents. As <Table III-6> shows, 26.7 percent of the households included in the sample of the KHFWs 2013 had housing-related debts.<sup>9)</sup> More specifically, the ratios of households with these debts in the four different groups are 31.3 percent, 37.3 percent, 38.3 percent (37.1 percent), and 15.3 percent, respectively. The relative

shares among these 3 types of debts are 58.3 percent to 12.7 percent to 8.9 percent (7.6 percent) to 20.1 percent. While some of the households in our sample have taken out loans not to purchase, but to come up with the deposit money for their rental houses, home owners account for far more of the total debts, given the significant difference between the cost of purchasing homes and the cost of renting homes, and also the tendency of Korean financial institutions to prefer secured lending with collaterals. However, it should be noted that households that own houses elsewhere and currently live in their rented homes together with the owner-occupying multiple house owning households are significantly more (6.5 percentage points more) likely to be burdened with housing-related debts in comparison with the owner-occupying single house own households. Group I, forming the baseline of our analysis, consists of owner-occupier households who are incapable of using their homes as leverage for making capital gains by leasing part or the entirety of their homes, since they themselves occupy the homes they own. Households in Groups II and III, on the other hand, are able to use the homes they own as leverage for making further capital gains (in the form of *chonsei* security deposits). Nevertheless, almost 40 percent of households in each of these two groups owe housing-related debts to financial institutions. These figures indicate that Korean households with rental houses are quite aggressive in incurring significant amounts of debts from financial institutions on top of *chonsei* deposit which is in essence a borrowing from tenant.

<Table III-6> shows the housing investment and deb-incurring behavior of Korean households vis-à-vis baby boomer households. Of the 2,017 baby boomer households in our sample, 540 or 26.8 percent had taken out housing loans, which is not too far off from the indebted ratio of 26.7 percent among all the households in the KHFWS whole sample of 2013. The ratios of baby boomer households with housing-related debts in the four groups are 33.0 percent, 36.6 percent, 32.0 percent (29.9 percent), and 10.6 percent, respectively, while the

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9) Even households in Group IV, owning no homes and living in rented homes, may have taken out loans to pay the security deposits for their *jeonse* or monthly rent leases. In calculating the DSR for this group, therefore, I included the principals and interests to be paid on securitized, bank, and credit card loans as well as installment payments in the numerator.

relative shares of these households' debts in the total baby boomer household housing-related debts are 61.9 percent to 17.8 percent to 8.7 percent (7.0 percent) to 11.7 percent. In other words, baby boomer households owning multiple homes accounted for the highest ratio of total baby boomer housing-related debts. By contrast, baby boomer households residing in rental house while owning and renting houses elsewhere were 6.3 percentage points (or 7.2 percentage points, for Group III') lower than all the households in these groups to have housing-related debts. In view of the fact that both principals to be amortized and the interest to be paid during the life of mortgage, baby boomer households seems to be in relatively good debt-servicing position considering the Debt-Service-Ratios(DSR) in all groups.

<Table III-6> Ratios of Households with Housing-Related Debts, 2013

(Units: number of households, %)

All sample households (9,080)				Baby boomer households (2,017)			
Group	Number of households	Number of households with housing-related debts	Ratio <sup>1)</sup>	Group	Number of households	Number of households with housing-related debts	Ratio <sup>1)</sup>
Total	9,080	2,420	26.7	Total	2,017	540	26.8
Group I	4,509	1,410	31.3	Group I	1,013	334	33.0
Group II	825	308	37.3	Group II	262	96	36.6
Group III	562	215	38.3	Group III	147	47	32.0
Group III'	499	185	37.1	Group III'	127	38	29.9
Group IV	3,184	487	15.3	Group IV	595	63	10.6

Note: 1) The ratios represent the proportion of households with housing-related debts in the number of households in each group.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

<Table III-7> is a financial statement showing the economic positions of baby boomer households in Group I, who owns current residence only. The net worth and the current annual income of these households in this baseline group amounted to KRW 376 million and KRW 62.78 million on average, respectively. Both figures fall slightly short of the KRW 493 million and KRW 68.78 million of Group III (renting their home while owning houses elsewhere), and of the

KRW 421 million and KRW 65.06 million of Group III' (renting their homes while they own single house elsewhere). Among the 1,013 households in Group

**<Table III-7> B/S of Baby Boomer Households Owning only current residence (Group I)**

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	1,013	67	135	195	265	351
(%)	100.0	6.6	13.3	19.2	26.2	34.6
Current Income	6,278.0 (5,200.0)	984.0 (1,050.0)	2,129.3 (2,160.0)	3,554.2 (3,506.0)	5,427.2 (5,480.0)	11,248.6 (9,296.0)
Gross Assets	44,829.6	13,604.2	25,199.2	25,920.3	40,932.4	72,909.0
Financial Asset	9,897.7	1,673.8	3,577.4	4,514.7	9,606.5	17,394.2
(%)	22.1	12.3	14.2	17.4	23.5	23.9
Savings (Stock, Bond)	9,897.7	1,673.8	3,577.4	4,514.7	9,606.5	17,394.2
Housing Repo. Deposit	0.0	0.0	0.0	0.0	0.0	0.0
Real Property	34,932.0	11,930.4	21,621.8	21,405.6	31,325.9	55,514.8
Real Estate valuation	31,728.7	11,513.6	20,681.1	19,149.8	28,912.2	49,665.2
(%)	70.8	84.6	82.1	73.9	70.6	68.1
Home (Residence)	22,008.8	8,899.7	17,253.2	14,779.2	20,113.9	32,186.2
Other Housing Asset	0.0	0.0	0.0	0.0	0.0	0.0
Housing Asset	22,008.8	8,899.7	17,253.2	14,779.2	20,113.9	32,186.2
Non-Residential R.E	9,719.8	2,613.8	3,427.9	4,370.6	8,798.3	17,479.1
Other Physical Asset	3,203.3	416.9	940.7	2,255.8	2,413.7	5,849.6
(%)	7.1	3.1	3.7	8.7	5.9	8.0
Liabilities	7,189.6	1,621.7	4,369.8	4,077.6	6,602.0	11,684.1
Borrowings	6,411.2	1,609.6	3,483.5	3,669.6	5,916.5	10,511.9
Rental Deposit to return	778.4	12.2	886.2	408.0	685.5	1,172.2
Net Wealth	37,640.1 (26,160.0)	11,982.5 (9,250.0)	20,829.4 (15,080.0)	21,842.7 (17,255.0)	34,330.4 (27,189.0)	61,225.0 (42,474.0)
Annual Debt Payment	841.6	230.8	405.6	485.2	786.2	1,387.4
DSR	N	642	28	81	130	231
	(%)	20.5	46.3	30.8	20.7	22.2

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

I only 397 households (39.2 percent) belongs to the lowest three income quintiles, but the net worth and the current income of these lower-three quintile households are considerably small, thus dragging down the average net worth and current income group-wide. The gaps in net worth and current income are similarly prominent in Group III', with the 44 households belonging to the highest (fifth) income quintile in that group boasting a net worth of KRW 707 million and a current annual income of KRW 116.49 million, on average. However, in this group that includes only 127 households, the lower income quintile households exerted relatively little influence.

The ratio of Group I's baby boomer household liabilities to the appraised value of their homes is 32.7 percent on average while the same ratio across income quintiles range between 18.2 percent and 36.3 percent. Therefore, even the baby boomer households in this group owning only their homes, even in the cases of other financial assets accumulated, do not appear to be excessively leveraged. In comparison with their counterparts in Group III', households in this group appear to have much higher DSRs across all income quintiles, posing significant burdens to amortize their liabilities. However, when we compare these households' liabilities to either their disposable income or the total debt against appraised values of their homes, their dependency on leverage is actually smaller than that of their counterparts in Group III'. Assuming that these households are willing to participate in the Housing Pension plan, which is called as Korean version of reverse mortgage converting their home equities into streams of fixed monthly payments after their retirement, they have already succeeded in securing a source of steady post-retirement income. Nevertheless, baby boomer households in the lowest income quintiles face significantly high DSRs, and therefore will suffer the significant burdens to amortize their debts, irrespective of to which group they belong.

**<Table III-8> B/S of Baby Boomer Households Owner-occupiers with other house ownership elsewhere(Group II)**

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	262	5	20	39	51	147
(%)	100.0	1.9	7.6	14.9	19.5	56.1
Current income	8,638.1 (7,220.0)	533.5 (510.0)	2,148.5 (2,009.0)	3,533.9 (3,609.0)	5,641.0 (5,640.0)	12,444.5 (10,000.0)
Gross Assets	95,153.6	44,097.9	49,312.0	46,136.0	51,569.3	133,371.9
Financial Asset	18,722.2	4,031.5	4,684.8	6,045.2	8,364.0	28,666.1
(%)	19.7	9.1	9.5	13.1	16.2	21.5
Savings(Stock, Bond)	18,722.2	4,031.5	4,684.8	6,045.2	8,364.0	28,666.1
Housing Repo. Deposit	0.0	0.0	0.0	0.0	0.0	0.0
Real Property	76,431.4	40,066.5	44,627.2	40,090.8	43,205.3	104,705.7
Real Estate valuation	72,407.6	38,731.9	42,986.7	38,896.6	41,367.3	98,640.8
(%)	76.1	87.8	87.2	84.3	80.2	74.0
Home(Residence)	28,545.1	10,325.1	18,508.2	20,194.1	23,183.3	35,058.1
Other Housing Asset	30,506.5	25,605.8	19,734.8	15,608.6	13,924.6	42,384.5
Housing Asset	59,051.6	35,930.9	38,242.9	35,802.7	37,107.9	77,442.6
Non-Residential R.E	13,356.0	2,801.0	4,743.8	3,093.8	4,259.4	21,198.2
Other Physical Asset	4,023.8	1,334.6	1,640.4	1,194.3	1,837.9	6,065.0
(%)	4.2	3.0	3.3	2.6	3.6	4.5
Liabilities	20,057.9	22,601.8	14,583.8	10,814.3	8,725.1	27,382.5
Borrowings	9,409.6	10,236.0	9,089.3	5,108.2	4,102.5	12,520.4
Rental Deposit to return	10,648.2	12,365.8	5,494.4	5,706.1	4,622.6	14,862.0
Net Wealth	75,095.7 (49,615.0)	21,496.2 (21,242.0)	34,728.2 (38,870.0)	35,321.8 (35,410.0)	42,844.3 (35,499.0)	105,989.4 (64,921.0)
Annual Debt Payment	990.2	217.9	498.6	626.4	537.8	1,357.7
DSR	N	2	10	26	32	82
(%)	20.2	74.9	44.5	27.0	15.4	19.7

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

**<Table III-9> B/S of Baby Boomer Renter Households with owning houses elsewhere(Group III)**

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	147	4	23	29	37	54
(%)	100.0	2.7	15.6	19.7	25.2	36.7
Current income	6,877.8 (5,600.0)	1,157.4 (1,170.0)	2,059.9 (2,000.0)	3,427.3 (3,280.0)	5,564.5 (5,600.0)	12,095.2 (10,320.0)
Gross Assets	70,570.1	26,806.7	24,697.9	31,433.9	69,405.2	114,199.0
Financial Asset	25,298.2	9,032.6	6,001.4	10,758.8	17,440.8	47,808.2
(%)	35.8	33.7	24.3	34.2	25.1	41.9
Savings(Stock, Bond)	13,927.8	3,914.1	2,670.2	5,847.2	8,197.5	27,736.5
Housing Repo. Deposit	11,370.5	5,118.5	3,331.2	4,911.5	9,243.3	20,071.8
Real Property	45,271.9	17,774.1	18,696.5	20,675.1	51,964.4	66,390.8
Real Estate valuation	43,016.5	17,638.1	18,270.8	19,645.5	49,693.5	62,574.6
(%)	61.0	65.8	74.0	62.5	71.6	54.8
Home(Residence)	0.0	0.0	0.0	0.0	0.0	0.0
Other Housing Asset	35,988.3	17,638.1	15,636.0	18,082.0	41,127.1	51,422.0
Housing Asset	35,988.3	17,638.1	15,636.0	18,082.0	41,127.1	51,422.0
Non-Residential RE	7,028.2	0.0	2,634.7	1,563.5	8,566.3	11,152.6
Other Physical Asset	2,255.4	136.0	425.8	1,029.7	2,271.0	3,816.1
(%)	3.2	0.5	1.7	3.3	3.3	3.3
Liabilities	21,264.1	8,703.0	11,336.3	7,704.3	24,048.1	31,383.0
Borrowings	8,451.9	4.3	3,311.2	3,456.1	12,277.0	11,122.6
Rental Deposit to return	12,812.2	8,698.6	8,025.0	4,248.2	11,771.1	20,260.4
Net Wealth	49,306.0 (34,147)	18,103.8 (20,389)	13,361.6 (9,530)	23,729.6 (16,700)	45,357.1 (31,362)	82,816.0 (64,911)
Annual Debt Payment	792.7	170.3	275.5	522.5	1,023.0	1,033.8
DSR	N	122	2	20	33	42
	(%)	14.9	31.8	15.9	18.6	19.9

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

Next, <Table III-10> shows the economic position of baby boomer households that currently live in rented homes, but own a single house elsewhere. Note the sizable gaps in net worth and current income between households belonging to the highest income quintile and the rest of the households in the four lower income quintiles. While the average net worth and current annual income amount to KRW 421 million and KRW 65.06 million in Group III', much of this comes from the highest-quintile households, while the net worth and the current annual income of the lower-quintile households fall significantly short of the group-wide averages.

The highest-quintile households in Group III', on average, have made an average deposit of KRW 177.57 million each for their current rented residence (for *chonsei* or deposit with monthly rent contracts) to the landlords. This amount, constituting the component of financial asset of these households, far exceeds the KRW 155.96 million they have received as security deposits (i.e., liabilities) on average from the tenants occupying the houses they own elsewhere. However, the ratio of these households' total liabilities (borrowings from financial institutions plus the lease security deposits to be returned to tenants) to the appraised value of their houses amounts to 65.9 percent, which is considerably higher than the total debt ratio against housing value observed in other groups. More specifically, the loans that these households have taken out of financial institutions to leverage their investment in their investment house they own amount to 27.2 percent of the market prices of their houses, thus making these houses vulnerable to becoming "under-the-water." The risk increases even further in the fourth and fifth income quintile groups. In other words, these households appear to be rather excessively leveraged, taking out significant amounts of loans from financial institutions on top of the security deposits they have to return to their tenants after the lease expiration.<sup>10)</sup>

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10) There were only 5 first-quintile households and 4 first-quintile households in Groups II and III. Of these nine households, only one held housing-related debts. Interpretation in this respect therefore requires care.

〈Table III-10〉 B/S of Baby Boomer Renter Households with owning a house elsewhere(Group III')

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	127	3	23	25	32	44
(%)	100.0	2.4	18.1	19.7	25.2	34.6
Current income	6,506.2 (5,500.0)	1,235.3 (1,200.0)	2,059.9 (2,000.0)	3,404.2 (3,200.0)	5,501.3 (5,600.0)	11,649.4 (9,800.0)
Gross Assets	60,683.2	16,035.6	24,697.9	28,961.9	63,964.5	97,318.2
Financial Asset	22,437.7	5,803.5	6,001.4	11,183.1	15,792.2	43,359.8
(%)	37.0	36.2	24.3	38.6	24.7	44.6
Savings(Stock, Bond)	12,531.9	3,594.5	2,670.2	6,023.8	7,589.7	25,602.5
Housing Repo. Deposit	9,905.8	2,209.0	3,331.2	5,159.3	8,202.5	17,757.4
Real Property	38,245.5	10,232.1	18,696.5	17,778.8	48,172.3	53,958.4
Real Estate valuation	36,351.6	10,038.6	18,270.8	16,875.5	45,946.8	50,897.4
(%)	59.9	62.6	74.0	58.3	71.8	52.3
Home(Residence)	0.0	0.0	0.0	0.0	0.0	0.0
Other Housing Asset	29,518.8	10,038.6	15,636.0	16,054.7	36,146.0	40,383.3
Housing Asset	29,518.8	10,038.6	15,636.0	16,054.7	36,146.0	40,383.3
Non-Residential RE	6,832.8	0.0	2,634.7	820.9	9,800.8	10,514.2
Other Physical Asset	1,893.9	193.5	425.8	903.2	2,225.5	3,060.9
(%)	3.1	1.2	1.7	3.1	3.5	3.1
Liabilities	18,536.8	1,630.3	11,336.3	7,344.2	22,514.9	26,598.2
Borrowings	8,055.5	6.5	3,311.2	2,731.2	11,976.1	11,002.0
Rental Deposit to return	10,481.3	1,623.8	8,025.0	4,613.0	10,538.9	15,596.2
Net Wealth	42,146.4 (28,894.0)	14,405.3 (15,612.0)	13,361.6 (9,530.0)	21,617.7 (15,796.0)	41,449.6 (30,995.0)	70,720.0 (60,519.0)
Annual Debt Payment	791.9	254.6	275.5	556.8	913.0	1,132.1
DSR	N	2	20	22	30	37
(%)	14.8	31.8	15.9	20.0	17.1	12.7

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

〈Table III-11〉 B/S of Baby Boomer Renter Households(Group IV)

(Units: number of households, %, KRW 10,000)

	Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile
# of Sample Households	595	169	171	123	94	38
(%)	100.0	28.4	28.7	20.7	15.8	6.4
Current income	3,049.2 (2,431.0)	888.5 (900.0)	2,041.6 (2,000.0)	3,499.7 (3,540.0)	5,223.6 (5,132.0)	9,214.3 (8,760.0)
Gross Assets	8,773.7	2,442.8	4,571.2	10,219.0	15,383.1	30,867.4
Financial Asset	6,292.0	2,107.3	3,466.2	7,177.4	9,546.3	23,917.5
(%)	71.7	86.3	75.8	70.2	62.1	77.5
Savings(Stock, Bond)	3,240.1	740.9	1,612.4	3,505.2	5,464.8	13,704.1
Housing Repo. Deposit	3,051.9	1,366.4	1,853.9	3,672.2	4,081.5	10,213.5
Real Property	2,481.7	335.5	1,104.9	3,041.5	5,836.8	6,949.9
Real Estate valuation	1,835.3	201.9	737.3	2,193.8	4,639.5	5,062.9
(%)	20.9	8.3	16.1	21.5	30.2	16.4
Home(Residence)	0.0	0.0	0.0	0.0	0.0	0.0
Other Housing Asset	0.0	0.0	0.0	0.0	0.0	0.0
Housing Asset	0.0	0.0	0.0	0.0	0.0	0.0
Non-Residential R/E	1,835.3	201.9	737.3	2,193.8	4,639.5	5,062.9
Other Physical Asset	646.4	133.6	367.6	847.8	1,197.3	1,887.0
(%)	7.4	5.5	8.0	8.3	7.8	6.1
Liabilities	1,525.1	657.3	1,103.5	2,053.6	2,061.4	3,757.7
Borrowings	1,484.6	657.3	998.6	2,005.8	2,053.5	3,757.7
Rental Deposit to return	40.5	0.0	104.9	47.8	7.8	0.0
Net Wealth	7,248.6 (3,030.0)	1,785.6 (890.0)	3,467.7 (2,432.0)	8,165.4 (5,066.0)	13,321.8 (6,572.0)	27,109.7 (18,900.0)
Annual Debt Payment	277.6	79.4	163.0	319.2	257.7	1,444.3
DSR	N	276	49	91	63	51
(%)	17.5	28.0	15.2	18.6	8.8	27.1

Note: Figures in parentheses represent the medians.

Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

〈Table III-12〉 Financial Positions of Baby Boomer Households: Housing-related Debt indicator by 4 Sub-tenures

(Unit: %)

		Total	1Quintile	2Quintile	3Quintile	4Quintile	5Quintile	
2,017 households (2013)	Group I (1,013) <sup>1)</sup>	Liabilities / Home(Residence)	32.7	18.2	25.3	27.6	32.8	36.3
		Rental Deposit to return / Home(Residence)	3.5	0.1	5.1	2.8	3.4	3.6
		Liabilities / Disposable income	142.9	224.8	265.7	140.9	152.4	129.2
		DSR(642) <sup>2)</sup>	20.5	46.3	30.8	20.7	22.2	18.7
	Group II (262) <sup>1)</sup>	Liabilities / Housing Asset	34.0	62.9	38.1	30.2	23.5	35.4
		Rental Deposit to return / Housing Asset	18.0	34.4	14.4	15.9	12.5	19.2
		Liabilities / Disposable income	300.5	–	–	401.9	189.6	285.3
		DSR(152) <sup>2)</sup>	20.2	74.9	44.5	27.0	15.4	19.7
	Group III (147) <sup>1)</sup>	Liabilities / Housing Asset	59.1	49.3	72.5	42.6	58.5	61.0
		Rental Deposit to return / Housing Asset	35.6	49.3	51.3	23.5	28.6	39.4
		Liabilities / Disposable income	402.9	–	–	279.5	594.7	334.7
		DSR(122) <sup>2)</sup>	14.9	31.8	15.9	18.6	19.9	12.0
	Group III' (127) <sup>1)</sup>	Rental Deposit to return / Housing Repo. Deposit	105.8	73.5	240.9	89.4	128.5	87.8
		Liabilities / Other Housing Asset	62.8	16.2	72.5	45.7	62.3	65.9
		Rental Deposit to return / Other Housing Asset	35.5	16.2	51.3	28.7	29.2	38.6
		Liabilities / Disposable income	365.1	154.0	–	263.8	534.7	292.7
DSR(111) <sup>2)</sup>		14.8	31.8	15.9	20.0	17.1	12.7	
Group IV (595) <sup>1)</sup>	Liabilities / House Value	–	–	–	–	–	–	
	Rental Deposit to return / House Value	–	–	–	–	–	–	
	Liabilities / Disposable income	58.4	83.0	62.5	68.9	45.6	49.0	
	DSR(276) <sup>2)</sup>	17.5	28.0	15.2	18.6	8.8	27.1	

Notes: 1) Figures in parentheses represent the number of baby boomer households in each group.  
2) Figures in parentheses indicate the number of baby boomer households in each group with securitized loans, credit loans from banks, and credit card loans to amortize.  
Source: Micro raw data for the Korean Household Finance and Welfare Survey (KHFWS), 2013.

# IV

## Housing Pension and Other Alternative Assets for Baby Boomers: Implications for Tax Policy

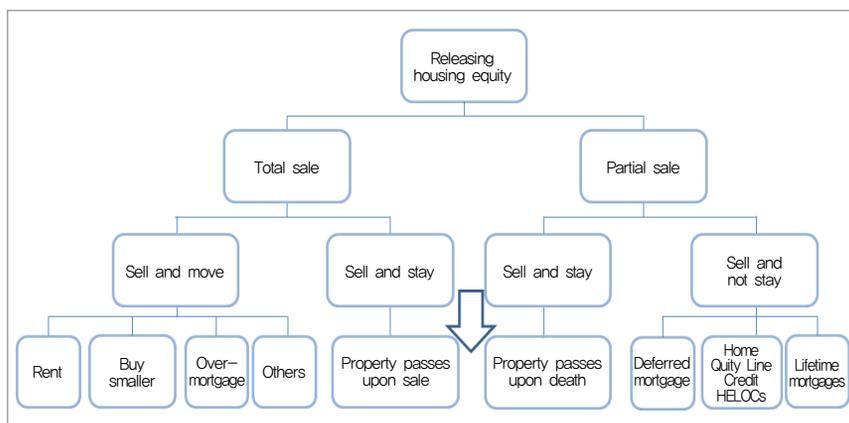
### 1 Housing equity as a source of post-retirement income

While there are numerous studies on whether and how elderly retirees might be able to secure the flows of income necessary for adequate living, the OECD study conducted in 2013 stands out, particularly for its focus on the income-guaranteeing function of homes as assets for old-aged households. The sheer fact of owning a home serves to save the retiree the cost of renting a home while ensuring the stability of living conditions for the retiree's household. Owning a home in itself, therefore, serves a central role in the overall system for securing old-age income, helping to prevent a retiree's slip into poverty while also substantially increasing their income security.<sup>11)</sup>

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11) According to the OECD(2013), different countries use different methods to convert imputed rents into monetary values. The OECD's method applied to its member states provides relevant data that shows that home ownership increases retirees' income by 18 percent on average, or by 29 percent in the case of Spain.

[Figure IV-1] Equity release schemes



Source: Ong, R., M. Halfner, G. Wood, T. Jefferson and S. Austen (2013), "Assets, Debt and the Drawdown of Housing Equity by an Ageing Population," Positioning Overmortgage Paper, No. 153, Australian Housing and Urban Research Institute, Melbourne, PENSIONS AT A GLANCE 2013, p.87, Figure 2.17.

[Figure IV-1] introduces the diverse ways in which an owner-occupying household may liquidate his housing equity. The presence of the "wholesale" option on the left side of the chart illustrates that it is difficult to divide up a lumpy asset like housing and to liquidate only one part at a time. The home owner can either sell their entire home opting to stay there as a tenant, or relocate to a smaller home by either purchasing or renting it. The "partial sale" option on the right side of the column enables the home owner to continue to live there until their death by receiving a return on the sale of their title to that home in either part or entirety up front. Alternatively, the home owner, using the partial sale option, may secure a loan, using their home as security collateral, which they will not need to repay until death.<sup>12)</sup>

Numerous states worldwide have set out to reform their public pension plans, raising the pension age and forcing people to remain in the job market longer so that they can continue to contribute to the plans and collect their pension

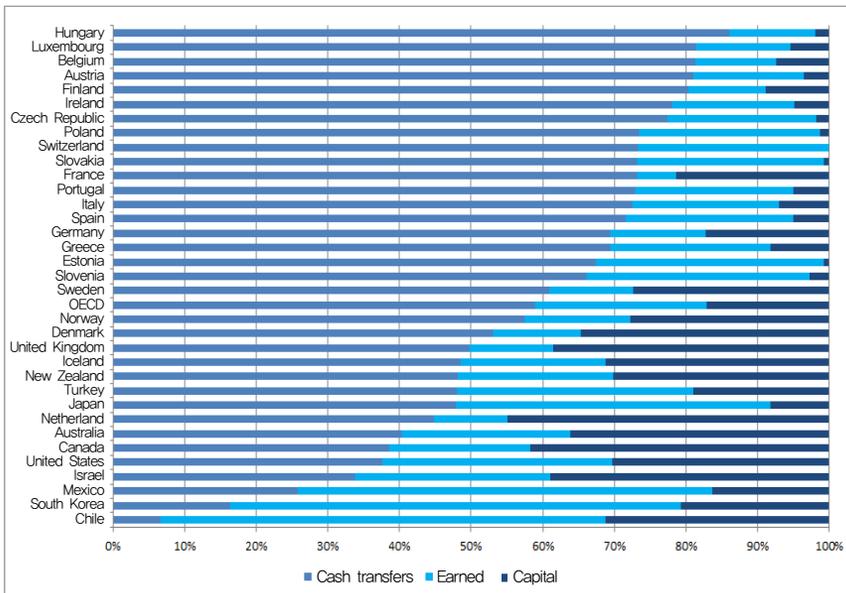
12) The "lifelong mortgage" shown in the chart is also known as an "annuity reverse mortgage" or the "home income plan."

benefits at a later date. In the meantime, these states also encourage people to make use of private pension and annuity plans incorporating housing equity and financial assets in order to ensure adequate post-retirement income. There is also increasing demand for these government to replace cash transfers on demand inelastic items, such as the medical care and long-term health care for the elderly (aged 65 or older) and the poor, with in-kind benefits over time. At any rate, a pressing policy task facing many states worldwide today is to find and design a new old-age income security system that would allow home owners' housing equity to contribute to their post-retirement income security.

[Figure IV-2] shows the compositions of income sources for the elderly aged 65 and older in various OECD member states. In Korea, public pensions and

**[Figure IV-2] Sources of Income for the Elderly in OECD Member States in the 21st Century**

(Unit: %)



Note: Earned income includes income from employment and self-employment. Capital income includes not only interests on non-pension-type savings, but also private pension payments.

Source: OECD Income Distribution Database, PENSIONS AT A GLANCE 2013, p.71, Figure 2.4 (<http://dx.doi.org/10.1787/888932935857>).

government cash transfers account for only 15 percent of elderly income, while private pensions and other savings-type equities account for 20 percent or so of elderly income. The elderly in Korea therefore are forced to continue working in order to earn the income they need. International comparisons like this one clearly demonstrate the inadequacy of public pension plans in Korea, and also reveal the need to provide increasing in-kind benefits and public services for the impoverished elderly, while encouraging home owners to make use of the alternative net equity liquidifying schemes like the Housing Pension. Given the fact that real estate property occupy overwhelming shares in household asset portfolios in Korea, reverse mortgage plans like the Housing Pension are particularly germane to Koreans' search for a more effective old-age income security system.

## 2 Reverse mortgage and the Housing Pension in Korea

As the Korean society ages, the demand for financial products that can help retirees and the elderly liquidate their assets for steady and secure flows of post-retirement income, such as annuity plans and long-term care insurances, will only grow.<sup>13)</sup> Given the overwhelming importance of homes in household asset portfolios in Korea, the Housing Pension, which provides benefits for elderly home owners, will gain even greater significance and attention, particularly given the major uncertainty looming large over the Korean housing market.

The classical reverse mortgage plan involves financial institutions like banks taking individuals' homes as security collateral for certain amounts of loans, which the institutions provide to the debtors over a fixed and long period of time like pension benefits. This financial product allows retired or near-retirement home owners to utilize part of the housing equity and assets they own for future income security. Home owners taking out these loans, in turn, can withdraw

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13) Poterba(2004) p. 51

fixed amounts of money as monthly payments from the revolving lines of credit that the banks provide over a definite period of time or during the remainder of their lives. The conventional mortgage involves the home owner paying back the debt they owe to the bank in equal and regular installments over a certain period of time, with their owners' equity in their home increasing in proportion to the amount of debt repaid. The reverse mortgage works exactly in the opposite way. Another added benefit of reverse mortgage plans is that they charge no pre-payment penalties on home owners who amortize their debts to banks ahead of schedule. In return for homes set up as security collateral, banks provide lines of credit, through which home owners can withdraw money up to given limits. Henceforth, the more of the debt the home owner repays, the more money they can withdraw from their line of credit, while the interests on the money they withdraw from the bank are added to the balance in the mortgage account. In certain regions, home owners can take out second or third reverse mortgage loans on their homes if their market values increase. Banks, however, are reluctant to take lien positions on reverse-mortgaged homes. In so far as the home owner retains sufficient equity in their reverse-mortgaged home, they may switch to a new and better reverse mortgage that offers a lower interest rate. The bank providing the new reverse mortgage, however, will claim more than the line of credit it provides. Debtors often mistake this claimed amount for the amount of debts they have to repay. The recorded lien, however, serves as a home equity line of credit and indicates the maximum amount of loan the debtor may withdraw. The actual amount of debt expected to be repaid is therefore only the sum of the principals the debtor has borrowed, plus interests.

In the United States, only home owners aged 62 or older are eligible to apply for reverse mortgage loans. Suppose only one spouse meets this ownership-plus-age requirement and takes out a reverse mortgage loan on the home they own. After the debtor dies, the surviving spouse must repay the entire amount of the unamortized loan should they wish to continue to live in the same home. For this reason, financial experts generally advise against married couples seeking out reverse mortgage loans until both spouses pass the 62-years-old threshold. While the debtor who takes out a reverse mortgage loan need not pay the principal and the interests on a regular basis, they are required to pay the insurance premiums, property taxes, and other duties associated with

home ownership, and also to live in that home as their primary residence. Otherwise, the bank may require the debtor to repay their debt ahead of the schedule, and may threaten foreclosure should the debtor fail to comply.<sup>14)</sup> The government-insured HECM Standard, introduced in the United States in 1989, became the benchmark for the Housing Pension in Korea. HECM Saver is another reverse mortgage plan, launched in October 2010, which has significantly reduced the cost of borrowing.

The Housing Pension is Korean take on reverse mortgage loans. The eligibility criteria stipulated by the Korea Housing Finance Corporation (KHFC) are: (1) that the home owner be at least 60 years of age (if the married couple together owns a single home, the older spouse must be at least 60 years of age); (2) that the home owner and their spouse own only one home (no multi-house owners may apply); and (3) that the market value of the home owner's home be KRW 900 million or less. Notwithstanding the "single-home" requirement, the home owner needs to be living in the only home they own at the time of applying for the loan. (A home owner who owns two homes, due to inheritance or unavoidable relocation, may still apply for the loan, on the condition that they sell one of the homes in three years.) The certificate of deposit (CD) interest rate of three months is applied, along with the additional 1.1 percent on leverage. The home owner must designate the mortgage-providing bank as the first-priority holder of the right to the collateral security, while the mortgage is settled at 120 percent of the insured amount. Upon the settlement of the mortgage, the home owner is released from the duty to pay registration, local education, and special rural development taxes and also from the duty to purchase National Housing Bonds. Moreover, the Housing Pension reduces the property tax by 25 percent (or by up to KRW 500 million on each home that is valued at KRW 500 million or higher on the market), while the interests the home owner pays can be deducted (up to KRW 2 million) from the pension

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14) Reverse mortgage loans are nonrecourse loans. This means that while the amount of the individual's debt must not exceed the market value of their home, the inheritor of the home (and the debt accompanying it) is required to repay the unamortized remainder of the debt even if the house price has fallen. The inheritor, of course, can be released from the debt by transferring the title of the home to the bank.

income they receive. <Table IV-1> summarizes the key points of the Housing Pension.

<Table IV-1> Housing Pension Overview

	Description
Eligibility	<ul style="list-style-type: none"> <li>* Age: The home owner (or the older spouse of a married couple who together own a home) must be at least 60 years of age.</li> <li>* Number of homes owned: The home owner and their spouse must own only one home. (They may temporarily own up to two homes.)</li> <li>* The single-home requirement was relaxed somewhat beginning in November 2014 in order to extend loans to married couples meeting any of the following criteria:               <ul style="list-style-type: none"> <li>– They own one home;</li> <li>– They own multiple homes that do not exceed KRW 900 million in total.</li> </ul> </li> <li>* Home value: The home(s) owned must not exceed KRW 900 million in value (in total) or be an “elderly welfare home” registered with local authorities.</li> </ul>
Pension payment	<ul style="list-style-type: none"> <li>* Lifelong payments: The home owner may opt to receive a fixed amount of money every month, without defining the limit on withdrawals from their line of credit.</li> <li>* Mixed payments: The home owner may define the limit on withdrawals from their line of credit, and receive the remainder of the loan in monthly payments.</li> <li>* Definite period payment: The home owner may opt to receive a fixed amount of money every month, over a definite period of time (ranging between 10 and 30 years).</li> </ul>
Monthly payments	<ul style="list-style-type: none"> <li>* Fixed-amount payments: The home owner receives the same amount of money every month.</li> <li>* Fixed-rate increasing payments: The monthly payments increase at the rate of 3percent every 12 months.</li> <li>* Fixed-rate decreasing payments: The monthly payments decrease at the rate of 3percent every 12 months.</li> <li>* Earlier benefit payments: The home owner receives significant amounts of monthly payments during the first 10 years, and receives only 70 percent thereof beginning in the 11th year.</li> </ul>
Cessation of payments	<ul style="list-style-type: none"> <li>* Home owner’s death, default on debt, long-term non-occupancy, default on setting additional security collateral, loss of title, etc.</li> </ul>
Amortization	<ul style="list-style-type: none"> <li>* The home owner may opt to amortize part or the entirety of the pension benefits they have received at any time without penalty.</li> <li>* If the home owner dies and the surviving spouse does not amortize the debt, the bank may dispose of the home to amortize the debt.               <ul style="list-style-type: none"> <li>– House value &gt; total pension benefits paid: The excess is returned to the debtor (inheritor).</li> <li>– House value &lt; total pension benefits paid: The debtor (inheritor) need not pay the shortage.</li> </ul> </li> </ul>

Source: KHFC, “Housing Pension: Becoming Even More User-Friendly as of August 1,” July 30, 2014; “Multi-Home Owners Can Benefit from Housing Pension Starting Today,” November 3, 2014.

Banks that provide housing pension benefits do bear certain risks, including: (1) fluctuation (decline) in the the market price of houses set up as security collateral; (2) the home owner living beyond life expectancy; and (3) difficulty in setting appropriate limits to the maximum line of revolving credit. Considering the possible fall in home prices and the lengthened life expectancy of home owners, banks instead try to sell the pension plan to old-aged retirees.

Home owners who are eligible to join this government-insured pension plan have plenty of reasons to find the Housing Pension attractive, given the risks of fluctuations in the future values of their properties and also the option of not amortizing the debts they incur through the pension. Since the plan's introduction in July 2007, the number of new participants has increased steadily yearly, exceeding 20,000 by June 2004. As of the end of 2014, a cumulative total of 19,880 loans had been provided, for a total insured balance of KRW 26.1036 trillion. However, the upward trajectories of all the related figures suddenly came to a halt and began to fall abruptly in 2015 due to drastic drops in housing prices. The amount of pension benefits that a home owner may collect through the Housing Pension is decided on the basis of the price of their home at the time of joining the program. A fall in the home price therefore means that newcomers will receive less in pension benefits. Eligible home owners in Korea today thus show greater reluctance toward the Housing Pension. Nevertheless, as baby boomers will soon begin to retire en masse, and as their asset portfolios are heavily skewed in favor of homes and real assets, the demand for the Housing Pension will continue to rise in the future.

Given the actuarial structure of the Housing Pension, the key risk factors are the home prices, the interest rates, and the probability of debtors closing on their debts. KHFC decides the maximum amount of monthly payments to be paid to each participant according to the principle of equivalence, i.e., making equal the present values of the expected amount of losses and the expected amount of the insurance cost after applying fixed and expected average values to all three key risk factors. From the perspective of the Korean government, the Housing Pension is an extremely unfair financial transaction, heavily favoring (imposing almost no risks or burdens) on individual participants. The current structure of the Housing Pension is therefore highly likely to increase fiscal burdens on the Korean state in the future. The current pension structure is rife

〈Table IV-2〉 Housing Pension Benefits Paid and Balances

(Units: number of loans, KRW 100 million)

	Insured loans			Insured balances		
	Number of loans	Benefits paid	Insured amount	Number of loans	Benefits paid	Insured amount
2007	515	44	6,025	511	44	5,972
2008	695	230	8,633	1,166	265	14,247
2009	1,124	531	17,474	2,260	772	31,275
2010	2,016	911	30,361	4,065	1,639	59,532
2011	2,936	1,401	41,000	6,686	2,931	97,472
2012	5,013	2,392	69,006	11,393	5,193	163,485
2013	5,296	3,423	62,950	16,127	8,395	220,278
2014	4,536	3,393	49,174	19,880	11,416	261,036
TOTAL	22,131	12,325	284,623	19,880	11,416	261,036

Notes: 1. "Benefits paid": The actual amount of pension benefits paid to participants so far (i.e., the sum of monthly payments, individual withdrawals, interests on debts, and insurance fees).

2. "Insured amount": The total amount of pension benefits to be paid to participants until they reach age 100 (i.e., the sum of monthly payments, individual withdrawals, interests on debts, and insurance fees).

Source: KHFC, *Housing Finance Monthly*, December 2014, p. 114, and January 2012, p. 126.

with other problems as well, as participants possess far more information regarding likely changes in the prices of the homes they set up as security collateral; as the Korean government applies nationwide average fluctuation rates on home prices without taking into account the distribution and concentration of valued properties in certain regions; and as home owners are allowed to amortize their debts, terminate their contracts ahead of schedule, and back out of the pension scheme if their home values increase dramatically. As home owners retain their put option, i.e., the right to sell their homes even when their values fall short of the remaining balance of their debts, the debts they incur through the Housing Pension are non-recourse loan.

### 3 Implications of housing market changes for tax policy

The Korean state provides a multi-tiered old-age income security system, consisting of the National Pension, Employer pensions, retirement pensions (with corporate contributions), private pensions, the Basic Livelihood Security Program, and the Basic Old-Age Pension, in addition to the Housing Pension. On top of the social security programs they are required to contribute to, Koreans can choose from this considerably wide range of pensions and design the flow of post-retirement income throughout the remainder of their lives based on their present and future assets.

In this subsection, let us examine the implications, for the Korean tax policy, of using the National Pension, private pensions, and immediate annuities as vehicles for monetizing and liquidating housing equity.

Mandatory public pensions like the National Pension, to which all Korean businesses and citizens are required to contribute, run on contributions or insurance premiums from both employees and employers. These contributions are deductible in entirety from beneficiaries' taxable income, and beneficiaries are further exempted from taxes on the income that is generated on their pension benefits while they are still contributing. Once beneficiaries pass the pension age threshold and begin to receive pension benefits, they pay income taxes on those benefits at lower rates than those imposed on earned or corporate income. Contributions to public pension plans are deductible due to their mandatory nature. Retirees pay taxes on only part of the pension benefits they receive because much of the benefits they receive comes from the past contributions they themselves made.

Private pensions in Korea consist exclusively of savings-type financial products that individuals are free to purchase and cancel. Pension savings are deductible from the account holder's income up to KRW 4 million a year. Account holders are also exempted from taxes on gains generated in administering and investing the savings deposited during the administration phase. At the end of the administration phase, account holders can finally collect their pension benefits, either in lump sums (paying "other income" taxes) or in monthly payments (paying "pension income" taxes). Taxes that have been

levied on these pension benefits while account holders were still contributing will be eliminated in this phase. The pension taxation system in Korea is described as “EETp” (with “E” standing for tax exemption and “Tp” standing for partial taxation) because up to KRW 12 million of each individual’s income from private pensions is treated as tax exempt, and only low tax rates (up to 5percent) are imposed on the remainder. In other words, Koreans who hold savings-type pension accounts and receive pension benefits thereof are subject to taxation, while Korean home owners who receive Housing Pension benefits are tax exempt.

Whereas mortgage loans are personal loans, reverse mortgage loans provided via the Housing Pension are *in rem* loans, with the debt ceiling limited to the price of the homes settled as security collateral. This makes the Housing Pension all the more appealing to home owners. As the Housing Pension benefits that home owners receive on a monthly basis are regarded as “financial liabilities secured by properties set up as collateral,” the pension benefits themselves are treated as liabilities and therefore tax exempt.<sup>15)</sup> Reverse mortgage loans in the United States are similarly regarded as advanced loans and not as earned income, and are therefore tax exempt. Home owners can deduct the reverse mortgage loans from their income only after amortizing their loans completely, and only up to USD 100,000. By contrast, Korean home owners can deduct the interests on their reverse mortgage loans from their pension income (up to KRW 2 million).

A pension or an annuity conventionally refers to a financial product requiring the beneficiary to pay certain amounts of premiums to the insurer (either at a fixed point in time or over a long period), in return for fixed amounts of regular payments after a certain point in time. The emergence of immediate annuities in 2012, which promise to pay pension benefits with a single contribution from the beneficiary, were thus much talked about.<sup>16)</sup> Savings-type

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15) According to Haig and Simons’ inclusive conceptualization of income, regarded by policy researchers as ideal, everything that could reduce an individual’s future spending power—including the future cost they will pay to increase their present income—must be subtracted from the individual’s present income. Therefore, as pension-collecting beneficiaries have already paid the principals and interests on the pension benefits they are collecting, their pension income ought not to be taxed.

insurances requiring beneficiaries to invest for at least 10 years also exempt beneficiaries from interest income taxes on their monthly pension benefits. As these products imposed no ceilings on the amounts of money beneficiaries may deposit, they were touted as the ultimate “tax-saving” instruments for accumulating wealth. However, lifelong insurance holders are fundamentally barred from terminating their contracts ahead of the set maturity date. Even the “inheritance-type” products that promise to return the principals that beneficiaries have saved after a certain period of time elapses or upon beneficiaries’ death may cause losses of principals if beneficiaries terminate their contracts early.

The Housing Pension differs from other types of pensions. Whereas the latter require beneficiaries to contribute a sizable amount of money in equal installments over a long stretch of time in return for fixed monthly payments of pension benefits after beneficiaries pass a certain age, the former provides pension benefits on the basis of the homes that beneficiaries already own and set up as security collateral. Suppose a home owner decides to invest KRW 100 million in cash in an immediate annuity before or as of December 2012. He will begin to receive KRW 300,000 or so every month. Suppose our home owner is at least 60 years of age and has decided to join the Housing Pension. The amount of monthly pension benefits that the Housing Pension provides was lowered in February 2012, but for every KRW 100 million of his home value, our home owner will receive about KRW 230,000 a month. Whereas the amount of monthly pension benefits that the home owner will receive from his immediate annuity plan will vary over time, and likely decrease given the downward trend in the interest rate, the amount of monthly pension benefits from the Housing Pension will stay constant until the death of both our home owner and his spouse. Moreover, the home owner can opt to amortize his debts (principals and interests alike) ahead of schedule, in either part or entirety, without penalty. The value

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16) In response to the growing criticism that the well-off may use immediate annuities to avoid paying their interest income taxes, the National Assembly amended the Enforcement Ordinance for the Tax Act, imposing, as of February 12, 2013, a 15.4percent interest income tax on the gains generated by inherited long-term savings insurances to which beneficiaries are required to contribute more than KRW 200 million each.

of his home may drop after his death, below the total amount of pension benefits he and his spouse have received until that point, but the Korean government will not be able to demand that his surviving spouse pay back the difference. Conversely, if the value of the home increases after the home owner's death beyond the total amount of pension benefits he and his spouse have received until then, and his spouse decides not to keep the home, the government may sell it and return the excess portion to the spouse. Baby boomers set to retire in a few years therefore mainly face two options: they can either liquidate their homes (up to KRW 900 in value each), using the returns to purchase financial products like immediate annuities; or they can keep their homes, using them to leverage Housing Pension benefits. Given the cost of transaction and the benefit of property tax exemption, the Housing Pension provides a far more attractive option than all other types of pensions. The home equity loans provided by the Housing Pension offer quite a wide range of options for the debtor, while the backing institutions almost single-handedly take up the associated risks, such as declines in home values, fluctuations in interest rates, and longer life expectancies.

Owning a home into one's old age provides numerous advantages over liquidating it and keeping other financial assets. First, in paying the cost of the home one purchases, one is effectively making a savings deposit, from which one can derive pension benefits in old age. A home, moreover, is a very stable asset and almost amounts to purchasing a long-term care insurance plan. On top of that, it can be inherited as part of the family legacy. However, purchasing and maintaining a home may severely limit the cash flow of a household. Basing one's asset portfolio exclusively on homes and real assets also leaves the portfolio vulnerable to fluctuations in property values, and can cause liquidity shortages, limiting the ability of the home owner to withdraw the amount of capital they need when necessary.

The decision of whether to join the Housing Pension will necessarily rest on consideration of a host of related issues, the least among them being life security for the surviving spouse and whether or not the home is set to be inherited. Nevertheless, the Housing Pension may offer the best alternative yet for elderly home owners who have retired or are about to retire and who expect to continue to live in their current homes for years to come.

The concept of housing welfare is emerging as a buzzword among policymakers and researchers in Korea today. The Korean government may need to differentiate the tax burdens on home owner occupiers and the house owners not occupying them, reducing repeated property tax burdens on the former over time. As a matter of fact, the capital gains tax, the housing rental income tax, the comprehensive real estate tax, the property acquisition tax, and various other housing-related taxes all impose differential burdens at the points of acquisition, possession, and disposal based on objective data such as the number of houses registered and owned, the physical space on the registry, official property prices announced by the government, and reported transaction prices. The recently controversial housing rental income tax, for example, reflects the recent change in the Korean housing policy that has extended the imputed rental income tax from owners of three houses or more to owners of two houses or more. The tax also reflects the tax wedge in the Korean tax regime that imposes a higher acquisition tax rate on the high-price homes that exceed KRW 90 million in value. However, the government may need to start using different indicators that are more reflective of the actual economic positions of households, such as current income, net worth, and occupancy, in the place of the absolute number of houses owned and the like, in order to improve the effectiveness and equity of its taxation policy. Such policy reforms will also more effectively serve the anticipated decline in the overall housing demand in Korea associated with the aging of baby boomers.

Although there is growing demand for smaller homes due to the declining birth rate and the long-term decrease in the average number of household members, developers continue to supply uniform-sized apartment, thus failing to accommodate the changing demand with adequate elasticity. This stubbornness on the supply side is another reason why there is an increasing number of households who are willing to purchase and own homes, but who still persist in living in rented ones. As expectations of increases in property values have dissipated and policymakers have failed to abolish tax measures that discriminate against multi-house owners, even people who actually want to own homes for themselves and not for investment purposes continue to put off buying homes. The lifecycle-caused changes in the housing service demand and the decreasing importance of homes in post-retirement asset portfolios will ultimately mean

declines in the relative prices of houses in the long run. It is therefore high time for the Korean government to revisit and reform its currently demand-suppressive differential property tax system, which was invented during the house bubble. The aging of the baby boomer generation, the anticipated increase in the number of people living either by themselves or without children will conspire with macroeconomic conditions at large, such as the persistently low interest rates and the slowdown in the increase of property values, thus causing potential home owners to delay purchasing homes and switch from *chonsei* leases to monthly rents. Korean policymakers therefore need to revisit the transfer, acquisition, and comprehensive real estate taxes as well as the related exemptions and benefits so as to favor people who own and occupy homes, and also reduce the difference in the housing rental income taxes imposed on landlords renting their properties on a *chonsei* basis and others renting their properties for monthly rents.

# V

## Conclusion

Korean society is rapidly aging. The country joined the league of aging societies worldwide in 2000 (with the elderly making up over 7 percent of the total national population), and is expected to enter the phase of the post-aged society in just 26 years. Such an increase in the elderly share of the national population is a phenomenon not unique to Korea. Japan, for instance, is one of the fastest aging societies at present: in 2000, the elderly had already made up 17.2 percent of the total Japanese population. Given this reality, the Japanese government and civil society have for many decades been making thorough preparations for the transition into an aged society. China, with a population of 1.3 billion, is poised to join the league of aging societies very soon. In this atmosphere, policymakers and governments in advanced countries, including the United States and the United Kingdom, have stepped up research on the socioeconomic implications of the aging society.

This study divides Korean households into four groups according to their home ownership and housing tenure modes, and explores how the aging of the Korean population—particularly the baby boomer generation—will change the patterns of housing service consumption, ownership, and occupancy in the future. In Korea, it is not uncommon to hear near-retirement home owners confess their home as the only thing they have prepared for their retirement. This study closely examines the economic positions of near-retirement or retired baby boomers and their households in Korea, analyzing the patterns of their home ownership and tenure status as indicated by the micro raw data for the KHFWS from 2010 to 2013.

The KHFWS of 2012 reveals that middle-aged and elderly home owners tend to sell the homes they have bought for investment purposes and rented to tenants, in order to maintain and stay in the homes they currently occupy. Baby boomer households were especially more likely than other age groups to own their home and other multiple houses (almost one out of every three multi-house owners in the survey was a baby boomer). In the meantime, the weight of financial assets—as compared to real assets—tended to increase in these baby boomers’ asset portfolios over time. However, it is not certain whether this phenomenon has to do with the aging of asset holders in general or is unique to the baby boomer generation.

A single probit model regression result also revealed baby boomer households as more likely than other age groups to own homes at locations other than their current locations of residence. This appears to reflect the fact that property prices in Korea kept escalating while baby boomers were in the heyday of their economic activity (in their 30s through 50s), encouraging them to invest in real assets over other types of assets.

Following the Ioannides and Rosenthal model (1994), this study also explored how the discrepancy between housing investment demand and housing service consumption demand can predict and explain baby boomers’ home ownership and tenure choice behavior. The analysis produced the following findings. First, the hypothesis that it is the size of the gap between housing investment demand and housing service demand that determines whether an individual will own or rent a home works better when the baby boomer generation is included as a dummy variable than with other variables, such as age and the square of age. Second, the higher an individual’s current income and the greater their net worth, the more likely they are to purchase homes for investment purposes, thus ending up as owners of multiple houses (occupying one of them), and the less likely they are to rent a home. Third, the fact that the inclusion of the baby boomer generation as a dummy variable in the model explains home ownership, occupancy, and investment behavior better than does the inclusion of the age variable indicates that baby boomers tend to approach housing investment and housing service separately. Fourth, certain demographic variables, such as marital status and the size of household, can significantly explain the tendency to own multiple houses, which increases with marriage and with having fewer household

members. Fifth, the educational attainment of the householder also retains statistical significance. The better educated the householder, the more likely they are to think of home ownership and housing investment in separate lights, rather than letting the difference between their housing investment needs and housing service needs decide the question.

The 9,080 households making up the sample of the KHFWS in 2012 and 2013 have mostly stayed in their respective home ownership/occupancy group, except for the 20 percent or so of the households owning multiple houses who moved into the current residence owning group in one year after selling the homes they bought for investment purposes and no longer needed. The pattern is replicated among baby boomer households as well, with 20.3 percent of baby boomer households in the multi-house owning group having moved into the group of owning current residence only over the same period of time.

Reverse mortgage plans bear significant pertinence to near-retirement baby boomers in Korea, as housing asset make up overwhelming shares of their portfolios. The Housing Pension provides baby boomers with chances to secure steady sources of post-retirement income by taking out reverse mortgage loans on their homes. Home owners need not repay their loans to the bank, and may opt to amortize their debts ahead of schedule without penalty. Unlike conventional pension plans, which require beneficiaries to save certain and sizable amounts of money over a certain period of time in order to receive pension benefits, the Housing Pension treats the homes of beneficiaries as “savings deposits” on the basis of which they can withdraw pension benefits. Korean home owners who satisfy the eligibility criteria can benefit from this government-insured and quite attractive pension plan that enables them to avoid the risks of future property price declines and debt maturity. In addition to the Housing Pension, Korea already provides systematic and multi-tiered old-age income security systems, consisting of public pensions like the National Pension and occupational pensions, as well as corporate retirement pensions, personal pensions, the Basic Livelihood Security Program, and the Basic Old Age Pension.

While not discussed in depth in this study, there are a number of related questions and issues upon which researchers may expand. The general pattern is that the income flow, the composition of different sources of income, and the composition of the asset portfolio change over time as the householder ages.

Given this fact, researchers may explore whether and how the current taxation and social security policies manage the changes in income flow and net worth before and after retirement, and whether the current policies satisfy the principle of equity in intergenerational accounting.

Consider the following examples. Under the current system, an individual who works and lives on earned income from employment before retirement pays about 3 percent of their monthly wage into the National Health Insurance (NHI) scheme. After retirement, however, the amount of contributions required to be made is adjusted on the basis of the individual's wealth and assets. In some cases, therefore, an individual may end up paying more into the NHI scheme after retirement than they did before. In the meantime, the Korean government in 2012 abruptly halved the tax exemption ceiling on the amount of income from financial assets, from KRW 40 million a year to KRW 20 million a year, thus imposing far greater tax burdens (and possibly increased NHI contributions) on people who have recently retired and were hoping to live on the accrued interests and dividends from their financial assets. Beginning in May 2013, the newly amended NHI Act and its Enforcement Rules will not allow people who receive KRW 40 million or more in annual pension income from public pensions (National, Government Employees, Military, School Teachers, and Postal Service Pensions) to be included as "dependent family members" on the list of workplace-based NHI participants' family members. The National Pension law was also amended recently, and now forces early retirees (who retire around the age of 55) to suffer the absence of regular income ("income cliff") for 7 to 10 years until they become eligible to receive National Pension benefits between the ages of 62 and 65. These are only some examples where the current tax and social security laws in Korea impose increasing burdens on citizens as they age and retire.

The current practice of switching the basis of taxes, NHI contributions and other such mandatory charges from earned income to accumulated wealth serves to deepen the conflict of interests between younger generations (possessing little wealth, but benefitting from steady earned income) and older ones (possessing greater wealth, but having lost steady earned income). The Korean government may need to adopt the new concept of "converted income from net wealth," converting the amounts of wealth that older generations possess in the forms

of homes, real assets, and *chonsei* security deposits, into income streams and basing NHI contributions and other such dues thereupon. However, doing so may abruptly increase the amounts of taxes and public dues that retirees pay and therefore transform their asset portfolios. At any rate, how the state decides to handle the mounting fiscal pressure resulting from the aging society will always and inevitably affect the housing market by changing people's home ownership and tenure choice behavior. The seed for the intergenerational conflict of interest is present in every public policymaking issue, whether it concerns debt financing or intergenerational accounting.

## Bibliography

- Artle, R. and Pravin Varaiya, "Life Cycle Consumption and Homeownership", *Journal of Economic Theory* 18, 38-58, 1978.
- Choi Eun-yeong and Kwon Sun-pil, "Demographic and Household Structures and Changing Housing Patterns: 1985-2010," SRI press release, March 2012, pp. 29-31.
- Choi Jae-cheon, *Double-Cropping Your Life*, SERI Research Essay 018, 2005.
- Christelis, D., Georgarakos D., and Michael Haliassos, "Differences in Portfolios Across Countries: Economic Environment versus Household Characteristics, *The Review of Economics and Statistics*, March 2013, 95(1): 220-236
- Han Gyeong-hye et al., *Life Changes and Continuity for Baby Boomers: 2010-2012*, SNU Institute on Aging and MetLife Korea, 2013.
- Hong Gi-seok, "Population Aging and Housing Prices," *KDI Research Report: Searching for New Breakthroughs for the Real Estate Policy at Crossroads (Part I)*, January 2013.
- Hwang Jae-hun, "How to Increase Participation in the Housing Pension in the Aging Society," *Housing Finance Monthly*, September 2011.
- Ioannides, Y.M. and Stuart S. Rosenthal, "Estimating the Consumption and Investment Demands for Housing and Their Effect on Housing Tenure Status", *The Review of Economics and Statistics*, 1994, Vol.76, No.1, pp127-141.
- Jeon Seong-ju, Park Seon-yeong and Kim Yu-mi, "Promoting the Housing Pension for the Security of Old Age," *KIRI Weekly* No. 306, November 2014, p. 9.
- Jeong Eui-cheol, "Analysis of the Decisive Factors of Home Occupancy and Relocation Behavior of Elderly Home Owners," *Journal of Housing Studies*, Vol. 21, No.3, August 2013, pp. 37-60.
- , "Analysis of the Decisive Factors of Home Occupancy Behavior of Elderly Households: Focusing on Households Owning Homes with Home Owners at Age 55 and Older," *Journal of National Territorial Studies*, Vol. 77, June 2013, pp. 119-136.
- Kang Seok-hun, "Aging Society and Changing Demand for Assets," *Journal of Fiscal Studies*, Vol. 2, No. 3, August 2009, pp. 113-145.
- KHFC, *Housing Finance Monthly*, <http://www.hf.go.kr>.
- , *Housing Finance Monthly*, December 2014, p. 114, and January 2012, p. 126.
- , "Housing Pension Becomes Even More User-Friendly Starting on August 1," press release, July 2014.
- , "Multi-Home Owners Can Join Housing Pension Starting Today," press release, November 2014.

- Koh Cheol and Kim Gyeong-hwan, *Forecasts on the Changing Housing Demand*, Report 97-52, KRIHS, August 1997.
- Koh Gwang-su, Kim Geun-su and Kim Jae-chil, "Population Aging and the Capital Market in Korea: Household Shareholding and the Three-Tiered Social Security System," *Journal of Finance*, Vol. 19, 2005, pp. 61-128.
- Kookmin Bank, "Housing Price Index: Time Series (October 2014)," <http://nland.kbstar.com>.
- Mankiw, G. N. and David N. Weil, "The Baby Boom, The Baby Bust, and the Housing Market", *Regional Science and Urban Economics* 19 1989, 235-258.
- Marjorie Flavin and Takashi Yamashita, "Owner-Occupied Housing and the Composition of the Household Portfolio," *American Economic Review* Mar. 2002.
- McFadden, D., "Demographics, the Housing Market, and the Welfare of the Elderly," in *Studies in the Economics of Aging* ed. by David A. Wise, University of Chicago Press 1994.
- McKinsey Global Institute, *Beyond Korean Style: Shaping a new growth formula*, 2013.
- Modigliani, F and R. Brumberg, "Utility analysis and the consumption function: An interpretation of cross-section data", in *Post Keynesian Economics* edited by K. Kurihara, Rutgers University Press, New Brunswick, N.J., 1954
- OECD, *Ageing and Employment policies*, <http://www.oecd.org/employment/emp/ageingandemploymentpolicies.htm>
- \_\_\_\_\_, *Pensions as a Glance* 2013.
- Park Heon-su and Kim Min-jeong, "An Analysis of How Demographic Changes Affect Housing Prices: Focusing on Seoul and the Six Metropolitan Cities," *Journal of Real Estate Studies*, Vol. 24, No. 2, June 2014, pp. 23-32.
- Park Jae-gyeong, "Housing Pension Fact-Finding Survey 2010," *Housing Finance Monthly*, August 2010, p. 7.
- Poterba, J. M., "Demographic Structure and Asset Returns," *The Review of Economics and Statistics*, November 2001, 83(4), 565-584.
- \_\_\_\_\_, "Impact of Population Aging on Financial Markets in Developed Countries," Federal Reserve Bank of Kansas City, Aug. 2004.
- Ro Younghoon, "Housing Equity Composition and Retirement: Baby Boomer Households," *Fiscal Forum*, June 2013, pp. 27-51.
- Se-Jik Kim and Hyun Song Shin, "Financing Growth without Banks: Korean Housing Repo Contract," Working Paper presented Aug. 6, 2011.
- Seo Un-ju and Kim Su-yeong, "Future Household Projections: 2010-2035," SRI press release, April 2012, pp. 51-53.
- Statistics Korea, "Demographic and Household Structures and Changing Housing Patterns: 1995-2010," press release, March 2013.
- , "Future Population Projections: 2010-2060," press release, December 2011.

- Tobin, J., "Life Cycle saving and balanced growth," in *Ten Economic Studies in the Tradition of Irving Fisher* edited by W. Fellner, Wiley, New York, 1967.
- Verbist, G., M. Förster and M. Vaalavuo (2012), "The Impact of Publicly Provided Services on the Distribution of Resources: Review of New Results and Methods", OECD Social, Employment and Migration Working Papers, No. 130, OECD Publishing, <http://dx.doi.org/10.1787/5k9h363c5szq-en>.
- Yoo, Peter S., "Age Dependent Portfolio Selection," Federal Reserve Bank of St. Louis working paper no. 94-003, 1994.