

**Family Contributions to Elder Support in Korea:
Incentive, repayment, need, and tradition**

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Abstract:

The population of South Korea is ageing rapidly and the threat to elderly well-being from the erosion of traditional family care is of much concern. Yet relatively little is known about the actual financial status of elderly Koreans or the circumstances that influence the amount of support elderly Koreans receive from their adult children. This paper addresses these issues using data from the first wave of the Korean Longitudinal Study of Ageing. We estimate that over 60 percent of Koreans aged 65+ would be poor without financial transfers from their children. Elderly poverty is still mitigated substantially both by cohabitation with children and by transfers from children. Furthermore, income inequality among the elderly is reduced on balance by transfers from children. The amount of support provided by adult children appears to be influenced by inheritance expectations and investment in child's education. The traditional importance of the first son as an elder care provider remains. Parents' financial need also has some influence.

I. INTRODUCTION

The Korean population is rapidly ageing due to extended life expectancy and decreased fertility rates. One result is a growing need for elder care and financial support. But the traditional arrangement of family provision, especially the dominant role of the first son as the primary source of support for aged parents, is breaking down, and an alternative system is not yet in place. As a result, caring for the rapidly increasing ranks of older Koreans poses a major challenge to Korean society and the Korean government in particular. Despite the sense of an impending crisis faced by elderly Koreans, there is relatively little systematic knowledge concerning their financial well-being. During this transitional period, it is also important to understand the current role of children in providing elder care and motivations underlying the support.

In this analysis, we utilize data from a national survey to provide an overview of the financial well-being of elderly people, to assess the extent to which adult children support their parents, and to identify motivations for that support. We analyze three types of support including cohabitation, financial transfers, and meetings. As possible factors influencing adult children, we focus on (1) the incentives provided by the possibility of an inheritance; (2) the repayment motive engendered by prior parental investment in the child's education; (3) the parents' level of need; and (4) the traditional role of the first son.

This paper is organized in the following way. Section II provides background on elder care in Korea and Section III summarizes the relevant literature on intergenerational transfers. Section IV introduces the Korean Longitudinal Study of Ageing dataset and variables. Section V provides an overview of poverty among older Koreans and children's contribution to reducing the poverty. Section VI examines the patterns of three major types of family elder support – coresidence, financial transfers, and meetings. Finally, section VII offers some caveats and suggests productive directions for future research.

II. BACKGROUND ON KOREAN ELDER CARE SYSTEM

The Korean population is rapidly ageing due to growing life expectancy and decreased fertility rates (Table 1). Though population ageing is common in many developed countries, it is occurring much faster in Korea, giving little time for the Korean government to cope. The transition from an ageing society, where over 7 percent of the population are aged 65 or older, to an aged society, where over 14 percent are aged 65 or older, is expected to take roughly 19 years from 2000 to 2018. This transition is notably shorter than the estimates of 115 years in France, 71 years in the U.S., and 24 years in Japan (Korea National Statistical Office, 2006; United Nations, 1996). The growth rate of the oldest of the old is even higher, which predicts a drastic increase in chronic illnesses and elder care needs.

[Table 1 here]

Traditionally, families have played the dominant role in the Korean elder care system. In

particular, based on the prevailing Confucianism in East Asian countries, the eldest son has been primarily responsible for taking care of his old parents, co-residing with them in a three generation household. Since males have been the usual breadwinner in Korea, the wife of the eldest son has been the actual care provider for her parents-in-law.

Although caring for an old parent has often been praised as a reflection of filial piety in Korea, the relationship has traditionally included an intergenerational exchange of resources, reinforced by strong norms. In a largely agrarian society, the eldest son took advantage of scarce family resources such as educational opportunities and family properties (Oh and Warnes, 2001). In return, the eldest son and his wife provided family care when parents got old. The eldest son who neglected his parents could be easily identified in a rural society with limited mobility and was strongly blamed for neglecting his filial duty by his siblings and neighbors.

Although adult children are still an important source of old age security for parents, the tradition of family care is rapidly breaking down. For example, the proportion of elderly people who lived with their child decreased from 77 percent in 1984 to 54 percent in 1998 (Kim and Rhee, 1999). Child-to-parent monetary transfers accounted for 72 percent of total parental income in 1980 but only 31 percent of the income in 2003 (Moon et al., 2005).

Fast industrialization and urbanization of the Korean society during recent decades contributed to the erosion of the parent-child bond. Many people have moved away from their home towns and found jobs outside of the agricultural sector, so the importance of family properties has decreased. Expansion of secondary and higher education also made children less dependent on parental transfers. As more women participate in the labor market, fewer of them become available for elder care (Choi, 2001). In urban areas, residences tend to be cramped and hence less suited for living with elderly parents (Choi, 1999) and increased mobility makes it easier for neglectful children to avoid community stigma.

Although the traditional family care system is breaking down, an alternative public system is either not yet in place or at the infant stage. The Korean national pension program started in 1988, so few elderly people have accumulated enough funds to receive sizable benefits. Two major programs for old age security, the Basic Old-Age Security and the Long-term Care Insurance, started in only 2008. As for elder care services, Cho et al. (2004) estimated that the ratio of the number of long-term care beds to number of the elderly in Korea, 0.4 percent, is much lower than that of developed countries, which ranges from 2 to 7 percent. In fact, with its priority on economic growth, the Korean government tended to minimize its provision of social services. Elder care has been no exception and the government has intentionally emphasized the norm of filial piety (Chee, 2000; Palley, 1992). In spite of recent increases, expenditures for the elderly population took only 0.4 percent of total government budget and 4.9 percent of the Korean Ministry of Health and Welfare budget in 2006 (Korean Ministry of Health and Welfare, 2006).

III. CURRENT KNOWLEDGE AND NEXT STEPS

Despite this sense of urgency, there is relatively little systematic knowledge concerning the financial well-being of older Koreans. There is also a need to better understand the current role of children as elder care providers and their motivations for providing the support. This

study intends to fill these gaps. Utilizing data from a recent nationally representative survey, we provide an overview of the financial status of older Koreans, assessing the extent to which adult children support their parents. In addition, we analyze the patterns of family support provided by adult children to identify their motivations.

First, we add evidence on the financial well-being of elderly Koreans and children's contribution to their well-being. In the past, researchers paid little attention to the elderly population partly due to lack of data. With raised concerns on population ageing, new surveys targeting elderly Koreans were initiated and recent studies using the datasets started to provide more accurate estimates of the financial status of older Koreans. For example, using the 2002 wave of the Korea Labor and Income Panel Study, Moon et al. (2006) analyzed poverty among households headed by people aged 60 or older. By comparing their household income except private transfers, which are mostly transfers from children, and the poverty line announced by the Korean Ministry of Health and Welfare, the study estimated 38.7 percent of the households were poor with a poverty gap of 4.5 billion ~~k₩~~.¹ Adding private transfers to the household income decreased the proportion to 27.9 percent and the gap to 2.8 billion ~~k₩~~.

The 2005 wave of the Korean Longitudinal Study of Ageing (KLOSA) is one of the few large datasets with recent detailed financial information on elderly people. Though some studies utilized the data to estimate the determinants of child-to-parent financial transfers, no study has analyzed the dataset in terms of elderly Koreans' financial well-being itself. We provide an overview of elderly Koreans' income and assets. We also estimate the poverty gap in the population and children's contribution to reducing the poverty through financial transfers and cohabitation.

Second, this paper fills gaps in the literature on the motivations underlying adult Koreans' support for their elderly parents. Theory on motivations of family elder support, or more broadly on intergenerational transfers, are largely divided into two clusters – altruism and exchange. The altruism perspective presumes that people transfer their resources to other family members due to an altruistic concern for them (Becker, 1974 & 1991). In other words, one's utility function depends not only on one's own well-being but also on that of family members. The economic theory of altruism predicts that poorer family members will receive more transfers and richer ones give more transfers.

In contrast, the exchange motivation assumes family members are selfish and, hence, transfers among them occur only when there is an expectation for reciprocity (Cox, 1987). For example, in an agrarian society the parents' standard of living depends on their children's labor, and partly for that reason the parents are inclined to have more children and provide children with adequate sustenance. In modern developed societies, adult children might provide more financial support to a parent who provides care for their own children. Along the same line, elderly parents can use their bequests strategically to draw more care and attention from their children if the support is motivated by potential bequests (Bernheim et al., 1985).

Empirical evidence on which perspective better explains parental transfers and child's elder care is mixed across countries and even within a country. Indeed, many studies are unsuccessful in separating one motive from the other or in capturing related complexities such as social norms and the lifetime distribution of income. A recent review paper by Bianchi et al. (2006) shares this concern:

¹ 1,000 Korean won is worth about \$1. For that reason the financial statistics presented here are presented in units of 1,000 won, abbreviated ~~k₩~~.

“The majority of empirical studies ... have failed to find convincing evidence in support of a single model of behavior. ... focusing on one model paints too narrow a picture and we encourage the reader to keep in mind the possibility that the different models ... may be relatively more or less important in different types of families, in different contexts or cultures, and at different points in the life course. Yet despite the multiplicity of motives, identifying when a particular model is operating is important for understanding intergenerational behavior in general, and more specifically, the impact and appropriateness of various public policy measures.”

In discussing the parental investment in the child's human capital, Becker & Murphy (1988) consider the time gap between parent's transfers and child's transfers. In their model, both altruistic and selfish parents can invest in a child's education. The former does so without any expectation for reciprocity while the latter does expect it. Altruistic parents who plan to leave bequests choose the level of the education which maximizes child's wealth by comparing the marginal return from the education and the return from the financial assets set aside for bequests. In contrast, selfish parents in a rapidly developing society, where the return to education is high, invest in their child's education for their own old age security. Education increases child's income and the increased income enables the child to provide parents with better family care. Accordingly, exchange-motivated parents' investment in their child's education occurs until its return is greater than the return from savings for old age. If social norms force adult children to repay past parental investment, optimal family care is provided by children. If not, the reciprocity between the parents' investment and the child's repayment is replaced by a “social compact” – adults pay taxes to finance efficient education of children in society and later grown-up children pay taxes to finance public pensions and medical subsidies for aged adults.

Some explanations outside of the economic literature consider social norms (Bianchi et al., 2006) and they seem particularly relevant to elder care in Korea. If taking care of his or her elderly parents is a norm, then an adult child who conforms to the norm feels intrinsic pleasure from taking care of parents as well as enjoying social approval. In contrast, those who violate the norm are stigmatized and punished by family members and neighbors.

Empirical studies which utilize newly available nationally representative datasets focus on child-to-parent financial transfers. A consistent finding from these studies is that adult Koreans provide more financial support for parents with lower income. This finding is interpreted as evidence of altruism on the part of the children. Two studies used the same dataset with this paper. Kim (2008) analyzed which parents received more and which children gave more separately. In the analysis of parental characteristics, parents with lower income and assets received more transfers in total from all children and, based on this result, he concluded that altruism is the dominant motivation. In terms of children's characteristics, comparison among siblings using a family fixed-effects model showed a child's additional year of education associated with only about an additional \$90 transfers per year and he concluded “child education can hardly be a retirement plan.” Kim (2008) also analyzed the first wave of the Korean Retirement and Income Study and found parents who provided more grandchild care received more transfers, suggesting adult child's reciprocity for elderly parent's grandchild care partly explain the transfers.

Park (2008) analyzed children's regular, irregular, and in-kind transfers to parents

separately using parent-child pairs in the KLOSA. Based on his finding that both the likelihood and the amount of regular transfers were negatively associated with parental income, he concluded altruism explains child-to-parent transfers in Korea. In addition, neither the likelihood nor the amount was related to parental wealth and, therefore, he said inheritance expectation is not the main motive for the transfers. Park (2008) also found a positive relationship between child's educational attainment and child's regular transfers to parents but he said this does not necessarily indicate the repayment motive as child's lifetime income is not controlled in the study.

Moon et al. (2006) analyzed child-to-parent transfers using the Korea Labor and Income Panel Study. First, the authors analyzed parental characteristics related to the transfers using its sixth wave in 2002. In the estimation with a generalized tobit model, parents with higher income were less likely to receive transfers and, if they did, received a lesser amount. Parental assets showed a negative relationship with the likelihood but a positive relationship with the amount, implying a possible positive bequest motive. A separate analysis for child characteristics used data from 2000 to 2004 with a family fixed-effects model. In this analysis, the amount of the transfers increased with an increase in the child's income and assets but the size of the effects was marginal. The amount of child's consumption was separately controlled for and it had a greater positive association with the transfer amount than that of income or assets. Information on child's education was not available in the study.

As a study on elder care outcomes other than child-to-parent financial transfers, Chung (2007) analyzed the frequency of face-to-face meetings between parents and their children in the 2004 Korean General Social Survey. Though the study found a possible existence of an exchange motivation, the sample was limited to only 158 Korean parents aged 60 or older who did not live with any child. In a logit regression of whether respondents meet their child at least once per week on parental income in a natural log format, education, age, sex, and marital status, only the income showed a significant relationship. A one percent increase in parental income was associated with 0.7 percent increase in the odds ratio of meeting a child at least once per week.

Our paper fills two kinds of gaps in the literature on the motivations underlying adults Koreans' elder support. First, we analyze motivations of children's face-to-face meetings with their parent using the KLOSA. As mentioned, existing studies on the motives of family elder care have focused on child-to-parent financial transfers, whose motive might not necessarily coincide with that of the face-to-face meetings. Children's face-to-face meetings with their parent might be an important substitute for declining cohabitation and financial transfers. Substitution seems especially likely when we consider the relative closeness between parents' and their non-cohabiting children's houses in Korea due to its small geographic size.

Second, this paper tests a new hypothesis on adult Koreans' motive behind elder support – whether potential parental bequests motivate the support. As shown, studies draw conclusions on both exchange and altruism based on the same relationship between parent's income/assets and the amount of elder care provided by children. In contrast, we explicitly investigate the exchange motivation using a proxy variable in the KLOSA dataset.

Studies on Japanese family elder care show the need for the Korean government to pay more attention to the inheritance motive in designing policies. Japan shares various characteristics of the Korean elder care system such as a family-care tradition by the first son, the norm of filial piety based on Confucianism, and housing proximity between parents and children. Meanwhile, Japan experienced earlier industrialization and urbanization along with population

ageing than Korea. In the process, the filial piety norm and family elder support functions weakened substantially and policies adopted to meet elder care need put the Japanese government in financial difficulties (Ogawa & Retherford, 1993; Sodei, 2004).

Similarly to Korea, housing accounts for most of the wealth of elderly Japanese and evidence shows Japanese elder support is partly motivated by inheriting parent's house. For example, Yamada (2006) found children who expected to inherit parent's house were likely to coreside with parents more, to live closer to parents, and to visit parents more often (Yamada, 2006). In a comparative study between Japan and England, Izuhara (2002) describes Japanese parents' response to the child's exchange motivation by saying "the majority of individuals either did not plan to leave any bequest, or planned to leave a bequest only if their children looked after them in their old age." As with Korea, the Japanese civil law ensures equal division of inheritance among siblings and, the author says, "the particular rules of exchange among family members ... can therefore be jeopardized if all the children insist upon their legal rights of equal inheritance."

While Korean adult children's motivation to provide family support have not been ascertained by interview studies, Korean parents' motivations to leave bequests were directly surveyed in Chung et al. (2005). To the question regarding which children parents plan to bequest, only 4.7 percent of elderly Koreans chose 'to the child providing elder care'. Other answers included 'to the eldest son only (30.3%)', 'to all children but mostly to the eldest son (11.6%)', 'equally to all children (27.1%)', 'to the poorest child (4.7%)', 'to the most favorite child (3.2%)', and 'never thought about it (7.3%)'. The small portion of parents with the strategic bequest intention seems contrasted with the finding that 88.5 percent of the respondents thought wealth is helpful to draw elder care from children in the same study. The contrast might imply that many Korean parents do not use bequests strategically though they feel the need to do so.

In addition to testing the exchange motive via inheritance, our study also adds evidence on other often-studied motivations as we control for them in addition to the inheritance motive. Those other motivations tested include the repayment motive engendered by prior parental investment in child's education, the financial need of parents, and the traditional role of the first son. This study cannot examine the reciprocity for parent's grandchild care due to lack of relevant information in the dataset.

IV. DATA AND VARIABLES

This paper analyzes the first wave of the Korean Longitudinal Study of Ageing (KLOSA), which was sponsored by the Korea Labor Institute. The study sample is representative of the Korean population aged 45 or older excluding institutionalized people and residents of Che-Ju Island. For the purpose of this study, the analysis sample is limited to people aged 65 or older (hereafter elderly people). Age 65 is not only the usual cutoff point to define the aged population in various demographic studies, but also an eligibility criterion for Korean government programs targeted on older people. The final analysis sample includes 3,981 elderly

people.² The KLOSA is a longitudinal survey. The first wave, which contains data for 2005, has been released and follow-up waves are planned every other year. Data collection for the 2007 wave is completed and expected to be available in late 2009.

The KLOSA dataset consists of comprehensive ageing-related modules including socio-demographic characteristics, income, assets, family composition, health, employment, and life satisfaction. In particular, it has detailed information about income, including transfers among family members, and assets. In fact, the KLOSA is one of few large studies which include financial information on elderly persons.

[Table 2 here]

Table 2 presents summary statistics of key variables. To see what poor elderly people look like, we particularly compare the characteristics based on poverty status. In this paper, poverty is defined utilizing the eligibility criterion for the Basic Old Age Pension, which provides poor elderly people with supplemental income just as does the Supplemental Security Income program in the U.S. By this criterion, an elderly person is classified as being poor if his/her self-support, annual income except private transfers + 0.05*net assets, is lower than a predetermined poverty line, equivalent to \$3,840 for married individuals and \$4,800 for others (Korean Ministry of Health and Welfare, 2007). According to the criterion, over 60 percent of elderly Koreans were poor in 2005. Elder poverty will be analyzed more in detail in later sections.

In 2005, the mean age of elderly Koreans was 73.1. 39 percent were male, and three quarters dropped out before middle school. 61 percent were married or cohabitated and 38 percent were widowed or dispersed, that is, having a spouse in North Korea. As for household composition, 16 percent lived alone, 41 percent only with a spouse, 21 percent with a spouse and at least one child without any grandchild, and 18 percent with a spouse and at least one child and one grandchild. On average, an elderly person had 3.9 surviving children and 6.7 surviving grandchildren. An average elderly person had 0.4 ADL limitations and 1.2 IADL limitations.³ In terms of subjective health, 49 percent reported “bad” or “very bad,” 31 percent “fair”, 17 percent “good”, and 2 percent “very good”.

When compared by poverty status, poor elderly people were more likely to be old, female, and widowed/dispersed and less likely to be educated, married, and employed. Elderly people in poverty had more grandchildren, though similar number of children, and spent more time taking care of grandchildren. Poor elderly people had more ADL and IADL limitations and reported worse subjective health.

V. ELDER POVERTY AND ROLE OF CHILDREN

² This study excludes about six percent of elderly people who were married but whose spouse did not participate in the survey.

³ Activities of Daily Living (ADL) are defined as “the tasks of everyday life” and they include activities such as eating, dressing, getting into/out of a bed or chair, taking a bath or shower, and using the toilet. Instrumental Activities of Daily Living (IADL) are “activities related to independent living” such as preparing meals, managing money, shopping, doing housework, and using a telephone (National Cancer Institute).

In this section, we analyze elder poverty and assess the extent to which adult children financially support their parents. In the KLOSA, respondents reported the amount of their income and assets denominated in Korean Won.⁴ One reported source of the income is transfers from children, which provides the empirical basis for examining financial support by adult children for their aged parents.⁵ One limitation of the dataset is the transfers between parents and children were surveyed only for parent-child pairs who did not live together. Thus any transfers between cohabiting children and their parents are missing from our tabulations.

We provide an overview of the income and assets first. Table 3 summarizes elderly people's annual income in 2005. 89.3 percent of elderly people had some income. Median total income was 2,210 ~~k₩~~ while mean income was 5,280 ~~k₩~~. By sources of income, 68.6 percent had private transfers, 53.6 percent had public transfers, 27.3 percent had earned income, 16.3 percent had asset income, 1.4 percent had a private pension, and 1.8 percent had other income.⁶ In terms of amount on average, 43.2 percent came from earned income, 26.3 percent from private transfers, 17.6 percent from public transfers, 10.4 percent from asset income, 0.5 percent from private pension, and 1.4 percent from other income.⁷ These findings accord with other studies which have shown that elderly Koreans depend more on their own labor and child-to-parent transfers and less on their assets and public transfers compared to old people in developed countries (Moon et al., 2005; Kim, 2003).

[Table 3 here]

Elderly people gave as well as received. As shown at the bottom of Table 3, 9.9 percent of elderly Koreans gave money privately and the average amount was 143 ~~k₩~~. Recipients

⁴ In the KLOSA, respondents were asked to report their own income excluding their spouse's income and assets under their own name. While elderly males tend to earn more than elderly females and assets are also more likely to be registered under husband's name, living standard of an elderly couple depends on a couple's entire income and assets. Accordingly, for an elderly couple, this paper recalculated personal income and assets by averaging husband's and wife's income and assets.

⁵ For all questions regarding children, including those on financial transfers between parents and children, only one person within a couple answered to the questions and the answer was applied to both the husband and the wife. However, compared to transfer data from other studies, married/cohabited respondents do not seem to separate what they received from or gave to children from what their spouse did. Accordingly, we assume people reported transfers at a couple-level and divide the transfers by two if an elderly person was married. When transfer amount in the dataset is not the same for a husband and his wife, averaged amount is used.

⁶ Numbers from the 2004 survey by the Korea Institute for Health and Social Affairs (KIHASA) are similar except public transfers. According to the survey, 78.6 percent had private transfers, 92.6 percent had public transfers, 27.8 percent had earned income, and 12.5 percent had asset income (Chung et al., 2005). The difference in public transfers might occur because most KIHASA respondents considered public transportation subsidies, for which all elderly people are eligible, while KLOSA respondents did not.

⁷ For those who had income from each source only, mean annual income was 8,440 (6,720) ~~k₩~~ of earned income, 3,460 (7,320) ~~k₩~~ of asset income, 1,770 (1,420) ~~k₩~~ of public transfers, 2,110 (2,110) ~~k₩~~ of private transfers. Numbers in parentheses indicate estimation by the 2004 KIHASA survey. Different classification of income between the KLOSA and the KIHASA partly explains the difference.

included children (6.1%), elderly people's own parents (2.5%), and others (2.3%). When we compare upward and downward transfers between elderly Koreans and their children, both the incidence of transfers (68.1% vs. 6.1%) and its average amount (1,390 k₩ vs. 130 k₩) were dominantly upward. By poverty status, the median total annual income of the non-poor elderly, 6,650 k₩, was about seven times higher than that of the poor elderly, 960 k₩. For the poor population, median transfers from children was 350 k₩ while the median for the non-poor was 400 k₩.

Assets and debts of elderly Koreans in 2005 are summarized in Table 4. 77.4 percent of elderly people owned some assets and the median and mean value of total assets was 20,000 k₩ and 59,639 k₩. With respect to asset type, 69.8 percent of elderly persons owned real estate assets, 41.0 percent owned financial assets, and 13.3 percent owned other assets. With respect to monetary values on average, real estate assets (92.7%), especially housing value (74.2%), accounted for most of total asset value. Financial assets and other assets explained 6.6 percent and 0.7 percent of total assets, respectively. Over 20 percent of elderly people had debts and the mean value was 6,454 k₩. By poverty status, while an average poor elderly person had assets equivalent to 5,000 k₩, an average non-poor one had assets of 66,750 k₩ (Appendix 2).

[Table 4 here]

According to the aforementioned definition of poverty, we estimate that 60.8 percent of the elderly would be poor if they did not receive any transfer from children in 2005. To compare elder poverty with poverty in the rest of the population, we referred to Cho (2007), who analyzed absolute and relative poverty at a household level using data from the Korea Labor and Income Panel Study from 2000 to 2005. To define absolute poverty, Cho (2007) used the poverty line announced by the Korean Ministry of Health and Welfare every year. According to his findings, 38.2 percent of elderly households were poor while only 10.6 percent of non-elderly households were poor in 2005. Relative poverty was defined as having household income below 50 percent of median household income. 49.8 percent of elderly households and 14.2 percent of non-elderly households were poor in 2005. By both standards, elderly households accounted for about 45 percent of all poor households.

We further analyze poverty in the elderly population by examining poverty by elderly people's cohabitation status with at least one child. According to the KLOSA data, still a substantial portion of elderly Koreans, 41.5 percent, lived with a child in 2005. 69.7 percent of the coresident elderly people were poor. In comparison, among elderly people who lived with no child, 54.5 percent were estimated to be poor. However, it should be noted this definition of poverty considers only the elderly's own income and assets excluding transfers from all children. If children provide their coresident parent with substantial in-kind transfers, such as food and clothes, the realistic poverty rate in the coresident elderly group can be substantially lower. In fact, elderly poverty seems still mitigated substantially by cohabitation with a child based on the fact that the proportion of elderly people who coreside with a child is much higher among the poor. While almost half of poor elderly Koreans lived with a child, only about 30 percent of non-poor elderly Koreans did so in 2005 (Figure 1).

[Figure 1 here]

Next, for the coresident and non-coresident subgroups of elderly people, the mean and

overall poverty gap and the overall gap filled by child-to-parent transfers are estimated. The poverty gap for an average poor elderly person is calculated by averaging individual poverty gap, that is, the gap between the poverty line and self-support (Table 5).⁸ The mean gap was 3,052 ₩ for the entire elderly population, 3,549 ₩ for the coresident group, and 2,601 ₩ for the non-coresident group.

[Table 5 here]

The overall poverty gap aggregates individual poverty gap of all poor elderly people. The overall poverty gap was 8.3 billion ₩ for the entire elderly population and this divided into 4.6 billion ₩ for the coresident elderly group and 3.8 billion ₩ for the non-coresident group. Finally, the extent to which child's financial transfers reduce elder poverty is estimated by aggregating the transfers for all poor elderly people.⁹ Overall, 26.5 percent of elder poverty was filled by the transfers. For elderly people living with a child, 18.7 percent of their poverty gap was filled by transfers from other non-coresident children. For elderly persons who lived with no child, 34.2 percent of the poverty gap was filled by transfers from their children.

Child-to-parent financial transfers not only reduce poverty among the elderly but also reduce inequality in the population. Table 6 presents median income of elderly people by their living arrangements and child's financial transfers. As shown, inequality among the elderly, measured as Gini coefficients, decreases in all four elderly groups as we include the transfers in parent's income. Accordingly, the transfers from children contribute to reducing poverty as well as inequality in Korean elderly population.

[Table 6 here]

VI. PATTERNS OF SUPPORT BY ADULT CHILDREN OF THEIR AGED PARENTS

Here we consider three types of support that parents receive from adult children: (1) cohabitation with at least one child, (2) financial transfers from each non-coresident child, and (3) frequency of meetings with each non-coresident child. The analyses of the later two variables are limited only to non-coresident children as the KLOSA data collection was limited to them.

In analyzing elder support provided by children, it is desirable to restrict the analysis sample to adult children. This is because many Koreans cohabit with their parents until they marry, and in this arrangement they are less likely to be providing support as receiving it. To determine a reasonable age cutoff for adult children, we compare the proportion of children providing their parents with major types of elder care by child age group (Appendix 1). The proportion of children cohabiting with parents radically drops around age 30, which is about the average marriage age in Korea. The proportion of non-coresident children providing financial

⁸ If an elderly person's self-support was negative due to large amount of debts, the poverty line was used for averaging instead of self-support.

⁹ If child-to-parent transfers were greater than individual poverty gap, the gap was used instead for aggregating.

transfers to parents increases substantially around the same age. Therefore, we use age 30 for the cutoff point.

The unit of analysis for cohabitation is an elderly individual and that for other two variables is a parent(s)-child pair. If a child has both a surviving father and a surviving mother, we analyze sum of the child's transfers across two parents. The final analysis sample includes 3,864 elderly people, who are aged 65 or older and have at least one adult child, and their adult children.

In terms of the factors that influence an adult child's support, we focus on the following four: (1) the expectation of substantial parental bequests, (2) the repayment motive for previous parental investment in child's education, (3) parental financial need, and (4) the traditional role of the first son. Appendix 2 summarizes the KLOSA variables which proxy for these factors.

First, as a proxy for the bequest expectation, we use parent's direct assessments of the probability to leave a bequest great than 100,000 ~~kW~~ in the KLOSA. Here the potential bequest is not for individual child but for all surviving children. The likelihood was measured as an interval variable ranging from 0.0 to 1.0 with 0.1 increments. The mean bequest probability was .221 in 2005.

A second factor influencing children's support for their parents is children's educational attainment. This variable is one reflection of the support that the child received from parents when young, which may create a sense of obligation to give back. Unfortunately that repayment motivation is confounded by the fact that the child's education is also correlated with his or her current income and hence ability to provide elder support to the parents. (The KLOSA does not include any direct measures of children's current income.) Hence the proper interpretation of the education variables is not clear. In the KLOSA, child's education is measured with both school levels and in years and we use the former. 24.9 percent of children did not have high school diploma and 42.7, 30.6, and 1.6 percent received high school education, some college education, and graduate school education, respectively.

Third, the parental need is estimated by parent's income excluding transfers from children, assets, and debts, described above. Finally, to capture the traditional role of the first son, we control for sibling composition. The KLOSA includes information on child's sex, birth order, and the total number of siblings. Using these variables, we generate a composite variable with four categories, "the first son" (24.1% of total), "younger son" (27.7%), "first daughter" (21.7%), and "younger daughter" (26.3). Additionally, we control for the total number of children.

Econometric Models

In analyzing the three elder care outcomes, we use multivariate statistical methods with appropriate subsamples. For the first outcome, coresidence, a logit regression analysis is used to estimate the determinants of whether an elderly person lived with at least one adult child and, if so, whether the child is the eldest son, as has long been the tradition.

Elderly people who did not live with any adult child are of a particular interest since they cannot receive any benefit from cohabitation. Accordingly, the two outcome variables that are not necessarily accompanied by cohabitation – child-to-parent transfers and child's frequency of meetings with a parent – are analyzed for two separate groups, parents who lived with at least one adult child and those who did not.

Regarding the transfers and the meeting frequency, descriptive analyses below demonstrate a considerable portion of children transferred no money to parents and/or never met parents in 2005. Since it can be misleading to analyze the children who provided no family care together with those who did, we use a two-part model: in the first part, a logit regression is used to analyze whether a child transferred any money to the parent; in the second part, which is restricted to children who did make a payment, an OLS regression (with and without family fixed effects) is used to analyze the magnitude of the payment. An analogous procedure is used to analyze the frequency of meetings.

Coresidence

The KLOSA surveyed whether a respondent coresided with each of all his/her surviving children in 2005. Since cohabitation with adult children itself can be an important vehicle to provide elder support, we are interested in whether an elderly person lives with at least one adult child (hereafter, “live with a child”). In the analysis sample, 39.9 percent of elderly people cohabitated with a child in 2005. When we restrict elderly people to those who had at least one adult child, 40.9 percent were coresident. Under the Confucian tradition, many elderly parents cohabit with their first son and his wife. Among elderly people who lived with at least one adult child and had at least two children of which at least one was male, 52.8 percent of the people were coresident with the first son in 2005, showing the first son still tends to play a bigger role than any of his siblings in this respect.

To examine the patterns of coresidence more in detail, we analyze it with multivariate regressions in two stages. First, whether an elderly person lived with a child is regressed on various characteristics of the elderly person. For the purpose of this analysis, the analysis sample is restricted to elderly persons who had at least one adult child. The second stage analyses whether the first son was coresident if an elderly person lived with a child. For this analysis, the analysis is elderly people who lived with at least one adult child and had at least two children of which at least one was male.

Both stages use a multivariate logit regression and the same set of control variables, which include an elderly person’s sex, age (in five-year intervals), marital status, educational attainment (less than middle school, middle school, high school, more than high school), employment status, the number of sons (none, 1, 2, 3, or more), the number of all children (1, 2, 3, or more), income except transfers from children (in natural log format), assets (in natural log format), debts (in natural log format), and expectation of leaving a bequest over 100,000 ~~k₩~~ (0.0 – 1.0 with 0.1 increments).

The regression outcome of the first stage is presented in the first column of Table 7. What we observe in the previous simple comparison of cohabitation by elder poverty status is reconfirmed in the regression result. Both elderly people’s income and assets showed a negative association with their likelihood to coreside with a child and debts had an opposite relationship. Separately from parental financial capabilities, parent’s higher bequest expectation was related to greater likelihood for parents to live with a child. Having no son or exactly two sons were related to lower likelihood of the cohabitation compared to having more than three sons while the number of daughters did not show a statistically significant relationship with the likelihood.

[Table 7 here]

The second column of Table 7 reports the result from the second stage regression. The amount of parent's assets was negatively associated with the likelihood to live with the first son when parents lived with a child but the amount of income and debts did not show a significant relationship. Parent's bequest expectations had a positive relationship with the likelihood. Having exactly one or two sons were related to greater likelihood to live with the first son than having more than three sons.

Financial Transfers

Next we analyze adult children's financial transfers to their elderly parent. Respondents in the KLOSA reported whether they received any financial transfers from each of their children and, if so, how much. These questions were surveyed only for children who did not coreside with respondents. Regular and irregular financial transfers and in-kind transfers were surveyed separately and this paper analyzes the sum of the financial transfers. 52.4 percent of children made positive transfers and the median amount was 100 ~~k₩~~ in 2005. When the sample is restricted to children with positive transfers only, the median value increased to 300 ~~k₩~~.

We compared the incidence and the average amount of child-to-parent transfers by elderly people's poverty status and living arrangements (Figure 2). Children were more likely to send money if both parents were alive. In contrast to the finding that coresidence between elder parents and their child was more prevalent among poor elderly people, the likelihood of child-to-parent financial transfers did not show much difference by parent's poverty status once parent's living arrangements are adjusted. However, in terms of the median amount of the transfers, parent's being poor was related to greater amount among non-married parents while it was related to smaller amount among married parents.

[Figure 2 here]

The patterns of child-to-parent financial transfers were also estimated with a two-part multivariate model. The first part uses a logit regression to analyze whether an adult child transferred a positive amount of money to the parent. The second part restricts the analysis sample to children who made a positive payment and analyzes the magnitude of the payment using OLS regression with and without family fixed effects.

For possible determinants of the financial transfers, both stages controlled for the same set of variables, which relate to parent characteristics (husband only/wife only/both, age, educational attainment, employment status, income except transfers from children, assets, debts, bequest expectation, and the number of children) and child characteristics (first son/younger son/first daughter/younger daughter, age, marital status, educational attainment, employment status, and the number of own children). When both parents were surviving, we used total values for income, assets, and debts, mean values for bequest expectation, and higher values for age, education, and employment status.

[Table 8 here]

As mentioned earlier, we ran the regressions for two elderly subgroups, elderly people

living with no child and other elderly people. Table 8 summarizes the outcomes for the former. The positive association with parent's income and assets with the likelihood that children transfer to their parent remained in the logit regression even after various covariates were controlled (column 1, Table 8). In contrast, the parental bequest probability had a strong negative relationship with the likelihood. Compared to children without high school diploma, those with upper levels of education were more likely to make financial transfers. Sons were less likely to send money to parents relative to younger daughters.

In terms of the transfer amount, parent's income showed a negative relationship while parent's bequest expectation had a positive association (column 2, Table 8). Children's high school education or above was positively related with the transfer amount and the size of the education coefficients increased with the level of education. The first sons sent more money to parents than younger daughters. When we additionally controlled for family fixed-effects, the coefficients of child's educational attainment remained significant and positive though their size became smaller (column 3, Table 8). The first sons were shown to transfer more than younger daughters in the fixed-effects model also and the effects of being the first son were greater in the fixed-effects model.

[Table 9 here]

Table 9 presents regression results of child-to-parent financial transfers when parents lived with a child other than the focal child. Parents with higher income and assets were more likely to receive transfers from children in this subgroup also (column 1, Table 9). The negative relationship between parent's bequest probability and child's likelihood of making upward financial transfers holds. All upper levels of child's education were related to greater likelihood to transfer to parents than child's education lower than high school. As the level of education went up, the size of the coefficient consistently increased. Sons compared to younger daughters had a lower likelihood to transfer to parents.

With the transfer amount, neither parent's financial need proxies nor parent's bequest probability had a statistically significant relationship (column 2, Table 9). Children with higher education sent more money to parents than those without high school diploma. Furthermore, the amount increased as children received upper levels of education. First sons sent significantly more money to parents than younger daughters did. When family fixed-effects are additionally controlled for, the coefficients of education remained significant and positive though their size got slightly smaller (column 3, Table 9). Transfers by the first sons remained significantly more than transfers by younger daughters.

Frequency of Meetings

The final outcome variable is how often an adult child met the elderly parent. In the KLOSA, elderly respondents reported the frequency of their meetings with each of non-coresident children. An ordinal variable measured the frequency with ten categories, "Never", "Hardly", "1-2/year", "3-4/year", "5-6/year", "1/month", "2/month", "1/week", "2-3/week", and "≥4/week."

As shown in Figure 3, majority of Korean adult children fell into the categories between "1-2/year" and "1/month" and 1.7 percent never met their parent in 2005. Poor elderly parents

met their child less often than non-poor ones in 2005 and this suggests non-poor elderly Koreans might benefit more from child's non-financial support delivered through the face-to-face meetings compared to poor elderly people.

[Figure 3 here]

Next, we examined whether an elderly person cohabitates with a child makes a difference in the distribution of non-coresident child's frequency of meetings with parents. Relative to the coresident parents, non-coresident parents were more prevalent at low or high frequency categories while the opposite was true at middle frequency categories (Figure 4).

[Figure 4 here]

Similarly to the financial transfers, we analyze the frequency of child's meetings with a non-coresident parent with a two-part model. The first part analyzes whether an adult child met their parent at least once in 2005, that is, did not fall into the "never" category, using a logit model. The second stage is restricted to parent-child pairs which met at least once. In the analysis, we quantify the categorical variable into frequency per month (0.5/12, 1.5/12, 3.5/12, 5.5/12, 1, 2, 1*4, 2.5*4, and 5.5*4 days/month) and analyzed it using OLS regressions with and without family-fixed effects.

At both stages, we use the same control variables used in analyzing financial transfers. One exception is we additionally control for housing proximity between parents and children in analyzing the frequency. The KLOSA asked respondents how long it took to go to each non-coresident child's house using public transportation. Answers included "less than 30 minutes", "between 30 minutes and 1 hour", "between 1 and 2 hours", and "more than 2 hours" and 15.4, 24.2, 18.7, and 41.8 percent of children fell into each category.

We compared the housing proximity by parent's living arrangement. Figure 5 shows children whose parent lived with no child lived farther from their parent compared to children whose parent was coresident with a sibling. Accordingly, elder parent's cohabitation with no adult child does not appear to cause children to live closer to parents.

[Figure 5 here]

To examine the factors related to child's frequency of face-to-face meetings with their non-coresident parent, we estimated the frequency with a two-part multivariate model. The first part uses a logit regression to analyze whether an adult child met their parents at least once in 2005. The second part analysis is restricted to children who met their parent at least once and analyzes the frequency using OLS regression with and without family fixed effects.

Table 10 summarizes analysis outcomes for the elderly subgroup living with no child. Even after controlling for various characteristics of parents and children, the amount of parent's income and assets had a positive relationship with the likelihood to meet a non-coresident parent at least once in 2005 (column 1, Table 10). Parental bequest expectations did not show a significant relationship with child's likelihood to meet parents. Not children with graduate school education but those with high school and some college education were more likely to meet parents than children who did not receive high school education. There were more first sons than younger daughters among children who never met their parent.

[Table 10 here]

In terms of the meeting frequency, none of the proxy variables for parent's economic status showed a significant relationship with the frequency but parent's bequest probability had a strong positive relationship with the frequency (column 2, Table 10). High school and college educated children than those without high school diploma and the first sons than younger daughters met their parents more often. When family fixed-effects are additionally controlled for, the significant positive association between child's education and the frequency disappeared (column 3, Table 10). The coefficient of the first sons remained similar in the models with and without the fixed effects.

[Table 11 here]

Table 11 summarizes analyses of face-to-face meetings between adult children and their elderly parent cohabiting with their adult sibling. Neither proxies of parent's economics status nor parent's bequest probability was significantly associated with the likelihood that children met their parents (column 1, Table 11). Children who received high school and college education showed greater likelihood to meet their parents than those without high school diploma. Sons compared to younger daughters were less likely to meet parents.

With the frequency of meetings, parent's bequest expectations and parent's economic status variables had no significant relationship (column 2, Table 11). Child's education at the high, middle, and graduate school levels were all positively related with higher frequency than below high school education. Furthermore, the size of the coefficients increased with the level of education. The first sons met their parent more often than younger daughters. When family fixed effects are added as controls, the coefficients of education variables did not show a significant relationship with the frequency any more (column 3, Table 11). In contrast, there was little change in the significant positive relationship between being the first son and the frequency between models with and without fixed effects.

VII. DISCUSSION AND CONCLUSIONS

Using the first wave of the KLOSA data, this study adds evidence on the financial well-being of elderly Koreans and the role of children in improving the well-being. Although the proportion of child-to-parent monetary transfers to total parental income decreased rapidly during recent decades, the transfers still accounted for about one quarter of an average elderly person's total income and, particularly, over 70 percent of an average poor elderly person's income in 2005. For both poor and non-poor elderly groups, real estate assets, especially housing value, explained most of total asset value, implying the importance of a home ownership in future bequests. About 60 percent of elderly people were estimated to be poor if they did not receive any transfers from children. The overall poverty gap in elderly population was 8.3 billion ~~kW~~ and about one quarter of the gap was filled by transfers from non-coresident children. Furthermore, the transfers reduced inequality among elderly people. Elderly people's

cohabitation with adult children is also expected to reduce elder poverty. About 40 percent of entire elderly population cohabitated with at least one adult child and the proportion was much higher among the poor elderly. The first son was coresident in about half of the cases when parents lived with a child.

As for adult Koreans' motivations for supporting their aged parents, our paper suggests the importance of incentives provided by potential inheritance. The parent's probability of leaving substantial bequests seems to increase various types of elder care including the likelihood of coresidence, the amount of financial transfers, and the frequency of face-to-face meetings. This finding is particularly interesting since it is found even after parental income and assets are controlled.

Interestingly, the inheritance motive regarding the amount of financial transfers and the frequency of meetings was observed only among parents living with no child and this further supports the existence of the inheritance motive. Our bequest proxy relates to potential bequests not for each child but for all children. The actual recipient child of the aggregate bequests is less evident if parents live with no child and this plausibly makes each child further motivated by the aggregate bequests. In other words, when a parent lives with an adult child, the aggregate inheritance hardly motivates other non-coresident children since the coresident child is most likely to receive the inheritance.

The repayment motive also appears substantial. Children's education is positively associated with the likelihood and the amount of child-to-parent financial transfers. Both the likelihood to meet parents and the meeting frequency were also positively related to child's educational attainment. However, as we noted earlier, failure to control for child's income or wealth leaves the possibility that child's education could be actually a proxy for child's ability to provide elder care rather than child's repayment motive. In spite of the caveat, our consistent findings of the positive associations between child's elder care and various measures of child's higher SES, such as being educated, being employed and being married, imply children's financial well-being has positive influence on their provision of elder support.

When we additionally controlled family fixed-effects for the transfer amount, the effect of the education became smaller but remained significant and positive. This shows an interesting contrast with the positive relationship between the education and the meeting frequency disappeared when family fixed-effects were controlled. One plausible explanation for the contrast would be the face-to-face meetings are much more affected by cohesive family culture, which is correlated with child's educational attainment, than the financial transfers. As a result, once siblings are compared to each other, the effect of education remains only for financial transfers.

Although child's altruistic care for parent's financial need seems to strongly motivate cohabitation with elderly parents, our findings on other elder care outcomes contradict to the altruistic motivation. Parents with higher income and higher assets were more likely to receive transfers regardless of their cohabitation status with a child. Parents with more income and assets were also more likely to meet their children when parents lived with no child.

The traditional importance of the first sons in elder support remains important. Having fewer sons reduced elderly people's likelihood to cohabitate with children. The amount of financial transfers and the frequency of meetings with parents were consistently higher among the first sons. However, it was also true that the first sons had higher likelihood of no transfer and no meeting. Children who never transfer to parents or never meet their parents are unusual, implying exceptionally distant relationships with parents. If this is the case, the first sons might

be more likely to be in this exceptional relationship since they traditionally have a closer relationship with parents than any other sibling.

Certain caveats should be noted. First of all, our study is cross-sectional. The second wave of the KLOSA is expected to be available in late 2009 and the longitudinal study utilizing the first two waves would help increase internal validity of this study. Second, our proxy for potential bequests is not actual amount of potential bequests but subjective assessment over a threshold bequest amount. Better proxies for the bequests can help examine the inheritance motive more accurately. Third, child's educational attainment cannot separate child's ability to pay from the repayment motivation. Moreover, if children of the parent with higher income and assets also have higher economic status, the positive relationship between parent's SES and child's elder care might reveal child's ability to provide care matters once more. Fourth, the exchange motivation driven by parents' grandchild care, which is probably an important motive for elder support, is not controlled.

In this study, we show Korean adult children still play a crucial role in providing support for their aged parents in spite of the rapid collapse of family care tradition. In contrast with common belief in filial piety and prevailing altruism-based explanations in literature, parent's financial need was not the dominant motive for child's elder support except cohabitation. Rather the importance of inheritance expectations as a motive underlying the support appears highly underestimated. The repayment motive for previous parental investment in child's education and the effects of adult children's financial well-being in general seem influential. The traditional importance of the first son as an elder care provider remains.

In recent years, the Korean government has been introducing various new policies to meet rapidly increasing elder care need and to improve the welfare of elderly population. Different motivations behind adult children's elder support have different implications for the results of such policies. To slow the decline in family elder care and to achieve the intended goals of the policies, more evidence is needed on the true motivations for the family contributions and to incorporate them into designing the policies.

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TABLES

Table 1. Demographic trends in Korea, 1960-2020

	1960	1970	1980	1990	2000	2010	2020
% Population 65 and over	3.7	3.3	3.9	5.0	7.3	11.0	15.4
% Population 80 and over	0.4	0.4	0.5	0.7	1.1	2.0	3.6
Dependency ratio ¹⁾	6.7	6.1	6.2	7.2	10.2	15.2	21.7
Life expectancy at birth	55.2	60.9	66.8	72.7	77.5	80.0	81.7
Total fertility rate	5.6	4.3	2.2	1.7	1.2	1.3	1.3

1) Population aged 65 and over / population aged 15-64 * 100

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. World Population Prospects: The 2008 Revision.

Table 2. Summary statistics of Koreans aged 65+ in 2005

	Sample size	Mean				Max ¹⁾
		Overall (100%)	SD	Poor (60.8%)	Others (39.2%)	
Age	3,981	73.09	11.55	74.63	70.71	105
Male	3,981	0.39	-	0.31	0.52	1
Education	3,978					
<Middle school		0.75	-	0.83	0.62	1
Middle school		0.09	-	0.07	0.12	1
High school		0.11	-	0.07	0.18	1
> High school		0.05	-	0.02	0.08	1
Marital status	3,981					
Married / cohabited		0.61	-	0.48	0.81	1
Separated / divorced		0.01	-	0.02	0.01	1
Widowed / dispersed		0.38	-	0.50	0.19	1
Never married		0.00	-	0.00	0.00	1
Form of household	3,981					
Living alone		0.16	-	0.19	0.11	1
Couple		0.41	-	0.32	0.55	1
Couple, child		0.21	-	0.22	0.20	1
Couple, child, grandchild		0.18	-	0.23	0.11	1
Others		0.04	-	0.04	0.04	1
Employed	3,981	0.17	-	0.06	0.33	1
Home ownership	3,981	0.36	-	0.25	0.52	1
Apartment (vs. house)	3,981	0.31	-	0.31	0.31	1
Number of children	3,981	3.93	3.08	4.01	3.80	10
Number of sons		2.03	2.11	2.07	1.97	7
No child		0.02	-	0.03	0.01	1
No son		0.08	-	0.08	0.07	1
Number of grandchildren	3,967	6.71	7.67	7.22	5.92	34
Grandchild care						
Any	3,967	0.06	-	0.06	0.05	1
Total hours spent	3,965	109.71	1,127.03	123.69	88.06	5,824
Number of ADL limitations	3,981	0.38	2.45	0.48	0.21	7
Number of IADL limitations	3,981	1.18	4.69	1.52	0.63	10
Subjective health	3,981					
Very good		0.02	-	0.01	0.03	1
Good		0.17	-	0.13	0.23	1
Fair		0.31	-	0.28	0.37	1
Bad		0.37	-	0.42	0.30	1
Very bad		0.12	-	0.15	0.08	1

1) Min values are zeros for all variables except the lowest age is 65

Table 3. Summary statistics of income and transfers of Koreans aged 65+ by source in 2005 (in $\text{k₩} \approx \$$)

	% with income>0 ¹⁾	Median	Mean	%	Max
Total personal income	89.3	2,210	5,280	100.0%	388,160
Earned income	27.3	0	2,280	43.2%	130,000
Wage	7.5	0	400	7.6%	84,000
Self-employed	11.6	0	1,038	19.7%	120,000
Agriculture / fishery	14.3	0	812	15.4%	30,000
Side job	2.3	0	31	0.6%	7,500
Asset income	16.3	0	551	10.4%	360,000
Interest from financial assets	15.0	0	510	9.7%	360,000
Rental income from real estate	2.0	0	40	0.8%	20,000
Public transfers	53.6	60	928	17.6%	36,000
Public pension	19.9	0	623	11.8%	36,000
National pension	15.5	0	242	4.6%	36,000
Occupational pension	4.9	0	381	7.2%	36,000
Social security	41.6	0	304	5.8%	19,200
Worker's compensation	0.0	0	11	0.2%	19,200
Basic Living Security	4.9	0	148	2.8%	9,360
Veteran's benefits	3.3	0	70	1.3%	18,000
Others	37.6	0	76	1.4%	6,000
Private pension	1.4	0	27	0.5%	12,000
Other income	1.8	0	76	1.4%	50,000
Private transfers from	68.6	400	1,418	26.9%	60,000
From children	68.1	400	1,390	26.3%	60,000
From parents	0.5	0	1	0.0%	500
From others	2.9	0	27	0.5%	12,000
Private transfers to	9.9	0	143	-	40,000
To children	6.1	0	130	-	40,000
To parents	2.5	0	4	-	2,000
To others	2.3	0	9	-	12,000

1) Proportion of people with positive income

Table 4. Summary statistics of assets and debts of Koreans aged 65+ by source in 2005 (in 10^4 ₩ ≈ \$)

	% with assets>0 ¹⁾	Median	Mean		Max
				%	
Total personal assets	77.5%	20,000	59,639	100.0%	2,001,000
Real estate	69.8%	20,000	55,294	92.7%	2,000,000
Home	66.9%	12,500	44,236	74.2%	2,000,000
Real estate except home	15.0%	0	13,810	23.2%	1,500,000
Security deposit	0.4%	0	44	0.1%	50,000
Financial assets	41.0%	0	3,938	6.6%	503,000
Cash, checking accounts	39.7%	0	2,420	4.1%	150,000
Savings deposit	4.8%	0	931	1.6%	500,000
Stocks / trust	0.6%	0	307	0.5%	500,000
Insurance	1.5%	0	136	0.2%	141,000
Money lent	0.7%	0	129	0.2%	60,000
Private savings club	0.4%	0	16	0.0%	25,000
Other Assets	13.3%	0	407	0.7%	75,000
Total personal debts	21.3%	0	6,454	-	1,500,000
Net personal assets	74.8%	19,350	53,184	-	1,951,000

1) Proportion of people with positive assets

Table 5. Mean income and assets, and poverty of Koreans aged 65+ by cohabitation status in 2005 (in ₩ ≈ \$)

	Overall (100.0%)			Living with a child (41.5%)		Living with no child (58.5%)	
	All (100.0%)	Poor (60.8%)	Non-poor (39.2%)	Poor (69.7%)	Non-poor (30.3%)	Poor (54.5%)	Non-poor (45.5%)
Individual Poverty Line (a)	3,840 for married individuals, 4,800 for others						
Total Income excluding Private Transfers (b = c - d)	3,862	577	8,961	367	8,677	768	9,095
Total Income (c)	5,280	2,001	10,370	1,481	9,855	2,473	10,614
Private Transfers (d)	1,418	1,424	1,409	1,115	1,178	1,705	1,519
Net Assets (e = f - g)	53,184	12,755	115,950	9,149	136,724	16,032	106,118
Total Assets (f)	59,639	17,299	125,371	14,077	146,825	20,226	115,218
Total Liabilities (g)	6,454	4,543	9,421	4,928	10,101	4,094	9,100
Self-support (h = b + 0.05*e)	6,521	1,215	14,758	824	15,513	1,570	14,401
Mean Poverty Gap (i = mean a - h (if a>h) or a (otherwise)	—	3,052	—	3,549	—	2,601	—

Table 6. Median income and Gini coefficients of Koreans aged 65+ by living arrangements and financial transfers from all children (in ~~₩~~ ≈ \$)

	Median income		Gini coefficient	
	Before transfers	After transfers	Before transfers	After transfers
Separate & non-married	120	2,880	0.808	0.640
Separate & married	1,920	3,500	0.688	0.605
With child & non-married	120	700	0.899	0.780
With child & married	700	1,720	0.764	0.699

Table 7. Logit analyses of elderly Koreans' co-residence with their adult child in 2005¹⁾(SE in parentheses, in ~~k₩~~ ₩ ≈ \$)

	Likelihood to live with at least one adult child ²⁾	Likelihood to live with the first son ³⁾
Bequest ($\geq 100,000$ k₩ ₩) probability (0.0 – 1.0)	0.356** (0.160)	0.382* (0.206)
Ln income	-0.053*** (0.014)	-0.024 (0.021)
Ln assets	-0.108*** (0.011)	-0.065*** (0.015)
Ln debts	0.027** (0.013)	-0.038* (0.021)
Male	-0.120* (0.068)	-0.030 (0.111)
Age (65-69 omitted)		
70-74	-0.109 (0.100)	-0.139 (0.158)
75-79	-0.036 (0.122)	-0.143 (0.191)
80-84	0.303** (0.151)	-0.006 (0.224)
≥ 85	0.637*** (0.186)	0.182 (0.247)
Marital status (Married omitted)		
Separated/Divorced	-0.556 (0.364)	1.001 (0.725)
Widowed/Dispersed	0.708*** (0.098)	-0.089 (0.166)
Education (<Middle school omitted)		
Middle school	0.387*** (0.135)	-0.821*** (0.228)
High school	0.095 (0.135)	-0.196 (0.237)
>High school	-0.062 (0.213)	-0.799** (0.405)
Employed	-0.145 (0.144)	0.143 (0.238)
Number of sons (>3 omitted)		
0	-1.116*** (0.288)	Sample Restricted
1	-0.262 (0.189)	1.144*** (0.249)
2	-0.406** (0.177)	0.546** (0.216)
3	-0.310* (0.187)	-0.040 (0.211)
Number of children (>3 omitted)		
1	0.154 (0.214)	Sample Restricted
2	-0.011 (0.151)	0.266 (0.247)
3	0.127 (0.120)	0.388** (0.171)
Constant	0.653*** (0.203)	0.244 (0.283)
Sample size	3,864	1,447

***: p -value < 0.01, **: p -value < 0.05, *: p -value < 0.10

- 1) The unit of analysis is an elderly individual.
- 2) The analysis sample is restricted to elderly people who have at least one adult child.
- 3) The analysis sample is restricted to elderly people who live with at least one adult child and have at least two adult children of which at least one is male.

Table 8. Analyses of Korean adult children's financial transfers to their non-coresident parent aged 65+ in 2005: When a parent lives with no adult child¹⁾

(SE in parentheses, in ~~k₩~~ ≈ \$)

	Likelihood to transfer (<i>Logit</i>)	Ln amount transferred (<i>OLS</i>) ²⁾	Ln amount transferred (<i>Fixed effect</i>) ²⁾
<i>Parent (respondent)'s Characteristics</i>			
Bequest probability	-0.729*** (.192)	0.323*** (.122)	-
Ln income	0.034** (.016)	-0.035*** (.009)	-
Ln assets	0.051*** (.014)	0.001 (.009)	-
Ln debts	-0.015 (.011)	-0.016** (.007)	-
Couple (both omitted)			
Husband only	-0.551** (.222)	0.157 (.157)	-
Wife only	0.020 (.127)	0.040 (.076)	-
Age (65-69 omitted)			
70-74	-0.066 (.117)	0.087 (.069)	-
75-79	-0.022 (.139)	0.063 (.098)	-
80-84	-0.102 (.206)	0.211* (.126)	-
≥85	0.055 (.277)	-0.031 (.147)	-
Education (<Middle school omitted)			
Middle school	-0.082 (.147)	0.214** (.105)	
High school	-0.200 (.162)	0.274*** (.092)	
>High school	-0.014 (.193)	0.308** (.144)	
Employed	-0.211 (.145)	-0.032 (.084)	
# children (≥4 omitted)			
1	-0.130 (.243)	0.114 (.171)	-
2	-0.083 (.142)	0.353*** (.100)	
3	-0.019 (.120)	0.245*** (.076)	-

(Table continued in the next page)

Table 8. (continued)

	Likelihood to transfer (<i>Logit</i>)	Ln amount transferred (<i>OLS</i>) ²⁾	Ln amount transferred (<i>Fixed effect</i>) ²⁾
<i>Child's Characteristics</i>			
Sibling composition (Younger daughter omitted)			
First son	-0.183* (.100)	0.376*** (.069)	0.524*** (.052)
Younger son	-0.270** (.105)	0.095 (.075)	0.207*** (.052)
First daughter	-0.042 (.078)	0.060 (.047)	0.105** (.044)
Age (30-39 omitted)			
40-49	-0.020 (.074)	0.081 (.056)	0.062* (.044)
50-59	0.162 (.118)	0.165** (.075)	0.054 (.067)
60-69	-0.108 (.229)	0.367** (.176)	0.010 (.139)
70-79	1.291 (1.055)	0.170 (.509)	0.033 (.466)
Marital status (Married omitted)			
Separated/divorced	-1.880*** (.282)	0.165 (.423)	0.354 (.214)
Widowed/dispersed	-1.129*** (.371)	0.073 (.249)	-0.019 (.279)
Single	-0.371** (.180)	-0.075 (.162)	-0.064 (.110)
Education (<High school omitted)			
High school	0.550*** (.119)	0.220*** (.069)	0.122** (.060)
Some college	0.751*** (.132)	0.597*** (.087)	0.430*** (.074)
Graduate school	0.698*** (.262)	0.901*** (.173)	0.819*** (.147)
Employed	0.645*** (.089)	0.315*** (.062)	0.150*** (.045)
# children (≥ 3 omitted)			
0	-0.469*** (.169)	0.299** (.150)	0.176* (.096)
1	-0.178 (.112)	0.133 (.081)	0.022 (.060)
2	0.023 (.096)	0.076 (.061)	-0.010 (.048)
Constant	-0.646** (.268)	5.204*** (.186)	5.564*** (.080)
Sample size	6,017	3,411	3,411
R-square	-	0.197	0.752

***: p -value < 0.01, **: p -value < 0.05, *: p -value < 0.10

- 1) The unit of analysis is a parent(s)-child pair. If a child has both a surviving father and a surviving mother, we analyze sum of the child's transfers across two parents.
- 2) The analysis samples is restricted to adult children who transferred to their parents.

Table 9. Analyses of Korean adult children's financial transfers to their non-coresident parent aged 65+ in 2005: When a parent lives with an adult child¹⁾

(SE in parentheses, in ~~k₩~~ ≈ \$)

	Likelihood to transfer (<i>Logit</i>)	Ln amount transferred (<i>OLS</i>) ²⁾	Ln amount transferred (<i>Fixed effect</i>) ²⁾
<i>Parent (respondent)'s Characteristics</i>			
Bequest probability	-0.590** (.236)	0.201 (.132)	-
Ln income	0.045** (.018)	0.000 (.012)	-
Ln assets	0.036*** (.013)	0.010 (.007)	-
Ln debts	-0.019 (.017)	-0.012 (.012)	-
Couple (both omitted)			
Husband only	0.361 (.245)	0.053 (.149)	-
Wife only	0.026 (.147)	0.035 (.091)	-
Age (65-69 omitted)			
70-74	0.181 (.166)	-0.048 (.094)	-
75-79	0.252 (.173)	0.012 (.110)	-
80-84	0.358* (.215)	-0.261* (.132)	-
≥85	0.597** (.257)	-0.148 (.144)	-
Education (<Middle school omitted)			
Middle school	0.018 (.191)	0.273** (.135)	
High school	0.002 (.231)	0.256* (.153)	
>High school	-0.285 (.314)	0.185 (.215)	
Employed	-0.156 (.200)	-0.161 (.103)	
# children (≥4 omitted)			
1	Dropped	Dropped	-
2	-0.255 (.198)	0.154 (.149)	
3	0.340** (.139)	0.072*** (.085)	-

(Table continued in the next page)

Table 9. (continued)

	Likelihood to transfer (Logit)	Ln amount transferred (OLS) ²⁾	Ln amount transferred (Fixed effect) ²⁾
Child's Characteristics			
Sibling composition (Younger daughter omitted)			
First son	-0.255* (.134)	0.308*** (.093)	0.298*** (.081)
Younger son	-0.356*** (.122)	-0.035 (.073)	0.003 (.067)
First daughter	-0.002 (.099)	0.068 (.060)	0.103* (.057)
Age (30-39 omitted)			
40-49	0.094 (.120)	0.071 (.087)	-0.075 (.074)
50-59	0.277* (.163)	0.198** (.112)	0.008 (.097)
60-69	-0.031 (.239)	0.240 (.153)	-0.043 (.143)
70-79	-0.389 (.488)	0.249 (.231)	-0.008 (.314)
Marital status (Married omitted)			
Separated/divorced	-1.116*** (.306)	-0.272 (.241)	-0.283 (.232)
Widowed/dispersed	-0.451 (.303)	-0.467*** (.148)	-0.379* (.197)
Single	-0.544** (.274)	0.479** (.223)	0.226 (.177)
Education (<High school omitted)			
High school	0.282*** (.128)	0.304*** (.077)	0.165** (.071)
Some college	0.627*** (.156)	0.771*** (.097)	0.399*** (.095)
Graduate school	1.270*** (.395)	1.634*** (.251)	1.217*** (.189)
Employed	0.533*** (.101)	0.257*** (.072)	0.289*** (.061)
# children (≥3 omitted)			
0	-0.164 (.227)	0.139 (.153)	0.010*** (.135)
1	0.018 (.144)	0.126 (.093)	0.088 (.085)
2	-0.015 (.117)	0.159** (.074)	0.027 (.064)
Constant	-0.977*** (.295)	4.973*** (.183)	5.467*** (.108)
Sample size	3,668	1,913	1,913
R-square	-	0.218	0.791

***: p -value < 0.01, **: p -value < 0.05, *: p -value < 0.10

- 1) The unit of analysis is a parent(s)-child pair. If a child has both a surviving father and a surviving mother, we analyze sum of the child's transfers across two parents.
- 2) The analysis samples is restricted to adult children who transferred to their parents.

Table 10. Analyses of Korean adult children's frequency of meeting their non-coresident parent aged 65+ in 2005: When a parent lives with no adult child¹⁾

	(SE in parentheses, in k₩ ≈ \$)				
	Likelihood to meet (Logit)		Ln frequency / mo. (OLS) ²⁾		Ln frequency / mo. (Fixed effect) ²⁾
<i>Parent (respondent)’s Characteristics</i>					
Bequest probability	0.673	(.763)	0.382***	(.081)	-
Ln income	0.081**	(.039)	-0.008	(.007)	-
Ln assets	0.149***	(.030)	-0.001	(.006)	-
Ln debts	-0.006	(.046)	-0.001	(.005)	-
Couple (both omitted)					
Husband only	-1.091**	(.475)	-0.269***	(.098)	-
Wife only	0.665**	(.330)	-0.069	(.055)	-
Age (65-69 omitted)					
70-74	0.631**	(.294)	-0.061	(.051)	-
75-79	0.593	(.394)	-0.091	(.061)	-
80-84	1.777***	(.578)	-0.062	(.093)	-
≥85	0.353	(.714)	-0.002	(.155)	-
Education (<Middle school omitted)					
Middle school	1.767**	(.801)	0.022	(.078)	-
High school	0.775	(.514)	-0.017	(.063)	-
>High school	-0.342	(.847)	0.064	(.080)	-
Employed	0.321	(.431)	-0.062	(.055)	-
# children (≥3 omitted)					
1	-0.518	(.900)	0.310**	(.153)	-
2	-0.883**	(.402)	0.070	(.068)	-
3	-0.318	(.403)	-0.007	(.047)	-

(Table continued in the next page)

Table 10. (Continued).

	Likelihood to meet (<i>Logit</i>)		Ln frequency / mo. (<i>OLS</i>) ²⁾		Ln frequency / mo. (<i>Fixed effect</i>) ²⁾	
<i>Child's Characteristics</i>						
Sibling composition (Younger daughter omitted)						
First son	-0.582	(.356)	0.094*	(.051)	0.109**	(.045)
Younger son	-0.392	(.340)	0.045	(.049)	0.076*	(.045)
First daughter	0.414	(.318)	-0.015	(.045)	-0.019	(.039)
Age (30-39 omitted)						
40-49	0.205	(.265)	-0.115***	(.038)	-0.096**	(.039)
50-59	0.342	(.510)	-0.071	(.060)	-0.070	(.060)
60-69	1.769	(1.266)	-0.208	(.155)	-0.182	(.114)
70-79		Dropped	-0.064	(.422)	0.527	(.404)
Marital status (Married omitted)						
Separated/divorced	-1.782***	(.440)	-0.285**	(.123)	-0.074	(.104)
Widowed/dispersed	-0.899	(.597)	-0.067	(.174)	0.063	(.164)
Single	-1.330***	(.474)	-0.009	(.092)	0.188**	(.089)
Education (<High school omitted)						
High school	0.873***	(.265)	0.120**	(.058)	0.070	(.050)
Some college	1.039**	(.413)	0.242***	(.063)	0.102	(.063)
Graduate school	0.643	(.742)	0.046	(.112)	-0.185	(.127)
Employed	1.370***	(.242)	0.069*	(.039)	0.103***	(.038)
# children (≥3 omitted)						
0	0.601	(.423)	-0.060	(.090)	-0.190**	(.080)
1	0.847**	(.371)	-0.023	(.057)	0.000	(.053)
2	1.159***	(.290)	0.011	(.043)	0.029	(.043)
Distance from parents (<0.5 hour omitted)						
0.5-1 hour	1.949	(.560)	-1.325***	(.075)	-1.257***	(.051)
1-2 hours	0.728	(.469)	-1.888***	(.072)	-1.862***	(.056)
>2 hours	-0.500	(.207)	-2.606***	(.065)	-2.694***	(.049)
Constant	No constant		1.090***	(.142)	1.086***	(.077)
Sample size	6,004		5,919		5,919	
R-square	-		0.460		0.708	

***: p -value < 0.01, **: p -value < 0.05, *: p -value < 0.10

1) The unit of analysis is a parent(s)-child pair.

2) The analysis samples is restricted to adult children who met their parents at least once.

Table 11. Analyses of Korean adult children's frequency of meeting their non-coresident parent aged 65+ in 2005: When a parent lives with an adult child other than the focal child¹⁾

(SE in parentheses, in ~~kW~~ ≈ \$)

	Likelihood to meet (Logit)		Ln frequency / mo. (OLS) ²⁾		Ln frequency / mo. (Fixed effect) ²⁾
<i>Parent (respondent)'s Characteristics</i>					
Bequest probability	0.490	(1.134)	0.106	(.092)	-
Ln income	-0.043	(.068)	-0.006	(.008)	-
Ln assets	0.054	(.037)	0.003	(.005)	-
Ln debts	0.041	(.060)	0.010	(.007)	-
Couple (both omitted)					
Husband only	-0.619	(.715)	-0.224**	(.105)	-
Wife only	-0.918**	(.450)	-0.020	(.069)	-
Age (65-69 omitted)					
70-74	0.806	(.666)	0.122*	(.072)	-
75-79	0.447	(.961)	0.035	(.083)	-
80-84	-0.092	(.743)	0.057	(.095)	-
≥85	-0.576	(.842)	-0.019	(.109)	-
Education (<Middle school omitted)					
Middle school	-1.186*	(.650)	-0.003	(.089)	-
High school	-1.552**	(.637)	0.219**	(.094)	-
>High school	-1.650*	(.908)	0.345**	(.140)	-
Employed	0.376	(.740)	0.068	(.083)	-
# children (≥3 omitted)					
1	Sample Restricted		Sample Restricted		-
2	Dropped		0.107	(.114)	-
3	0.171	(.472)	0.059	(.061)	-

(Table continued in the next page)

Table 11. (Continued).

	Likelihood to meet (<i>Logit</i>)	Ln frequency / mo. (<i>OLS</i>) ²⁾	Ln frequency / mo. (<i>Fixed effect</i>) ²⁾
<i>Child's Characteristics</i>			
Sibling composition (Younger daughter omitted)			
First son	-1.042* (.583)	0.212*** (.075)	0.239*** (.066)
Younger son	-1.140** (.511)	-0.062 (.063)	0.004 (.057)
First daughter	-0.088 (.529)	-0.004 (.053)	0.029 (.048)
Age (30-39 omitted)			
40-49	0.105 (.802)	-0.057 (.061)	-0.145** (.060)
50-59	0.348 (1.109)	-0.082 (.085)	-0.249*** (.080)
60-69	-0.123 (.897)	-0.104 (.130)	-0.260** (.116)
70-79	-2.031 (1.285)	-0.229 (.230)	-0.622** (.265)
Marital status (Married omitted)			
Separated/divorced	-1.503*** (.546)	-0.248 (.173)	-0.001 (.138)
Widowed/dispersed	1.412 (.953)	-0.189 (.149)	0.135 (.145)
Single	-0.690 (.571)	0.070 (.148)	0.126 (.133)
Education (<High school omitted)			
High school	1.307*** (.495)	0.234*** (.056)	-0.022 (.058)
Some college	1.619*** (.586)	0.294*** (.073)	0.064 (.081)
Graduate school	-1.042 (.780)	0.399** (.186)	-0.002 (.191)
Employed	0.863** (.379)	0.031 (.058)	0.038 (.050)
# children (≥ 3 omitted)			
0	-1.898** (.903)	0.041 (.122)	-0.027 (.112)
1	-1.241 (.771)	-0.010 (.076)	0.055 (.071)
2	-0.936* (.539)	-0.062 (.052)	0.026 (.053)
Distance from parents (<0.5 hour omitted)			
0.5-1 hour	-1.115 (.683)	-1.129*** (.079)	-1.108*** (.064)
1-2 hours	-0.790 (.916)	-1.670*** (.079)	-1.643*** (.071)
>2 hours	-2.039*** (.609)	-2.452*** (.076)	-2.377*** (.062)
Constant	6.623*** (1.048)	0.687*** (.143)	0.907*** (.098)
Sample size	3,532	3,609	3,609
R-square	-	0.432	0.733

***: p -value < 0.01, **: p -value < 0.05, *: p -value < 0.10

1) The unit of analysis is a parent(s)-child pair.

2) The analysis samples is restricted to adult children who met their parents at least once.

APPENDICES

Appendix 1. Proportion of children providing support for parents aged 65+ by child age groups in 2005

(Number of observations in parentheses)

Child age group	% children coresiding with elderly parents	% non-coresident children making financial transfers to elderly parents
25-29 ¹⁾	36.5 (148)	42.6 (94)
30-34	19.9 (846)	53.2 (678)
≥35	12.5 (10,420)	54.8 (9,118)
Total	13.7 (11,429)	54.5 (9,901)

- 1) The youngest child of people aged 65+ was 20. Children younger than age 24 are omitted from this table due to the small number of observations.

Appendix 2. Summary statistics of key independent variables in 2005 (in kW ≈ \$)

	Sample size	Mean	Max ¹⁾
Parent's bequest (≥100,000 kW) probability	11,266	0.221	1
Child's education	11,266		
<High school		0.249	1
High school		0.428	1
Some college		0.306	1
Graduate school		0.017	1
Child's sex * birth order	11,266		
First son		0.241	1
Younger son		0.277	1
First daughter		0.218	1
Younger daughter		0.263	1

- 1) Min values are zeros for all variables.

FIGURES

Figure 1. Coresidence with at least one child among Koreans aged 65+ in 2005

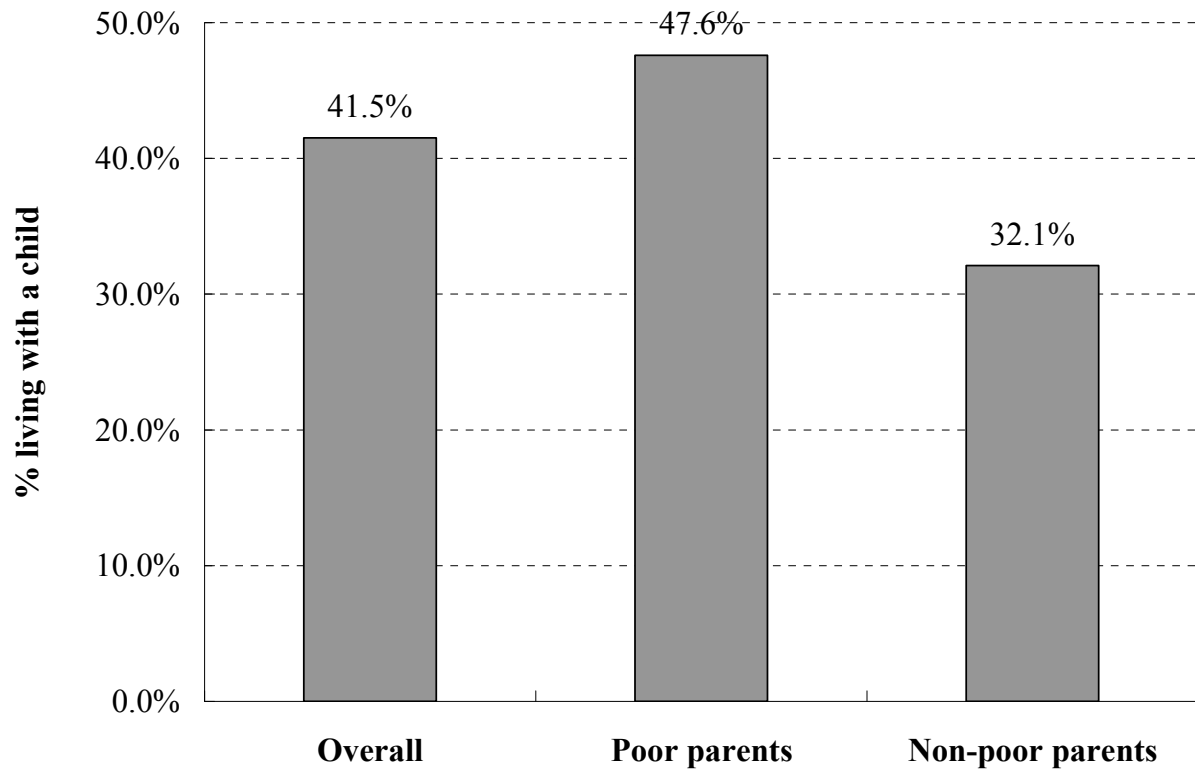
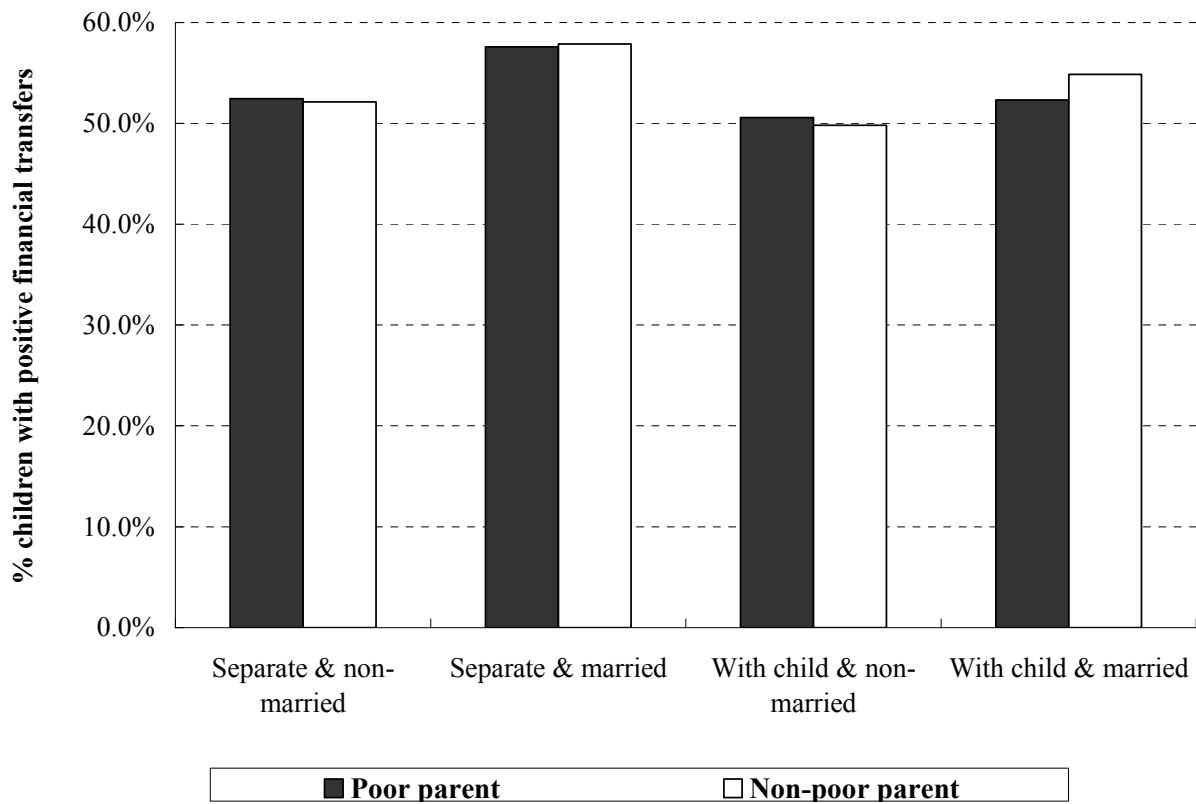
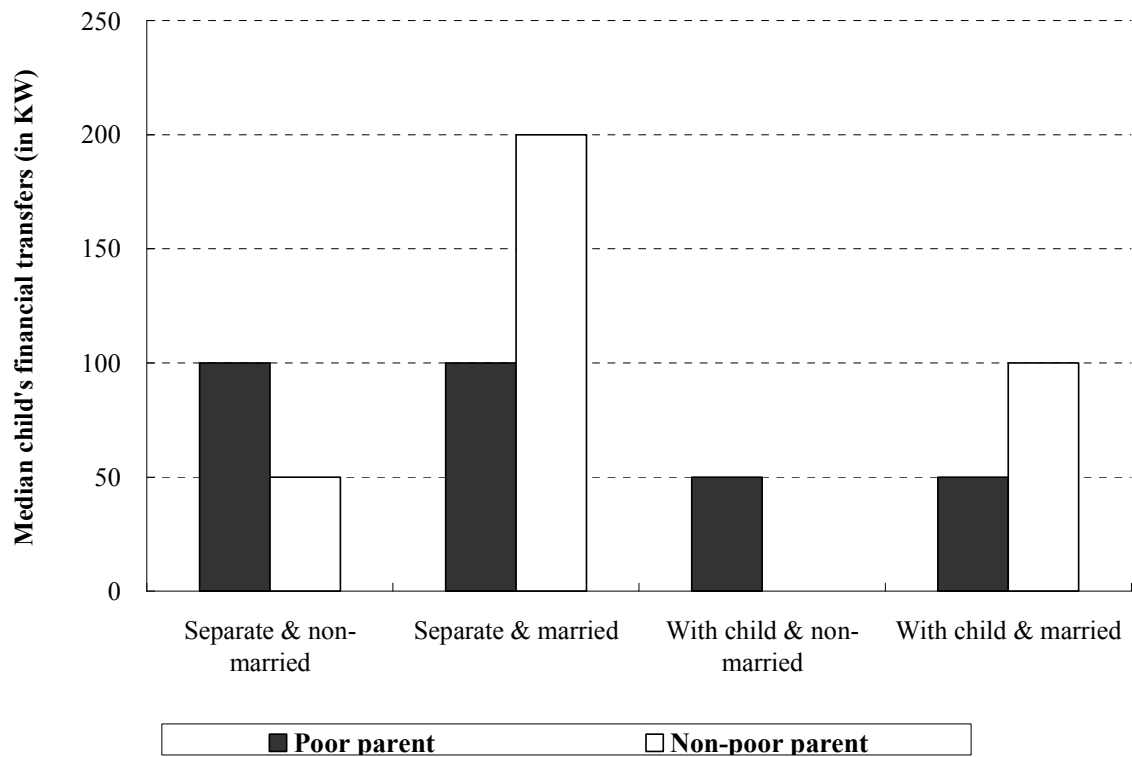


Figure 2. Adult Korean child's financial transfers to their non-coresident parent(s) aged 65+ by parent(s)' living arrangements and poverty status in 2005 (in kW ≈ \$)

(a) whether a child made positive transfers



(b) Median financial transfers – all children



(c) Median financial transfers – children with positive transfers only

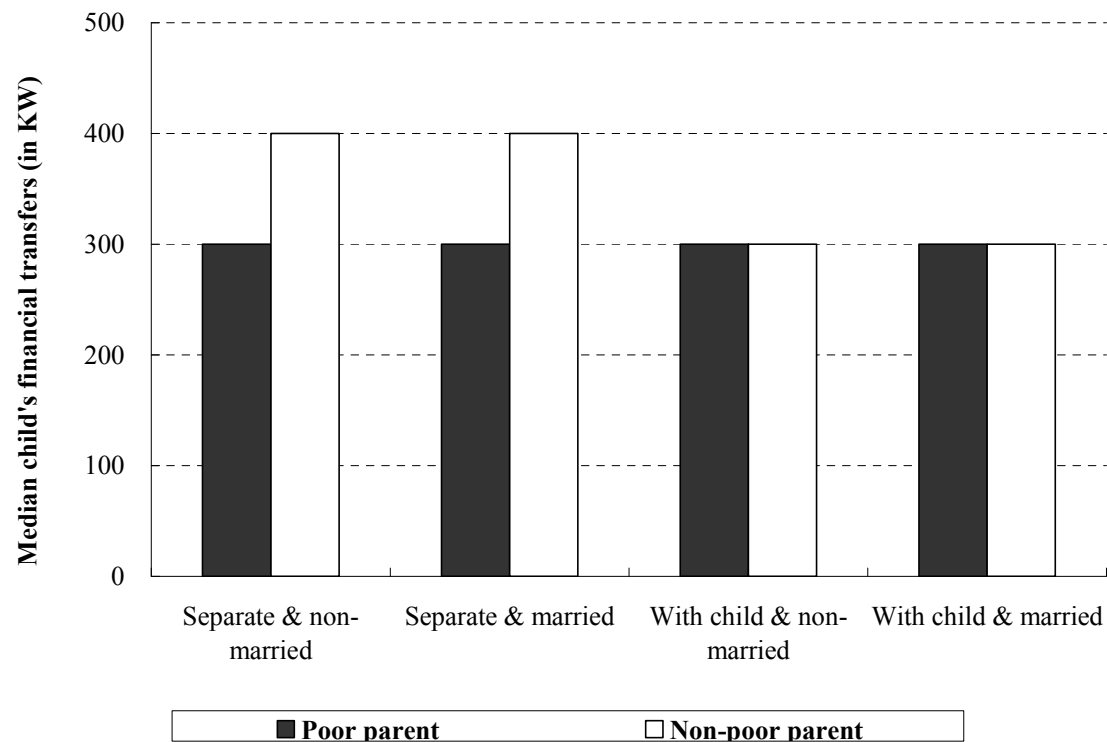


Figure 3. Adult Korean children's frequency of meeting their non-coresident parent(s) aged 65+ by parent's poverty status in 2005

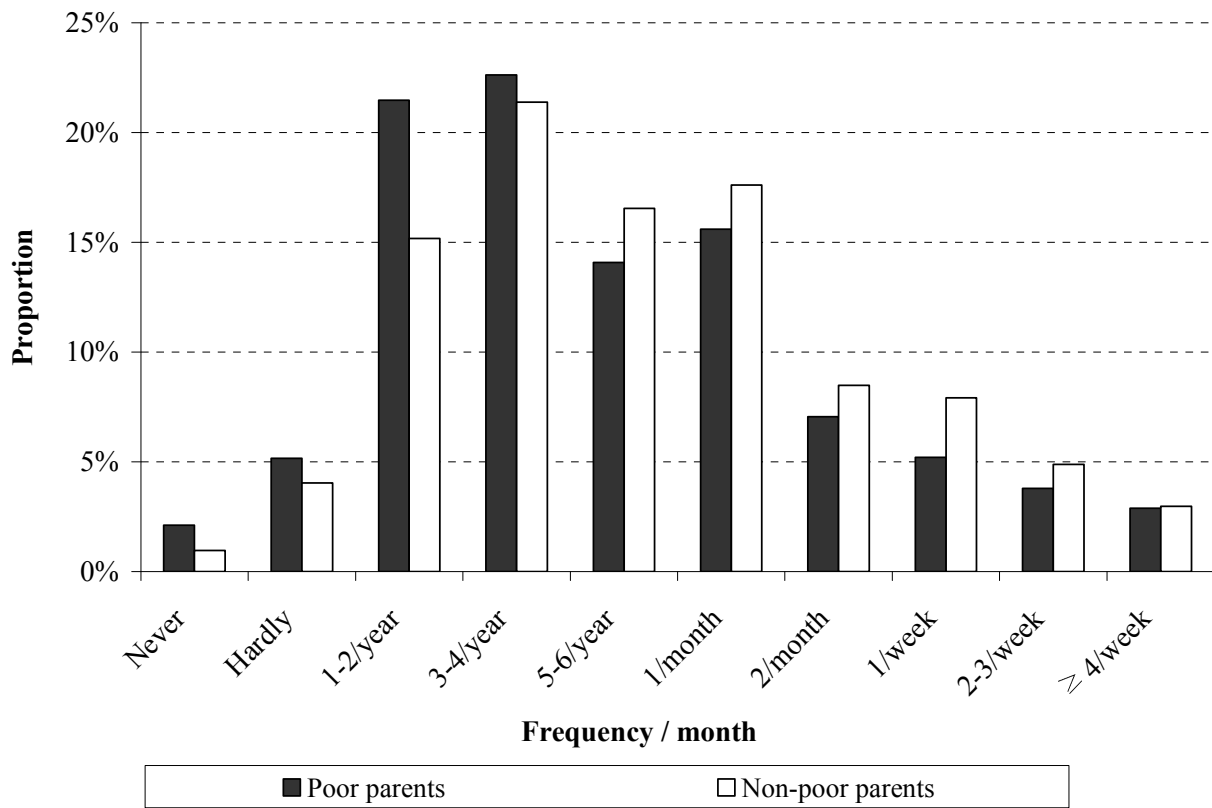


Figure 4. Adult Korean children's frequency of meeting their non-coresident parent(s) aged 65+ by parent's living arrangements in 2005

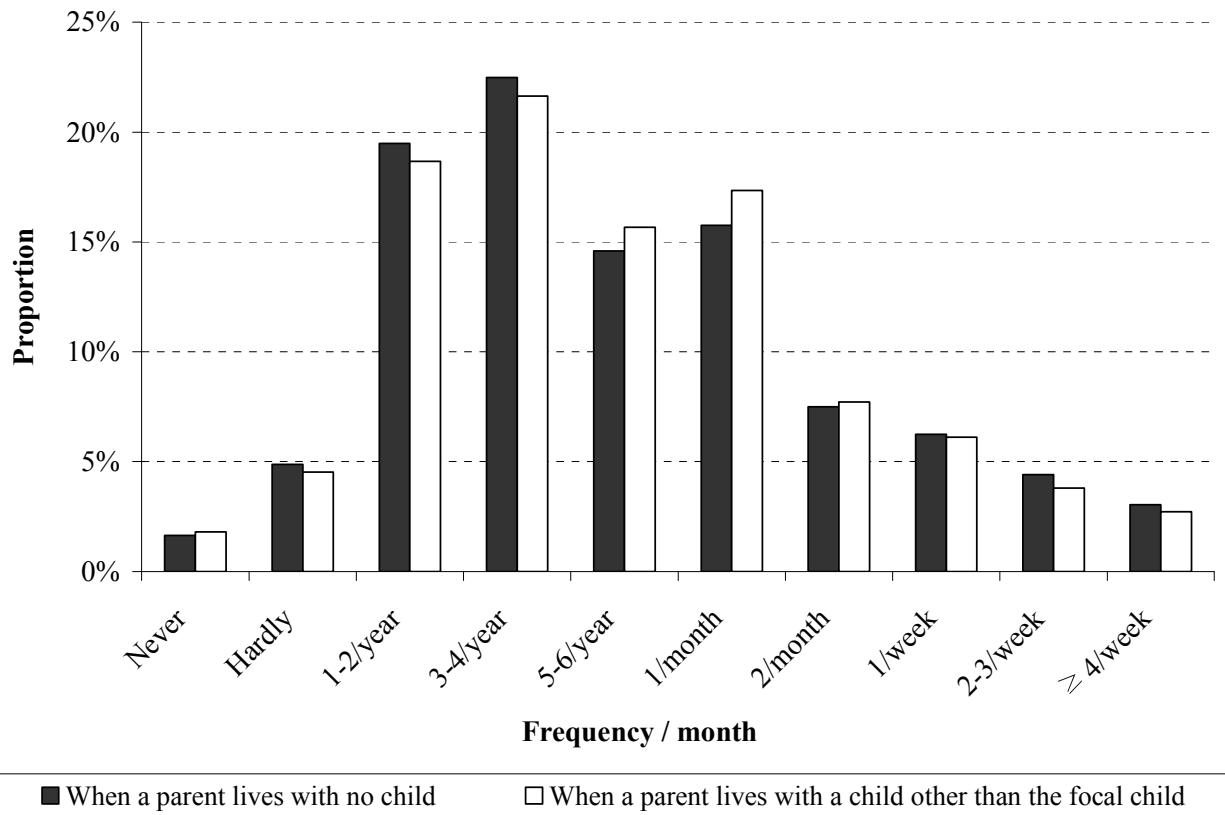
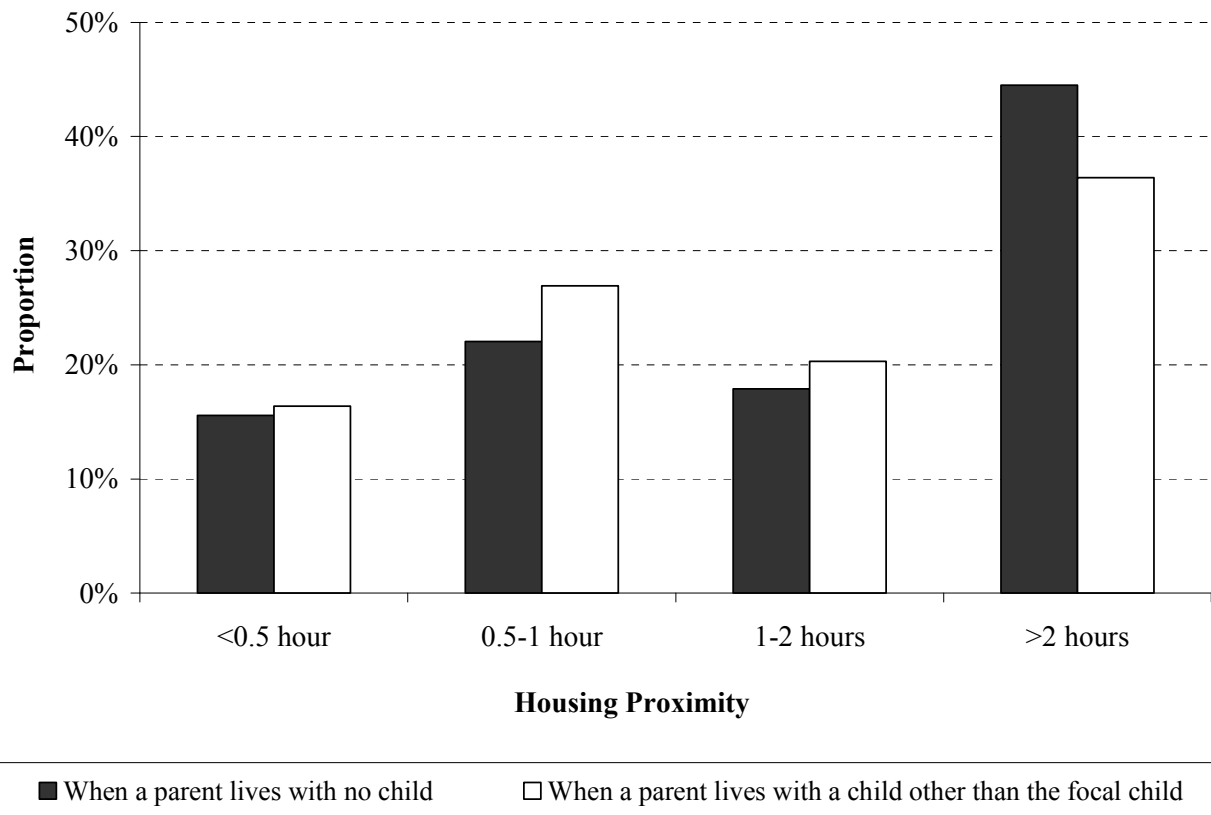


Figure 5. Adult Korean children's housing proximity to their non-coresident parent(s) aged 65+ in 2005¹⁾



1) Housing proximity measures how long it takes to go to parent's house with public transportation.