

The Elderly's Decision to Transfer

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Abstract

Transfer behavior of the elderly is composed of a myriad of inextricably-linked decisions that the elderly encounter in the face of the relationship with their children and the environment in which the government and insurance companies can alter costs and benefits of transfers. With regard to downstream transmission of wealth, the lack of consensus as to what underlies the elderly's decision to transfer, which refers to the probability, the amount as well as the timing of transfers, is reflected in the multiplicity of hypotheses concerning transfer motives. Tests that are designed to distinguish one motive from the others have failed to deliver generalizable results, possibly because these tests are based on limited data and/or because theories of transfer motives themselves do not provide a complete account of the elderly's transfer behavior. In this study, I take advantage of the rich data available in the 1993-2006 waves of the Assets and Health Dynamics of the Oldest Old (AHEAD) and the Health and Retirement Survey (HRS). I attempt to jointly estimate the elderly's decision to transfer, their choice of living arrangement, their decision to hold wealth in an annuitized form and their health status as well as taking into consideration intervening factors such as gift and estate tax incentives.

1 Introduction

Transfer behavior of the elderly is composed of a myriad of inextricably-linked decisions that the elderly encounter in the face of the relationship with their children and the environment in which the government and insurance companies can alter costs and benefits of transfers. With regard to downstream transmission of wealth, the lack of consensus as to what underlies the elderly's decision to transfer, which refers to the probability, the amount as well as the timing of transfers, is reflected in the multiplicity of hypotheses concerning transfer motives. Tests that are designed to distinguish one motive from the others have failed to deliver generalizable results, possibly because these tests are based on limited data and/or because theories of transfer motives themselves do not provide a complete account of the elderly's transfer behavior. In this study, I take advantage of the rich data available in the 1993-2006 waves of the Assets and Health Dynamics of the Oldest Old (AHEAD) and the Health and Retirement Survey (HRS). I attempt to jointly estimate the elderly's decision to transfer, their choice of living arrangement, their decision to hold wealth in an annuitized form and their health status as well as taking into consideration intervening factors such as gift and estate tax incentives.

The next section provides review of some of the existing literature. A sketch of ideas for the theoretical and the empirical model follows. Descriptive statistics of the dataset I have are tabulated to show that the planned joint estimation is feasible. I conclude with a list of tasks that I will pursue in the future.

2 Literature Review

Before the discussion of transfer behavior, it is important to distinguish between types of transfer that will be considered. The paper is concerned primarily with downstream intergenerational transfers of wealth or transfers that are made from parents to children because the occurrence of downstream transfers of wealth is much more frequently observed than that of their upstream (child-to-parent) counterpart. According to the Health and Retirement Survey (HRS) from 1993-2006, the percentage of households making monetary gifts downstream is approximately 35% and would be higher with the inclusion of bequests; approximately half of the interviewed households

reported intention to leave bequests to their children. In contrast, the percentage of the HRS households that received upstream monetary transfers hovers around 5% across waves. As a result of their rare occurrences, only a small number of studies related to upstream intergenerational transfers have been published; Sloan et al (2002) provides an example and the paper offers mixed results of their existence depending critically on the definition of transfers. Nishiyama (2002) acknowledges the presence of upstream transfers but decides to disregard it completely upon lack of data.

This paper focuses on transfer behavior of the elderly to adult children. Motives underlying transfer behavior are better illustrated when legal obligations of parents towards their children under the age of 18 are removed from consideration. Charitable donations and gifts made to a cause or a political organization are also irrelevant in this study.

Transfers of wealth can take place at different points in time. The term ‘inter vivos transfers’, used interchangeably with ‘gifts’, refer to transfers made when the donor (in this case, the parents) is still alive and ‘end-of-life transfers’ or ‘bequests’ refer to transfers made upon or after the donor’s death. In this paper, the term ‘transfer’ when mentioned alone encompasses both inter vivos transfers and bequests.

Inter vivos transfers and bequests differ and interconnect on many levels. In addition to their obvious difference in time references, stylized facts suggest that inter vivos transfers are often distributed unequally among children of the same household while bequests are divided equally. McGarry (1999) and Norton and Van Houtven (2006) find that 95% of children of households that engage in intergenerational transfer in the US receive a bequest while only 40% of them receive an inter vivos transfer; the difference in incidence between the two types of transfer is further exaggerated if transfer amounts too are accounted for.

In one respect, inter vivos transfers and bequests are alike: assets that are not transferred when the parents are alive will likely be transferred when they are dead, momentarily casting aside spending down. The joint consideration of inter vivos transfers and bequests facilitates a better understanding of the transfer profile of parents over their life cycles. The juxtaposition of these two types of transfer is particularly pertinent for the elderly; their shorter life expectancy necessitates careful estate planning and its process begins with careful transfers made inter vivos.

2.1 Motives in the Literature

Parents transfer to children for different reasons and their transfers may be intentional or accidental. Among theories that attempt to explain intentional transfers, two are most widely debated, both focusing on the unequal distribution of wealth among children of the same household and both faring well with inter vivos transfers while, without additional assumptions, failing to address the equal division of bequests. The strategic bequest motive, also known as exchange, suggests that parents leave assets to children in exchange for services, including informal care and running daily errands (Bernheim et al, 1986). The theory predicts that children who provide more services to parents end up with larger transfers and parents with more remaining assets are more likely to receive care from children. The altruistic bequest motive, referred to as altruism henceforth, argues that parents transfer in order to equalize the marginal utility of wealth among their children (Barro, 1974; Becker, 1974). A larger portion of bequest or inter vivos transfer would be given to poorer children, regardless of care provided.

Both exchange and altruism have been tested empirically. Using data from the 1993 and 1995 waves of the Assets and Health Dynamics of the Oldest Old (AHEAD), Norton and Van Houtven (2006) find that their fixed effect logistic regressions validate exchange for inter vivos transfers but not for bequests. McGarry (1999) exploiting a dataset from the same source finds evidence for altruism in both types of transfer. The author argues that parents who have not made a large inter vivos transfer are likely to bequeath a larger asset to poorer children while those who have already compensated for the difference in incomes among their children are likely to intend an equal division of estates. Each of these papers considers only one transfer motive and casts aside the debate as to which motive offers a better description of transfer behavior of the elderly.

An attempt to resolve the exchange-altruism debate is provided by Cox and Rank (1992). Using the 1987-8 National Survey of Family and Households, the authors estimate two equations, one for the probability of receiving an inter vivos transfer and the other for the amount of transfer. If altruism dominates, increases in child income should induce a reduction in both the probability and the amount of transfers. If exchange dominates, increases in child income should diminish the probability but increase the amount of transfers. A rise in income translates into a higher opportunity cost of time for the child, which has to be properly compensated for. Taking into account

liquidity constraints by including proxies for permanent income, the authors find a negative coefficient of child income in the probability equation and a positive coefficient in the amount equation, consistent with exchange. There are also other studies that attempt to resolve the debate, including Bernheim et al (1985), Wilhelm (1996), Brown (2004) and Sloan and Norton (1997), to name a few. The results are mixed with some finding support for exchange, some for altruism and others concluding that transfer motives are lacking in their studies altogether.

An alternative explanation for the elderly's transfer behavior is the accidental theory, proposed by Yaari (1965), whereby bequests are assets unexhausted by the parents and left accidentally because the parents miscalculate their time of death, consistent with the life cycle hypothesis. If accidental bequests were to be observed empirically, we would expect to see parents annuitize much of their wealth and increase their consumption levels as they approach their expected end of life, the process known as spending down. The accidental theory does not directly address inter vivos transfers, although it would be logical to assume that parents behaving according to the theory would not make them unless inter vivos transfers are considered part of the spend-down process or estate planning of the elderly. Hurd et al (2007) find the pattern of inter vivos transfers among households from the 1992-2000 waves of the Health and Retirement Survey (HRS) to be consistent with the life cycle hypothesis and conclude in support of the accidental bequest motive.

The accidental bequest motive and the intentional transfer motives are not necessarily mutually exclusive. The accidental theory predicts that the elderly consume at a faster rate as they become older and part of the elderly's accelerated consumption may include inter vivos transfers. If the pattern of transfers is empirically consistent with either altruism or exchange, then the accidental theory and the intentional transfer motives are simply descriptions of two distinct but inextricably linked phenomena where the elderly make inter vivos transfers in favor of poverty-stricken or caregiving children over others and do so at an increasing rate as they approach death.

The lack of consensus as to which motive best explains the elderly's transfer behavior implies that there is room for improvement in the estimation of transfers or that the existing motives are insufficient, failing to address other factors that may enter the elderly's transfer decision contemporaneously. A richer dataset may be needed. An altruistic parent, for example, may start giving more to less fortunate children very early on, so datasets that begin to

collect information when the parent is old and the child is no longer liquidity constrained (much like AHEAD) might not fully capture altruism. The key is probably to consider the entire transfer profile that begins early in the parent's life cycle. Alternatively, one might study the decision to transfer jointly with other decisions that the elderly face, accounting for unobserved heterogeneity and the complexity of the relationship between parents and their children.

2.2 Estate and Gift Tax Incentives

Transfer behavior is complicated by the presence of estate and gift taxes. Understanding transfer taxes is critical to understanding transfer behavior with respect to the amounts and the timing of transfers and may shed light on or in some cases further complicate transfer motives above.

A brief description of federal transfer tax incentives that is relevant to the period between 1993 and 2006 is provided. A detailed historical evolution of these tax incentives can be found in Luckey (2003), where attention should be paid to the Tax Reform Act of 1976, the Economic Recovery Act (ERTA) of 1981, the Taxpayer Protection Act of 1997 and the Economic Growth and Tax Relief Reconciliation Act of 2001, since they were instrumental in shaping the transfer tax system that is in place today. The Tax Reform Act of 1976 saw previously separate gift and estate taxes being unified as a single tax with liability that is based on the sum of inter vivos transfers and bequests. The ERTA of 1981 abolished the imposition of any transfer tax on inter-spousal transfers; a husband can now give an unlimited amount of gifts to his wife tax-free.

The umbrella term 'transfer tax' nests three taxes that interact in a complex manner. Gift tax is applied to a transfer of property for less than its full value, including direct gifts such as cash, stocks, bonds, businesses or real estate as well as indirect gifts such as cancellation of debt or loaning 10000 USD or more at less than the market interest rate (as of 2008, according the IRS). The gift tax is computed annually and gifts are liable to tax only when their values are above the annual exclusion amount and the difference between their values and the exclusion amount is cumulated over life. Estate tax applies to taxable estate upon death of the donor as well as the cumulated taxable gifts. Capital gains tax, which is part of the income tax, applies to a transfer of an investment with unrealized capital gains. The basis on which capital gains tax is computed depends on whether the investment is

given to the recipient as a gift or a bequest. The donor—in this case, the parents—is usually responsible for the gift tax (although an agreement could be made otherwise) while the recipient is responsible for the estate and the capital gains tax.

It is possible for the elderly to exploit avenues of tax avoidance in order to maximize the amount of wealth passed on to their children if they understand when and how to transfer an asset. Following Joulfaian (2007), I take the gift tax as the center around which its interactions with the estate and the capital gains taxes can be understood. As discussed above, gifts are liable to the gift tax if and only if their values exceed what is known as the annual exclusion amount. This amount is per recipient and currently inflation-indexed using CPI-U for the year before the transfer. In most cases, even when the value of the gift exceeds the annual exclusion amount, the donor may not have to pay the gift tax that year because she is also allowed the lifetime taxable gift limit, which is the per-donor lifetime exclusion amount. For instance, in 1993, when the annual exclusion was 10000 and the lifetime taxable gift limit was 600000 USD, a donor could make an inter vivos transfer of 10000 USD to any number of people without being liable to the gift tax and if one of those inter vivos transfers was greater than 10000 USD, the difference would be taxable but instead of the donor having to pay for it that year, the amount would be cumulated against the 600000 allowable exclusion, taxed only when the lifetime exclusion was used up, and would be carried over as part of the estate tax should the donor die that year. Under the gift-splitting principle where married couples could be considered as two individuals making gifts separately, the exclusion amounts (lifetime and annual) double for the household.

Another feature of the gift tax that parents can exploit to increase wealth transmitted to their children is the fact that it operates on a tax exclusive basis or that the gift tax is based on the amount received by the recipient and not the total amount (including tax) paid by the donor. This is in stark contrast with the tax inclusive basis of the estate tax where the total amount relinquished by the donor is taxable. The implication is that the effective rate of tax on inter vivos transfers would always be lower than that on bequests or the statutory tax rate (given that the gift and the estate taxes have been unified).

Additional facets of complexity exist in the interplay between the estate and the gift tax. The gift tax surrendered within three years of the date of death is considered part of the estate tax; in other words, if transfers are made

closer to the date of death, they lose their tax-exclusive advantage. Also, the timing of transfer of an investment matters; under the current tax system, a transferred asset with unrealized capital gains is liable to the capital gains tax, which is computed based on the sale value of the asset minus the asset's basis (which can be thought of as costs of the seller). The basis is different if the asset is transferred as a gift than if it is part of the recipient's bequest. As a gift, the basis is known as carryover which means that the basis of the donor is carried to the recipients, with adjustments for the appreciation of the asset and a share of taxes already paid prior to the transfer. As part of the bequest, the asset is subject to the stepped up basis or the fair market value of the asset at the date of the donor's death (Luckey, 2003 and IRS online documentation). If an investment has large unrealized capital gains, it is better left to the recipient as part of the bequest because the stepped up basis is usually greater than the carryover.

Transfer tax incentives bias the choice between bequests and inter vivos transfers and distort parents' transfer behavior. The monetary incentives not only change the timing of transfer, generally in favor of inter vivos transfers over bequests, but also do so in such a fashion that parents are induced to make inter vivos transfers at an earlier point in their lives than they may have liked otherwise. The fact that taxable gifts made within three years of the parents' death are included in the estate tax means that in the face of longevity uncertainty, parents who wish to maximize the amount of transfers given to their children would make frequent inter vivos transfers early on even though they know they need to save up, expecting morbidity later. In the absence of such institutional imposition as tax incentives, the elderly may wish to hold on to their wealth for as long as possible and we may observe a greater incidence of discretionary consumption (such as vacation or luxury goods) and accidental bequests.

Poterba (1998), Joulfaian and McGarry (2004) and Joulfaian (1997) draw similar conclusions with regard to how transfer tax incentives impact transfer behavior of older parents. While finding evidence that changes in tax rates over time induce changes in the amount and the frequency of inter vivos transfers, the authors find that parents do not fully exploit tax avoidance channels. Joulfaian and McGarry (2004) use the 1992-2000 waves of the AHEAD and HRS, restricting their sample to the initially wealthy or those with a higher level of bequeathable wealth than the lifetime exclusion limit in 1992 and 1993, and find weak evidence in support of spending down and even when they control for life expectancy and health whose deterioration

should theoretically accelerate the spend-down process, the variables do not have the expected explanatory power. Poterba (1993) finds that too small a percentage of the elderly with bequeathable wealth (about one-third) make inter vivos transfers despite transfer tax incentives. The results are surprising considering that part of careful estate planning comprises spending down and, if we believe that the elderly prefer giving money to their own children to surrendering it to the federal government, frequent inter vivos transfers.

In light of Joulfaian and McGarry (2004) that considers the wealthy and controls for education of the parents, it is fair to dispute the argument that the elderly may not be capable of understanding how to take advantage of tax incentives as an explanation for their small behavioral impact; the wealthy and educated of all people should best understand the tax code. That tax incentives have effects that are smaller than expected insinuates that tax incentives alone cannot explain transfer decision in its entirety. The elderly may wish to keep their resources for later life care and a better understanding how life expectancy and the expectation of morbidity enter estate planning may be needed. Also, there exists the need to revisit the transfer motives mentioned above. It is possible that the transfer motives operate counter-actively to tax incentives. For instance, an exchange-motivated yet wealthy parent may wish to award an amount smaller than the exclusion limit to their children in order to elicit a greater frequency of care since there is obvious moral hazard in giving children a lump sum now and expecting the promise of care to be fulfilled later. Or if intentional transfer motives were not correct, the lack of compelling evidence for tax incentives may act in support of the accidental bequest theory, where parents spend down on forms of consumption other than transfers to their children.

2.3 Annuitized and Bequeathable Wealth

The form of wealth parents hold has implications not only for the amount of transfers but the types of transfer made. Ease of transfer depends on how liquid the assets are. Assets that are liquid such as bank accounts or mutual funds will be more easily transferable and, given the intent to transfer, should be transferred inter vivos. Illiquid assets or assets with substantial unrealized gains are better left as bequests, according to the tax incentives discussed above. The household's portfolio can also partly explain whether transfers are made intentionally or accidentally. One way to test if bequests are intentional is to see whether life insurance policies are being purchased; spending on life

insurance can be construed as an intention to offset annuitization and convert annuitized wealth to other forms of wealth that can be passed on to children.

Household wealth can be held into two broad forms. Bequeathable wealth includes cash, bank accounts, stocks, and life insurance policies as well as assets that can be passed on to the next generation. Annuitized wealth exists in the form of income flows such as Social Security benefits or pensions and while some annuities continue providing limited benefits to survivors (or spouses of deceased individuals who were primary wage earners of the household), most cease upon death of the owner. Based on data from the Health and Retirement Survey, Butrica and Mermin (2006) estimate that more than 50% of retirement wealth is annuitized while less than 20% comes from financial assets, a form of bequeathable wealth. The fact that annuities make up for more than half of the retirees' wealth resonates across all studies considered in this paper.

There is a trend away from annuitization. The use of employer-provided Defined Benefit (DB) pension, which typically pays in an annuitized form, is being replaced by the growing popularity of Individual Retirement Accounts (IRAs) and Defined Contribution (DC) pensions, which provide benefits in a lump sum (Dushi and Webb, 2004). Also, only a small percentage of the elderly decide to purchase annuities (most annuities are compulsory)—only 4% of retirees according to Butrica and Mermin(2006).

Data seem to suggest that the elderly prefer holding their wealth in the bequeathable form to the annuitized form, but it would be rash to conclude that the preference reflects intentional bequest motives. While it is true that holding more wealth in the bequeathable form means having more wealth to bequeath, there is evidence that reversing the annuitization process leads to greater consumption. Butrica and Mermin (2006) examine how retirement consumption varies by the degree of annuitization and find that the elderly with less annuitized wealth spend more on discretionary expenditures, which include items such as transportation and entertainment, are more sensitive to the degree of annuitization than basic expenditures such as health care, food and clothing. Jones (1996) focuses on housing using the 1985 Annual Housing Survey complemented it with the Canadian Census Data of 1986. He finds evidence that tenure transitions, with homeowners switching to tenancy or dependency by liquidating their housing wealth, are associated with dissavings of bequeathable wealth. Both papers indicate that the elderly are not afraid to draw down their assets in order to finance consumption. The fact that they decide to indulge themselves, as it were, is consistent with the

spend-down process that one would expect if the hypothesis of accidental bequest were correct.

However, the presence of the spend-down process is not necessarily testament to accidental bequests, if a large part of discretionary spending, to use the classification coined by Butrica and Mermin (2006), is made up of inter vivos transfers and we can verify that these transfers are utilized according to either altruism or exchange. This is of course an empirical question that can be explored using the dataset Butrica and Mermin have.

In spite of the elderly's revealed preference for bequeathable wealth, evidenced by low rates of voluntary annuitization, there is a benefit to holding annuities: in the face of longevity uncertainty, annuities provide insurance against outliving one's wealth. The elderly hedge the uncertainty of death by trading their initial resources for streams of income that last till the day they die. The extent to which they annuitize and the question of when they should start annuitizing their wealth depend on their life expectancy (which in turn depends on health), degree of risk aversion, strength of the bequest motives and the extent to which their families provide insurance (Kotlikoff and Spivak, 1981; Dushi and Webb, 2004). The above discussion has addressed the association between the degree of annuitization and bequest motives.

The relationship between the degree of annuitization and the annuitant's life expectancy is rather complicated. Based on the 1992-2000 waves of the HRS, Dushi and Webb (2004) find the mortality rate of the average annuitant to be significantly higher than that of the average population. It is possible that healthier elders expect to live longer than average and annuitize more. But it is also possible that elders live longer because they annuitize and now have a piece rate incentive for longevity, finding longevity to be cheaper (Philipson and Becker, 1998). The fact that it is unclear whether annuitization causes longevity or the other way round means that health, life expectancy and annuitization decisions are endogenous to one another.

Alternatively, the elderly may be insured against depleting wealth before death by their family members, possibly reducing their incentives to purchase annuities. The literature distinguishes among family members, whether they be the elderly's spouses or their children. The existence, however limited, of longevity risk pooling between husbands and wives has been empirically verified (Walliser, 2000; Altonji et al, 1992). The spousal living arrangement seems to delay the optimal annuitization process (by at least 3-12 years according to the simulations by Dushi and Webb (2004)), couples able to rely on each other's resources (to some extent) in events of under-consumption.

Children, on the other hand, do not seem to step up as old-age insurance (Walliser, 2000). In Mellor (2001), where data from the 1993 AHEAD dataset and the 1990 Panel Study of Income Dynamics (PSID) are employed, children are found to not be potential substitutes of long-term care insurance. Parents who buy long-term care insurance do not take into account whether or not they are provided with informal care by their children. This implies that parents are not convinced that care by their children will be provided at a constant, reliable rate. The result is consistent with the lack of upstream monetary transfers, which in effect limits the discussion of altruistic children. Granted that families (particularly, children) do not provide full insurance against outliving one's wealth, the elderly still have an incentive to keep part of their wealth annuitized.

The decision to hold wealth in an annuitized or a bequeathable form affects the decision to transfer. The decision to purchase more annuities at the expense of bequeathable wealth (and the reverse) clearly impacts ease of transfer, distorts consumption behavior which then determines how much wealth is left for transfer, and is intertwined with the elderly's considerations of health, life expectancy and care arrangements (whether they be spousal or children-based). The fact that the annuitization decision interacts with decisions in other aspects of life of the elderly necessitates modeling these decisions jointly.

2.4 Living Arrangements of the Elderly

One of the decisions the elderly encounter is where to live and, where applicable, with whom. Possible living arrangements include living in the community and living in an institution (most notably, nursing homes). Living in the community includes living independently, living with spouse, living with children or living with relatives. Depending on the objectives of the study, some of the living arrangements are bundled together; living independently and living with spouse are often treated one category. Living with relatives is a rare occurrence and often left out.

Based on a sample of 3000 elders in Massachusetts in 1982-1986, Boersch-Supan et al (1988) have found living independently (which in this case also includes living with spouse) to be the predominant mode of living arrangements. Roughly 60% of the elderly in the sample chose to live independently throughout the 4-year period. On the other hand, the figures for living with children and living in an institution seem to vary over time, with a greater

percentage of parents being placed in an institution as they become older and their health deteriorates. The figure for institutionalized elders was 0.8% in 1982 and 22.2% in 1986. A similar conclusion could be reached using the 1993-2000 waves of the AHEAD dataset (Charles and Sevak, 2004).

Despite the variations in terms of datasets and econometric models, there seems to be much agreement in the literature as to the preferred modes of living arrangement. All studies reviewed in this paper conclude that the elderly prefer living independently to living with children and they prefer living with children to living in an institution. The consensus here is that living independently is a normal good, the living arrangement that is chosen as the elderly's wealth and income rise, whereas living in a nursing home is an inferior arrangement, selected only when the elderly's wealth declines, everything else being equal (Hoerger et al, 1996; Boersch-Supan et al, 1988, Boersch-Supan et al, 1990). Living with children is in between the two arrangements; its income elasticity depends on the sample considered.

Based on the 1982-1986 Massachusetts Survey of the Elderly from the Hebrew Rehabilitation Center for the Aged (HRCA), Boersch-Supan et al (1988 and 1990) find that living arrangements are often stable over time. Changes occur when the elderly have a change in health status and when they lose their spouses. As health of the elderly worsens, they usually tend to switch either from living independently to moving in with their children (or their children moving in with them) or from living with children to being institutionalized. The deterioration of functional abilities, reflected in needs for ADL or IADL helpers, need for respite care (primarily due to the elderly's problems with incontinence and agitation) and old ages, has been shown to accelerate nursing home placement for the elderly (Gaugler et al, 2000). Upon the loss of a spouse (usually within one year), the elderly tend to move in with their children and sometimes move to an institution but to a much lesser extent (Boersch-Supan et al, 1988; Boersch-Supan et al, 1990). The loss of spouse may be seen as deterioration in health too—a psychological one; bereavement is highly associated with a greater risk of depression (Michael et al, 2001).

Effects of relocation have been studied quite extensively in the Epidemiology literature. Castle (2001) documents 121 publications, detailing how different patterns of relocation induce physiological and psychological disturbances, collectively known as the 'relocation stress syndrome', among the elderly. Considering only the move from a residential community to an institution, the literature seems to suggest that this relocation pattern is gener-

ally associated with an increase in mortality and deterioration in functional health and co-morbid conditions but an improvement in some measures of personal life satisfaction (particularly, number of contacts). The severity of the effects of relocation depends on the quality of the new environment and whether the move is voluntary. In the case of a spousal loss and deterioration of health, the elderly are unlikely to move voluntarily, given that their cognitive awareness is intact, and will experience rather severe health effects.

Children provide a means to delay institutionalization for the elderly. Informal care is associated with an improvement in health and in cases where in-home care by professionals is involved, children's involvement may help alleviate stress on the helper's part. Charles and Sevak (2005) demonstrate that informal care provided by children can reduce the risk of a nursing home entry. Gaugler et al (2000) argue that children's help with ADLs and overnight respite delays institutionalization of the parents. These studies should be considered in conjunction with the aforementioned work of Mellor (2001), particularly Charles and Sevak (2005) since they draw conclusions from the same dataset (AHEAD). While Charles and Sevak (2005) and Mellor (2001) seem to suggest different roles for children, they are not necessarily in contradiction with one another. Charles and Sevak suggest informal care provided by children to a certain degree replaces formal care provided by a nursing home. Mellor, on the other hand, implies that informal care does not replace long-term care insurance and although long-term insurance reduces the cost of nursing home entry, the owners are under no obligation to exploit the relative cost advantage of nursing homes, should they prefer a different mode of living arrangement. Taken together and assuming that the authors have correctly produced their estimates, the papers insinuate that even though the elderly may prefer living independently, they may also like to be financially prepared when the risk of institutionalization beckons, not overburdening their loved ones with the costs of nursing home care.

Bearing in mind that institutionalization is the least preferred mode of living arrangement, everything else being equal, the elderly may devise strategies to allow them the options of living independently or as a second best alternative, living with children or at least to postpone being institutionalized for as long as possible. One apparent way in which the elderly may do so is to be financially equipped and financially independent. Studies clearly suggest that modes of living arrangement are critically contingent on the elderly's wealth; with independence living being a normal good, the greater wealth and income the elderly hold, the more affordable independence living

is to them. Consequently, the elderly may wish to hold on to their wealth for as long as possible, consistent with observations noted when tax incentives are studied, thereby limiting inter vivos transfers and not surrendering too much bequeathable wealth in such a way that children can make the decision for them, granted that the parents are cognitively aware.

The portfolio of wealth held by the elderly has implications on the choice of living modes available to them. It would seem that since payments of annuities are often small, households with large bequeathable wealth or with liquid assets should have more freedom in their living arrangements. And when the cost of independence living is overbearing, households can down-size, liquidate their housing wealth and move to a smaller house or rent altogether, accommodating a longer period of independence living for themselves. Households that already live in a small house and still find the costs of living alone to be burdensome, quite possibly due to the fact that they hold a small portion of bequeathable wealth and their annuity payments are only sufficient for basic spending, may consider coresidence with their children.

Coresidence is often a mutually advantageous arrangement for both the elderly and their adult children. When parents move in, the economies of scale bring about a reduction in living expenses of the parents and their children. When children move in, they tend to share responsibilities and provide care for the parents. Hoerger et al (1996) find coresidence to be a more common phenomenon among households with larger housing wealth. Children move in to the parents' house to receive better housing services and the effect is statistically significant only among households with cognitively aware parents. The authors conclude that this is indicative of 'exchange' of informal care for housing, especially when the burden of care on the children's part is low. A further implication of this result that the cost of caregiving can be so high, most likely because the parents are incapable of taking care of themselves, that shared housing is no longer beneficial to the children, in which case a new living arrangement needs to be made: institutionalization.

Living arrangements, bequest motives and health are inextricably linked. Living arrangements may affect the strength of bequest motives or the type of motive in operation but bequest motives too can influence the choice of living arrangements. For example, institutionalized parents who receive some form of care from their visiting children may bias towards giving a larger transfer to those children than if they were living independently and were not as in need of attention. At the same time, exchange-motivated parents who are living independently may attempt to signal their need for coresidence

upon realizing their health state through promises of transfers. The duality is also present in the relationship between living arrangements and health. Some living arrangements have proved to promote health. For example, coresidence, implicitly entailing informal care, is attributable to increased longevity. Health too determines an appropriate living arrangement for the elderly, an obvious example being the association between worsening health and the need for institutionalization as has been discussed above.

Bequest motives, the decision to hold annuitized versus bequeathable wealth, living arrangements and health, against the backdrop of considerations of tax incentives, are endogenous to the elderly's transfer behavior. Transfer behavior engulfs the decision of whether or not to make a transfer, the amount of transfer and when it would be optimal to make a particularly type of transfer (inter vivos versus end-of-life). With the exception of Hoerger et al (1996), Boersch et al (1988; 1990) and Brown (2004; 2007) that attempt to account for unobserved heterogeneity and, in the case of Brown specifically, estimate some of these decisions jointly, all papers reviewed above have disparately analyzed aspects that together make up the decision to transfer. The consequences are that their estimates may be biased and ultimately that the elderly's decision to transfer is not completely understood.

3 Idea for the Theoretical and the Empirical Model

I intend to write a theory of utility maximization in a two-period framework, where inter vivos transfers take place in period 1 and bequests in period 2. The utility function is that of the household which in its simplest form would consist of one parent and one child. (This framework is in contrast with the other paper I am working on where the parent and the child each have their own utility functions and the outcome is a bargaining solution.) As its arguments, the utility function includes the parent's and the child's consumption levels and the parent's health status which is a function of informal care provided by the child and his wealth. The parent and the child would have separate budget constraints with tax incentives as part of the parent's budget constraint. The budget constraints change as living

arrangements vary. The household decides on the level of transfers, the level of informal care and the optimal living arrangement.

As the literature review suggests, I plan to jointly estimate: -

- (1) the decision to make an inter vivos transfers;
- (2) the decision to leave a bequest (or in my dataset, the intention to leave a bequest);
- (3) the elderly's living arrangement (which includes living alone, living with a spouse, living with children and a nursing home stay and maybe whether or not the elderly lives within ten miles of any of their children);
- (4) the decision to hold wealth in annuitized form (probably proxied by the lack of life insurance or the purchase of long-term care insurance);
- (5) health (using different measures including subjective health, actual conditions, and ADLs, following Boersch et al, 1988).

Informal care and measures of tax incentives (which change the cost of inter vivos transfers relative to bequests) would be explanatory variables.

Among papers that have accounted for unobserved heterogeneity, two estimation methods are mentioned: the structural model and the simulated maximum likelihood estimator (with autocorrelated errors).

4 Data and Descriptive Statistics

Data used in this paper are drawn from the 1993 and 1995 waves of Asset and Health Dynamics among the Oldest Old (AHEAD) and the 1998, 2000, 2002, 2004 and 2006 waves of Health and Retirement Survey (HRS). The surveys are conducted by the University of Michigan for the National Institute on Aging. The two waves of AHEAD consist of older individuals who were born before 1924 and contain detailed information on demographics, health status, cognition, family structure, healthcare utilization, employment, assets and income and health insurance. In 1993, the respondents were non-institutionalized. They were then followed, in some instances to a nursing home, in 1995.

HRS includes individuals born between 1931 and 1941, who were first interviewed in 1992 and every 2 years thereafter. The HRS survey contains similar information as AHEAD and they were merged in 1998. In 1998, 2000 and 2002, two additional cohorts were added to the HRS survey: Children of Depression (CODA) who were born between 1924 and 1930 and War Baby

(WB), born between 1942 and 1947. In 2004 and 2006, an additional cohort was included: Early Baby Boomers (EBB) born between 1948 and 1953. In total, the HRS contains 5 cohorts.

AHEAD and HRS store information at five meaningful levels: household (which includes information provided by a household representative), respondent (which contains information of older individuals and their spouses or partners in the same household as well as that of ex-spouses), child (which comprises information of all children of the household), helper (which lists helpers of each respondent; these helpers could be a trained physician, a child or an institution, etc.) and sibling (which consists of characteristics of the respondent's siblings). The overlap between information stored at one level and another is small. All information is provided by two sources: the household's family respondent who gives an interview on general characteristics of the household, the respondents (including spouses and partners) and the children as well as transfer-related information and the household's financial respondent who addresses questions related to the household's wealth and income and can be the same person as the family respondent. It should be not surprising to observe substantial lack of data on some child-related variables; parents may not know how much each of their children earns, for example.

The level of analysis in this study is the household level, each observation containing information on the family respondent, his/her current and previous spouses, their children and the household's finances.

Currently, I have not reformatted the dataset in such a way that each observation represents a respondent yet. Instead, I have stacked all the waves together, so the unit of observation in my current dataset now is person-year. A household with 2 respondents who were both interviewed in 5 waves would appear 10 times in my current dataset. Descriptive statistics of variables that I plan to include in the estimation are provided below and computed based upon my current dataset.

The variable 'bequeathable wealth' is created following Joulfaian and McGarry (2004). The dummy variable takes the value of 1 if the total value of the household's assets was greater than the lifetime exclusion amount for that calendar year, depending on marital status of the respondent, and takes the value of 0 otherwise. The variable measures the extent to which the household had more wealth to bequeath than the federal government would allow them to do so tax-free. The lifetime exclusion amount for a single household was 600000 USD in 1993 and 1995, 625000 USD in 1998, 675000

USD in 2000 and 1 million in 2002-2006. The amounts doubled for married households, granted the gift-splitting principle.

5 Next Steps

Write the theory, identify exclusion restrictions and identify the appropriate empirical model to use.

Investigate the debate between in-cash versus in-kind transfers to better understand coresidence and see if it should be included in my theoretical or empirical model.

Probe into the effect of government programs such as Medicaid and Medicare.

Clean my current dataset, merge with it information stored at the child level and convert it into a panel-like format.

Incorporate some of the HRS ‘exit’ and ‘post-exit’ files to identify deceased respondents and investigate how their wealth was distributed after death (bequests).

Calculate the age-specific life expectancy for each parent in the household to better understand estate planning. I have three possible sources: 1) the life tables (from the Centers of Disease Control and Prevention) or 2) data on age-specific mortality rates compiled by the Social Security Administration (which seems to be more frequently referenced by the existing literature but I cannot find it online) or 3) information on self-assessed probabilities of living until age 75 or 85 reported in the HRS dataset (although almost half the respondents had missing values for these variables). I gravitate towards 1) out of convenience and would rule out 3) because of the number of missing observations.

6 References

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Table 1: Parental Characteristics and Health Status

| Variables | Mean | Standard Deviation |
|--------------------------------|-------------|---------------------------|
| Age | 68.788 | 11.094 |
| Gender | 0.593 | 0.491 |
| Cohort | 2.487 | 1.200 |
| Race | 0.179 | 0.384 |
| Married | 0.628 | 0.483 |
| Education | 11.945 | 3.463 |
| No. of residents | 0.525 | 1.049 |
| No. of children | 3.198 | 2.241 |
| Work | 0.303 | 0.459 |
| Subjective health (1-5) | 2.903 | 1.155 |
| Past health (1-3) | 2.174 | 0.585 |
| High blood pressure | 0.518 | 0.499 |
| Diabetics | 0.166 | 0.372 |
| Cancer | 0.129 | 0.336 |
| Lung disease | 0.097 | 0.296 |
| Heart disease | 0.245 | 0.429 |
| Angina | 0.071 | 0.256 |
| Congestive heart | 0.034 | 0.181 |
| Stroke | 0.079 | 0.269 |
| Psychological problem | 0.152 | 0.359 |
| Arthritis | 0.549 | 0.498 |
| Fall | 0.191 | 0.393 |
| Hip | 0.013 | 0.112 |
| Incontinence | 0.195 | 0.396 |
| Memory | 2.943 | 0.955 |
| Count | 0.939 | 0.238 |
| Difficulty with ADLs | 0.274 | 0.446 |
| Difficulty with IADLs | 0.202 | 0.402 |

Table 2: Variables related to living arrangements

| Variables | Mean | Standard Deviation |
|--|-------------|---------------------------|
| In nursing home | 0.025 | 0.156 |
| Any children living within 10 miles | 0.611 | 0.487 |
| Any children owning home | 0.753 | 0.431 |
| Parents owning home | 0.791 | 0.406 |
| Parents renting | 0.156 | 0.363 |

Table 3: Informal care measures

| Variables | Mean | Standard Deviation |
|---|-------------|---------------------------|
| Receiving help from children (ADL/IADLs) | 0.165 | 0.372 |
| Identifying children as helpers | 0.080 | 0.272 |
| Expecting future help from children | 0.409 | 0.492 |
| Fraction of children providing care | 0.038 | 0.114 |

Table 4: Transfer measures

| Variables | Mean | Standard Deviation |
|---|-------------|---------------------------|
| Making will provisions to children | 0.466 | 0.498 |
| Reporting equal division of estate | 0.226 | 0.418 |
| Reporting making 500 USD transfers | 0.347 | 0.476 |
| Life insurance purchased | 0.659 | 0.474 |
| Care for grandchildren | 0.249 | 0.433 |
| Given deed to a home to any children | 0.017 | 0.128 |

Table 5: Wealth measures

| Variables | Mean | Standard Deviation |
|---|-------------|---------------------------|
| Networth | 378183.7 | 1394897 |
| Household income (including all residents) | 52029 | 151229.4 |
| Total asset value | 276334.5 | 1283919 |
| Bequeathable Wealth | 0.034 | 0.180 |