Understanding the Determinants of a Long-Term Care Insurance Purchase

by Mary E. Dorn; Deanna L. Sharpe, Ph.D., CFP®; Geri Dickey, Ph.D.; and Dalisha D. Herring, CFP®

Mary E. Dorn is a doctoral candidate in the Department of Personal Financial Planning at the University of Missouri—Columbia. She has more than 30 years of experience in the financial services industry and has owned and operated CDS Group Financial Services LLC since 1997.

Deanna L. Sharpe, Ph.D., CFP®, is an associate professor in the Personal Financial Planning Department at the University of Missouri—Columbia. Her teaching and research focus on factors affecting later-life economic well-being, including labor supply, family resource management, financial planning, consumer expenditure patterns, retirement savings behavior, and financial planner/client relationships.

Geri Dickey, Ph.D., is an assistant professor in the Social Work Department at Park University. Previously she was director of the bachelor in social work program and assistant professor at Missouri Western State University. She spent more than 20 years providing clinical social work services primarily within mental health social work community-based clinics.

Dalisha D. Herring, CFP®, is a doctoral student in the Department of Personal Financial Planning at the University of Missouri—Columbia. She has more than a decade of experience in trust and estate administration, retirement plan wholesaling, and personal financial planning practice.

Executive Summary

- As the older population continues to grow in number and live longer, the adequacy of private and public funding for long-term care expenses will become a greater concern, thereby increasing the importance of understanding the dynamics of long-term care insurance (LTCI) ownership.
- This research uses data from the Health and Retirement Study to identify and compare the characteristics of individuals associated with four LTCI purchase patterns.
- Financial planners can use the results of this study to target their discussions to clients regarding long-term care funding, resulting in more effective planning for an important need that may have been neglected.
- Consistency of results with the economic theories of permanent income, life cycle hypothesis, and risk transference is examined to provide practitioners and academics with information directing further research for consumers regarding long-term care.

The united states faces a geriatric explosion as baby boomers reach age 65. The number of Americans age 65 and older is expected to increase from 40.2 million in 2010 to approximately 88.5 million in 2050. Given this trend, by 2030, close to one in five Americans will be age 65 and older (Vincent and Velkoff 2010).

As this cohort ages over the next three decades, medical advances that increase longevity will shift health concerns from acute to chronic illness. A lengthy illness has potentially devastating financial consequences on the accumulated wealth and retirement savings of individuals and couples. Although medication and lifestyle choices may alleviate the debility of many chronic illnesses, other illnesses such as Alzheimer's disease eventually render an individual incapable of taking care of him or herself. When this happens, long-term care is needed, and the funding for such care will have been predetermined based on advanced planning (or lack of it).

The information offered in this paper is useful for financial planners who want to present a full and rational explanation to clients regarding funding for long-term care. Long-term care insurance (LTCI) is part of an insurance portfolio for clients, however the literature indicates this is not the standard. Presenting information about long-term care funding to clients and their adult children would be wise. The potential beneficiaries may wish to secure their inheritance with the funding mechanism for insurance. Planners who neglect to present—and to document the presentation of—long-term care funding options to clients open themselves to possible legal battles with family members.

The intent of this study is to inform planners of client target markets for LTCI purchase and to help identify clients that would generally resist coverage.

Theoretical Framework

According to the permanent income and life cycle consumption hypotheses, consumers prefer smooth lifetime consumption patterns (Bryant and Zick 2005). Therefore, individuals and families will adjust their consumption and savings patterns accordingly, based on expected future income, needs, interest rates, anticipated inflation, and preferences.

Consumers engage in precautionary savings to ensure smooth consumption in the event of an unexpected, exogenous income shock such as temporary unemployment (Hubbard, Skinner, and Zeldes 1994; Starr-McCluer 1996). However, it is difficult for consumers to use precautionary saving to meet occasional, severe, and unpredictable income shocks without affecting their normal consumption patterns. Consequently, when the probability of occurrence is uncertain and the risk of financial loss is great, consumers often transfer risk to a third party through purchase of actuarially fair-priced insurance (Harrington and Niehaus 1999). Long-term care insurance (LTCI) can be used to transfer the risk of having to pay the potentially exorbitant financial costs of long-term care. Curiously, although purchase of LTCI is a rational consumer choice, only 15.6 percent of the population age 55 or older own policies, according to 2014 data from the U.S. Census Bureau.

Privately purchased LTCI plans are categorized by the U.S. Census Bureau as group plans (31 percent) or individual plans (69 percent). Potential reasons for rational consumers' non-purchase of LTCI include: budget constraints, available substitutes, lack of understanding about the LTCI product, and the perceived probability of need for long-term care. Complicated consumer choices, inability of the insurance industry to establish a non-problematic method for sales, and underwriting have placed the LTCI industry in a state of flux for several years (Cohen, Kaur, and Darnell 2013), as companies have dropped in and out of the market and products have changed from year to year.

As the older population continues to grow in number and live longer, more individuals face the potential need for long-term care. Adequacy of both private and public funding (Medicaid and Medicare) for long-term care expenses will become a greater concern. Consequently, it is important to improve the understanding of the dynamics of LTCI ownership.

This exploratory research used the 2006 and 2012 waves of the Health and Retirement Study (HRS) to identify and compare the characteristics of individuals associated with four LTCI purchase patterns:

1. Owner (had LTCI in 2006 and 2012)
2. Lapser (had LTCI in 2006 but not in 2012)
3. Purchaser (no LTCI in 2006, have LTCI in 2012)
4. Non-owner (no LTCI in 2006 or 2012)

Results were compared with prior research. Consistency of results with the economic theories of permanent income, life cycle hypothesis, and risk transference were examined. This study provides practitioners and academics with information that directs further research and education of consumers regarding funding long-term care.

Literature Review

According to Morith (2004), 87 percent of survey respondents thought that long-term care was a big problem in the U.S. Eighty-two percent felt it was irresponsible not to plan for long-term care needs, however only 12 percent stated they had adequately done so.

Additional research has found that many seniors fear outliving their retirement savings given expected health care needs, yet these same seniors state they do not want to become a burden to their families (Grote 2011). Although these feelings are valid, between 2000 and 2040, the number of nursing home residents is expected to rise from approximately 1.2 million to 2.7 million (Gibson and Redfoot 2007).

Ng, Harrington, and Kitchener (2010) found that in 2006, 39 percent of nursing home residents accounted for 61 percent of long-term care spending by Medicaid. They also found that in 2007, public funding accounted for approximately 67 percent of long-term care spending (25 percent Medicare and 42 percent Medicaid), which amounted to $190.4 billion. (Medicare spending for long-term care is limited to post-acute and hospice care either in a nursing home or at home.) The remaining 33 percent of long-term care spending was paid privately out-of-pocket, with 11 percent paid for with LTCI.

Many individuals report that the cost of LTCI is prohibitive or they distrust LTCI providers (Curry, Robison, Shugrue, Keenan, and Kapp 2009). But avoiding LTCI could be problematic. A U.S. Department of Health and Human Services report indicated individuals have approximately a 40 percent chance of entering a nursing home in their lifetime. Of those who enter, approximately 10 percent will stay from three to five years (Nelms, Mayes, and Doll 2012). The national average daily cost of a semi-private room in a nursing home is $225, according to 2016 data from Genworth (the most current information available), which translates to approximately $410,625 for a five-year stay, without considering any home health care costs prior to entering the nursing home.

Why does the purchase of private

LTCI remain at such low levels? For a rational consumer with bequest motives or preferences for care for whom LTCI is not cost prohibitive, reasons for not having private LTCI could be having substitutes and alternatives for LTCI, uncertainty regarding the perceived need for long-term care, or supply-side failures on the part of insurance companies.

Given the generally accepted principle that insurance is appropriate for loss exposures with low probability and high potential for severity, one could conclude that for risk-averse individuals, the greater the uncertainty surrounding a possible loss, the greater the value of insurance to cover such a loss (Arrow 1963). Expenditures for long-term care meet these criteria for many in our society.

Further, the increased incidence of dementia and Alzheimer's disease has the potential to render a greater number of individuals in need of long-term care. According to the Alzheimer's Association, approximately 5 million seniors age 65 or older were diagnosed with Alzheimer's disease in 2014, of which almost two-thirds were women. With a greater proportion of the population becoming elderly, projections for future incidence of dementia and Alzheimer's disease indicate a doubling of new cases by 2050 (Seshadri and Wolf 2007).

Several studies have found that the survival rate for individuals after a dementia diagnosis ranges between about three years and six-and-a-half years (Wolfson et al. 2001) with women averaging about four-and-a-half years and men averaging about four years (Xie, Brayne, and Matthews 2008). The cost of such care has the potential to reach almost $500,000 per person over a five-year period.

Consumers presumably desire to minimize their possible long-term care costs while maintaining their customary life cycle consumption patterns (Gupta and Li 2007). Long-term care expenses must take into account current and future LTCI premiums (if insurance is purchased), and the out-of-pocket expenses for services not covered by insurance (Gupta and Li 2007). As with any insurance product, the demand for the insurance will depend on the individual valuation of the "commodity" being insured (Cook and Graham 1977), which, for LTCI, is wealth accumulation and health recovery. Individuals place value on the cost of long-term care using cost-benefit analysis, perceived probability of need, informal care substitutes, wealth preservation, and bequest motives. If the value of such care is greater than the expense of an LTCI policy, then purchasing a policy is a reasonable choice.

For individuals at either end of the financial spectrum, LTCI may not be a reasonable alternative. Individuals with relatively low income and wealth will rationally depend on Medicaid for their long-term care needs. Those with high income and high net worth have the financial ability to self-insure against the probability of long-term care costs, leaving individuals in the "middle" as those with the greatest potential benefit from the purchase of LTCI.

Prior research regarding purchase and non-purchase of private LTCI policies has focused on these primary factors: substitution and alternatives for LTCI, consumer understanding of need for long-term care, and characteristics of the LTCI industry (Pauly 1990; Sloan and Norton 1997; McCall, Mangle, Bauer, and Knickman 1998; Cramer and Jensen 2006). This research continues to explore these areas.

Substitutions and Alternatives to LTCI

According to the U.S. Census Bureau, the national median income in 2014 was $53,657, but for individuals ages 65 or older, it was $36,895. Medicaid is the primary source of funding for nursing home care, but it is not without limits. Medicaid is a means-tested program that requires individuals to be virtually destitute before funding is triggered. Because the spend-down mechanism to qualify for Medicaid can be considered a reduced premium for long-term care coverage beyond that charged in the private marketplace, individuals without private insurance who need long-term care services will be required to "spend down" current assets to qualify for Medicaid.

Further, Medicaid funds a limited choice of long-term care facilities. The elderly would prefer to avoid low-quality facilities (Kemper, Spillman, and Murtaugh 1991), and state certificate of need policies for the number of Medicaid beds and reimbursement rates can further reduce the facility choices for the consumer (Harrington, Preston, Grant, and Swan 1992). Still, Medicaid has been found to have a "crowd out" effect on the purchase of privately held plans and therefore serves as a substitute for such policies, especially for individuals with relatively modest means (Pauly 1990; Sloan and Norton 1997).

Home equity is another potential substitute for LTCI (Davidoff 2010). Many seniors live in their homes throughout retirement unless long-term care becomes a necessity, and many of these homes carry no mortgage. Therefore, sufficient home equity can substitute for LTCI in two ways, according to Brown and Finkelstein (2009): (1) home equity may crowd out an LTCI purchase if the individual sells his or her home and uses the proceeds to fund long-term care; and (2) a reverse mortgage would allow an individual to finance long-term care needs with their home equity while retaining the asset. Davidoff (2010) found that among those for whom Medicaid was not a viable alternative, the majority had home equity sufficient to fund much of their potential long-term care costs.

Although financial costs are a major consideration in an LTCI purchase, much of the emphasis of these policies

is on the institutional care that might be needed (Pauly 1990). Two points are relevant: (1) the possible substitution effect that adult children might have on LTCI policies; and (2) the amount of informal care given prior to institutional care becoming necessary. Pauly (1990) suggested that a possible reason for not purchasing LTCI is to reduce the likelihood of institutional care over informal care by adult children. Lack of coverage and expense of care is presumably a motivating factor in familial care. Pauly (1990) also suggested that adult children are more willing to provide informal care if no LTCI is in place to cover the cost of formal care. Additionally, many adult children would prefer their parents not spend all their retirement savings paying for non-family members to do tasks that could be performed by those within close proximity. The implication may be that traditional bequest motives have been substituted for the informal care that would be obtained by not insuring the cost of long-term care.

Cantor (1989) found that a majority of care provided to elderly persons was provided by family members. Most individuals decline in health gradually over time, losing the ability to perform some instrumental activities of daily living (IADLs) and activities of daily living (ADLs) to a point where institutional care becomes necessary. Prior to institutional care, assistance required by an individual, like cleaning, transportation to and from doctor's appointments, paying bills, etc., can be done by family members (Kemper 1992). This would leave retirement assets in tact until institutional care is necessary. Many families adjust their living arrangements to accommodate a parent in order to postpone the need for formal care (Hoerger, Picone, and Sloan 1996). Although informal care can be considered a substitute for LTCI, Brown, Goda, and McGarry (2012) found that individual preference for formal versus informal care was statistically significant in the decision to purchase LTCI.

Adult day service centers (ADS) can give the caregiver a respite from their caregiving duties to work or take time for themselves. As of 2010, approximately 4,600 ADS centers in the U.S. served 260,000 participants and their caregivers (Dabelko-Schoeny and Anderson 2010). Adult day service centers are funded by both private and public funds with a large portion coming from Medicaid (Jacobs and Weissert 1987).

Although ADS centers will only allow for a daily respite for a caregiver, other permanent housing alternatives have become prevalent substitutes for traditional informal care. These include congregate housing, assisted living, and continuing care retirement communities (Gibler, Lumpkin, and Moschis 1997; Zimmerman et al. 2003).

Continuing care retirement communities (CCRCs) have a full range of housing from independent living, to assisted living, to a nursing facility. Approximately 1,990 CCRC facilities operated in the U.S in 2010 (Zarem 2010). According to one study, seniors considering a CCRC facility were most concerned with their ability to remain independent and have the availability of long-term care onsite (Kichen and Roche 1990).

Perceived Need and Health Status

The perceived need for long-term care has been debated at length with mixed results. Research has suggested that consumers underestimate the perceived need for long-term care (Lindrooth, Hoerger, and Norton 2000; Cohen, Kumar, and Wallack 1992). Yet Taylor, Osterman, Acuff, and Østbye (2005), found individuals overestimated the probability of moving into a nursing home in the next five years. Brown, Goda, and McGarry (2012) reported that 45 percent of those asked felt they may eventually need long-term care and those same survey respondents were 10 percent more likely to own LTCI than those who did not believe they would need such care. Their results were consistent with Sloan and Norton (1997).

Self-reported health conditions have been found to positively influence the decision to purchase LTCI (Lindrooth, Hoerger, and Norton 2000; Caro, Porell, and Kwan 2011). And Sloan and Norton (1997) argued that having self-reported good or excellent health was linked with the purchase of LTCI.

Many studies have attempted to measure financial literacy surrounding long-term care (see, for example, the "2009 MetLife Market Survey of Nursing Home, Assisted Living, Adult Day Services, and Home Care Costs" at metlife.com/assets/cao/mmi/publications/studies/mmi-market-survey-nursing-home-assisted-living.pdf). General findings are that consumers have little knowledge regarding long-term care (Matzek and Stum 2010), which is another potential reason for the lack of private LTCI policies.

Understanding the Insurance Marketplace

The LTCI marketplace has experienced a lot of change. LTCI was first offered to consumers as an unregulated product in 1974. The National Association of Insurance Commissioners (NAIC) began to provide policy standards to state insurance regulators in 1987. The Health Insurance Portability and Accountability Act (HIPAA) gave certain LTCI policies preferred tax status with limits. New required benefit triggers, lack of the availability of cash value, and other policy provisions made the policies more difficult for insurance companies to underwrite and promote.

Because many insurance companies in the LTCI marketplace had underpriced their policies, double-digit rate increases became pervasive and public outcry grew. The consumers most affected were seniors nearing the age of benefit need.

Table 1: Mean Values of Independent Variables Presented by Condition of LTCI Ownership

	Owner	Lapser	Purchaser	Non-Owner
Respondent Age 2006	68	65	63	65
Marital Status 2006	0.83	0.97	0.84	0.81
Marital Status 2012	0.70	0.72	0.70	0.66
Household Income 2006	$105,232 ($62,327)	$77,256 ($47,004)	$94,638 ($52,100)	$65,206 ($41,064)
Household Income 2012	$93,567 ($62,184)	$74,665 ($47,012)	$104,371 ($64,842)	$64,724 ($39,790)
Household Total Assets 2006	$991,219 ($599,750)	$621,760 ($237,000)	$659,509 ($259,900)	$503,931 ($205,000)
Household Total Assets 2012	$736,652 ($415,000)	$286,507 ($75,000)	$544,917 ($197,000)	$380,012 ($125,000)
Household Home Equity (Primary Residence) 2006	$244,557 ($180,000)	$170,037 ($100,000)	$169,894 ($116,573)	$164,258 ($100,000)
Household Home Equity (Primary Residence) 2012	$166,583 ($130,000)	$88,923 ($34,150)	$133,473 ($85,000)	$112,813 ($60,000)
Respondent Self-Reported Health 2006	0.92	0.98	0.89	0.85
Respondent Self-Reported Health 2012	0.82	0.73	0.79	0.72
Respondent Probability of Nursing Home Entry in Five Years 2006	16	0.15	0.10	0.12
Respondent Probability of Nursing Home Entry in Five Years 2012	21	0.14	0.16	0.16
Number of Living Children 2006	2.88	3.18	3.11	3.23

Note: "Owner" had LTCI in 2006 and 2012; "Lapser" had LTCI in 2006 but not in 2012; "Purchaser" had no LTCI in 2006, but did have LTCI in 2012; and "Non-owner" had no LTCI in 2006 or 2012.

Consumers who presumed the "cost" of LTCI as too high often cited an underlying fear of substantial rate increase (Rubin et al. 2014).

Adverse selection occurs when the insured has information regarding their risk that the insurer does not—meaning individuals who have a greater anticipated need for future insurance protection are more likely to purchase the coverage than those who do not. Individuals who are most likely to need the coverage will pay the higher premium while others find coverage elsewhere or let their policies lapse. Studies have indicated most policy lapses occur within the first five years of ownership (Finkelstein, McGarry, and Sufi 2005; Rubin et al. 2014).

Methodology

This study analyzed data from the 2006 and 2012 waves of the Health and Retirement Study (HRS), a nationally representative, longitudinal study of persons over age 50 using a multi-stage area probability sample design that includes questions specifically related to LTCI. The years 2006 and 2012 bookended the Great Recession of 2008. During this period, many individuals lost substantial value in their homes, retirement, and stock portfolios. A visible reduction in spending combined with an increase in credit card debt over the same period (Hurd and Rohwedder 2010) posed a threat to the purchase and continuation of LTCI policies.

This study selected respondents that were present in both the 2006 and 2012 waves of the HRS and who were not on Medicaid. Respondents were generally interviewed by phone biannually and are represented in subsequent waves until death or attrition. The final observations included and analyzed in this study totaled 12,696.

In both waves, the HRS asked respondents: "Not including government programs, do you now have any LTCI which specifically covers nursing home care for a year or more or any part of personal or medical care in your home?" (see hrsonline.isr.umich.edu). The response to this question determined categorization of the respondent in the study as: owner, lapser, purchaser, or non-owner of LTCI.

Prior research indicated that income, wealth, home equity, marital status, number of children, age, and self-reported health and probability of nursing home stay in the next five years were salient variables regarding the decision to purchase LTCI (Ahlstrom, Tumlinson, and Lambrew 2004; Brown, Goda, and McGarry 2012, Cohen, Kumar, and Wallack 1992; Davidoff 2010; Pauly 1990). Consequently, these variables were used as independent variables in this study.

Results

Sample characteristics are presented in Table 1. Among the 12,696 observations relevant to this study, 9.7 percent were owners of LTCI across both waves, 4.5 percent let their policies lapse, 4.3 percent were purchasers, and 81.5 percent were non-owners of LTCI.

Among the four groups, purchasers had the lowest mean age (63 in 2006), whereas owners had the highest mean age (68 in 2006). The majority of respondents were married in both waves, with lapsers having the highest percentage of married respondents at 97 percent in 2006 and 72 percent in 2012. Conversely, non-owners of LTCI had the lowest percentage married (81 percent in 2006 and 66 percent in 2012). Mean

Table 2: Fixed Effects Logistic Regression Results

	Lapser		Purchaser	
	Coefficient	Odds	Coefficient	Odds
Intercept	0.6330	N/A	–2.2791 ***	N/A
Respondent Age	–0.0303 ***	0.97	–0.0148 **	0.99
Single to Married	0.0486	1.05	0.3081	1.36
Married to Single	0.0485	1.05	–0.0704	0.93
Number of Living Children	0.0954 ***	1.10	–0.0140	0.99
Income Rose	–0.1077	0.90	0.2302	1.26
Income Fell	0.0902	1.09	–0.0409	0.96
Assets Rose	0.1707	1.19	0.3829 **	1.47
Assets Fell	0.5323 ***	1.70	0.0519	1.05
Equity Rose	0.1076	1.11	0.1514	1.16
Equity Fell	–0.2242	0.80	–0.1021	0.90
Respondent Health Better	–0.0150	0.99	–0.1043	0.90
Respondent Health Worse	–0.0246	0.98	–0.0946	0.91
Spouse Health Better	0.0612	1.06	0.2166	1.24
Spouse Health Worse	0.4368 ***	1.55	0.1133	1.12
Increase in Respondent Probability of Nursing Home Entry in Five Years	–0.4923 **	0.61	0.0002	1.00
Decrease in Respondent Probability of Nursing Home Entry in Five Years	0.2258	1.25	0.2651	1.30

Notes: *** p< 0.0001; ** p< 0.001

total assets for 2006 and 2012 were $991,219 and $736,652 respectively for owners; $621,760 and $286,507 respectively for lapsers; $659,509 and $544,917 respectively for purchasers, and $503,931 and $380,012 respectively for non-owners.

Mean home equity values decreased from 2006 to 2012 for all respondents. Mean incomes for 2006 (2012) were $105,232 ($93,567) for owners; $77,256 ($74,665) for lapsers; $94,638 ($104,371) for purchasers; and $65,206 ($64,724) for non-owners. The majority of respondents reported being in better-than-average health in both study waves. Mean self-reported probability of needing nursing home care in the next five years was generally higher in 2012 versus 2006 for respondents with the largest increase among the owners of LTCI. Finally, the mean number of children was close to three for all conditions of LTCI ownership with a slightly lower number of living children observed in 2012 versus 2006.

Respondents who owned coverage had fewer children on average. In contrast, non-owners reported the largest number of children. These results support the idea that potential family care may substitute for LTCI.

Total household assets, income, and home equity were highest on average among owners of LTCI and lowest among non-owners, suggesting that the price of LTCI may be a barrier to purchase among consumers with relatively fewer financial resources. Those who let their policies lapse had lower average income and home equity than those who purchased the coverage. The average asset level was also lower for lapsers versus buyers. Additionally, lapsers had the greatest decrease in average assets from 2006 to 2012 at 54 percent.

Self-reported health was best among lapsers, followed by owners, purchasers, and non-owners. Not surprisingly, the self-estimated probability of needing nursing home care in the next five years was generally higher in 2012 compared with 2006 for respondents in every status of ownership except lapsers, who reported a slight decrease. Owners had the highest mean probability in the 2012 wave followed by lapsers, purchasers, and non-owners. Interestingly, purchasers had the largest mean increase in perception of need for long-term care from 10 percent to 16 percent or 60 percent.

To identify factors significantly associated with LTCI lapse or purchase given longitudinal data, fixed effects logistic regression was used with the model log $(P_{it}/1–P_{it}) = \mu t + \beta X_{it} + \gamma zi + \alpha_i$. That is, log-odds of LTCI purchase or lapse are a function of time-varying (x) and time-invariant factors (z and α).

Results reported in Table 2[1] indicate that becoming older and an increase in subjective probability of nursing home entry were associated with reduction in likelihood of lapsing. Conversely, an additional child and a decline in asset value and spouse health were associated with increased likelihood of lapsing. Becoming older was associated with a decreased likelihood of being a purchaser or LTCI, and a rise in asset value was associated with increased likelihood of being a purchaser.

Discussion

This exploratory study compared characteristics of four different groups of LTCI owners. These comparisons add to the current literature on LTCI purchase

consideration of "purchasers" (those who did not own LTCI in 2006, but did own the product in 2012) and "lapsers," as prior research compared only ownership and non-ownership (Brown and Finkelstein 2009; Cramer and Jensen 2006; Curry, Robison, Shugrue, Keenan, and Kapp 2009).

Rational choice theory dictates that a rational consumer concerned about the need for long-term care and wishing to protect assets for either consumption or bequest motives, would consider LTCI as a viable funding choice, yet current ownership of such policies remains low. Substitutions for LTCI as well as alternative housing arrangements have been presented as possible reasoning for the low rates of ownership.

The lack of long-term care literacy and flux within the insurance industry seemingly hampering the ability to produce a viable, comprehensive, affordable LTCI option for the consumer has been thought to stunt LTCI sales. Research has also suggested that individuals who do consider coverage do so at retirement (Sloan and Norton 1997; Atchley and Dorman 1994). This study substantiated this finding by indicating that LTCI owners were older than purchasers, lapsers, and non-owners.

Because the majority of insurance policies consider age in the underwriting process, it is reasonable to conclude that LTCI policies are less expensive at younger ages. In fact, it is suggested that ages 52 to 64 are the best time to purchase policies (Rubin et al. 2014). The finding presented here that purchasers had the lowest mean age of households in the four conditions of ownership is consistent with this literature.

Previous studies have found that if consumers lapse their policies, they usually do so shortly after purchase and the longer the policies are in force the less likely they are to lapse (Rubin et al. 2014; Cohen, Kaur, and Darnell 2013). The insurance policies owned by the lapsing cohort in 2006 could have been a group plan offered by their employer that was lost at retirement. Additionally, many group plans can either not be converted to an individual plan upon the end of employment, or employees choose not to take advantage of this option. Policy implications for this are substantial for those selling LTCI, for employers seeking to increase the choices and viability of voluntary benefits offered to employees, and for insurance companies attempting to maintain their risk pool.

This study's results are consistent with the literature regarding the age of LTCI policy owners—owners are older and typically married with relatively fewer children. However, this study's findings also contradict the literature by indicating substantially higher wealth, income, and home equity for LTCI owners compared with individuals in the other categories of LTCI ownership.

For example, mean wealth for owners was between 33 and 41 percent greater in 2006, and was 26 to 61 percent higher in 2012 than found in other statuses. Home equity was also greater for owners compared with others by 20 to 47 percent. Another difference was that, with the exception of purchasers, LCTI owners had a substantially higher mean income compared with all other categories.

The difference in financial characteristics of owners versus the other statuses might indicate a contradiction to the concept of self-insurance for a rational consumer found in the current literature. Conversely, a large portion of the previous literature indicates that the cost of LTCI limits its marketability to a sizable portion of the population. Rubin et al. (2014) called those most likely to have the resources to purchase LTCI the "middle affluent," as NAIC suggests no greater than 7 percent of income be used for LTCI premiums.

In their study of group LTCI, Matzek and Stum (2010) found that an employee's income was the only defining characteristic affecting the long-term care literacy of the employee and thereby the purchasing decision. Such findings are consistent with this study's finding that households defined as LTCI owners had greater financial assets than those in other categories of ownership.

In this study, respondents who lapsed LTCI in the second wave of the HRS study had the largest increase in assets (54 percent from 2006 to 2012), but also had a 3.4 percent decrease in income. Respondents who purchased LTCI had a 17 percent decrease in assets along with a 10 percent increase in income. These two groups run parallel to current literature in that the lapsers do so to protect their consumption patterns through the preservation of assets by eliminating the costly premium; and purchasers have less incentive to save now with both an increase in income and assets to maintain their consumption patterns. Non-owners had the lowest financial characteristics of all statuses and follow the literature's assertion of rational choice, since Medicaid would be a rational choice for this group.

This study indicated respondents who own LTCI had fewer children compared with those in other statuses, and non-owners had the greatest number of children, coinciding with the literature regarding informal care as a substitute for LTCI.

Also, self-reported health for all statuses of ownership was quite consistent with the probability of need for nursing home services, increasing across the statuses from 2006 to 2012. This result seems reasonable as all individuals aged six years between waves. Not surprising, individuals who lapsed their policies indicated a decrease in probability of the need for a nursing home in five years from 2006 to 2012, while purchasers indicated an increase in this probability.

Limitations

Limitations of this study include the lack of quantitative evidence in the data regarding consumer choice and preferences. For example, respondents who could self-insure may prefer to reduce current consumption and save to ensure placement in a nursing home of choice. Or these same respondents may simply have strong bequest motives. A closer look at consumer choice and preferences could flush out answers to questions that might address the "why" regarding the lack of private funding for long-term care needs such as substitutes for LTCI and alternative housing arrangements. Additionally, for the purposes of this study, it was assumed that individuals who were designated as "owners" owned the same LTCI policy in both the 2006 and 2012 waves of the HRS. But, the actual LTCI purchase date is unknown, and owners in 2006 could have dropped one policy and purchased another by 2012.

The HRS does not include any underwriting data from insurance companies including applicants who were denied coverage. This lack of evidence within the sample used here regarding denied LTCI policies due to underwriting may have resulted in respondents being placed in a state of non-ownership when that would not be their preferred status.

Further, questions regarding the type of LTCI policies owned—group or individual plans—were not asked in the HRS study and may add bias regarding those who lapse. Finally, the 2006 and 2012 waves bookend the 2008 housing and financial crisis experienced in the U.S. This financial crisis may also lead to bias in the results, especially regarding the financial characteristics of all statuses. The 2008 financial crisis contributed to the loss of many middle management jobs, for which the sample used here would naturally fit. During this time, home equities plummeted as did the stock market, and a consequence may have been the lapse of both individual and group LTCI policies.

Bequest motives were not controlled for in this study, possibly accounting for the contradictory findings regarding financial characteristics of LTCI owners. Future research regarding both individual and family personal preferences of LTCI purchase is needed. Additionally, the emergence of the modern family and the shift away from the traditional nuclear family renders research surrounding personal preferences of long-term care funding necessary. ■

Endnote

1. Fixed effects logistic regression is appropriate when the dependent variable is dichotomous, the dependent and the independent variables are measured at two points in time, and change occurs in the dependent and independent variables over time. Use of change instead of levels for time-varying independent variables helps avoid multicollinearity. The method used here for logistic regression follows Allison (2005). Because all respondents aged at the same rate and the change in number of children over time was negligible, both factors were treated as time-invariant and entered the analyses as level in 2006. Following prior research, income, assets, and home equity were categorized as low, medium, and high based on quartile distribution to reduce potential for bias due to nonlinearity.

References

Ahlstrom, Alexis, Anne Tumlinson, and Jeanne M. Lambrew. 2004. "Linking Reverse Mortgages and Long-Term Care Insurance." Brookings Institution report, available at brookings.edu/research/linking-reverse-mortgages-and-long-term-care-insurance.

Allison, Paul D. 2005. *Fixed Effects Regression Methods for Longitudinal Data Using SAS*. Cary, N.C.: SAS Institute.

Arrow, Kenneth J. 1963. "Uncertainty and the Welfare Economics of Medical Care." *The American Economic Review* 53 (5): 941–973.

Atchley, Robert C., and Mark S. Dorman. 1994. "Gaining Marketing Insights from the Ohio Long-Term Care Insurance Survey." *Journal of the American Society of CLU and ChFC* 48 (5): 66.

Brown, Jeffrey R., and Amy Finkelstein. 2009. "The Private Market for Long-Term Care Insurance in the United States: A Review of the Evidence." *Journal of Risk and Insurance* 76 (1): 5–29.

Brown, Jeffrey R., Gopi Shah Goda, and Kathleen McGarry. 2012. "Long-Term Care Insurance Demand Limited by Beliefs about Needs, Concerns about Insurers, and Care Available from Family." *Health Affairs* 31 (6): 1,294–1,302.

Bryant, W. Keith, and Cathleen D. Zick. 2005. *The Economic Organization of the Household*, second edition. Cambridge, United Kingdom: Cambridge University Press.

Cantor, Marjorie H. 1989. "Social Care: Family and Community Support Systems." *The Annals of the American Academy of Political and Social Science* 503 (1): 99–112.

Caro, Frank G., Frank W. Porell, and Ngai Kwan. 2011. "Expectancies and Ownership of Long-Term Care Insurance Policies among Older Married Couples." *Journal of Applied Gerontology* 30 (5): 562–586.

Cohen, Marc A., Ramandeep Kaur, and Bob Darnell. 2013. "Exiting the Market: Understanding the Factors Behind Carriers' Decision to Leave the Long-Term Care Insurance Market." Report prepared by the U.S. Department of Health and Human Services, available at aspe.hhs.gov/report/exiting-market-understanding-factors-behind-carriers-decision-leave-long-term-care-insurance-market.

Cohen, Marc A., Nanda Kumar, and Stanley S. Wallack. 1992. "Who Buys Long-Term Care Insurance?" *Health Affairs* 11 (1): 208–223.

Cook, Philip J., and Daniel A. Graham. 1977. "The Demand for Insurance and Protection: The Case of Irreplaceable Commodities." *The Quarterly Journal of Economics* 91 (1): 143–156.

Cramer, Anne Theisen, and Gail A. Jensen. 2006. "Why Don't People Buy Long-Term-Care Insurance?" *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 61 (4): S185–S193.

Curry, Leslie A., Julie Robison, Noreen Shugrue, Patricia Keenan, and Marshall B. Kapp. 2009. "Individual Decision Making in the Non-Purchase of Long-Term Care Insurance." *The Gerontologist* 49 (4): 560–569.

Dabelko-Schoeny, H., and K. A. Anderson. 2010. "The MetLife National Study of Adult Day Services: Providing Support to Individuals and Their Family Caregivers." MetLife Mature Market

Institute study available at metlife.com/assets/cao/mmi/publications/studies/2010/mmi-adult-day-services.pdf.

Davidoff, Thomas. 2010. "Home Equity Commitment and Long-Term Care Insurance Demand." *Journal of Public Economics* 94 (1): 44–49.

Finkelstein, Amy, Kathleen McGarry, and Amir Sufi. 2005. "Dynamic Inefficiencies in Insurance Markets: Evidence from Long-Term Care Insurance." National Bureau of Economic Research paper No. w11039.

Gibler, Karen, James R. Lumpkin, and George P. Moschis. 1997. "Mature Consumer Awareness and Attitudes toward Retirement Housing and Long-Term Care Alternatives." *Journal of Consumer Affairs* 31 (1): 113–138.

Gibson, Mary Jo, and Donald L. Redfoot. 2007. "Comparing Long-Term Care in Germany and the United States: What Can We Learn from Each Other?" AARP Public Policy Institute study available at assets.aarp.org/rgcenter/il/2007_19_usgerman_ltc.pdf.

Grote, Jim. 2011. "Keeping Ahead of the Long-Term Care Domino." *Journal of Financial Planning* 24 (5): 22–27.

Gupta, Aparna, and Lepeng Li. 2007. "Integrating Long-Term Care Insurance Purchase Decisions with Saving and Investment for Retirement." *Insurance: Mathematics and Economics* 41 (3): 362–381.

Harrington, Scott E., and Greg Niehaus. 1999. *Risk Management and Insurance*. New York, N.Y.: McGraw-Hill/Irwin.

Harrington, Charlene, Steve Preston, Leslie Grant, and James H. Swan. 1992. "Revised Trends in States' Nursing Home Capacity." *Health Affairs* 11 (2): 170–180.

Hoerger, Thomas J., Gabriel A. Picone, and Frank A. Sloan. 1996. "Public Subsidies, Private Provision of Care, and Living Arrangements of the Elderly." *The Review of Economics and Statistics* 78 (3): 428–440.

Hubbard, R. Glenn, Jonathan Skinner, and Stephen P. Zeldes. 1994. "The Importance of Precautionary Motives in Explaining Individual and Aggregate Saving." *Carnegie-Rochester Conference Series on Public Policy* 40: 59–124.

Hurd, Michael D., and Susann Rohwedder. 2010. "Effects of the Financial Crisis and Great Recession on American Households." National Bureau of Economic Research paper No. w16407.

Jacobs, Bruce, and William Weissert. 1987. "Using Home Equity to Finance Long-Term Care." *Journal of Health Politics, Policy and Law* 12 (10): 77–96.

Kemper, Peter. 1992. "The Use of Formal and Informal Home Care by the Disabled Elderly." *Health Services Research* 27 (4): 421–451.

Kemper, Peter, Brenda C. Spillman, and Christopher M. Murtaugh. 1991. "A Lifetime Perspective on Proposals for Financing Nursing Home Care." *Inquiry* 28 (4): 333–344.

Kichen, Jeffrey, and Joseph L. Roche. 1990. "Life-Care Resident Preferences." In R. Chellis and P. Grayson (eds.), *Life Care: A Long-Term Solution?* Lexington, MA: Lexington Books.

Lindrooth, Richard C., Thomas J. Hoerger, and Edward C. Norton. 2000. "Expectations among the Elderly about Nursing Home Entry." *Health Services Research* 35 (5): 1,181–1,202.

Matzek, Amanda E., and Marlene S. Stum. 2010. "Are Consumers Vulnerable to Low Knowledge of Long-Term Care?" *Family and Consumer Sciences Research Journal* 38 (4): 420–434.

McCall, Nelda, Steven Mangle, Ellen Bauer, and James Knickman. 1998. "Factors Important in the Purchase of Partnership Long-Term Care Insurance." *Health Services Research* 33 (2): 187–203.

Morith, Nancy P. 2004. "Long-Term Care Planning." *Journal of Financial Service Professionals* 58 (1): 59–64.

Nelms, Linda L., Saral L. Mayes, and Betty Doll. 2012. "The Interface between Continuing-Care Retirement Communities and Long-Term-Care Insurance." *Journal of Financial Planning* 25 (5): 54–60.

Ng, Terence, Charlene Harrington, and Martin Kitchener. 2010. "Medicare and Medicaid in Long-Term Care." *Health Affairs* 29 (1): 22–28.

Pauly, Mark V. 1990. "The Rational Nonpurchase of Long-Term-Care Insurance." *Journal of Political Economy* 98 (1): 153–168.

Rubin, Larry, Kevin Crowe, Adam Fisher, Omar Ghaznawi, Richard McCoach, Rachel Narva, David Schaulewicz, Tom Sullivan, and Toby White. 2014. "An Overview of the U.S. LTC Insurance Market (Past and Present): The Economic Need for LTC Insurance, the History of LTC Regulation and Taxation, and the Development of LTC Product Design Features." Society of Actuaries monograph available at soa.org.

Seshadri, Sudha, and Philip A. Wolf. 2007. "Lifetime Risk of Stroke and Dementia: Current Concepts and Estimates from the Framingham Study." *The Lancet Neurology* 6 (12): 1,106–1,114.

Sloan, Frank A., and Edward C. Norton. 1997. "Adverse Selection, Bequests, Crowding Out, and Private Demand for Insurance: Evidence from the Long-Term Care Insurance Market." *Journal of Risk and Uncertainty* 15 (3): 201–219.

Starr-McCluer, Martha. 1996. "Health Insurance and Precautionary Savings." *The American Economic Review* 86 (1): 285–295.

Taylor, Donald H., Jan Osterman, S. Will Acuff, and Truls Østbye. 2005. "Do Seniors Understand their Risk of Moving to a Nursing Home?" *Health Services Research* 40 (3): 811–828.

Vincent, Grayson K., and Victoria Averil Velkoff. 2010. "The Next Four Decades: The Older Population in the United States: 2010 to 2050." U.S. Census Bureau report No 1138.

Weissert, William G. 1990. *Adult Day Care: Findings from a National Survey*. Baltimore, MD: The Johns Hopkins University Press.

Wolfson, Christina, David B. Wolfson, Masoud Asgharian, Cyr Emile M'lan, Truls Østbye, Kenneth Rockwood, and D.F. Hogan. 2001. "A Reevaluation of the Duration of Survival after the Onset of Dementia." *The New England Journal of Medicine* 344 (15): 1,111–1,116.

Xie, Jing, Carol Brayne, and Fiona E. Matthews. 2008. "Survival Times in People with Dementia: Analysis from Population Based Cohort Study with 14 Year Follow-Up." *The BMJ* 336 (7638): 258–262.

Zarem, Jane E. 2010. "Today's Continuing Care Retirement Community (CCRC)." American Seniors Housing Association, available at https://www.seniorshousing.org/filephotos/research/CCRC_whitepaper.pdf.

Zimmerman, Sheryl, Ann L. Gruber-Baldini, Philip D. Sloane, J. Kevin Eckert, J. Richard Hebel, Leslie A. Morgan, Sally C. Stearns, Judith Wildfire, Jay Magaziner, Cory Chen, and Thomas R. Konrad. 2003. "Assisted Living and Nursing Homes: Apples and Oranges?" *The Gerontologist* 43 (2): 107–117.

Citation

Dorn, Mary E., Deanna L. Sharpe, Geri Dickey, and Dalisha D. Herring. 2017. "Understanding the Determinants of a Long-Term Care Insurance Purchase." *Journal of Financial Planning* 30 (11): 38–46.