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Boomers' life insurance adequacy pre & post the 2008 financial crisis

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Abstract

The baby boomers represent a large percentage of the U.S. population and their preparation for retirement, or lack thereof, can affect the economy at large. In light of the 2008 financial crisis, boomer households may be delaying retirement, choosing to work longer. Using the 2004 and 2010 Survey of Consumer Finance, logistic regression analyses are used to examine life insurance adequacy among boomers before and after the financial crisis of 2008. We find a significant difference in 2010 between the baby boomers and the senior generation in life insurance adequacy. Variables related to net worth, such as income, marital status, and self-insurability, were significant predictors of life insurance adequacy. Given greater life insurance adequacy among those with higher income, increasing group term insurance may help mid to low income households. Further implications to practitioners, agents, and educators are discussed.

Jel classification: G22

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1. Introduction

The oldest baby boomers (born between 1946 and 1964), became eligible to draw on Social Security during the financial crisis of 2008 (Farrell, 2013). As there are a large number of older Americans, specifically the baby boomers, examining life insurance adequacy

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among this subgroup of the population is an important recourse. By 2030 the boomer population is projected to be 61 million (Knickman and Snell, 2002). In the event that baby boomers do not have sufficient amounts of life insurance, they may sustain financial hardships that have significant economic consequences.

The impact of a financial crisis can especially reduce the purchasing power of older households (Kirkpatrick and Tennant, 2002). Because these households are closer to retirement, they are more susceptible to income shocks. Holding inadequate amounts of life insurance implies that more households may have to rely on social security survivor benefits, placing additional strain on the economy. Because of the purchasing and consumption influence boomers possess, depressed spending can weaken an already strained economy (Beinhocker, Farrell, and Greenberg, 2009).

Older households are interested in insurance not only from a pure death protection standpoint (i.e., term insurance). They are also interested in its saving component, estate tax benefits, in addition to bequest motives (Baek and DeVaney, 2005; Ibbotson, Milevsky, Chen, and Zhu, 2007; Mittra, 1995). This article includes the face amounts of both term and cash value life insurance. In the absence of sufficient insurance to cover insurable risks (e.g., untimely death), households will place too much emphasis on these risks while neglecting managing uninsurable risks (e.g., investing in the stock market; Mitchell, 2011).

This article seeks to assess life insurance adequacy pre and post the 2008 financial crisis by investigating if there is a difference in life adequacy between boomers and seniors (those born before 1946); current life insurance holdings among the boomers in comparison with other age cohorts pre- and post-financial crisis; and whether having a financial planner increases the likelihood of boomers having adequate life insurance post-financial crisis.

2. Background

Historically, baby boomer wealth has exceeded their predecessors by more than 100%. They thrived during a time when saving was not a priority (Beinhocker et al., 2009). A burgeoning stock market alongside loose lending practices and low borrowing costs weakened the savings motive. Moreover, boomers as a whole did not share the same aversion to credit that had preoccupied the previous generation, who faced severe economic distress periods, such as the Depression and World War II.

Boomers may be wealthier than their predecessors, but the same characteristics that define their generation are creating unique challenges for their future that will have significant economic implications (Gokhale and Kotlikoff, 2000). They are living longer than earlier generations and choosing to exist independently from their children. They are spending their wealth at a faster rate than previous cohorts. Many choose or need to work longer to save more for retirement. As a result, a larger portion of wealth is annuitized because of the expansion of programs such as Medicare and Social Security; there are increasing healthcare costs, and more wealth is tied up in annuities, which results in less bequests.

Boomers also tend to be less risk adverse than younger households. This may be because of a decreased expected human capital value and a greater level of accumulated assets. For

older boomers, there may be no more dependents to provide for and there are fewer years to protect for the surviving spouse (Lin and Grace, 2007). A perception of decreased financial vulnerability leads some boomers to have inadequate life insurance holdings.

The matter of inadequate life insurance among the baby boomers has been under examined. Few studies compare how baby boomers utilized life insurance before and after the financial crisis of 2008; however, there is widespread research that examines how the crisis impacted the way baby boomers prepared for retirement (Rosnick and Baker, 2010; Tres, 2010). The analysis of retirement preparation before and after the crisis provides a lens through which we can more broadly understand how baby boomer wealth was affected by the crisis, allowing us to further examine how life insurance utilization was shaped by the crisis. For example, Munnell, Golub-Sass, Soto, and Webb (2008) find that in the context of the housing crash wealth effect, boomers may not have sufficient savings to sustain a desired standard living in retirement. It may not be surprising to find that boomers may not have adequate life insurance policies either.

2.1. Life insurance inadequacy

There are various definitions of "inadequacy" when associated with life insurance usage. Many financial advisors use an individualized capital needs analysis to calculate the amount of life insurance an individual needs. However, according to the 2010 Life Insurance Study (LIMRA), the average American has enough life insurance to replace less than four years of income, with an average amount of $155,000 (LifeJacket, 2011). The 2011 LifeJacket study reveals that one-third of life insurance policyholders bought their policy a decade ago, suggesting coverage amounts may not have changed with life circumstances (LifeJacket, 2011).

Inadequate life insurance can have a large impact on retirement preparedness in addition to significantly reducing living standards for widows (Auerbach and Kotlikoff, 1991; DeVaney, 1995). Past studies demonstrate the severe economic impact of inadequate life insurance among older widows, the consequences of which include falling into poverty (Bernheim, Forni, Gokhale, and Kotlikoff, 1999).

One of the primary reasons households possess insufficient amounts of insurance coverage is there is little income to extend beyond household necessities. The 2011 Insurance Barometer study reveals that 22% of respondents cite inadequate life insurance coverage. Approximately 28% of respondents who are married would like their spouse or partner to have life insurance or to add more to their existing coverage. The study also cites that respondents with life insurance still express concerns about coverage contrasted with those who own long-term care or medical insurance—perhaps because of insufficient coverage and high financial risk in the event of a loss. Almost half the respondents who have insufficient coverage state the price of life insurance as the foremost barrier to purchase, second to having other financial priorities.

Unawareness of need or risk also results in insufficient amounts of life insurance (Johnson, 1970; Mitchel, 2003), implying that educating households about the inherent necessity of life

insurance adequacy, and the risks of insufficiency, should result in adequate life insurance. This produces a simple equation: awareness of need and risk + knowledge + sufficient financial assets (*should*) = adequate life insurance. This would not only suggest an opportunity for financial planners to educate clients, but insinuate that simply delivering the information, updating clients about the changes in delivery and access to insurance, the wider use of the Internet as regards life insurance, the use of cell phones for financial transactions, and so forth, should result in changed behavior. However, we know that the situation is far more complicated because of behavioral biases and other extenuating factors influencing household insurance behavior. For example, many households choose to postpone paying all debts in the event of a spouse's death. They find alternative ways to fund education for their children. They may be willing to reduce living standards to adjust after losing a spouse or pin hopes on remarrying to justify lower amounts of life insurance. All of these reasons would be sufficient to warrant inadequate coverage of life insurance, but would leave room for copious "what ifs," which may cost them future goals. Additionally, the top 10% of life insurance companies had approximately one-quarter of their assets tied up in mortgage-backed securities by 2006—assets that were a part of many individual household portfolios. When many homeowners stopped paying their mortgages, this decreased the underlying value of these securities, and thus, severely reduced many household portfolios. For many households "sufficient financial assets" in the simple equation above was more than compromised (Baranoff and Sager, 2009).

Calculators are commonly used to determine life insurance adequacy by computing insurance needs that are based on income and arbitrary numbers, Human Capitalized method, Capital Needs Analysis, the Multiple Income method, and the Economic Life Cycle method (Mitchell, 2003). The Human Capitalized model projects income into the future and then discounts it to the present. The Capital Needs method takes into consideration the reduction of household income because of the death of a wage earner and the decrease in living standard suffered by the survivors. This information is then incorporated into insurance needs. The Multiple Income method uses a predetermined figure and multiplies it by earnings to derive total life insurance needs. The Economic Life Cycle is based on the life cycle model—finding an optimal, smooth consumption path over the insured's lifetime and determining appropriate life insurance needs. Because these are different methods, incorporating different household financial information, the amount of life insurance will vary based on inputs.

Past studies that examine life insurance demand use similar variables to assess adequacy. Using the 1992 wave of the Health and Retirement Survey (HRS), and the Economic Security Planner (ESPlanner) financial planning software to compute life insurance needs, Bernheim et al. (1999) finds underinsurance among single households, non-White households, younger households, and other groups. Finke, Huston, and Waller (2009) developed the most recent and extensive model of life insurance adequacy. This model includes current life insurance, household income, estimated taxes, household economies of scale, and other key factors to determine adequacy. Finke, Huston, and Waller's (2009) model for life insurance adequacy will serve as the framework for this study, discussed later in the article. Independent variables used in the analyses are discussed below.

2.2. Independent variables

2.2.1. Age

The effect of age on insurance demand is varied (Chen, Wong, and Lee, 2001; Showers and Shotick, 1994; Zietz, 2003). As age increases, we would expect life insurance face value amounts to decrease because the need to replace living expenditures would also be decreasing. Because the value of human capital decreases and the cost of insurance rises, it follows that there should be a decrease in life insurance coverage (Campbell, 1980). Alternatively, an increase in mortality risk (and poor health) can necessitate greater insurance holdings, depending on household preferences (Finke, Huston, and Waller, 2009). For example, older households, such as the baby boomers may hold life insurance because of bequest motives or estate planning reasons (Baek and DeVaney, 2005). Given that prior studies find that households fail to adjust life insurance coverage after initial purchase, we expect no difference between baby boomers and the senior generation in life insurance adequacy pre and post the 2008 financial crisis.

2.2.2. Financial professional

The inclusion of a financial planner, accountant, broker, and banker in the descriptive analysis is pertinent because these professionals may at some point dispense life insurance advice (Mulholland, Finke, and Huston, 2012). Although the definition of a financial planner in the Survey of Consumer Finances is not particularly clear, as it does not distinguish between financial professionals who present themselves as advisors with or without a CFP designation, it is interesting to see how a financial planner compares with the other previously listed professionals. Based on the findings of Finke, Huston, and Waller (2009) and Scott and Finke (2013), we expect a positive relation between the use of a financial planner (compared with using a non-financial planner professional) on life insurance adequacy.

2.2.3. Education

Education also has varied results from prior studies, demonstrating both positive and negative associations with life insurance demand (Zietz, 2003). However, stemming from human capital theory, households with more education should have greater protection because of a steeper earning capacity (Bryant and Zick, 2006). They should also be better able to make optimal insurance decisions than those with less education or utilize a financial service professional to meet insurance needs. Therefore, we expect a positive association between education and life insurance adequacy.

2.2.4. Marital status

Previous literature reports positive and negative as well as non-significant findings between marital status and life insurance demand (Zietz, 2003). Because married households possess the advantage of pooling resources as well as exhibiting greater needs for insurance than single households, we expect a positive effect on life insurance adequacy.

Table 1 Ethnic group difference in life insurance ownership*

	Blacks	Hispanics	Whites
Positive attitude about LI	↑	↑	↑
Feel agents/financial professionals are knowledgeable	↑	↓	↑
Have a *greater* concern about placing financial burden on others	↑	↓	↓
Seek to understand the product	↑	↑	↑
Prefer to purchase at their workplace	↓	↓	↓
Research on the Internet	↑	↑	↑
Prefer to purchase on the Internet	↓	↑	↓
Prefer to purchase from agent/financial professional	↑	↓	↑

* Adopted from the 2011 Insurance Barometer Study.

2.2.5. Race

Ethnic group differences also play a role in life insurance ownership. Table 1 shows differences between Blacks, Hispanics, and Whites when compared with each other. These differences are key in pinpointing specific strategies for each group, considering their preferences and goals for life insurance. For example, Blacks have an overall preference for life insurance compared with Hispanics and Whites. They are more likely to consider burdening family members as a top reason for purchase. Blacks and Whites will use life insurance to cover funeral expenses more than Hispanics, who will use insurance to fund education needs (Mitchel, 2011). Though race has been significantly related to the findings in past studies, we do not expect any differences among racial classes when examining adequacy.

2.2.6. Risk tolerance

As risk aversion increases, a household should possess greater amounts of life insurance (Ibbotson et al., 2007). Households who are substantial risk takers display a preference for risk seeking behavior; the risk tolerance question used in the survey is limited and may not fully reflect risk tolerance. Therefore, we do not expect a significant relation between risk tolerance and life insurance adequacy.

2.2.7. Self-employment

Given the volatility of earnings within self-employed households, there should be greater life insurance coverage than for households who are not self-employed. From a human capital standpoint, greater life insurance adequacy may be warranted for self-employed households.

2.2.8. Net worth

Net worth and life insurance demand has been found to be negatively related (Baek and DeVaney, 2005), as those with greater net worth may be able to self-insure or afford an unexpected shock to income.

2.2.9. Ability to self-insure

If assets are greater than the present value of human capital, households can afford to self-insure; thus, having a negative impact on life insurance adequacy. Although net worth and the ability to self-insure are indeed correlated, the correlation does not interfere with the analysis evident by correlation tests.

2.2.10. Income

Bernheim et al. (1999) finds more underinsurance at moderate levels of income. As household income increases, underinsurance increases also. However, past studies also demonstrate greater affordability of insurance with increased income (Browne and Kim, 1993; Lewis, 1989). As income variation increases, the present value of human capital decreases, leading to less demand for life insurance (Finke, Huston, and Waller, 2009).

2.2.11. Expectation of income growth

This is one of the variables that aim to capture attitudes related to life insurance adequacy. Ibbotson et al. (2007) cite that with higher income, a higher discount rate should be used to value human capital and, thus, would depress life insurance holdings.

2.2.12. Spending greater than income

This variable accounts for liquidity constraints of the household (Bernheim et al., 1999). Households who spend greater than income will be less likely to have adequate life insurance.

2.2.13. Social security income

The receipt of social security benefits may depress life insurance holdings (Bernheim, 1991; Fitzgerald, 1987). As with other sources of income, social security benefits should be included in life insurance demand as it influences survivor benefits (Lewis, 1989).

2.2.14. Health

Related to human capital, greater health should have a positive effect on life insurance coverage (Baek and DeVaney, 2005). Better health promotes or facilitates better formation of human capital and it can also translate into more affordable premiums. However, there may be no effect on adequacy.

2.2.15. Bequest motive

Households with a bequest motive should demand life insurance at a greater rate than households without a bequest motive. However, having a bequest motive and executing financial strategies to prepare for the distribution of assets are two separate matters. Therefore, although we would expect a positive relation between having a bequest motive and adequate life insurance, it would not be surprising to find insignificant results.

2.2.16. Presence of children

Life insurance demand should be greater for those households with children (Lewis, 1989; Mulholland, Finke, and Huston, 2012).

2.2.17. Expectation of having a sizeable estate at death

The inclusion of this variable in the model is similar to including a bequest motive variable. Again, preferences or expectations may not always lend to financial preparedness.

2.2.18. Homeowner

Based on the findings of other studies, homeownership should have a positive effect on life insurance coverage (Gandolfi and Miners, 1996). Homeownership can also serve as a signal for greater life insurance adequacy because of the accumulation of assets within and beyond the building years of a household's life cycle stage.

3. Theory

A household seeks to maximize the expected utility of wealth, that is, pursue a level consumption path over the life cycle. Defined as the present value of expected future market wages, human capital is a non-tradable asset in the household portfolio. Labor income is used to fund most of household consumption, and so for a majority of households this dominates the financial capital side of the household portfolio (Campbell, 1980). Life insurance serves as an actuarial hedge against the loss of income whereas other financial assets seek to reduce diversifiable risk (Collins and Lam, 2011). Life cycle hypothesis supports the use of financial capital to supplement an unexpected loss of human capital to mitigate consumption shocks that can jeopardize financial goals.

A household's age in the life cycle influences life insurance needs. In a broad sense, younger households with greater human capital should possess adequate life insurance more than older households with less human capital to protect. All households should rationally prefer a smooth transition from one stage of the life cycle to the next, but this is not always possible.

Older adults, specifically baby boomers in the period of analysis, are still in the building stage and susceptible to income and consumption shocks that may alter life insurance needs or preferences. In short, their life cycle path can become steeper depending on unexpected variation in income and/or the economic environment. This leads to greater need for life insurance adequacy (not just coverage) compared with elders with greater stability in income and/or less exposure to the stock market.

Significant predictors of demand life insurance include household size, number, and age of dependent children, and income (Baek & DeVaney, 2005). Lewis (1989) developed his life insurance model based on the survivor's preferences for insurance. Demand for life insurance should decline with age as the value of human capital decreases (Baek and DeVaney, 2005). However, demand for life insurance should theoretically terminate at retirement as the value of human capital shrinks to zero (Collins and Lam, 2011; Finke, Huston, and Waller, 2009). However, many households continue to hold onto policies beyond retirement age, most specifically, cash value life insurance policies for a number of reasons (Brown, 1999).

4. Methodology

4.1. Model

To determine life insurance adequacy, the following method adopted from Finke, Huston, and Waller (2009) is used. First, it is necessary to determine the number of children under age 18 present in the household. Then, using the U.S. Census Bureau household poverty and income information, we determined if a household is above or below the poverty line based on income and dependents. The sample is then censored to households ages 35 to 70 (35 to 76 in 2010) who are working full-time. The 2010 sample is increased to age 76 to account for the senior generation. Using Bernheim et al. (2001) we adjust for household economies of scale to assess replacement needs in a two adult household. Taxes are estimated based on filing status, adjusted gross income, and personal exemptions. Unlike Finke, Huston, and Waller (2009), we use the original filing status question in the Survey of Consumer Finances (SCF) to be consistent with the survey years.

Insurance coverage is calculated based on the face value of both term and cash value life insurance. Instead of recreating the insurance ratio developed by Finke, Huston, and Waller (2009), it seems more straightforward to view the insurance ratio as current life insurance to life insurance needs. The life insurance adequacy model is presented in Eq. (1) below.

$$Adq\ LI = \frac{\sum_{P-1}^{P} V_p}{(I_t - T_t * f] * \left\{\frac{[1 - (1 + r_{rr})^{-W}]}{r_{rr}}\right\}} \tag{1}$$

Life insurance adequacy is a function of human capital and household financial characteristics. Where V_p in the numerator represents the face value of cash value and term life insurance policies; w, the difference between the respondent's age and retirement age; I_t, the household's current income; f, household economies of scale ratio (ability to pool resources in a dual-income household); T_t, estimated taxes based on filing status, personal exemptions, and standard deduction; r_r, expected real interest rate. A household has adequate life insurance when its insurance value (in the numerator) to insurance need (represented by the denominator) is greater than or equal to one. We assume that income growth is equal to the rate of inflation and to determine overall replaceable need, a discount rate of 2.3% is used. The regression model is shown below in Eq. (2).

$$\begin{aligned} Adequate\ Life\ Insurance = {} & \beta_0 + \beta_1 Age + \beta_2 Financial\ Professional \\ & + \beta_3 Demographic\ Characteristics \\ & + \beta_4 Financial\ Characteristics \\ & + \beta_5 Financial\ Attitudes + \varepsilon \end{aligned} \tag{2}$$

Adequate life insurance is a binary variable equal to 1 if the household has an insurance coverage to insurance needs ratio is greater than or equal to 1. *Age* includes boomers, seniors,

Table 2 Mean insurance and insurance need

	2004		2010	
	Insurance	Insurance need	Insurance	Insurance need
Boomers	$345,297.34	$676,507.76	$419,124.74	$ 700,545.65
Seniors	$235,741.31	$325,580.83	$295,727.41	$ 286,945.90
GenX and below	$235,952.48	$808,799.39	$342,860.90	$1,212,846.14
Financial planner	$478,396.10	$736,178.60	$586,766.69	$ 888,523.82
Non-financial planner	$284,421.30	$655,043.47	$351,424.69	$ 872,127.81

and generations younger than boomers. *Financial Professional* includes the use of a financial planner and non-financial planner. *Demographic Characteristics* is a vector of independent variables representing race, education, children, and marital status. *Financial Characteristics* includes net worth, income, self-insurability, self-employment, and homeownership. *Financial Attitudes* contains a bequest preference, a substantial risk tolerance level, the expectation of greater income in the future, and spending more than annual income.

4.2. Dataset

As we are examining life insurance adequacy among baby boomers pre and post the 2008 financial crisis, the 2004 and 2010 SCF datasets are used. This survey contains the necessary household demographic and financial characteristics for this research study. There were 4,519 respondents in 2004 and 6,482 in 2010. For the descriptive analyses, the SCF population weights will be used to represent the U.S. population as a whole but not for the multivariate analysis (Rubin, 1987).

Following Finke, Huston, and Waller (2009), the sample in 2004 was censored to married households working full-time, between age 35 and 70 (expanded to age 76 in 2010) and possessing income above the poverty line.

4.3. Descriptive statistics

Descriptive statistics are presented in Tables 2 and 4. Table 3 shows the coding for each variable in the study. Table 2 displays the mean insurance and mean insurance needs for all respondents. Of the generational groups, boomers have the highest insurance mean of $345,297 in 2004 but a greater insurance need than seniors in both years. Insurance holdings on average are higher among respondents who report seeking advice from a financial planner ($478,396) compared with those who use another financial professional ($284,421). However, insurance needs are greater (by ~$81,000) for households with a financial planner.

Table 4 displays demographic, financial, and other household characteristics. The first column for each year includes all respondents and the second column is censored/restricted based on age, households with more than one member and income above the poverty line. The sample size in 2004 for the censored sample is 1,966 households and 2,612 in 2010.

Table 3 Coding for each variable from the 2004 and 2010 Survey of Consumer Finances data

Variables	Coding
Adequate life insurance (dependent)	1 = adequate life insurance
Boomers	1 = age between 39 and 58, 0 otherwise in 2004; 1 = age between 45 and 64, 0 otherwise in 2010
Seniors	1 = age ≥ 59, 0 otherwise in 2004; 1 = age ≥ 65, 0 otherwise in 2010
Generation X and below	1 = age ≤ 39, 0 otherwise in 2004; 1 = age ≤ 45, 0 otherwise in 2010
Less than high school	1 = yes, 0 otherwise
High school graduate	1 = yes, 0 otherwise
Some college	1 = yes, 0 otherwise
College graduate	1 = yes, 0 otherwise
Single	1 = single, divorced, or widowed, 0 otherwise
Non-single	1 = married, 0 otherwise
White	1 = yes, 0 otherwise
Black	1 = yes, 0 otherwise
Hispanic	1 = yes, 0 otherwise
Non-financial planner	1 = banker, accountant, or broker, 0 otherwise
Financial planner	1 = yes, 0 otherwise
Spends more than income	1 = yes, 0 otherwise
Expect income growth	1 = yes, 0 otherwise
Substantial risk taker	1 = yes, 0 otherwise
Self-employed	1 = yes, 0 otherwise
Log of net worth	continuous
Self-insurable	1 = assets is greater than the present value of human capital, 0 otherwise
Social security income	1 = yes, 0 otherwise
Income <$35,150	1 = yes, 0 otherwise
Income between $35,150–$90,800	1 = yes, 0 otherwise
Income between $90,800–$147,050	1 = yes, 0 otherwise
Income between $147,050–$288,350	1 = yes, 0 otherwise
Income >$288,350	1 = yes, 0 otherwise
Poor health	1 = yes, 0 otherwise
Good or excellent health	1 = yes, 0 otherwise
Bequest motive	1 = very important/important, or positive, differing among spouses, weak positive, or negative = 0
Have children	1 = kids living at home or away from home, 0 otherwise
Expect to leave sizeable estate	1 = yes or possibly, 0 otherwise
Homeowner	1 = own ranch/farm/mobile home/house/condo/coop/..., 0 otherwise

Approximately 15% of these households possess adequate life insurance in 2004 and 14% have adequate life insurance in 2010. In both survey years, the majority of respondents are baby boomers followed by seniors in 2004 and GenX and below in 2010. The use of a financial planner is greater in the restricted sample for respondents versus the use of a planner in the full sample. Financial attitudes such as leaving a bequest and expecting to leave a sizeable estate did not change greatly from 2004 to 2010 in the restricted samples.

Table 4 Weighted frequencies of all respondents and censored sample (used for adequate life insurance; in %)

	2004		2010	
	All respondents (N = 4,519)	Restricted sample (N = 1,966)	All respondents (N = 6,482)	Restricted sample (N = 2,612)
Adequate life insurance (dependent)		*15.41*		*14.16*
Cohorts				
Boomers	69.18	64.36	59.58	70.81
Seniors	16.02	28.05	5.70	11.08
GenX and below	14.80	7.59	34.72	18.11
Education				
Less than high school education	9.16	3.30	9.91	4.59
High school grad	18.97	15.51	20.72	16.76
Some college	17.90	17.16	19.82	14.32
College grad	53.97	64.03	49.55	64.32
Good or excellent health	88.56	91.42	86.73	88.11
Financial professional				
Financial planner	15.51	21.78	15.68	22.16
Non-financial planner	84.49	78.22	84.32	77.84
Marital status				
Married	81.99	89.77	80.37	98.38
Single	18.01	10.23	19.63	1.62
Race				
Black	7.22	5.28	8.66	2.97
Hispanic	7.27	1.98	9.79	3.78
White	85.50	92.74	81.55	93.24
Have children	93.08	95.38	92.82	95.41
Attitudes/expectations				
Spends > income	13.12	10.89	15.45	11.35
Expect income growth	32.25	35.64	23.06	27.03
Substantial risk taker	5.54	6.27	5.03	6.22
Bequest motive	57.27	54.46	55.01	54.05
Expect to leave sizeable estate	68.41	74.92	66.84	75.41
Self-employed	39.01	47.19	32.27	42.43
Homeowner	85.10	94.06	81.27	95.14
Ability to self-insure	47.91	71.62	45.34	62.16
Social security benefits	5.95	9.57	5.93	12.43
Income				
<$35,150	12.77	6.27	12.88	2.43
$35,150–$90,800	32.25	26.40	33.94	24.59
$90,800–$147,050	14.39	14.85	17.13	17.30
$147,050–$288,350	12.46	17.16	13.38	23.51
>$288,350	28.13	35.31	22.67	32.16

5. Results

A Pearson correlation test was implemented with all variables in the regression models (e.g., between net worth and income) to avoid multi-collinearity issues. We did not detect any evidence of multi-collinearity. Two binomial logistic regression models are tested. The first, shown in Table 5, represents all respondents in the censored sample, while Table 6 shows results for only baby boomers in the censored sample.

Table 5 Regression results: DV = adequate insurance (insurance ratio ≥1)

Variables	2004 (N = 1,966)		2010 (N = 2,563)	
	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio
Adequate life insurance (dependent)				
Generation (senior)				
Boomer	−0.06	0.70	0.34**	1.62
GenX and below	−0.25	0.57	−0.20	0.95
Education (<high school)				
High school grad	0.14	1.99	0.11	1.42
Some college	0.22	2.14	−0.09	1.15
College grad	0.18	2.07	0.22	1.58
Marital status (single)				
Non-single	0.14	1.32	1.11***	9.14
Race (White)				
Black	0.42	1.17	−0.12	0.66
Hispanic	−0.68*	0.39	−0.17	0.63
Financial professional (non-financial planner)				
Financial planner	0.21**	1.53	0.14	1.33
Spends more than income	0.06	1.12	−0.08	0.84
Expect income growth	0.05	1.10	0.04	1.08
Substantial risk taker	0.03	1.06	0.07	1.15
Self-employed	−0.05	0.91	−0.02	0.95
Log of net worth	−0.01	0.99	0.00	1.00
Self-insurable	0.52***	2.84	0.25***	1.66
Social security income	0.11	1.25	0.33*	1.93
Income (<$35,150)				
$35,150–$90,800	0.04	1.33	0.19	3.70
$90,800–$147,050	0.04	1.32	0.20	3.72
$147,050–$288,350	0.27	1.67	0.63***	5.73
>$288,350	−0.11	1.15	0.09	3.34
Health (poor)				
Good or excellent health	0.03	1.06	−0.11	0.80
Bequest motive	−0.11	0.80	−0.04	0.93
Have children	0.16	1.38	0.15	1.35
Expect to leave sizeable estate	−0.09	0.83	−0.09	0.83
Homeowner	0.26	1.70	0.29*	1.79
Intercept	−2.23		−3.40	

Data are from the Survey of Consumer Finances.
*$p \leq 0.05$, **$p \leq 0.01$, ***$p \leq 0.001$.

In the first regression (see Table 5) generational groups vary significantly according to amounts of adequate life insurance in 2010. The baby boomer generation was 62% more likely than the senior generation to have adequate life insurance. The financial crisis also impacted racial disparities among household life insurance holdings. In 2004, Hispanic households were less likely than White households to have adequate life insurance; however, there was not a significant difference in 2010.

Households who can afford to self-insure, having assets greater than human capital, demonstrated greater life insurance adequacy in both survey years. In 2010, married household as compared with single households were more likely to have adequate life insurance coverage. This is consistent with what we expected, given household economies of scale.

Table 6 Regression results censored by baby boomers: DV = adequate insurance (insurance ratio ≥1)

Variables	2004 (N = 1,360)		2010 (N = 1,527)	
	Parameter estimate	Odds ratio	Parameter estimate	Odds ratio
Adequate life insurance (dependent)				
Education (<high school)				
High school grad	0.16	2.69	0.22	1.69
Some college	0.38	3.37	−0.03	1.32
College grad	0.29	3.07	0.12	1.53
Marital status (single)				
Non-single	−0.04	0.93	1.07***	8.48
Race (White)				
Black	0.64*	1.68	−0.37	0.48
Hispanic	−0.77*	0.41	0.00	0.70
Financial professional (non-financial planner)				
Financial planner	0.17	1.41	0.10	1.23
Spends more than income	0.01	1.02	0.02	1.04
Expect income growth	0.01	1.03	0.00	1.00
Substantial risk taker	0.05	1.10	0.04	1.08
Self-employed	−0.02	0.96	−0.07	0.87
Log of net worth	0.03	1.03	−0.03	0.97
Self-insurable	0.47***	2.56	0.37***	2.12
Social security income	−0.25	0.61	0.64***	3.63
Income (<$35,150)				
$35,150–$90,800	0.14	1.65	0.08	4.95
$90,800–$147,050	−0.04	1.38	0.26	5.89
$147,050–$288,350	0.31	1.96	0.87***	10.87
>$288,350	−0.05	1.37	0.30	6.15
Health (poor)				
Good or excellent health	0.05	1.10	−0.11	0.81
Bequest motive	−0.05	0.91	0.01	1.01
Have children	0.15	1.35	0.27	1.71
Expect to leave sizeable estate	−0.12	0.79	−0.12	0.79
Homeowner	0.30	1.81	0.40	2.22
Intercept	−3.11		−2.68	

Data are from the Survey of Consumer Finances.
*$p \leq 0.05$, **$p \leq 0.01$, ***$p \leq 0.001$.

Other positive predictors include receiving social security income, being a homeowner and possessing income greater than $147,000. Specifically, respondents reporting income between $147,050 and $288,350 represented the highest odds of insurance adequacy, 473% higher compared with the lowest income group (less than $35,150).

Having a financial planner was a significant and positive predictor of insurance adequacy in 2004, highlighting greater comprehensive planning in risk management than among other financial professionals. However, post the 2008 crisis, having a planner had no significant effect on life insurance adequacy.

The second regression analysis includes only baby boomers (see Table 6). As with the all respondent censored sample in 2004, the odds of a boomer having adequate life insurance were 156% greater if they can self-insure in comparison with respondents with insufficient

resources to self-insure. If an individual can self-insure, coverage may be unnecessary but adequate.

In 2004, Hispanic boomers were 59% less likely to be adequately insured than White boomer households. As expected from previous research, Black boomers were more likely to be adequately insured than White boomers in 2004; however, in 2010, there was not a remarkable discrepancy. Examining over-insurance among Black households would be a worthwhile research topic in the future.

Post 2004 we see similar results in the boomer sample. In 2010, there was a positive relation between life insurance adequacy and boomers who were married, receiving social security income, having assets to self-insure, and being within the second highest income category. Variables related to net worth and income had more of an impact post the 2008 financial crisis, whereas racial status, in addition to having substantial assets, influenced insurance adequacy before the crisis. This is not surprising because higher net worth households can draw on assets in difficult economic times more so than those with lower net worth.

6. Conclusion

Little in the literature exists that specifically examines how the financial crisis of 2008 affected life insurance adequacy among the baby boomer generation. This study aims to expand that literature by addressing the unique characteristics and challenges that define the boomer's generation and economic context, and by examining boomer life insurance adequacy before and after the financial crisis of 2008 as compared with older and younger generations.

Because life insurance is often sold not bought, we did not expect to see differences in adequacy within the survey years used in the study. However, using binomial logistic regression analyses for the 2004 and 2010 SCF years, we find compelling disparities between baby boomers and the senior generation in 2010 but not in 2004, revealing that the boomer generation is 62% more likely than the older cohort to have adequate life insurance post the financial crisis of 2008. These results were surprising, given that boomers display a higher risk tolerance than the senior generation, but positive for boomer households in a post-financial crisis economic context.

When restricting the sample to only boomers, the regression analysis demonstrated similar results to the analysis of the senior generation and the younger generation insofar as race, self-insurability, income, and marital status impacted life insurance adequacy in the survey years. For the 2004 SCF survey year, both samples reflected racial discrepancies wherein Black households are more likely to be adequately insured than White households, and Hispanic households are at a greater risk of being inadequately insured; however, there is little racial difference in 2010. Households whose assets exceed human capital, and can afford to self-insure, showed significant life insurance adequacy. In some cases when an individual can self-insure, coverage may not even be necessary, though it is certainly adequate. Married households, in 2010, are more likely than single households to be adequately insured. Social security income is also a positive predictor of life insurance

adequacy. Consistent with prior studies, social security acts as a substitute for life insurance but is also indicative of household wealth (Browne and Kim, 1993; Lewis, 1989).

The use of a financial planner is higher among households with adequate life insurance compared with the all respondents sample. Furthermore, having a financial planner compared with households without a planner is a significant predictor in the all respondent regression sample in 2004, suggesting that they are making a positive impact on household insurance behavior.

The results indicate that variables related to net worth (specifically assets used to calculate self-insurability) drive life insurance adequacy. Those who can afford to fully insure, having a ratio of insurance to insurance need greater than or equal to one, are able to hold suitable amounts of life insurance or none at all. Though there is not enough evidence to reject the null hypothesis post 2008, as boomers had better life insurance protection than the senior generation, this topic warrants further investigation and has pressing implications to financial planning practitioners.

Given longevity and changes in the definition and the delay of retirement for many, it is important to better devise ways to aid households in acquiring and sustaining adequate life insurance. Financial planning practitioners and life insurance agents can improve their services to clients by recognizing generational cohort differences and illustrating dynamic life insurance needs analysis in front of clients. This needs analysis may be different for each generation. For example, younger consumers are more interested in the price of insurance, whereas older households want to see product comparisons (LifeJacket Study, 2011). Purchase preferences of baby boomers are different than younger age cohorts. Boomers prefer face-to-face interaction, especially those households who have been divorced, are widowed or separated (Mitchell, 2011).

Sales strategies that worked to attract boomers may not work for later generations such as Generation Y. Technology innovation, in addition to the increase in speed of accessing information now than in the past, provides a new ground on which practitioners can capture both younger and older age groups. Regarding life insurance purchase via the Internet, purchase strategies tailored specifically to men may be worthwhile, because more males than females shop for life insurance online (Mitchell, 2011). For example, using language that evokes emotion, for example, “breadwinner,” or “do not leave your family unprotected,” rather than deterring consumers with morbid language is important.

Social policy implications are evident from the study. Auerbach and Kotlikoff (1991) suggest that employers may consider increasing group life insurance coverage. Other considerations to lessen potential hardships from the lack of adequate life insurance include expanding social security survivor benefits. However, both of these suggestions warrant further research and resources.

Education is key (Thomas, 2006) and insurance agents have cultivated a reputation in the industry—whether good or bad. However, agents must realize that trust precedes education, because it is a vital factor in purchasing decisions, especially among boomers. For example, Blacks are more likely than Whites to report that agents are trustworthy and females are more likely than males to have a positive view of insurance salespersons (Mitchell, 2011). Being transparent about fees and sales charges is another integral part of educating clients and building trust among all age cohorts (Thomas, 2006). Taking generational differences into

consideration can be of tremendous value to insurance agents, financial service professionals, and educators. We are in an indispensable position to help manage preferences and shape perceptions about the future.

References

Auerbach, A. J., & Kotlikoff, L. (1991). *Life Insurance Inadequacy-Evidence from a Sample of Older Widows* (No. w3765). Cambridge, MA: National Bureau of Economic Research.

Baek, E., & DeVaney, S. A. (2005). Human capital, bequest motives, risk, and the purchase of life insurance. *Journal of Personal Finance, 4,* 62–84.

Baranoff, E. G., & Sager, T. W. (2009). The impact of mortgage-backed securities on capital requirements of life insurers in the financial crisis of 2007–2008. *The Geneva Papers on Risk and Insurance-Issues and Practice, 34,* 100–118.

Beinhocker, E. D., Farrell, D., & Greenberg, E. (2009). Why baby boomers will need to work longer. *McKinsey Quarterly, 1,* 118–127.

Bernheim, B. D. (1991). How Strong Are Bequest Motives? Evidence Based on Estimates of the Demand for Life Insurance and Annuities. *Journal of Political Economy, 99,* 899–927.

Bernheim, B. D., Forni, L., Gokhale, J., & Kotlikoff, L. J. (1999). *The Adequacy of Life Insurance: Evidence from the Health and Retirement Survey* (No. w7372). Cambridge, MA: National Bureau of Economic Research.

Bernheim, B. D., Carman, K. G., Gokhale, J., & Kotlikoff, L. J. (2001). *The Mismatch Between Life Insurance Holdings and Financial Vulnerabilities: Evidence From the Survey of Consumer Finances* (No. w8544). Cambridge, MA: National Bureau of Economic Research.

Brown, J. R. (1999). *Are the Elderly Really Over-Annuitized? New Evidence on Life Insurance and Bequests* (No. w7193). Cambridge, MA: National Bureau of Economic Research

Browne, M. J., & Kim, K. (1993). An international analysis of life insurance demand. *Journal of Risk and Insurance, 60,* 616–634.

Bryant, W. K., & Zick, C. D. (2006). *The Economic Organization of the Household*. New York, NY: Cambridge University Press.

Campbell, R. (1980). The demand for life insurance: an application of the economics of uncertainty. *Journal of Finance, 35(5),* 1155–1172.

Chen, R., Wong, K. A. & Lee, H. C. (2001). Age, period and cohort effects on life insurance purchases in the U.S. *The Journal of Risk and Insurance, 68,* 303–327.

Collins, P., & Lam, H. D. (2011). Asset allocation, human capital, and the demand to hold life insurance in retirement. *Financial Services Review, 20,* 303.

DeVaney, S. A. (1995). Retirement preparation of older and younger baby boomers. *Financial Counseling and Planning, 6,* 25–33.

Farrell, C. (2013). *Don't Weep for Boomers Close to Retirement*. Businessweek.Com, 1.

Finke, M., Huston, S., & Waller, W. (2009). Do contracts impact comprehensive financial advice. *Financial Services Review, 18,* 177–193.

Fitzgerald, J. (1987). The effects of social security on life insurance demand by married couples. *Journal of Risk and Insurance, 54,* 86–99.

Fortune, P. (1973). A theory of optimal life insurance: Development and tests. *Journal of Finance, 28,* 587–600.

Gandolfi, A. S., & Miners, L. (1996). Gender-based differences in life insurance ownership. *Journal of Risk and Insurance, 63,* 683–693.

Gokhale, J., & Kotlikoff, L. J. (2000). *The Baby Boomers' Mega-Inheritance: Myth or Reality?* Federal Reserve Bank of Cleveland, Research Department.

Ibbotson, R. G., Milevsky, M. A., Chen, P., & Zhu, K. X. (2007). *Lifetime Financial Advice: Human Capital, Asset Allocation, and Insurance.* Charlottesville, VA: Research Foundation of CFA Institute.

Johnson, R. E. (1970). The college professor and the adequacy of his insurance coverage. *Journal of Risk & Insurance, 37,* 105–114.

Kirkpatrick, C., & Tennant, D. (2002). Responding to financial crisis: The case of Jamaica. *World Development, 30,* 1933–1950.

Knickman, J. R., & Snell, E. K. (2002). The 2030 problem: Caring for aging baby boomers. *Health Services Research, 37,* 849–884.

Lewis, F. (1989). Dependents and the demand for life insurance. *The American Economic Review, 79,* 452–467.

The LifeJacket Study. (2011). *Seven Key Insights to Help Close the Coverage Gap. Life Insurance*. New York, NY: Genworth Life Insurance Company.

Lin, Y., & Grace, M. F. (2007). Household life cycle protection: Life insurance holdings, financial vulnerability, and portfolio implications. *Journal of Risk and Insurance, 74,* 141–173.

Mitchell, J. O. (2011). *2011 Insurance Barometer Study*. USA: LIFE Foundation and LL Global, Inc.

Mitchel, J. O. (2003). The adequacy of life insurance coverage in U.S. households. *Journal of Financial Service Professionals, 57,* 54–63.

Mittra, S. (1995). *Practicing Financial Planning: A Complete Guide for Professionals.* Troy, MI: Mittra & Associates.

Mulholland, B. S., Finke, M. S., & Huston, S. (2012). *Understanding the Shift in Demand for Cash Value Life Insurance.* Lubbock, TX: Texas Tech University.

Munnell, A. H., Golub-Sass, F., Soto, M., & Webb, A. (2008). *Do Households Have a Good Sense of Their Retirement Preparedness? Issue in Brief, 8–11*. Chestnut Hill, MA: Center for Retirement Research at Boston College.

Rubin, D. B. (1987). Multiple Imputation for Nonresponse in Surveys. New York, Wiley.

Rosnick, D., & Baker, D. (2010). The impact of the housing crash on the wealth of the baby boom cohorts. *Journal of Aging & Social Policy, 22,* 117–128.

Scott, J. K., & Finke, M. J. (2013). The demand for disability insurance. *Financial Services Review*, *22,* 1–12.

Showers, V. E., & Shotick, J. A. (1994). The effects of household characteristics on demand for insurance: A Tobit analysis. *Journal of Risk and Insurance, 61,* 492–502.

Thomas, T. (2006). LIMRA looks at boomers and opportunities for growth. *National Underwriter/Life & Health Financial Services, 110,* 7–41.

Trese, H. (2010). Boomers in crisis. *Agent's Sales Journal, February 2010,* 24–26.

Zietz, E. (2003). An examination of the demand for life insurance. *Risk Management and Insurance Review, 6(2),* 159–191.