Understanding the Shift in Demand for Cash Value Life Insurance*

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Abstract

Life insurance is a tool that households use to hedge against the uncertainty of labor income flows over the life cycle. Overall demand for life insurance has experienced a 50-year decline. There has also been a shift away from cash value life insurance toward term life insurance over the past 15 years. The popular press and some life insurance demand literature suggest the change in demand is driven by changing demographics, shifting life insurance marketing efforts, and changes in timing of family formation. This paper attempts to identify exogenous factors influencing the demand for cash value life insurance beyond the demographic factors. Using the 1992 through 2007 Surveys of Consumer Finances, we find that the late 1990s introduction and expansion of tax-advantaged retirement accounts and education savings accounts may have contributed to reduced cash value life insurance demand. We find no significant evidence of a change in demand for cash value life insurance due to the increasing estate tax exemptions in the U.S. tax laws after 2001. There was a strong and consistent downward trend in cash value life insurance demand during this period even when significant term insurance, tax law changes and demographic effects are controlled.

1. Introduction

Households use life insurance to hedge against the uncertainty of labor income flows over the life cycle (Yaari, 1965; Fischer, 1973; Campbell, 1980). Life insurance is also used for bequest motives to help beneficiaries maximize their expected lifetime consumption (Lewis, 1989; Browne and Kim, 1993).

Overall demand for life insurance is in a 50-year downward trend (Kipling, 2010), but there has also been a shift away from cash value life insurance toward term life insurance over the past 15 years (ACLI, 2010). Table 1 shows both the decline in overall life insurance demand and the ongoing trend of consumers switching from cash value life insurance to term life insurance over the past 25 years. The popular press and some life insurance demand literature suggest the changing demand is driven by changing demographics and marketing issues. Treaster (1998) suggests that the increasing number of two-income households is reducing demand. Maremont and Scism (2010) indicate American life insurance companies are changing the focus of their sales efforts away from the middle-class market they have focused on for most of their history and toward selling large permanent life insurance policies to wealthier households for estate-tax planning purposes. Chen, Wong, and Lee (2001) suggest that changes in timing of family formation may be reducing the demand for life insurance.. Advantages of cash value life insurance such as its automatic savings component and tax advantages for estate planning may mitigate some of the decrease in demand (Aizcorbe, Kennickell, and Moore, 2003; Milevsky, 2006).

(Insert Table 1 here)

Other exogenous factors may be influencing the demand for cash value life insurance beyond the demographic effects. Over the past two decades there has been a concerted effort by

the U.S. Congress to introduce tax-advantaged savings tools using the U.S. tax code to encourage increased savings for retirement and higher education. There has also been an effort by Congress to reduce the tax burden on higher wealth families with tax laws introduced that significantly reduced the estate tax in the U.S.

Since cash value life insurance has both insurance and tax-advantaged benefits, these major tax law changes have the potential to affect the demand for cash value life insurance. The introduction of tax-advantaged savings plans allowed households to separate the life insurance decision from the tax-advantaged savings decision while also allowing separation of the education funding and retirement funding decisions. The estate tax exemption level and tax rate changes indicated in Table 3 reduce the amount of assets subject to the estate tax after 2001, in turn reducing the need to find cost-effective ways to maximize estate transfers. Using the 1992 through 2007 Surveys of Consumer Finances (SCF) and logistic regression, we examine the impact that the introduction of tax-advantaged retirement plans and education savings plans in the late 1990s and the changes in estate tax laws in the first decade of the 2000s are having on cash value life insurance demand.

This article is organized as follows: In Section 2 we look at the underlying theory of insurance demand and tax sheltering and discuss the purpose and rationale of our analysis. In Section 3 we develop our framework for conducting the analysis. Section 4 examines our data, model and variables. We then present our results in Section 5 and follow that with our discussion and conclusions in Section 6.

2. Background

2.1. Purpose

The purpose of this study is to examine if the decrease in demand for cash value life insurance is a function of the general annual downward shift in demand for life insurance or if it is due in part to the impact of exogenous tax law changes which occurred during the late 1990s and early 2000s, the period covered by this study.

While there has been considerable coverage in the popular press concerning the decline of the demand for life insurance (Treaster, 1998; Kipling, 2010; Maremont and Scism, 2010), we find very limited discussion in the academic literature. Chen, Wong, and Lee (2001) find a reduction in the purchase of life insurance in the U.S. over the period 1940 to 1996, especially among younger households. They speculate that the higher share of single households and the trend toward later marriages and resulting later child births are the leading causes of the decline. Studies by Lin and Grace (2007) and Frees and Sun (2010) indicate term and cash value life insurance are substitutes based up cross-sectional data, but they do not investigate the trend from longitudinal perspective so we have no indication from their work if this substitution effect is directly impacting cash value life insurance demand over time. Aizcorbe, Kennickell, and Moore (2003) indicate that cash value life insurance continued to decline between the 1998 and 2001 SCFs. They mention that while cash value life insurance promotes regular savings, especially for younger families, it is competing with an expanding set of alternatives for investing. They also indicate that some of the demand for cash value life insurance among wealthier households may be due to estate planning issues.

We believe this is the first study that attempts to directly investigate the possible link between the declining demand for cash value life insurance and the changing field of tax-advantaged investment vehicles. *We believe this article will add to the literature by better identifying causes for cash value life insurance decline. Financial advisors may find this*

information helpful in assisting clients to better understand life insurance as a tool in their overall plan. These findings may help policymakers better understand the interplay of various financial tools.

2.2. Rationale

Several major tax law changes occurred in the past 20 years which have the potential to impact the demand for permanent life insurance. Some of these laws introduced new savings vehicles for both retirement and education funding that include many of the tax advantages that have been found in cash value life insurance for many years. These laws also increased the limits on tax deferred savings vehicles. Another new law increased over multiple years the amount of assets exempted from transfer taxes due to death. Life insurance is often used in estate planning to replace assets lost to estate taxes.

Cash value life insurance has provided tax-advantages since it was exempted from income taxation during the introduction of the U.S. income tax in 1913 (Maremont and Scism, 2010). Considered a tax-advantaged method of savings in the U.S. because the savings portion of cash value life insurance grows tax-deferred until surrendered or withdrawn, Harrington and Niehaus (2004) indicate the tax benefits are similar to retirement accounts where the contributions are not tax deductible but earnings are the tax-deferred. Since all premiums paid into the policy are considered the basis for the cash in the policy, they also indicate that the tax-deferral benefits of cash value life insurance are higher than other tax-deferred savings plans. This is due to the inclusion of the cost of insurance in the basis, thus overstating its tax basis. This higher basis results in a lower tax on the savings portion of the policy should the owner

withdraw or surrender the cash value from policy. They argue that this tax advantage increases the demand for cash value life insurance.

There are costs and risk to access all of the cash in a cash value life insurance policy. Premiums paid for the policy are made with after-tax dollars. Withdrawing funds through a surrender from the policy is first considered a return of basis which is always available tax-free. For that portion of the surrender that is above the original basis, the proceeds are treated like interest income and taxed as ordinary income. To avoid this taxation, policy owners can borrow money from the insurance company, using the cash value in their policy as loan collateral. There is an interest cost associated with these loans which may be desirable compared to the income tax required to access the earnings on the cash value through a surrender. These loans avoid current taxation since it is the insurance company's money that is being used by the policy owner, not the cash value of the policy. If the loan is repaid by the policy owner before death of the insured or by the death benefits at the time of death, no income taxation occurs because no surrender of earnings has occurred and death benefits are usually tax-free.

The risk in accessing the cash value through policy loans exists due to the immediate taxation of loan proceeds at the household's marginal tax rate should the policy lapse due to insufficient remaining funds to pay the cost of insurance. In this situation, the household suffers the tax consequence of all gains in the policy, most of them already spent through policy loan withdrawals, becoming immediately taxable as ordinary income in the year the policy is lapsed.

A major tax-advantaged tool introduced in the past two decades is the Roth Individual Retirement Account (Roth IRA). Roth IRAs were established by the Taxpayer Relief Act of 1997 (TRA-1997) and further refined by the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA-2001) to give individuals another tool for tax-preferred retirement

savings. After-tax contributions to a Roth IRA grow tax-free as long as the account has been in existence a minimum of five years and any withdrawals occur after age 59-1/2. After these minimum requirements are met, all funds in these accounts are tax-free and do not count as income at the time of withdrawal. Therefore, they do not add any tax burden to the household as they are spent (Horan, Peterson, and McLeod, 1997).

These features of Roth IRAs are similar to the tax advantages cash value in life insurance. The major difference between the two tools is that Roth IRAs have neither the interest cost nor the risk of unexpected income taxation inherent in cash value life insurance to fully access the funds in the tool during the retirement years. Therefore, Roth IRAs are more efficient as a retirement funding tool than cash value life insurance.

Retirement funding was also enhanced by the increase in tax-deferred savings limits in Traditional IRAs, Keoghs, SEP-IRAs, SIMPLE-IRAs and 401(k), 403(b), and 457 employer-sponsored plans. These increases were included over the years in many of the tax reform acts that followed the introduction of each type of account, while EGTRRA-2001 and subsequent tax legislation made many of the limit increases subject to future cost-of-living changes. This eliminated the need to increase the specific limits for each type of plan periodically to keep up with inflation.

Education savings was greatly enhanced by the Small Business Job Protection Act of 1996, the TRA-1997 and the EGTRRA-2001. 529 college savings plans, named for Section 529 of the Internal Revenue Code, were created by the U.S. Congress in 1996 to give households the ability to save for higher education in a tax-preferred manner. 529 plans allow individuals and married couples to set aside after-tax savings that is allowed to grow tax-deferred until used for qualified education expenses. An estate tax benefit arises from 529 plans due to all funds gifted

to the 529 plan being considered completed gifts, therefore outside the taxable estate of the deceased sponsor. Unlike life insurance, 529 plans also offer sponsors the ability to extend the estate tax and tax-deferral benefits to multiple generations through the ability to name successor beneficiaries and successor sponsors.

Coverdell Education Savings Accounts (ESA) were created by the TRA-1997 to update the older Education IRAs through increased annual contribution limits and the inclusion of elementary and secondary school expenses as eligible tax-free expenditures.

Major changes to the wealth transfer tax laws were implemented in EGTRRA-2001 to raise the exemption limits for estate, gift, and generation-skipping transfer taxes, eventually repealing these taxes in 2010. These taxes returned in 2011 at 2001 levels due to a "sunset" clause in the original legislation. EGTRRA-2001 gradually raised the exemption limits from $675,000 in 2001 to $3.5 million in 2009, before repeal of the estate taxes in 2010. In addition, the legislation gradually reduced the top estate tax rate from 55 percent in 2001 to 45 percent in 2009, before eliminating the estate tax in 2010.[1]

From these tax law changes, the new and enhanced tax-qualified retirement and education saving instruments are potential substitutes for the tax-advantaged savings capabilities that has long been a part of cash value life insurance.

In addition to tax law changes, the substitutability of term life insurance for permanent life insurance as well changes in its cost and availability as may be impacting the demand for cash value life insurance. Most risk and insurance as well as personal finance textbooks indicate that the main difference between term and cash value life insurance is the existence of the

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[1] Note that while this article was completed after the Taxpayer Relief Act of 2010 reinstated the estate, gift, and generation-skipping transfer taxes with different exclusion amounts and top tax rates for taxable estates, the recent changes are not considered in this paper as they occurred outside the time period of interest. A future robustness test will be to include the 2010 SCF in this analysis to investigate the further impact of the tax-advantaged savings and estate tax law changes.

savings component in cash value life insurance, while the life insurance portion is the same for both types of policies (Harrington and Niehaus, 2004), thus making term and cash value life insurance substitutes. Lin and Grace (2007) find a negative relationship between demand for term life insurance and cash value life insurance, indicating term life insurance is a substitute for cash value life insurance. Frees and Sun (2010) extend Lin and Grace's work by using a two-part model, in turn showing that term and cash value life insurance are substitutes for the other type when held separately by a household but are complements when the household holds both types of life insurance together.

Brown and Goolsbee (2002) find empirical evidence that suggests the reduced search costs through increased use of the Internet reduced the cost of term insurance during their study period from 1995 to 1997 while cash value life insurance policies, whose costs are not compared on Internet web sites, remained level. Maremont and Scism (2010) indicate, referring to LIMRA industry data, that middle-class households are purchasing more term insurance to meet their life insurance needs due to the declining cost of term insurance relative to permanent insurance. In addition, they suggest the decline in available life insurance agents that serve the middle-class market is making online purchases more attractive, especially to younger households.

2.3. Research Question

Given the major tax law changes that have occurred over the past 15 years and tax advantages they contain that are similar to the tax advantages cash value life insurance has enjoyed for many years, we ponder the impact of these changes on the demand for cash value life insurance. Have the exogenous changes in the late 1990s and early 2000s in the tax-qualified

savings and estate tax laws with the resulting introduction of new tax-advantaged savings tools affected the demand for cash value life insurance by households in the U.S.?

3. Framework

3.1. Conceptual Model

Two main areas of theory guide our work. First, we look to theoretical models of the demand for life insurance to inform us of the rational behavior we expect from the household facing uncertainty of the household's income stream. Second, we look to the theory of portfolio choice in the presence of differential taxation to inform us of the rational behavior of the household making decisions in the face of current and changing tax legislation.

Well established theoretical models of the demand for life insurance (Yaari, 1965; Fischer, 1973; Campbell, 1980) view life insurance as a means for reducing the uncertainty in the household's income stream related to the premature death of the household's primary wage earner. Campbell (1980) indicates life insurance is a hedge against the uncertainty of labor income flows and Chen, et al. (2006) describe life insurance as the perfect hedge for human capital – only wages or life insurance will pay out at the end of the year. In addition to human capital replacement, Lewis (1989) suggests that life insurance demand is a function of the beneficiary's desire to smooth expected lifetime consumption; therefore, their desires need to be accounted for.

Building on the theoretical foundation of Auerbach and King (1983), Poterba and Samwick (2002) show that the change in marginal tax rates impact household asset allocation to tax advantaged assets and accounts. They show that the probability of a household owning tax-advantaged assets like tax-exempt bonds or assets in tax-deferred accounts is positively related to

the household's tax on ordinary income. Though not significant at the α=0.5 level, they do show in their empirical findings an increasing probability of ownership of other assets (mainly consisting of cash value life insurance). Poterba, Venti, and Wise (1996), focusing on savings in IRAs and 401(k)s along with other assets while not excluding cash value life insurance, show a significant increase in overall savings from 1984 to 1991 by having these tax-deferred plans available. Engen, Gale and Sholz (1996) suggest that savings will decline in the short run as households divert other savings assets to tax-sheltered savings, but in the long-run tax-advantaged savings plans increase national savings significantly.

The literature on the combination of tax-advantaged savings inside cash value life insurance is more limited in the academic literature. Walliser and Winter (1998) show evidence from Germany that tax-sheltering demand increases the demand for cash value life insurance. Milevsky (2006) indicates that the savings component of cash value life insurance with its corresponding tax-deferred growth leads to the product being useful for non-human capital reasons. He points to cash value life insurance being a good tax-shelter for accumulating savings to pay estate taxes.

3.2. Hypothesis

Given the understanding that the demand for cash value life insurance is predicated on the existence of a desire to hedge against the uncertainty of labor income flows, meeting bequest motives, and the efficient transfer of estates, we hypothesize that exogenous shifts in tax-sheltering instruments and estate tax laws have contributed to the reduction in demand for cash value life insurance, independent of demographic shifts in the U.S. over the past 20 years.

4. Data and Methods

4.1. Data

This study uses the first implicates of the 1992, 1995, 1997, 2001, 2004, and 2007 Survey of Consumer Finances (SCF) public data sets. The SCF data provides comprehensive financial and demographic data of U.S. households. Conducted triennially for the survey sponsors, the Board of Governors of the Federal Reserve System in cooperation with the Income Division of the Internal Revenue Service, the survey is administered by the social science and survey research organization NORC at the University of Chicago. The data from each survey year consists of two portions: a nationally- representative, geographically based random sample; and an additional set from IRS income tax data that oversamples high net worth households. While the SCF is cross-sectional in nature for each survey year, the data is highly comparable over time due to the consistency of survey questions since 1989. Thus, following Poterba and Samwick (2002), we compare household behavior as captured in the SCF of several major tax law changes that occur during this period: first, the tax law changes that introduced Roth IRAs and 529 college savings plans and revamped education IRAs into Coverdell ESAs in 1998, and the major estate tax reforms authorized by EGTRRA in 2001. The total numbers of households included in each data set after final adjustments for confidentiality purposes are: 3,906 (1992); 4,299 (1995); 4,305 (1998); 4,442 (2001); 4,519 (2004); and 4,418 (2007). For our study, the sample from 2007 was reduced by one household due to a discrepancy where the household indicated it did not own cash value life insurance, yet an amount was entered under the amount of cash value life insurance owned.

The combined dataset containing all years includes 25,888 households. For analysis purposes, all income and net worth values were converted to 2007 dollars using Bureau of Labor Statistic Consumer Price Index values (BLS, 2011).

The weights resident in each SCF data set, which provide a measure of the frequency with which families in the population could be found that are similar to the families in the samples, were used to calculate descriptive statistics.

4.2. Model

The demand for life insurance is a function of its intended use. Zietz (2003), in a review of life insurance research spanning a half century, identifies a number of predictors, both demographic and economic, that impact life insurance demand. For general life insurance demand, whether term or permanent, significant demographic predictors include age, bequest motive, education, employment, children, marital status, and race. Significant financial and economic predictors include homeownership, income, net worth, and occupation/employment.

Term life insurance is a substitute for cash value life insurance in meeting the human capital replacement needs of the household (Lin and Grace, 2007; Frees and Sun, 2010). Therefore we control for the substitution effect by including ownership of term life insurance in our model.

Milevsky (2006) indicates that another significant indicator of life insurance demand is health status of the insured household member. Demand for cash value life insurance is a function of the demand placed on it as a tax sheltering investment. Brown and Poterba (2006) model the demand for variable annuities, a type of cash value life insurance, as a function of

marital status, age, income, net worth, risk aversion, pension, ownership of a substitute tax-sheltered retirement vehicle, and whether the household has children.

Our goal is to appropriately model the demand for cash value life insurance with the intent of testing the hypothesis that exogenous shifts in the insurance market are affecting the demand for cash value life insurance, not to re-test if any of the above variables are related to cash value life insurance demand. Based upon our review of prior literature, in conjunction with variables that are available in the 1992 through 2007 Surveys of Consumer Finances, we use the following logistic regression model to model the demand for cash value life insurance:

$$OwnCV = \beta_0 + \beta_1(QSP\text{-}post98) + \beta_2(HighNW\text{-}post01) + \beta_3(OwnTerm) + \beta_{4\text{-}8}(1995\text{-}2007$$
$$yr\ dummies) + \beta_{9\text{-}13}(age\ groups{<}75) + \beta_{14\text{-}17}(income\ quintiles{>}20\%) + \beta_{18}\ (net$$
$$worth\ percentile{>}{=}70\%) + \beta_{19\text{-}21}(education{>}HS) + \beta_{22\text{-}23}(health\ status{>}Fair/Poor) +$$
$$\beta_{24}(risk\ averter) + \beta_{25}(owns\ QSP) + \beta_{26}(owns\ QRP) + \beta_{27}(has\ pension) +$$
$$\beta_{28}(married) + \beta_{29}(children) + \beta_{30}(self\text{-}employed) + \beta_{31}(homeowner) + \beta_{32}(bequest$$
$$motive) + \beta_{33}(expect\ sizable\ estate) + \beta_{34\text{-}36}(non\text{-}White\ race\ groups)$$

It should be noted that we use this model for estimating the interaction of year groups with qualified savings plans (QSP) and year groups with net worth (HighNW). We use the same model in a modified form to estimate the odds ratios for comparing the predictor variables across survey years. The model for comparing individual years eliminates the interaction variables, QSP-post98 and HighNW-post01, and divides the net worth into deciles and vingtiles to better examine the impact of higher net worth on demand for cash value life insurance separate from the interactions.

4.3. Variables

In this model, the dependent variable is demand for cash value life insurance by households. OwnCV is a binary variable equal to 1.0 when the household owns cash value life insurance. Like Brown and Poterba (2006), we divide age into bands to capture the non-linear predicted effect of life insurance need and life cycle stage.

Because we hypothesize that demand for cash value life insurance is affected by the changes in estate tax laws implemented by EGTRRA, we separate income into quintiles and net worth into a combination of quintiles (the lower 60 percent) and vingtiles or 5% bands (the upper 40 percent) since the households with higher income and net worth are most likely to encounter changing estate tax planning needs. We chose to separate the net worth variable into the combination of quintiles and vingtiles to better identify which portion of the population was likely affected by the shift in estate tax exemption.

Education is set to examine the differences among those with less than a high school education and those with a high school diploma, some college, or a college degree or higher. The respondent health status is reduced from four categories in the SCF data to three in the sample by combining Fair and Poor into one category in order to understand the differences between those who can obtain life insurance more easily than those who would experience some risk rating or denial of coverage. Attitude toward financial risk is reduced to a dummy variable to compare those survey respondents who identify themselves as risk averters versus those willing to take some level of risk.

Because we also hypothesize that the demand for cash value life insurance is affected by the tax law changes that introduced Roth IRAs and 529 and Coverdell ESAs in the late 1990s, we separate tax-qualified savings for both education and retirement and the presence of a pension (defined benefit plan) into three categories. Based upon the categorization of various accounts in

the multiple SCFs in our study, the variable "owns a qualified savings plan" includes ownership of traditional IRAs, Roth IRAs, and education savings plans (529 and/or Coverdell ESA). The variable "owns qualified retirement plan" includes all defined contribution plans. The "has defined benefit plan" variable captures all employer-provided pension plans. Each variable is introduced as a dummy variable.

Married, have children, self- employed, homeowner and desire to leave a bequest are included as control variables following the prior literature (Zietz, 2003).

Finally, Finke and Huston (2006) find that lower income black households are approximately 200% more likely than non-black households to own cash value life insurance in 2004, up from approximately 150% in 1995. Gutter and Hatcher (2008) find that black households insure a lower portion of their human capital than white households. To control for these differences due to race, we include race by categorizing it into the four categories list in the various SCFs for race: white, black, Hispanic, and other.

All variables are listed in Table 2.

(Insert Table 2 here)

We do not control for the transition by the life insurance industry from the 1980 Commissioners Standard Ordinary (CSO) mortality tables to the 2001 CSO mortality tables. While the new tables were introduced during the period of our study, Our analysis of the transition to the new tables indicated several issues that likely resulted in the old tables being the basis for the policies issued over our study timeframe. In particular, the IRS did not require the new tables to be used until January 2009. See Mercado (2008) for more details.

5. Results

5.1 Descriptive Analysis

The descriptive analysis in Table 2 confirms the findings from prior literature. We see that similar to the general U.S. population, the percent of nationally representative households in the data sets indicates a monotonic decline in the ownership of cash value life insurance between 1992 and 2007 in almost all age groups. Interestingly, there is a near parallel reduction in the joint ownership of term and cash value life insurance over this period. There is also a shift in the age group demographic over this study period as suggested by Chen, Wong, and Lee (2001). The baby boomers, those born from 1946 through 1964, were part of the two lowest categories in 1992 (ages 28 to 46) and transitioned in 2007 (ages 43 to 61) into predominantly the 45 to 54 and 55 to 64 age categories. We see a tremendous drop in the ownership of CVLI in the Age 44 and below categories, with less than half as many households in 2007 in those categories owning the cash value life insurance as their predecessors did in 1992. The decline in the middle categories over the ensuing years is less dramatic with the highest categories experiencing the least amount of decline. Our analysis indicates potentially different results than Chen, Wong, and Lee (2001) since the age categories that the baby boomers occupy over our analysis timeframe do not drop as precipitously as they suggest. In 1992, approximately 32% of baby boomer households owned cash value life insurance. By 2007, baby boomer households owning cash value life insurance had declined to approximately 28%. It appears that while baby boomers may own less cash value life insurance than the prior generation, they are maintaining a fairly stable level of ownership over time.

All education levels indicate a decline in ownership of cash value life insurance over the period of interest. However, those with high school or higher levels of education show the greatest decline in cash value life insurance ownership.

As expected, those with the higher levels of health relied less on cash value life insurance as the years progressed than did those with the lower levels of health. While not the focus of this study, we speculate that this lesser decline in ownership of cash value life insurance in the lower health levels may be due to a desire to retain as much life insurance as possible since additional insurance may not be readily available due to health issues.

All of the household demographic and desire variables show monotonic or near monotonic declines over the ensuing years. It is interesting to note that both the Desire to Leave a Bequest variable and the Sizable Estate variable show near monotonic declined from 1992 to 2004 with the desire to leave a bequest indicating a small uptick in 2007. We question the rationality of those households indicating these desire or expectations then reducing ownership of a tool well suited for both the bequest motive and the estate tax issues.

When we examine the change in the number of households owning cash value life insurance based upon net worth, we see differing changes across net worth strata. The lowest decile experienced a modest amount of decline over the years, with an uptick in the final six years of the study. The 40th to 85th percentiles show similar monotonic or near monotonic decline. The results for the 85th to 90th percentile and 90th to 95th percentile indicate interesting results. The 85th to 90th percentiles show varying yet relatively constant cash value life insurance ownership. The vingtile for the 90th to 95th percentiles actually indicates overall increasing demand over the time frame of our study. While subject to estate taxes at these levels, we find that the highest vingtile does not show an increasing demand but has a similar decline in households owning cash value life insurance similar the the 40th to 85th percentiles.

5.2 Logistic Regression Analysis

Table 3 compares the nominal and real dollar levels of estate tax exemptions over our period of interest. In addition, it indicates the net worth vingtile in which the estate tax exemption fell for that particular year, all in 2007 dollars. Net worth vingtiles indicate that for our study period, the range of the vingtile where the prevailing estate tax exemption limit fell was the vingtile with the 70th to 75th percentiles for all surveys except the 2001 survey. In that year, the vingtile containing the estate tax exemption was the 65th to 70th percentiles, with the exemption amount falling in the middle of that vingtile. This is understandable since in constant dollars, the estate tax exemption in 2001 was the lowest in the timeframe of our study. For consistency purposes in looking at the impact of the changing estate tax laws after 2001, we chose to include only the top 30% of households in all surveys as being potentially subject to estate taxes.

(Insert Table 3 here)

Table 4 compares the logistic regression analysis of each individual SCF survey. Of importance to our study, we confirm that younger households are less likely than the oldest households to own cash value life insurance as our study progresses through the years. In 1992, we see no significant difference between age cohorts, but significant differences begin to appear in the younger cohorts in the mid-1990s and in older cohorts starting in 2001.

(Insert Table 4 here)

Income is not a consistent predictor of cash value life insurance ownership over this time period, but net worth vingtiles are all highly significant indicators of cash value life insurance ownership. Several key findings to note in Table 4 regarding net worth: in all years, there is a highly significant relation between net worth level and likelihood of owning cash value life insurance as compared to the lowest quintile of net worth. It should also be noted that the

difference between net worth cohorts is decreasing over time with the exception of 2001 which seems to be an anomaly year to be discussed below. The decrease originally exists in the lower quintiles, but affects all cohorts by the final year of the study.

Similar to our findings for baby boomers in the descriptive statistics, our results in the logistic regression suggest the baby boomers are less likely to own cash value life insurance than the oldest households, though the results are for the most part not significant over the study period. We do find a significantly lower likelihood of the cash value life insurance ownership in the generation following the baby boomers as observed in the youngest age cohort in 2001 and expanding into the next lowest age group in the subsequent years.

As expected, many of the demographic variables show significance with a higher likelihood of owning cash value life insurance than those households not sharing that same demographic characteristic.

It is important to note that over our study period, we see a greater likelihood of owning cash value life insurance when the household owns qualified savings plans. These include education IRAs and traditional IRAs in the early years with the addition of Roth IRAs and 529 plans in the later years. This higher likelihood of ownership is also true of those households that own employer-sponsored defined contribution (DC) plans. The higher likelihood of owning cash value life insurance is relatively stable over the years even when the overall demand is declining.

5.3 Interaction Analysis

In Table 5, we examine the logistic regression of the combined dataset of all survey years first without interaction variables. We then introduce two interaction variables of interest to explore the relationship between the likelihood of owning cash value life insurance before and

after major tax law changes. First, we interact the ownership of qualified savings plans, which include traditional IRAs, education IRAs, and Keogh plans through 1998 and add 529 plans, Coverdell ESAs and Roth IRAs after 1998, with the year variables so we can examine the impact of these new tax-sheltered savings plans on the likelihood of owning cash value life insurance after 1998. Second, we create an interaction variable by combining households in the highest 30% of net worth, those more likely to have estate tax issues, and interacting this group with the year variable so we can examine the impact of the estate tax law changes post-2001 on the likelihood of ownership of cash value life insurance after 2001.

The two regression analyses were run on the combined data set, one without the interaction variables and one with them. We find very little impact of the additional interaction variables in the logistic regression equation. The pseudo R^2 increases from 0.2336 to 0.2338 after introducing the interaction variables into the equation. Also, no variables change their level of significance as a result of the added interaction variables.

We see important findings in Table 5. First, we see that all years are highly significantly different from 1992 in the likelihood of owning cash value life insurance. The likelihoods decrease monotonically with each successive survey, with households less than 50 percent as likely to own cash value life insurance in 2007 as in 1992. We also see that the top 30 percentile of net worth is not significantly different from the lowest net worth quintile. Next, education appears to have little influence on the likelihood to own cash value life insurance. We see that the existence of owning retirement plans also indicate a higher likelihood of owning this type of insurance. And similar to the results from the unpublished study by Finke and Huston (2006), we see that blacks are a little over 60 percent more likely to own cash value life insurance than whites while Hispanics and other races are less likely.

Our interaction variables both confirm and fail to confirm our hypothesis with regard to tax law changes and the resulting demand for cash value life insurance. We find that there is a significant decline in the demand for cash value life insurance after the introduction of Roth IRAs, 529 plans, and Coverdell ESAs. Households are approximately 11.5 percent less likely to own cash value life insurance in the years since the tax laws introduced these financial instruments.

We fail to find evidence that the changing estate tax laws have impacted the demand for cash value life insurance since the phase in of the higher exemptions began in 2002.

(Insert Table 5 here)

6. Discussion and Conclusions

In our analysis, we find evidence that exogenous changes beyond changing demographics are affecting the household portfolio decisions to own cash value life insurance. Since the introduction in the late 1990s of Roth IRAs, 529 plans, and Coverdell ESAs, we see a significant reduction in the likelihood of households to own cash value life insurance while controlling for demographic impactors and household desires.

Harrington and Niehaus (2004) suggest in their discussion on cash value life insurance that the overstatement of tax basis of a policy increases demand. Our analysis finds no evidence to support or refute this statement. While the tax advantage of higher policy basis does exist under current U.S. tax laws, our findings suggest the new tax-advantaged savings vehicles are likely overcoming this advantage as households come to understand they can get tax-free spending with neither the cost of policy loans nor the risk of unintended taxation by improper policy maintenance.

As industry data indicates, the overall demand for life insurance continues to trend downward as seen in Table 1, with permanent policies also decreasing as an overall portion of the total insurance demand. The findings of Frees and Sun (2010) that ownership of cash value policies is associated with greater ownership of term insurance are important to our findings. Much like a "gateway drug" is associated with the willingness to use other drugs, cash value life insurance is a gateway tool to the use of term life insurance. We conclude from our analysis that the introduction of new tax advantaged savings tools reduced the demand for cash value life insurance and this is also having an effect on the overall demand for all life insurance.

Although we hypothesize that the increasing exemption limits due to changing estate tax laws will lower the demand for cash value life insurance, we fail to find evidence that demand has indeed dropped due to these tax law changes. One explanation may be present in the net worth descriptive statistics shown in Table 6. The estate tax exemption increased in nominal terms by 12.5% from 1992 to 2001 and by 233% from 1992 to 2007. However, we see that the real change in 2007 dollars was a decrease of nearly 11% from 1992 to 2001 and an increase of only about 128% over the entire study period. Using constant 2007 dollars indicates a very different impact of the changes in exemptions.

In addition, the real mean net worth of households in all quantiles in our study have increased significantly during this timeframe, with the net worth of those households that are likely subject to estate taxes experiencing the greatest increase in real net worth. We see that while those households below the estate tax exemption limit saw an average increase in net worth of approximately 74%, those households likely subject to estate taxes in the 75th to 95th percentiles experienced an average increase in net worth that was 15 to 43 percent higher. The highest vingtile experience a real net worth increase similar to the lowest 75 percent of

households. This change in real net worth in these higher net worth households is likely

increasing demand for cash value life insurance at the very same time that exemption limit

increases should be lowering demand, resulting in no significant change in demand.

Our findings indicate that households and their advisors are making more rational choices

of the tools they use to fund their various lifetime goals by choosing more cost effective and less

risky tools for meeting their retirement and education funding needs. Further analysis using

household panel data rich in life insurance variables, including the type of advisor, if any,

assisting the household and changing household financial sophistication over time will allow

better exploration of those factors contributing to the declining demand for cash value life

insurance.

(Insert Table 6 here)

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TABLE 1: Permanent Life Insurance

As Percent of All Individual Life Insurance

Year	All Individual Life Insurance		Permanent Life Insurance	
	Policies (000s)	Face Amount ($millions)	Percent of All Policies	Percent of Face Amount
1985	17,637	$911,666	78.0	57.0
1986	17,116	934,010	77.0	55.0
1987	16,455	986,984	75.0	55.0
1988	15,796	996,006	81.0	56.0
1989	14,850	1,020,971	80.0	53.0
1990	14,199	1,069,880	79.0	52.0
1991	13,583	1,041,706	78.0	50.0
1992	13,452	1,048,357	76.0	49.0
1993	13,664	1,101,476	75.0	56.0
1994	13,835	1,057,233	73.0	52.0
1995	12,595	1,039,258	75.0	56.0
1996	12,022	1,089,268	Information Unavailable	
1997	11,734	1,203,681	66.4	46.0
1998	11,559	1,324,671	66.2	50.5
1999	11,673	1,399,848	62.1	42.4
2000	13,345	1,593,907	52.1	42.9
2001	14,059	1,600,471	57.0	36.8
2002	14,692	1,752,941	50.6	31.4
2003‡	13,821	1,772,673	52.8	29.5
2004‡	12,581	1,846,384	58.5	29.8
2005‡	11,407	1,796,384	59.9	29.0
2006‡	10,908	1,813,100	58.9	28.7
2007‡	10,826	1,890,989	55.4	27.8
2008‡	10,207	1,869,554	56.7	26.7
2009‡	10,139	1,744,357	58.9	25.9

Source: American Council of Life Insurers 2010 Fact Book

Special thanks to ACLI for annual percentages

‡Includes fraternal benefit societies.

TABLE 2: Descriptive Statistics: Own Cash Value Life Insurance - US Population Weighted Sample Statistics by Year

Variable	1992	1995	1998	2001	2004	2007	Combined
Own Cash Value Life Insurance	36.01%	32.02%	29.59%	28.27%	25.65%	23.92%	28.98%
Own Term Life Insurance	33.10%	28.87%	24.14%	22.49%	22.43%	19.45%	24.58%
Age Category							
< 35	26.73%	22.46%	18.20%	14.28%	12.71%	12.68%	17.83%
35 - 44	37.12%	29.59%	28.50%	27.44%	20.94%	17.22%	26.80%
45 - 54	39.16%	37.71%	32.82%	31.12%	27.74%	24.39%	31.41%
55 - 64	43.02%	36.56%	35.39%	35.18%	32.50%	34.04%	35.73%
65 - 74	40.77%	38.38%	38.27%	38.60%	37.15%	36.70%	38.30%
75+	35.55%	36.11%	33.48%	33.42%	34.31%	27.10%	33.11%
Income Quintiles (2007 $)							
< 20th	19.21%	19.31%	17.05%	16.65%	16.49%	13.79%	17.31%
20th - 40th	33.14%	27.65%	26.09%	25.09%	22.99%	20.64%	25.51%
40th - 60th	45.09%	39.40%	32.44%	33.05%	30.50%	29.66%	34.60%
60th - 80th	54.09%	46.70%	44.94%	39.90%	33.48%	33.68%	40.89%
> 80th	64.43%	58.56%	52.42%	46.47%	51.22%	54.52%	51.65%
Net Worth Quantiles (2007 $)							
< 20th	13.60%	12.28%	10.89%	7.07%	8.50%	8.33%	10.19%
20th - 40th	35.38%	28.72%	22.90%	25.95%	21.82%	21.75%	26.17%
40th - 60th	45.57%	41.42%	38.96%	36.00%	32.34%	30.42%	37.75%
60th - 65th	50.85%	48.61%	45.93%	46.19%	41.61%	38.98%	42.45%
65th - 70th	69.18%	61.90%	45.71%	44.89%	41.38%	42.81%	46.21%
70th - 75th	55.55%	58.13%	56.07%	41.03%	42.25%	35.45%	46.92%
75th - 80th	58.21%	51.46%	51.35%	55.57%	40.32%	41.62%	47.90%
80th - 85th	61.23%	55.18%	53.03%	50.03%	55.73%	51.30%	50.94%
85th - 90th	52.74%	63.76%	55.34%	49.90%	50.55%	50.61%	52.95%
90th - 95th	53.60%	55.64%	66.00%	57.69%	52.65%	66.19%	59.25%
> 95th	62.60%	59.31%	52.86%	54.16%	45.19%	44.33%	52.04%
Education Level							
< HS	16.51%	16.72%	18.30%	17.74%	13.60%	11.18%	15.75%
HS Degree	34.42%	29.82%	27.33%	23.27%	22.24%	22.42%	26.40%
Some College	37.31%	31.58%	26.99%	28.54%	23.25%	20.34%	27.63%
College Degree +	44.88%	39.24%	35.95%	34.56%	31.96%	29.49%	35.42%
Respondent Health Status							
Excellent Health	40.50%	34.15%	33.50%	28.27%	25.99%	26.03%	31.39%
Good Health	35.65%	33.84%	30.99%	30.02%	27.34%	23.73%	29.86%
Fair or Poor Health	30.12%	25.92%	21.74%	24.79%	22.03%	21.76%	24.25%
Respondent Risk Aversion							
Risk Averter	30.77%	24.86%	23.60%	22.79%	19.83%	17.68%	23.22%
Household Demographics & Desires							
Owns Qualified Saving Plan (IRA/Roth/Educ.)	53.19%	47.68%	42.26%	40.12%	38.32%	33.41%	41.62%
Owns Qualified Retirement Plan (DC Plan)	44.91%	37.53%	32.82%	32.88%	28.16%	26.64%	32.59%
Has Defined Benefit Plan	49.03%	41.38%	38.96%	32.19%	31.45%	32.51%	38.14%
Married	44.65%	39.48%	37.76%	35.21%	30.92%	30.09%	36.13%
Children	38.62%	33.71%	31.77%	31.07%	27.97%	26.25%	31.27%
Self-Employed	42.29%	41.55%	38.97%	35.44%	31.37%	32.89%	36.73%
Homeowner	44.37%	38.96%	37.00%	34.70%	31.69%	29.98%	35.68%
Desire to Leave a Bequest	35.78%	31.33%	28.24%	28.33%	23.49%	24.21%	28.23%
Expect to Leave a Sizable Estate	39.87%	36.72%	33.76%	32.38%	27.18%	25.92%	32.05%
Race							
White	39.75%	34.15%	32.25%	30.03%	28.17%	25.57%	31.41%
Black	29.33%	26.67%	27.36%	29.30%	25.86%	27.76%	27.67%
Hispanic	12.32%	20.05%	10.85%	11.72%	8.92%	8.59%	11.35%
Other	31.35%	24.67%	15.03%	22.58%	16.27%	17.66%	21.39%
N =	3,906	4,299	4,305	4,442	4,519	4,417	25,888

Data from 1992, 1995, 1998, 2001, 2004, and 2007 Surveys of Consumer Finances

All dollar amounts in 2007 dollars

Table 3: U.S. Federal Estate Tax Exemptions, Rates, and Top Bracket by Year, with SCF Net Worth Values

Year	Exemption ($)	Initial Tax Rate (%)	Top Tax Rate (%)	Top Bracket ($)	Top Bracket (2007 $)	Exemption (2007 $)	SCF Net Worth Values (2007 $)		
							Vingtile	Minimum Value	Maximum Value
1992	600,000	18.0	55.0	3,000,000	4,390,200	878,040	70 to 75th	740,188	1,281,353
1993	600,000	18.0	55.0	3,000,000					
1994	600,000	18.0	55.0	3,000,000					
1995	600,000	18.0	55.0	3,000,000	4,044,000	808,800	70 to 75th	718,834	1,103,405
1996	600,000	18.0	55.0	3,000,000					
1997	600,000	18.0	55.0	3,000,000					
1998	625,000	18.0	55.0	3,000,000	3,753,300	781,938	70 to 75th	735,271	1,240,341
1999	650,000	18.0	55.0	3,000,000					
2000	675,000	18.0	55.0	3,000,000					
2001	675,000	18.0	55.0	3,000,000	3,479,400	782,865	65 to 70th	638,232	1,020,172
2002	1,000,000	18.0	50.0	3,000,000					
2003	1,000,000	18.0	49.0	3,000,000					
2004	1,500,000	18.0	48.0	3,000,000	3,285,000	1,642,500	70 to 75th	1,307,622	1,725,830
2005	1,500,000	18.0	47.0	3,000,000					
2006	2,000,000	18.0	46.0	3,000,000					
2007	2,000,000	18.0	45.0	3,000,000	3,000,000	2,000,000	70 to 75th	1,291,230	2,319,720

Source: IRS.gov - http://www.irs.gov/pub/irs-soi/ninetyestate.pdf

Source: Surveys of Consumer Finances - 1992 to 2007

TABLE 4: Logistic Regression Analysis Comparing SCF Surveys

Variable	1992		1995		1998		2001		2004		2007	
	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value
Insurance Substitute (Dummy Variable)												
Term Life Insurance	0.483	<.0001***	0.324	<.0001***	0.378	<.0001***	0.34	<.0001***	0.43	<.0001***	0.376	<.0001***
Age Category (ref. 75 or older)												
Age < 35	0.964	0.8387	0.754	0.1145	0.94	0.7376	0.542	0.0012**	0.473	<.0001***	0.626	0.0187*
Age 35 to 44	0.938	0.6989	0.77	0.1023	0.966	0.829	0.657	0.0078**	0.549	0.0002***	0.64	0.0084**
Age 45 to 54	1.019	0.9058	0.987	0.9313	0.957	0.7762	0.871	0.3494	0.677	0.0089**	0.782	0.1113
Age 55 to 64	1.092	0.5843	0.98	0.8944	0.954	0.7584	0.777	0.091	0.789	0.1014	1.046	0.7578
Age 65 to 74	1.003	0.9862	1.259	0.1311	1.193	0.2515	0.978	0.882	0.982	0.905	1.114	0.4739
Income Deciles (ref. Lowest Quintile)												
Income 20th - 40th percentile	1.339	0.0283*	1.108	0.4242	1.179	0.2358	1.351	0.032*	1.045	0.7487	1.359	0.0332*
Income 40th - 60th percentile	1.493	0.0051**	1.28	0.0675	1.256	0.1271	1.354	0.0444*	0.992	0.9542	1.749	0.0003***
Income 60th - 80th percentile	1.502	0.0129*	1.163	0.3136	1.309	0.1074	1.356	0.0724	0.844	0.3153	1.596	0.0067**
Income > 80th percentile	1.792	0.0046**	1.392	0.0732	1.252	0.2769	1.298	0.2234	1.259	0.2971	2.157	0.0005***
Net Worth Quintiles (ref. Net Worth < 20th Percentile)												
Net Worth 20th - 40th percentile	2.768	<.0001***	2.389	<.0001***	1.829	0.0001***	4.127	<.0001***	2.115	<.0001***	1.977	0.0002***
Net Worth 40th - 60th percentile	3.339	<.0001***	3.324	<.0001***	2.895	<.0001***	5.437	<.0001***	2.722	<.0001***	2.376	<.0001***
Net Worth 60th - 65th percentile	3.431	<.0001***	3.345	<.0001***	3.412	<.0001***	6.599	<.0001***	3.402	<.0001***	2.439	0.0004***
Net Worth 65th - 70th percentile	4.996	<.0001***	4.534	<.0001***	3.111	<.0001***	5.53	<.0001***	3.131	<.0001***	3.043	<.0001***
Net Worth 70th - 75th percentile	2.694	<.0001***	3.477	<.0001***	4.142	<.0001***	5.083	<.0001***	2.932	<.0001***	2.322	0.0014**
Net Worth 75th - 80th percentile	3.796	<.0001***	3.1	<.0001***	3.387	<.0001***	8.34	<.0001***	3.001	<.0001***	2.735	0.0002***
Net Worth 80th - 85th percentile	3.472	<.0001***	2.826	<.0001***	4.028	<.0001***	7.177	<.0001***	3.539	<.0001***	2.99	0.0001***
Net Worth 85th - 90th percentile	2.93	<.0001***	3.502	<.0001***	3.7	<.0001***	7.772	<.0001***	3.127	0.0001***	2.853	0.0004***
Net Worth 90th - 95th percentile	3.319	<.0001***	3.587	<.0001***	3.753	<.0001***	10.641	<.0001***	3.389	<.0001***	2.816	0.0008***
Net Worth > 95th percentile	3.059	<.0001***	3.213	<.0001***	3.234	<.0001***	6.597	<.0001***	1.989	0.0279*	1.527	0.1802
Education Level (ref. Less than HS)												
HS Degree	1.627	0.003**	1.65	0.0043**	1.067	0.7069	1.104	0.5769	1.656	0.0104*	1.832	0.0057**
Some College	1.719	0.002**	1.588	0.0121*	0.956	0.8056	1.251	0.2376	1.834	0.0032**	1.397	0.1478
College Degree or Higher	1.755	0.001**	1.673	0.0045**	1.134	0.4848	1.146	0.4649	1.987	0.0007***	1.461	0.0942
Respondent Health Status (ref. Fair or Poor Health)												
Excellent Health	0.838	0.1374	0.883	0.2699	1.098	0.4268	0.891	0.3187	0.802	0.0573	0.848	0.1666
Good Health	0.916	0.4319	0.99	0.9237	1.138	0.2354	0.995	0.9637	0.969	0.7696	0.861	0.174
Respondent Risk Aversion												
Risk Averter	0.902	0.2291	0.772	0.0036**	0.951	0.6007	0.904	0.3069	0.713	0.0004***	0.702	0.0006***
Household Demographics & Desires (Dummy Variables)												
Owns Qualified Saving Plan (IRA/Roth/Educ.)	1.345	0.0009***	1.426	<.0001***	1.351	0.0004***	1.281	0.0044**	1.215	0.0208*	1.295	0.0031**
Owns Qualified Retirement Plan (DC Plan)	1.172	0.0822	1.569	<.0001***	1.253	0.0074**	1.464	<.0001***	1.373	0.0001***	1.306	0.0017**
Has Defined Benefit Plan	1.387	0.0004***	1.492	<.0001***	1.249	0.0262*	1.16	0.1373	1.362	0.0022**	1.355	0.0043**
Married	1.563	<.0001***	1.634	<.0001***	1.556	<.0001***	1.357	0.0009***	1.294	0.0056**	1.461	<.0001***
Children	1.57	<.0001***	1.295	0.015*	1.334	0.0077**	1.764	<.0001***	1.582	<.0001***	1.801	<.0001***
Self-Employed	1.074	0.4419	1.278	0.0068**	1.229	0.0215*	1.076	0.4178	1.235	0.0157*	1.183	0.0663
Homeowner	1.054	0.6437	1.143	0.2433	1.417	0.0035**	0.941	0.614	1.391	0.0132*	1.441	0.0104*
Desire to Leave a Bequest	1.016	0.8371	1.083	0.2957	1.055	0.4841	0.939	0.4119	1.015	0.8505	1.145	0.0862
Expect to Leave a Sizable Estate	1.137	0.1485	1.239	0.0126*	1.155	0.1036	1.302	0.0041**	1.093	0.3233	0.92	0.3786
Race (ref. White)												
Black	1.296	0.0645	1.457	0.008**	1.631	0.0005***	1.936	<.0001***	1.816	<.0001***	2.3	<.0001***
Hispanic	0.422	<.0001***	0.734	0.1338	0.396	<.0001***	0.507	0.0008***	0.511	0.0005***	0.442	<.0001***
Other	0.919	0.6176	0.71	0.0556	0.53	0.0041**	0.768	0.2594	0.762	0.1719	0.731	0.1225
	Coeff.		*Coeff.*		*Coeff.*		*Coeff.*		*Coeff.*		*Coeff.*	
Intercept	-2.63	<.0001***	-2.4835	<.0001***	-2.4864	<.0001***	-2.8377	<.0001***	-2.5267	<.0001***	-2.9995	<.0001***
Pseudo R^2 =		0.2407		0.2712		0.2579		0.2617		0.2264		0.2388
N =		3,906		4,299		4,305		4,442		4,519		4,417

Data from 1992, 1995, 1998, 2001, 2004, and 2007 Surveys of Consumer Finances

*, **, and *** indicate significance at the 0.05, 0.01, and 0.001 levels respectively

31

TABLE 5: Logistic Regression Analysis - Tax Law Change Interactions

Variable	Combined Years		Interactions	
	Odds Ratio	p-value	Odds Ratio	p-value
Interaction Variables				
Qualified Savings Post-1998 (ref. Pre-1999)			0.885	0.0408*
High Net Worth Post-2001 (ref. Pre-2002)			1.08	0.2421
Insurance Substitute (Dummy Variable)				
Term Life Insurance	0.391	<.0001***	0.391	<.0001***
Year (ref. 1992)				
1995	0.835	0.0003***	0.834	0.0003***
1998	0.697	<.0001***	0.696	<.0001***
2001	0.566	<.0001***	0.601	<.0001***
2004	0.498	<.0001***	0.513	<.0001***
2007	0.439	<.0001***	0.452	<.0001***
Age Category (ref. 75 or older)				
Age < 35	0.496	<.0001***	0.496	<.0001***
Age 35 to 44	0.599	<.0001***	0.598	<.0001***
Age 45 to 54	0.745	<.0001***	0.743	<.0001***
Age 55 to 64	0.83	0.002**	0.827	0.0017**
Age 65 to 74	0.995	0.9351	0.991	0.8784
Income Deciles (ref. Lowest Quintile)				
Income 20th - 40th percentile	1.346	<.0001***	1.344	<.0001***
Income 40th - 60th percentile	1.592	<.0001***	1.59	<.0001***
Income 60th - 80th percentile	1.577	<.0001***	1.575	<.0001***
Income > 80th percentile	1.721	<.0001***	1.716	<.0001***
Net Worth Quintiles (ref. Net Worth <= 70th Percentile)				
Net Worth > 70th percentile	1.036	0.4751	1.013	0.8065
Education Level (ref. Less than HS)				
HS Degree	1.594	<.0001***	1.591	<.0001***
Some College	1.598	<.0001***	1.597	<.0001***
College Degree or Higher	1.716	<.0001***	1.716	<.0001***
Respondent Health Status (ref. Fair or Poor Health)				
Excellent Health	0.94	0.1845	0.94	0.1823
Good Health	1.01	0.8133	1.01	0.8147
Respondent Risk Aversion				
Risk Averter	0.797	<.0001***	0.797	<.0001***
Household Demographics & Desires (Dummy Variables)				
Owns Qualified Saving Plan (IRA/Roth/Educ.)	1.438	<.0001***	1.528	<.0001***
Owns Qualified Retirement Plan (DC Plan)	1.386	<.0001***	1.384	<.0001***
Has Defined Benefit Plan	1.347	<.0001***	1.347	<.0001***
Married	1.476	<.0001***	1.475	<.0001***
Children	1.461	<.0001***	1.462	<.0001***
Self-Employed	1.256	<.0001***	1.253	<.0001***
Homeowner	1.772	<.0001***	1.774	0.0004***
Desire to Leave a Bequest	1.034	0.2744	1.034	0.2767
Expect to Leave a Sizable Estate	1.234	0.0001***	1.233	0.0001***
Race (ref. White)				
Black	1.527	<.0001***	1.525	<.0001***
Hispanic	0.462	<.0001***	0.461	<.0001***
Other	0.733	<.0001***	0.734	<.0001***
	Coefficient		*Coefficient*	
Intercept	-1.697	<.0001***	-1.7104	<.0001***
Pseudo R^2 =		0.2336		0.2338
N =		25,888		25,888

Data from 1992, 1995, 1998, 2001, 2004, and 2007 Surveys of Consumer Finances
*, **, and *** indicate significance at the 0.05, 0.01, and 0.001 levels respectively

Table 6: Net Worth Quantile Averages and Standard Deviations 1992 - 2007 (in 2007 $)								
Vingtile		1992	1995	1998	2001	2004	2007	% Increase 1992 - 2007
0 to 20th	Mean	$ (601)	$ (43,100)	$ (5,805)	$ (29)	$ 1,936	$ 2,719	--
	Std Dev	21,801	810,256	61,847	12,837	19,909	19,875	
20 to 40th	Mean	46,929	52,918	48,855	54,398	55,689	77,064	64.2%
	Std Dev	23,056	24,394	27,566	28,117	28,833	40,783	
40 to 60th	Mean	187,094	191,378	205,561	232,708	255,049	324,709	73.6%
	Std Dev	65,115	66,412	73,584	87,926	101,240	118,081	
60 to 65th	Mean	392,293	405,619	425,804	525,444	578,747	702,829	79.2%
	Std Dev	40,274	44,045	38,060	58,678	61,136	69,127	
65 to 70th	Mean	592,698	596,293	605,932	804,049	847,217	1,046,900	76.6%
	Std Dev	74,826	71,236	67,878	114,983	102,769	128,470	
70 to 75th	Mean	986,741	895,082	972,122	1,317,086	1,314,841	1,759,108	78.3%
	Std Dev	150,073	116,379	148,709	181,253	180,872	295,105	
75 to 80th	Mean	1,697,370	1,520,523	1,642,356	2,220,820	2,390,229	3,214,503	89.4%
	Std Dev	261,029	261,890	282,594	375,486	459,511	580,049	
80 to 85th	Mean	3,064,168	2,754,517	3,138,477	4,481,836	5,182,274	6,447,844	110.4%
	Std Dev	635,181	486,721	639,520	1,024,762	1,242,838	1,309,106	
85 to 90th	Mean	6,648,460	5,587,124	6,719,636	10,124,914	11,892,685	13,712,997	106.3%
	Std Dev	1,546,706	1,357,316	1,621,974	2,411,490	2,764,007	3,209,449	
90 to 95th	Mean	16,220,533	13,862,011	17,072,439	24,123,313	30,149,635	35,287,110	117.5%
	Std Dev	4,751,417	4,232,253	5,184,386	6,665,910	8,960,995	10,814,721	
95 to 100th	Mean	102,379,454	93,838,199	105,548,385	115,362,450	154,698,207	179,185,968	75.0%
	Std Dev	203,574,140	112,079,853	112,188,978	111,594,485	132,179,295	169,124,106	