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Feature Articles

Life Insurance Lapse Behavior

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Abstract

Life insurance policy lapses are detrimental to issuing insurers when lapses substantially deviate from insurer expectations. The extant literature has proposed and tested, using macroeconomic data, several hypotheses regarding lapse determinants. While macroeconomic data are useful in providing a general test of lapse determinants, the use of aggregate data precludes an analysis of microeconomic factors that may drive the lapse decision. We develop and test a microeconomic model of voluntary life insurance lapse behavior and provide some of the first evidence regarding household factors related to life insurance lapses. Our findings support and extend the prior evidence regarding lapse determinants. Consistent with the emergency fund hypothesis we find that voluntary lapses are related to large income shocks, and consistent with the policy replacement hypothesis we find that the decision to lapse a life insurance policy is directly related to the purchase of a different life insurance policy. We also find that age is an important moderating factor in the lapse decision. Changes in income

appear to more directly affect the decision to lapse for younger households, while they are generally unrelated to the lapse decision for older households.

Notes

Following Kuo et al. (2003), we use the term lapse to encompass both life insurance surrender activity (i.e., electing to receive the cash surrender value that has accumulated in a cash value (whole) life insurance policy in return for the life insurance coverage) and life insurance lapse activity (i.e., canceling the policy by failing to pay the premium).

Carson and Dumm (1999) show that insurer lapse rates are also inversely related to the overall performance of life insurance policies. Similarly, Gatzert et al. (2009) provide evidence that secondary market purchases of life insurance impacts expected lapse and surrender rates that can negatively affect insurer profits.

Smith (1982) and Walden (1985) discuss the value of various options contained within life insurance policies, including the option to surrender a life insurance policy.

This potential problem associated with policy surrender assumes that the policy is a whole life insurance policy and that the cash value that has accumulated within the policy (if any) exceeds surrender charges.

For instance, Carson and Hoyt (1992) show that policyowners were more likely to take a loan on a whole life policy when market rates exceeded the rate to borrow the cash value (prior to the use of floating policy loan interest rates).

While Liebenberg et al. (2012) do examine the decision to “drop” a life insurance policy, their definition of a “dropped” policy does not focus specifically on those households that decide to completely lapse/surrender a policy. In particular, the authors define dropped coverage as: “equal to one for households that decreased the amount of, or completely dropped, their term (whole life) insurance.” As such, the analysis conducted by Liebenberg et al. (2012) does not explicitly test the reason for lapses but, rather, investigates the factors associated with changes in overall life insurance holdings (i.e., both lapses and coverage reductions).

Due to the nature of the data, we are unable to test the interest rate hypothesis (IRH). Such a test would generally require the use of either (1) macroeconomic factors and/or (2) additional information regarding the specific characteristics of the life insurance policy. Since the HRS data only provides limited information regarding the policies held by the respondents and because we are interested in evaluating the household-level factors, we exclude the IRH from the analysis.

In addition to using the original HRS data from the University of Michigan, we also supplement that data with publicly available RAND HRS data to ensure consistency across each of the variables included in our models.

We exclude 1992 and 1994 because the HRS survey did not ask lapse-specific questions in those years.

We remove all households that did not have life insurance in the previous survey so as to limit our focus only on those households that have the ability to lapse a life insurance policy. Each of the models presented below were reestimated when including households that did not report having life insurance in the prior survey. The results of the reestimated models were generally qualitatively similar to those presented in this study, with the primary difference being that the coefficient on the NegNW1 variable is positive and significant for the full sample when including households that did not previously have life insurance policies.

The majority of households dropped from the sample are those that did not report household-specific income, were new entrants into the sample and did not have historical data required for calculation of the change variables, or did not report having a life insurance policy during the previous survey.

Additional variations of the models were estimated when including (1) involuntary lapse observations as “nonlapse” events and (2) involuntary lapses and classifying them as lapse events. The results from these specifications are discussed below.

Total household income is calculated as the sum of income from the following sources: household earnings; capital income; income from pensions and annuities; income from Social Security disability and Supplemental Security income; Social Security retirement income; income from unemployment and workers compensation; income from veteran's benefits, welfare, and food stamps; and other reported sources of income such as inheritance, alimony, and lump sums from insurance.

We calculate net worth as household assets minus household liabilities. Household assets include (1) the net value of stocks, mutual funds, and investment funds, (2) the value of checking, savings, or money market accounts, (3) the value of CDs, government savings bonds, and Treasury bills, (4) the net value of vehicles, (5) the net value of businesses, (6) the net value of real estate, (7) the net value of bonds and bond funds, (8) the net value of IRAs and Keogh accounts, (9) the value of the primary residence, and (10) the value of all other savings. Liabilities are calculated as the sum of (1) the value of the mortgage on the primary residence, (2) value of other loans on the home, and (3) the value of all other debt.

It should be noted that the decision to lapse a policy following a reduction of income could be attributed to either (1) the household needing funds contained within the policy to cover expenses or (2) the household being unable to pay the premium or unwilling to allocate a portion of current household funds to continue paying premiums. Unfortunately, the data do not allow us to distinguish between the two aforementioned reasons.

Individuals are identified as having purchased a new life insurance policy since the previous HRS survey based on the following survey question: “In the last two years, have you obtained any new life insurance policies?”

For instances where a respondent does not have a spouse, the Age variable is equal to the respondent's age. The use of average age is consistent with prior literature using survey data (Lin and Grace 2007; Liebenberg et al. 2012).

In addition to the control variables included in the model, we also considered the inclusion of a bequest variable. The HRS survey asks respondents the following question: “Including property and other valuables that you might own, what are the chances that you (and your [husband/wife/partner]) would leave an inheritance totaling $50,000 or more/$100,000 or more/$10,000 or more?” Because a small proportion of the total sample answers this question, it greatly reduces the overall size of the sample. However, we reestimated each of the models using a variety of bequest proxies and found no significant relation between the bequest proxies and the decision to lapse (while the other variables remained qualitatively similar). As such, we do not report the results of the models with the inclusion of the bequest variables.

Liquid assets include (1) the net value of stocks, mutual funds, and investment funds, (2) the value of checking, savings, or money market accounts, (3) the value of CDs,

government savings bonds, and Treasury bills, and (4) the net value of bonds and bond funds.

Post-estimation, we test to determine if the coefficient on NegInc1 and the coefficient on NegInc2 statistically differ both for Model 1 and Model 2. We fail to reject the null hypothesis that the coefficients on NegInc1 and NegInc2 differ significantly. We also test to determine if the coefficients on NegInc1 and NegInc2 differ from the coefficient on NegInc3. We reject the null hypothesis that NegInc1 and NegInc2 have coefficients that are statistically equivalent to the coefficient on NegInc3.

TABLE 3 Household-Specific Factors and the Decision to Lapse

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Additional variations of the models were estimated when including (1) involuntary lapse observations as “nonlapse” events and (2) involuntary lapses and classifying them as lapse events. The (unreported) results are qualitatively similar for all independent variables except the unemployment variable (NewUnemploy). When classifying involuntary lapses as voluntary lapses, the coefficient on the unemployment variable is positive and statistically significant. This result is not surprising, as involuntary lapses are often the result of unemployment or employers removing life insurance as an employee benefit.

We reestimated each of the models and replaced the Kids variable with a binary variable that denotes instances where a respondent reported the addition of a new child to the household. The results from these additional specifications do not differ qualitatively from those presented in Table 3 and are thus are not presented.

It should be noted that this method of partitioning the sample allows for a household to move across quartiles over time as the household respondent ages.

It should be noted that the NewUnemploy variable is omitted from the Quartile 3 and Quartile 4 results, while the NewDivorced variable is omitted from the Quartile 4 results. These variables are omitted from the model as they perfectly predict the lapse outcome.

TABLE 5 Lapse Behavior by Age Quartiles

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Liquidity, Estate Liquidation, Charitable Motives, and Life Insurance Demand by Retired Singles
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