Essays on Life Insurance

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Dissertation Defense

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Terry College of Business
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Essays on Life Insurance

	Paper	Area of Research	Research Question	Key Findings	Target Journal
1	Heidesch & Carson, “A Primer on the Evolution of Life Insurance Within the United States”	Life Insurance Demand; Economic History	What were the primary determinants of life insurance demand for the first American consumers to ever utilize it?		

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Essay 1: Updates/Revisions

Essay 1: A Primer on the Evolution of Life Insurance Within the United States.

1. Adjust the amounts of life insurance and other financial figures for CPI over time.

Sections Revised:

- 2.1.1: page 5
- 2.1.2: pages 5 and 6
- 2.1.5: pages 8 and 9
- 2.1.7: page 11
- 2.2.2: page 15
- 2.2.3: page 16
- 2.2.5: page 18
- 2.2.7: page 19
- 2.3.7: page 29
- 2.4.2: page 35

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2	Heidesch, Carson, Ragin, and Watson: “Life Insurance Demand Update with a Focus on Religion and Generational Birth Cohorts”	Determinants of Life Insurance Demand	Is Christianity a determinant of life insurance demand within the United States?		

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2	Heidesch, Carson, Ragin, and Watson: “Life Insurance Demand Update with a Focus on Religion and Generational Birth Cohorts”	Determinants of Life Insurance Demand	Is Christianity a determinant of life insurance demand within the United States?	Being a Christian member of older generational cohorts is positively associated with life insurance demand.	Journal of Risk and Insurance

Essay 2: Updates/Revisions

Essay 2: Life Insurance Demand Update with a Focus on Religion and Generational Birth Cohorts.

1. On time series "survey waves by cohort" interaction analysis, are the coefficients significantly different from each other?
2. Add a brief description/definition of GBC Theory.
3. Add lapse analyses.
4. What is the N of people who do not buy life insurance (add brief footnote/discussion).
5. Discuss reasons that the amount of life insurance is declining over time, and by cohort.
6. Issue to examine: Jewish and attendance of religious services.
7. Avoid saying "impact" on the probability of owning life.
8. How many observations are excluded due to life insurance question or to religious question?
9. Match the summary statistics table to the primary regression table.
10. Try to add discussion/commentary on the messaging from the various religions. What might explain the differences across the religions…?
11. Add education to the time series analysis on Table 21.

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2.1: Are the figures significantly different from each other?

A Focus on Survey Wave by Generational Cohort Interaction: Time Series with Year FE

Survey Wave	Cohort	Avg Age	Coeff. (std error)	Survey Wave	Cohort	Avg Age	Coeff. (std error)
2	WB	54.3	0.036 ***	2	EBB	54.1	0.065 ***
			(0.013)				(0.011)
3	WB	56.2	0.059 ***	3	EBB	56.1	0.047 ***
			(0.013)				(0.011)
4	WB	58.2	0.061 ***	4	EBB	58.4	0.049 ***
			(0.013)				(0.011)
5	WB	60.1	0.053 ***	5	EBB	60.2	0.034 ***
			(0.013)				(0.010)
6	WB	62	0.048 ***	6	EBB	62.1	0.025 **
			(0.013)				(0.010)
7	WB	64.1	0.043 ***	7	EBB	64.2	0.021 **
			(0.013)				(0.010)
8	WB	66	0.034 ***				
			(0.013)				
9	WB	67.8	0.022 **				
			(0.013)				
10	WB	69.9	0.028 **				
			(0.013)				

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Survey Wave	Cohort	Avg Age	Coeff. (std error)	
2	WB	54.3	0.036 ***	F-test: 16.02
			(0.013)	Prob > F = <0.001
3	WB	56.2	0.059 ***	F-test: 26.41
			(0.013)	Prob > F = <0.001
4	WB	58.2	0.061 ***	F-test: 24.26
			(0.013)	Prob > F = <0.001
5	WB	60.1	0.053 ***	F-test: 19.36
			(0.013)	Prob > F = <0.001
6	WB	62	0.048 ***	F-test: 15.89
			(0.013)	Prob > F = <0.001
7	WB	64.1	0.043 ***	F-test: 11.40
			(0.013)	Prob > F = <0.001
8	WB	66	0.034 ***	F-test: 6.06
			(0.013)	Prob > F = 0.0138
9	WB	67.8	0.022 **	F-test: 4.83
			(0.013)	Prob > F = 0.028
10	WB	69.9	0.028 **	F-test: 4.69
			(0.013)	Prob > F = 0.030

Survey Wave	Cohort	Avg Age	Coeff. (std error)	
2	EBB	54.1	0.065 ***	F-test: 30.14
			(0.011)	Prob > F = <0.001
3	EBB	56.1	0.047 ***	F-test: 23.46
			(0.011)	Prob > F = <0.001
4	EBB	58.4	0.049 ***	F-test: 19.08
			(0.011)	Prob > F = <0.001
5	EBB	60.2	0.034 ***	F-test: 10.29
			(0.010)	Prob > F = 0.001
6	EBB	62.1	0.025 **	F-test: 6.44
			(0.010)	Prob > F = 0.011
7	EBB	64.2	0.021 **	F-test: 4.19
			(0.010)	Prob > F = 0.041

2.2: Add a brief definition of Generational Birth Cohort Theory.

Generational Birth Cohort Theory

Developed by Strauss and Howe, 1991: A generational birth cohort is the aggregate of all people born over a span of roughly twenty years, or about the length of one phase of childhood.

Members of one generational birth cohort are identified, from first birthyear to last, by looking for birth cohort groups that share three key criteria while occupying the same phase of life.

- Share an age location in history.
- Share key historical events.
- Share impactful social trends.

Similarly, Pew Research Center, 2015: An age cohort spanning 15-20 years, where individuals share political circumstances, societal norms, and economic conditions, resulting in members have different formative experiences from other age cohort groups.

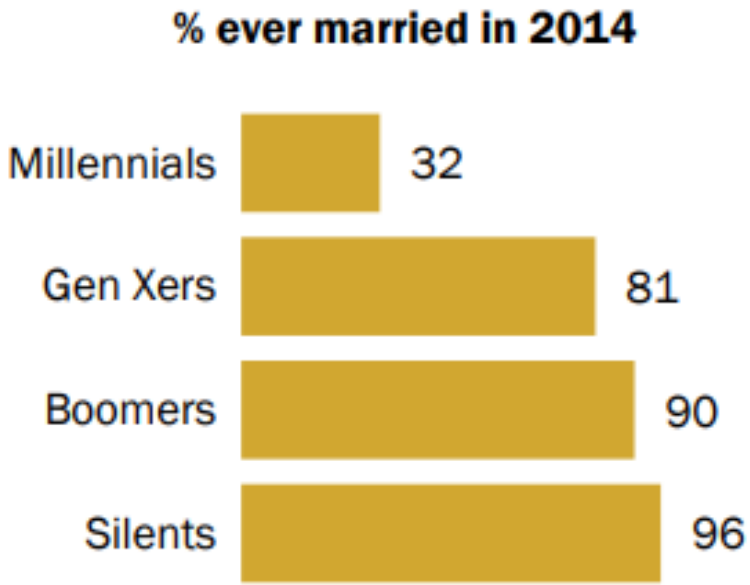
Consumer Behavior Literature

- Controlling for age, but not generational birth cohort membership of consumers, overlooks critical information pertinent to each unique birth cohort (Hansman and Schutjens, 1993).
- Differences experienced by separate generational birth cohorts at the time they become economic adults uniquely affect their financial attitudes and decisions as consumers for their entire lives (Schewe and Meredith, 2004).
- Consumer purchasing behaviors differ not only by age but also by generational birth cohort (Wolf, Carpenter, and Qenani-Petrela, 2005).

Insurance Literature

- Find a significant decrease in the purchase of life insurance for households whose members belong to more recent birth cohorts (Chen, Wong, and Lee, 2001).
    - Show that birth cohort differences can result in conflicting findings for consumers born into different generational birth cohorts.
    - Attribute a higher share of individuals living alone without dependents and trend toward getting married later in life (delaying children).
    - The authors note the challenges in separating and identifying cohort effects in their analysis of life insurance demand between birth cohorts.

Marriage Rates by Generation

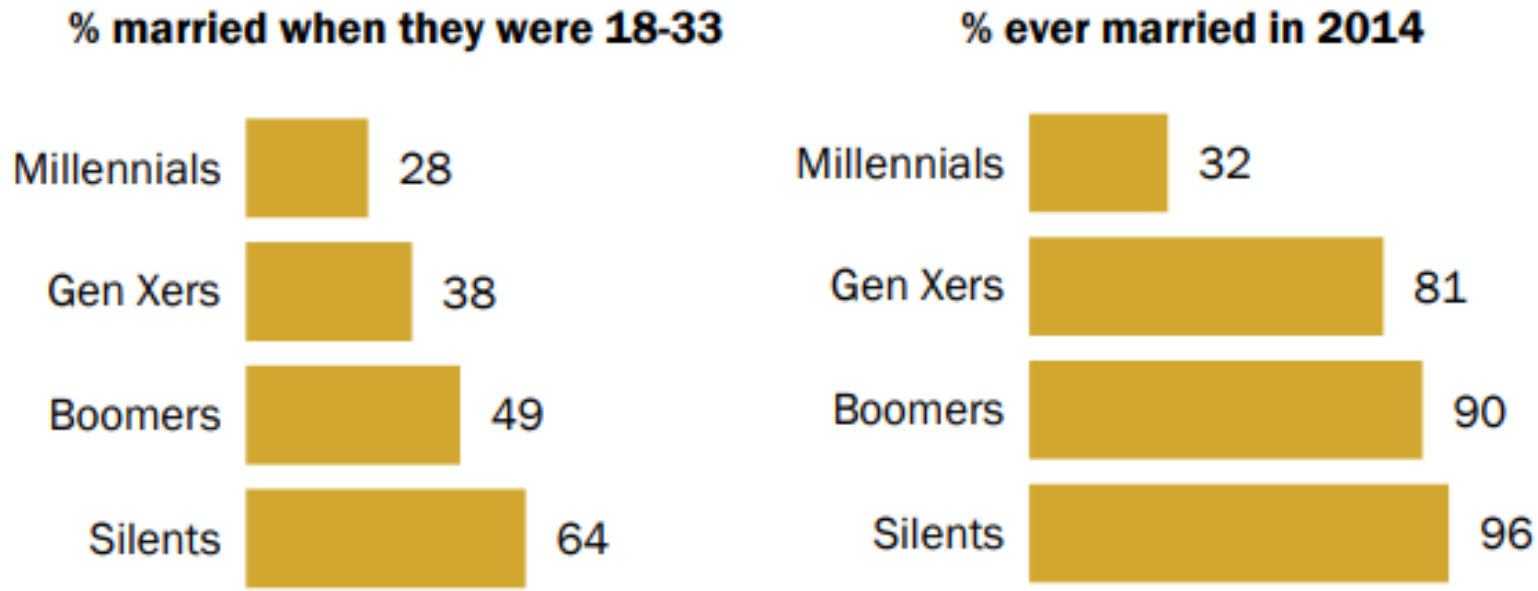


Ages shown are as of 2014. Members of the Silent generation were 69 to 86 in 2014. Since the Current Population Survey aggregates those ages 85 and older into one category, results for 69 to 84 year-olds are shown.

Source: Pew Research Center tabulations of the 2014, 1998, 1980 and 1963 Current Population Surveys from the Integrated Public Use Microdata Series (IPUMS)

PEW RESEARCH CENTER

Marriage Rates by Generation



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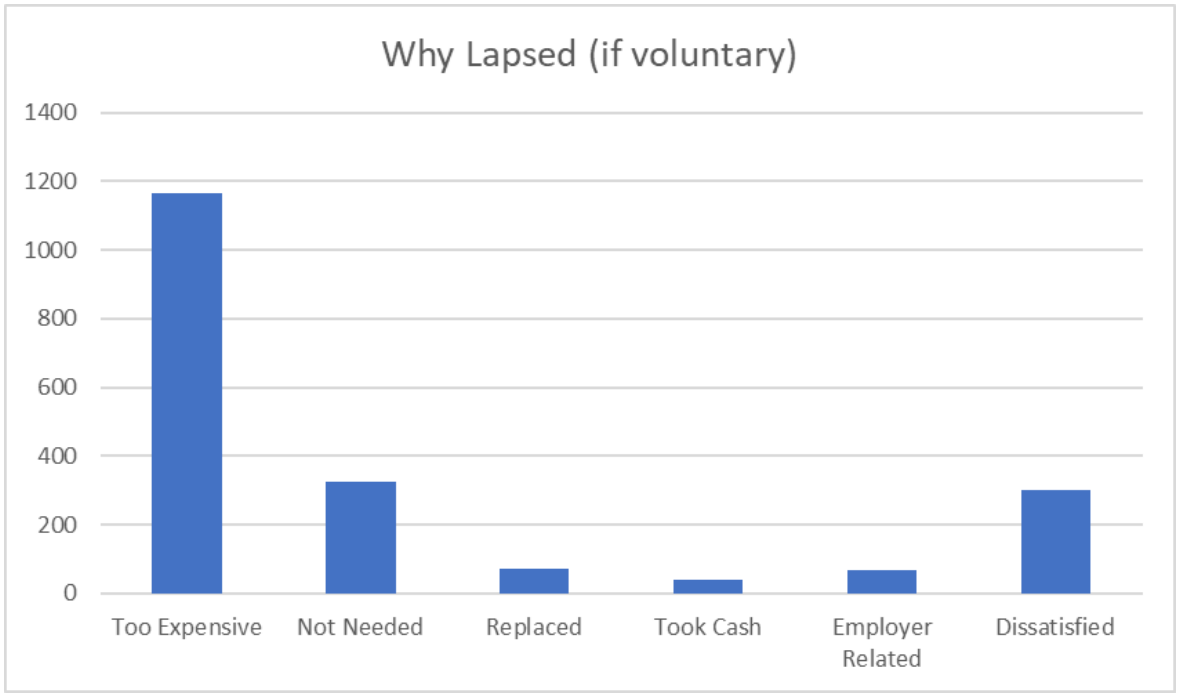
2.3: Add lapse analyses.

HRS Data

Years: 1998 – 2018



Following Fier and Liebenberg (2013):

$$
\begin{aligned}
VLapse = \beta_0 &+ \beta_1(1 \text{ if NewUnemploy for } R \text{ or } SP) + \beta_2(1 \text{ if 1st quartile of NegInc}) \\
&+ \beta_3(1 \text{ if 2nd quartile of NegInc}) + \beta_4(1 \text{ if 3rd quartile of NegInc}) \\
&+ \beta_5(1 \text{ if 1st quartile of NegNW (negative HH } \Delta \text{ in net worth.)}) \\
&+ \beta_6(1 \text{ if 2nd quartile of NegNW}) + \beta_7(1 \text{ if 3rd quartile of NegNW}) \\
&+ \beta_8(1 \text{ if NewLife for } R) + \beta_9(\text{Average Age of HH at Survey Year}) \\
&+ \beta_{10}(1 \text{ if NewDivorced for } R) + \beta_{11}(1 \text{ if NewRetired for } R \text{ and } S) \\
&+ \beta_{12}(1 \text{ if NewWidowed for } R) + \beta_{13}(\text{LN of HH Inc} > 0) \\
&+ \beta_{14}(\text{LN of HH Wealth} > 0) + \beta_{15}(\text{LN of Respondent Debt}) \\
&+ \beta_{16}(\text{Liquidity Measure}) + \beta_{17}(\text{Number of Children in HH}) \\
&+ \beta_{18}(1 \text{ for } R \text{ or } S \text{ Working}) + \beta_{19}(1 \text{ if College Degree } R \text{ or } S)
\end{aligned}
$$

Summary Statistics for Primary Lapse Model

Variable (n=78,079)	Mean	Std. dev.	Min	Max
RNewLapse	0.0338759	0.180911	0	1.000
VolLapse	0.0247314	0.1553062	0	1.000
NewHHUnemp	0.018968	0.1364127	0	1.000
NegInc1	0.1615927	0.3680792	0	1.000
NegInc2	0.1576224	0.3643889	0	1.000
NegInc3	0.1554323	0.3623186	0	1.000
NegNW1	0.1674458	0.3733758	0	1.000
NegNW2	0.1695078	0.3752022	0	1.000
NegNW3	0.1655503	0.3716788	0	1.000
NewLI	0.0474647	0.2126321	0	1.000
NewDivorce	0.0061988	0.0784889	0	1.000
NewHHRetiree	0.1713393	0.3768076	0	1.000
NewWidow	0.0054816	0.0738353	0	1.000
ln(HHIncome)	10.72719	0.999154	0	16.423
ln(Wealth)	11.53258	2.850891	0	18.323
ln(Debt)	2.868745	4.106666	0	14.557
Liquidity	0.2140462	0.7809945	-60	100.000
HHAgeAvg	67.27202	9.821023	27	108.000
Age Sq	4639.723	1411.21	441	11664.000
Worker in HH	0.5468948	0.4977992	0	1.000
College Degree	0.3042816	0.4601054	0	1.000
Children to HH	3.180766	1.978168	0	11.000

Variable (n=78,079)	Mean	Std. dev.	Min	Max
1998	0.0918173	0.2887697	0	1
2000	0.1004239	0.3005663	0	1
2002	0.0983363	0.2977707	0	1
2004	0.0896656	0.2857039	0	1
2006	0.0914587	0.2882621	0	1
2008	0.0857721	0.280029	0	1
2010	0.0779467	0.2680894	0	1
2012	0.0846194	0.2783163	0	1
2014	0.0812126	0.2731631	0	1
2016	0.0691351	0.2536854	0	1
2018	0.0627185	0.2424576	0	1
SW3	0.152128	0.3591472	0	1
SW4	0.1450326	0.352136	0	1
SW5	0.1308034	0.3371874	0	1
SW6	0.1077242	0.3100338	0	1
SW7	0.0966713	0.2955116	0	1
SW8	0.0830697	0.2759893	0	1
SW9	0.0605797	0.2385592	0	1
SW10	0.0533562	0.2247442	0	1
SW11	0.0436865	0.204398	0	1
SW12	0.0298031	0.170045	0	1
SW13	0.0235787	0.1517334	0	1

Time Series Lapse Analysis, Yearly FE
DV: Voluntary Lapse

	All 1	All 2	HRS Sub-Cohort	WB	EBB	MBB
New HH Unemployment	0.000	0.000	0.004	-0.013	0.001	0.008
	(0.005)	(0.005)	(0.007)	(0.011)	(0.013)	(0.018)
NegInc1	0.001	0.000	0.002	-0.006	0.001	-0.008
	(0.002)	(0.002)	(0.003)	(0.005)	(0.007)	(0.010)
NegInc2	-0.003	-0.003	-0.005**	0.002	0.000	-0.015
	(0.002)	(0.002)	(0.003)	(0.005)	(0.007)	(0.010)
NegInc3	0.002	0.002	0.001	-0.001	0.003	0.005
	(0.002)	(0.002)	(0.003)	(0.005)	(0.007)	(0.010)
NegNW1	0.001	0.001	0.002	-0.004	0.005	0.011
	(0.002)	(0.002)	(0.003)	(0.005)	(0.007)	(0.009)
NegNW2	-0.002	-0.001	0.001	-0.007	-0.001	-0.006
	(0.002)	(0.002)	(0.002)	(0.005)	(0.007)	(0.009)
NegNW3	-0.002	-0.002	-0.003	-0.003	-0.010	0.005
	(0.002)	(0.002)	(0.002)	(0.005)	(0.007)	(0.010)
New Life Insurance	0.096***	0.096***	0.098***	0.078***	0.130***	0.070***
	(0.003)	(0.003)	(0.004)	(0.008)	(0.010)	(0.013)
NewDivorce	0.008	0.009	-0.000	0.023	0.028	0.009
	(0.009)	(0.009)	(0.012)	(0.019)	(0.030)	(0.033)
NewHHRetiree	0.006***	0.005***	0.004*	0.007	0.016**	0.010
	(0.002)	(0.002)	(0.002)	(0.005)	(0.007)	(0.012)
NewWidow	-0.003	-0.003	-0.005	0.018	-0.009	0.007
	(0.009)	(0.009)	(0.011)	(0.038)	(0.049)	(0.103)
Natural Log of HH Income	-0.000	-0.000	-0.002	0.000	0.008*	0.002
	(0.001)	(0.001)	(0.002)	(0.003)	(0.004)	(0.005)
Natural Log of Total Wealth	0.000	0.000	0.000	0.000	0.000	-0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.002)
Natural Log of Total Debt	0.000	0.000	0.000	0.001**	-0.000	-0.001
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Liquidity	-0.001*	-0.001*	-0.003**	-0.000	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.007)

Time Series Lapse Analysis, Yearly FE
DV: Voluntary Lapse

	All 1	All 2	HRS Sub-Cohort	WB	EBB	MBB
HHAvgAge	0.000	-0.000	-0.000	0.001**	0.001*	0.003**
	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
At Least 1 Worker in HH	-0.003	-0.003	-0.001	-0.001	-0.024**	-0.027
	(0.002)	(0.002)	(0.003)	(0.006)	(0.010)	(0.020)
College	-0.006	-0.006	-0.013	0.035	-0.011	0.023
	(0.009)	(0.009)	(0.012)	(0.026)	(0.038)	(0.068)
# of Children in Household	0.002*	0.002	0.003*	-0.003	-0.003	0.006
	(0.001)	(0.001)	(0.002)	(0.004)	(0.006)	(0.010)
Regular Religious Service Attendance		0.001	0.022	-0.027	-0.028	0.075
		(0.017)	(0.029)	(0.034)	(0.255)	(0.061)
Protestant # Do not regularly attend religious services.		0.005	0.021	-0.014	-0.025	0.078
		(0.017)	(0.029)	(0.035)	(0.255)	(0.063)
Catholic # Do not regularly attend religious services.		0.010	0.029	-0.020	-0.008	0.091
		(0.018)	(0.029)	(0.035)	(0.255)	(0.067)
Jewish # Do not regularly attend religious services.		0.011	0.055	-0.063	0.316	0.000
		(0.023)	(0.036)	(0.053)	(0.290)	(0.000)
Not Religious # Regularly attend religious services.		-0.018	-0.032	0.009	-0.032	-0.076
		(0.019)	(0.031)	(0.038)	(0.258)	(0.076)
Cohort Specific Wave=3		0.003				
Cohort Specific Wave=4		0.006				
Cohort Specific Wave=5		0.010*				
Cohort Specific Wave=6		0.013*				
Cohort Specific Wave=7		0.014*				
Cohort Specific Wave=8		0.013				
Cohort Specific Wave=9		0.014				
Cohort Specific Wave=10		0.017				
Cohort Specific Wave=11		0.016				
Cohort Specific Wave=12		0.011				
Cohort Specific Wave=13		0.012				
Cohort Specific Wave=14		0.023				
R-Squared	0.017	0.018	0.018	0.018	0.038	0.018
Number of observations	78,079	77,810	41,488	9,405	8,368	5,164

Note: *$p < .1$,**$p < .05$,***$p < .01$.

Time Series Lapse Analysis, Yearly FE
DV: Respondent New Lapse

	All: 1	All: 2	HRS Sub-Cohort	WB	EBB	MBB
Intercept	-0.028	-0.031**	-0.013	-0.049	-0.066	0.055
	(0.029)	(0.014)	(0.020)	(0.036)	(0.143)	(0.086)
New HH Unemployment	0.023***	0.023***	0.018***	0.016**	0.040***	0.019
	(0.006)	(0.003)	(0.004)	(0.007)	(0.008)	(0.013)
NegInc1	-0.003	-0.004***	-0.002	-0.006	-0.016***	0.000
	(0.002)	(0.001)	(0.002)	(0.004)	(0.005)	(0.008)
NegInc2	-0.004*	-0.001	-0.001	0.002	0.001	-0.003
	(0.002)	(0.001)	(0.001)	(0.003)	(0.004)	(0.007)
NegInc3	0.001	-0.000	-0.000	-0.001	0.001	0.006
	(0.002)	(0.001)	(0.001)	(0.004)	(0.004)	(0.007)
NegNW1	0.003	0.002*	-0.002	0.003	0.012***	0.010
	(0.002)	(0.001)	(0.002)	(0.004)	(0.004)	(0.006)
NegNW2	-0.001	-0.000	-0.000	0.003	0.002	-0.002
	(0.002)	(0.001)	(0.001)	(0.003)	(0.004)	(0.007)
NegNW3	-0.002	-0.001	0.000	-0.002	-0.002	0.000
	(0.002)	(0.001)	(0.001)	(0.004)	(0.004)	(0.008)
New Life Insurance	0.136***	0.043***	0.035***	0.044***	0.063***	0.066***
	(0.004)	(0.002)	(0.002)	(0.005)	(0.006)	(0.010)
NewDivorce	0.014	0.006	0.009	0.001	-0.021	0.020
	(0.010)	(0.005)	(0.007)	(0.013)	(0.018)	(0.024)
NewHHRetiree	0.013***	0.008***	0.007***	0.008**	0.014***	0.012
	(0.002)	(0.001)	(0.001)	(0.003)	(0.004)	(0.009)
NewWidow	-0.003	-0.000	-0.005	0.038	-0.001	0.176**
	(0.010)	(0.005)	(0.007)	(0.026)	(0.030)	(0.075)
Natural Log of HH Income	0.002	0.002***	0.003***	0.001	0.005*	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.004)
Natural Log of Total Wealth	0.001	0.000	-0.000	0.001	0.000	0.002*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Natural Log of Total Debt	0.000	0.000	-0.000	-0.000	0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Liquidity	0.000	0.002***	0.001	-0.000	0.005***	-0.009*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.005)

Time Series Lapse Analysis, Yearly FE
DV: Respondent New Lapse

	All: 1	All: 2	HRS Sub-Cohort	WB	EBB	MBB
HHAvgAge	0.000	0.000***	0.000	0.000	0.000	-0.000
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
At Least 1 Worker in HH	-0.006**	-0.003**	-0.001	-0.005	-0.013**	-0.046***
	(0.003)	(0.001)	(0.002)	(0.004)	(0.006)	(0.015)
College	-0.000	0.006	0.006	0.017	0.009	0.067
	(0.010)	(0.005)	(0.007)	(0.018)	(0.023)	(0.050)
Children per Household	0.001	-0.001	-0.002**	-0.000	0.002	-0.004
	(0.002)	(0.001)	(0.001)	(0.003)	(0.004)	(0.008)
Regular Religious Service Attendance		0.000	-0.017	0.022	-0.012	0.010
		(0.011)	(0.017)	(0.024)	(0.158)	(0.044)
Lapse was Voluntary		0.975***	0.980***	0.977***	0.963***	0.936***
		(0.003)	(0.003)	(0.008)	(0.008)	(0.014)
Protestant # Do not regularly attend religious services.		-0.002	-0.020	0.026	-0.024	0.014
		(0.011)	(0.017)	(0.024)	(0.158)	(0.046)
Protestant # Regularly attend religious services.		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Catholic # Do not regularly attend religious services.		0.003	-0.014	0.028	-0.001	0.004
		(0.011)	(0.017)	(0.024)	(0.159)	(0.049)
Catholic # Regularly attend religious services.		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jewish # Do not regularly attend religious services.		0.000	-0.012	0.018	0.027	0.000
		(0.014)	(0.020)	(0.036)	(0.180)	(0.000)
Jewish # Regularly attend religious services.		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Not Religious # Regularly attend religious services.		0.002	0.019	-0.019	0.038	-0.036
		(0.012)	(0.018)	(0.026)	(0.160)	(0.055)
Other Religion # Do not regularly attend religious services.		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Other Religion # Regularly attend religious services.		0.000	0.000	0.000	0.000	0.000
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-Squared	0.027	0.727	0.750	0.677	0.725	0.639
Number of observations	78,079	77,810	41,488	9,405	8,368	5,164

Note: $^{*}p < .1, ^{**}p < .05, ^{***}p < .01$.

2.4: What is the N of people who do not own life insurance?

EBB: 72.2% own life insurance.

- 1,966 own
- 757 do not

MBB: 62.9% own life insurance

- 2,413 own
- 1,423 do not

LBB: 62.6% own life insurance

- 1,854 own
- 1,108 do not

2.5: Discuss reasons the amount of life insurance is declining over time and by cohort.

Hartley, Paulson, and Powers (2017) find life insurance ownership has declined within each race, education, and income subgroup for both term and permanent policies.

- The largest declines in term coverage generally being in those households with lowest education and income.
- The largest declines in permanent coverage being in the households with higher education and lower income.

There has been decreasing religiosity measured in more recent generational birth cohorts (Pew Research Center, 2019).

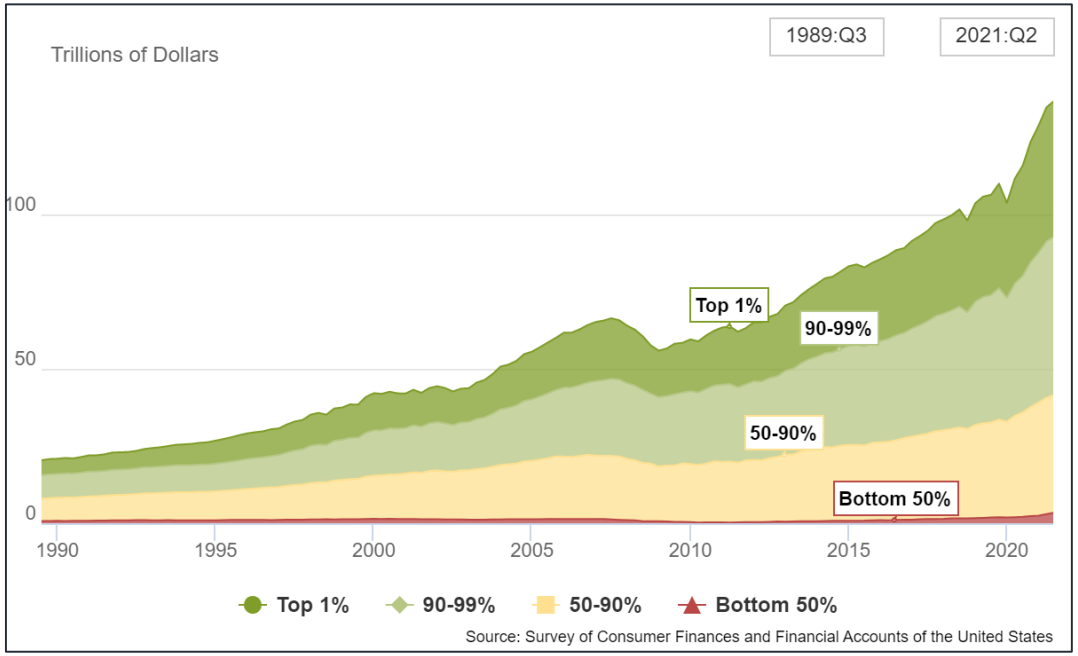
- Interesting, as it is likely a reflection of a cultural shift reflected via generational birth cohort membership consumer behavior.
- However, it is not likely to be a driving force behind the overall decrease in life insurance consumption.

Generational birth cohort theory: Extends birth cohort findings from Chen, Wong, and Lee (2001)

- More recent birth cohorts subsequently purchase fewer life insurance policies than the former cohort.
- Attribute the changes to cultural changes for each subsequent generation. Delaying (or avoiding) having children, marrying later, more independent women, etc.

Per life cycle theory, consumption is a function of wealth plus expected lifetime earnings divided by the number of years until retirement (or death depending on the model used).
Therefore, wealth levels, by definition, play a significant role in the consumption of life insurance products.

- Saez and Zucman (2014) examine wealth in the United States via income tax returns from 1913 through 2012 and find:
  - Wealth inequality/disparity has increased considerably since the mid-1980s.
  - They attribute this growing disparity to the rise of the share of wealth owned by the top 0.1\% richest families.



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  - Wealth inequality/disparity has increased considerably since the mid-1980s.
  - They attribute this growing disparity to the rise of the share of wealth owned by the top 0.1\% richest families.
- Smith (1995) finds racial and ethnic wealth disparities are large, and attributes them, in part, to differential inheritance and bequest inequities that persist for these demographic groups across generations.
- Eisenhauer and Halek (1999) find that increasing household wealth has a positive effect on the demand for life insurance.
- Bertaut and Starr-McCluer (2000) find that households with the highest likelihood to own permanent insurance are those that are wealthier.
- Brobeck (2011) determine there is need for concern regarding the lack of coverage for low to moderate income households.
- Mulholland, Finke, and Huston (2015) find that households who own cash value policies are on average wealthier and more financially sophisticated. They argue this finding lends support to their hypothesis that permanent life insurance is increasingly being used as a tax shield rather than as a hedge against a loss in human capital. This could signal a difference in utilization of different types of policies by wealthy households, which would be further widened by the growing wealth disparity within the nation.
- Wang (2019) finds that for married couples whose husband is in the middle to high income earning brackets, life insurance demand decreases monotonically as wealth increases.

2.6: Identifying as Jewish and not attending religious services.

- Friedlander, M. L., M. L. Friedman, M. J. Miller, M. V. Ellis, L. K. Friedlander, and V. G. Mikhaylov, 2010
  - Jewish Americans experience their identity as Jews at a primary intersection of culture and religion, with varying degrees per individual.
  - This creates potential limitations for interpretation of the individuals who self-identified as Jewish, as they may be doing so from the perspective of cultural identity instead of a religious one.

- Alper, B. A., and D. V. Olson, 2013,
  - Find a positive association between rates of synagogue attendance and Jewish population density.

- Weisskirch, R. S., S. Yeong Kim, S. J. Schwartz, and S. Krauss Whitbourne, 2016
  - Throughout American history Jews have been identified as a group using either race, ethnicity, members of a religion or as a culture.
  - The authors define Jewish Americans as an ethnic group for the purpose of their study.
  - Examine religious participation within a sample of Jewish Americans.
  - When compared against other ethnic groups comprised of African Americans, Asian Americans, White Americans, Jewish Americans, and Hispanic Americans, Jewish Americans were significantly less likely to have attended religious services, prayed, or followed religious customs compared with any of the other ethnic groups studied.

	Religious service attendance *M* (*SD*)	Frequency of prayer *M* (*SD*)	Religious observance *M* (*SD*)
African Americans	2.01 (1.05)	3.80 (1.17)	3.20 (1.05)
Asian Americans	1.73 (0.99)	2.71 (1.39)	2.56 (1.23)
White Americans	1.71 (0.95)	3.07 (1.39)	2.82 (1.23)
Jewish Americans	1.51 (0.68)	2.37 (1.03)	2.43 (0.74)
Hispanic Americans	1.72 (0.97)	3.28 (1.26)	2.81 (1.11)
	$F(4, 8442) = 18.44^{**}$	$F(4, 8466) = 94.05^{**}$	$F(4, 8448) = 37.31^{**}$

Note. In pairwise comparisons with Jewish Americans as the referent group, all findings were significant ($ps < .01$), except for between Jewish Americans and Asian Americans on religious observance.
$^{**}p < .01$.

2.7: Avoid using "impact" to describe the probability of owning life insurance.

- Searched throughout both empirical studies, and appropriately revised.

- Was careful during my job talk to not use the word "impact".

  - Focused on association and relationships, not causality.

2.8: How many observations are excluded due to the life insurance and/or religion questions?

Pull in the data (wide format) and delete missing survey responses.

A total of 42,124 respondents.

Reshape data for longitudinal analysis (long format).

Yields a total of **263,743** survey responses/observations.

42,124 respondents in 26,546 households

Drop the observations where the individual did not answer the question for either the DV and/or the primary variable of interest.

- Drop if they did not answer the question for the DV, "Do you have any life insurance [whole or term policy type], including individual or group policies?". (yes = 1, 0 otherwise)
  - Results in 3,941 observations (1.5%) being dropped (new total of 259,802 observations).
  - 41,877 respondents representing 26,394 households
- Drop if they did not answer the multiple-choice question to self-identify religious preference. Choices are Protestant, Catholic, Jewish, Other Religion, or None/No Preference
  - Results in 817 observations (.31%) being dropped, with a new total of **258,985** observations.
  - 41,734 respondents representing 26,360 households

Cross-Section Statistics for Survey Wave 2	Early Baby-Boomers: 2006					Mid Baby-Boomers: 2012					Late Baby-Boomers: 2018				
Variable	**N**	**Mean**	**Std. dev.**	**Min**	**Max**	**N**	**Mean**	**Std. dev.**	**Min**	**Max**	**N**	**Mean**	**Std. dev.**	**Min**	**Max**
Resp. Owns Life Insurance	2,723	0.722	0.458	0	1	3,836	0.629	0.483	0	1	2,962	0.626	0.484	0	1
Religious Identity															
Protestant	2,723	0.577	0.494	0	1	3,836	0.516	0.500	0	1	2,962	0.489	0.500	0	1
Catholic	2,723	0.263	0.440	0	1	3,836	0.265	0.441	0	1	2,962	0.226	0.418	0	1
Jewish	2,723	0.020	0.139	0	1	3,836	0.012	0.109	0	1	2,962	0.011	0.107	0	1
Other Religion	2,723	0.010	0.101	0	1	3,836	0.055	0.228	0	1	2,962	0.080	0.271	0	1
Not Religious	2,723	0.134	0.337	0	1	3,836	0.152	0.358	0	1	2,962	0.194	0.389	0	1
Age	2,723	54.028	3.483	31	59	3,836	54.368	41.315	27	77	2,962	54.764	3.724	28	71
Age Squared	2,723	2931.142	354.129	961	3481	3,836	2972.955	433.285	729	5929	2,962	3012.924	382.253	784	5041
Sex															
Female	2,723	0.544	0.498	0	1	3,836	0.553	0.498	0	1	2,962	0.553	0.497	0	1
Male	2,723	0.456	0.498	0	1	3,836	0.447	0.498	0	1	2,962	0.447	0.497	0	1
Race															
White/Caucasian	2,723	0.745	0.436	0	1	3,836	0.611	0.494	0	1	2,962	0.556	0.500	0	1
Black/African-American	2,723	0.151	0.358	0	1	3,836	0.258	0.437	0	1	2,962	0.242	0.429	0	1
Other Race	2,723	0.104	0.305	0	1	3,836	0.132	0.338	0	1	2,962	0.201	0.401	0	1
Ethnicity															
Hispanic/Latin	2,723	0.129	0.349	0	1	3,836	0.179	0.383	0	1	2,962	0.193	0.395	0	1
non-Hispanic/non-Latin	2,723	0.871	0.349	0	1	3,836	0.821	0.400	0	1	2,962	0.807	0.404	0	1
Marital Status															
Never Married	2,723	0.049	0.222	0	1	3,836	0.092	0.294	0	1	2,962	0.098	0.319	0	1
Married/Partnered	2,723	0.753	0.431	0	1	3,836	0.700	0.458	0	1	2,962	0.668	0.471	0	1
Separated	2,723	0.026	0.159	0	1	3,836	0.038	0.190	0	1	2,962	0.040	0.196	0	1
Divorced	2,723	0.141	0.348	0	1	3,836	0.143	0.354	0	1	2,962	0.168	0.374	0	1
Widowed	2,723	0.030	0.172	0	1	3,836	0.027	0.163	0	1	2,962	0.026	0.158	0	1
Years of Education	2,723	13.453	2.908	0	17	3,836	13.213	2.925	0	17	2,962	13.344	3.214	0	17
# of Children	2,723	2.636	1.743	0	11	3,836	2.705	1.821	0	11	2,962	2.587	1.873	0	11
Economic LC Variables															
Bequest$100KIntention	2,723	0.725	0.447	0	1	3,836	0.688	0.464	0	1	2,962	0.713	0.452	0	1
Percent of Stocks/Mutuals	2,723	0.042	0.142	-1.25	3.571	3,836	0.028	0.110	-0.435	1	2,962	0.027	0.235	-11	1.388889
OwnHome	2,723	0.813	0.390	0	1	3,836	0.702	0.457	0	1	2,962	0.678	0.467	0	1
ln(HHIncome)	2,723	10.968	1.097	3.219	17.049	3,836	10.814	1.210	1.386	14.286	2,962	10.902	1.362	0.693	15.395
ln(HHIncome)squared	2,723	121.501	23.236	10.361	290.658	3,836	118.426	24.719	1.922	204.076	2,962	120.698	27.285	0.480	237.012
ln(HHWealth)	2,723	10.932	3.683	0.000	16.487	3,836	9.383	4.558	0	16.912	2,962	10.016	4.244	0	18.422
ln(HHWealth)squared	2,723	133.058	56.075	0.000	271.82	3,836	108.812	61.887	0	286.006	2,962	118.320	60.570	0	339.352
WorkerinHH	2,723	0.888	0.315	0	1	3,836	0.837	0.369	0	1	2,962	0.836	0.370	0	1
#HHResidents	2,723	2.705	1.380	1	14	3,836	2.845	1.476	1	12	2,962	2.859	1.509	1	12
ΔHHIncome	2,723	1.904	34.292	-1	1095	3,836	6.159	274.278	-1	16821.25	2,962	13.115	369.541	-1	17084.03
ΔHHWealth	2,723	-0.802	58.756	-1544.563	887.889	3,836	1.501	103.620	-1271	4208.6	2,962	-5.946	299.336	-15395	1399
NewHHJob	2,723	0.296	0.457	0	1	3,836	0.282	0.450	0	1	2,962	0.270	0.444	0	1
NewHHUnemployed	2,723	0.039	0.193	0	1	3,836	0.073	0.261	0	1	2,962	0.044	0.204	0	1
NewHHRetiree	2,723	0.072	0.258	0	1	3,836	0.080	0.271	0	1	2,962	0.080	0.272	0	1

2.9: Match the summary statistics table to the regression table.

2.10: Add discussion/commentary on the messaging from the various religions—What might explain the differences across the religions…?

Renamed the "Role of Religion" section to "The Roles of Christian Churches and Persuasion Bias"

- Persuasion bias can, via the two necessary factors of social influence from an opinion leader and unidimensional/repetitive messaging across a network, significantly influence the views of individuals (Demarzo, Vayanos, and Zwiebel, 2003; DeGroot, 1974).
- Persuasion bias is the result of a boundedly rational individual not optimally processing information.
    - An optimal decision making process would consist of aggregating information received multiple times from within a network, by discounting the information they receive repeatedly.
    - Per Demarzo's model, all agents treat all information they receive as new and do not account for the fact that they have heard it before from within the same network.
- Much academic work has identified the effects of persuasion bias on consumer decision making. (Katz and Lazarsfeld, 1955; Galbraith, 1967; Degroot, 1974; Demarzo, Vayanos, and Zwiebel, 2003; Ackerberg, 2003; Brandts, Giritligil, and Weber, 2015).
- Dellavigna and Gentzkow, 2009 examine the effect of persuasive messaging when paired with social pressures, and find the combination significantly increases the likelihood of consumers changing their behavior.
- The messaging shift encouraging the purchasing of life insurance, via moral persuasion by both the religious and secular life insurance companies, successfully shifted consumer perception of life insurance. This affected consumer behavior, which resulted in increased life insurance sales. (Zelizer 1978, 1979; Stark and McCann, 1993; Brackenridge, 1999).
- I posit the residual effects of the initial persuasion bias will still be evident when looking at Christian consumer behavior present day.

Religion...

Limitations: Omitted variables, unavailable within the data, may further explain the consumer behavior for those individuals who identify Protestant, Catholic, or Jewish.

- Academic work within economics has long acknowledged the effect of the Protestant Work Ethic (PWE) theory. (Weber, 1905) documented and coined the term “Protestant Work Ethic”, arguing that Protestantism was part of the foundation supporting the development of rationalism.

- To assess one's level of PWE, empirical analyses commonly employed a 47 question, 5-point agree/disagree Likert scale, where question number 38 read; “A man should have enough insurance to take care of his family in case he dies”.

    - The stronger the magnitude of this belief, the stronger the measure of PWE overall.

- For Catholic individuals, Bennett (2009) argues that frequent Catholic doctrinal disputes around social and cultural policies between the Pope and the Congregation for the Doctrine of Faith frequently intersect with secular ideals, making it challenging to disentangle from theological discourse.

- Numerous fraternal Catholic life insurance companies exist, and the Presbyterian church still offers life insurance to its ministers and congregants.

- Judaism allows the purchasing of life insurance as well.

2.11: Add education to the time series analysis on Table 21.

Time Series for All Cohorts Combined: Yearly FE

Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
Total Annual Premium Paid for LI	0.000***	0.000***	0.000***	0.000***	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Protestant # Age at Interview	0.003	0.011	0.008	0.014**	-0.008
	(0.002)	(0.007)	(0.007)	(0.006)	(0.006)
Catholic # Age at Interview	0.003	-0.006	-0.007	0.017**	-0.005
	(0.002)	(0.007)	(0.007)	(0.007)	(0.007)
Jewish # Age at Interview	-0.009**	-0.030*	-0.020	0.017	-0.024**
	(0.005)	(0.016)	(0.015)	(0.012)	(0.012)
Other Religion # Age at Interview	0.004	0.036**	0.025	0.023	-0.013
	(0.005)	(0.018)	(0.017)	(0.017)	(0.017)
Age at Interview	-0.023***	-0.213***	-0.194***	0.000	-0.038***
	(0.004)	(0.014)	(0.014)	(0.012)	(0.012)
Age Squared	0.000*	0.002***	0.002***	-0.000	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married/Partnered	0.050	-0.373**	-0.405**	0.241	0.037
	(0.050)	(0.162)	(0.157)	(0.166)	(0.164)
Separated	0.050	-0.492***	-0.497***	0.328*	0.068
	(0.053)	(0.173)	(0.168)	(0.177)	(0.175)
Divorced	0.002	-0.363**	-0.374**	0.104	0.120
	(0.052)	(0.168)	(0.163)	(0.170)	(0.168)
Widowed	0.035	-0.411**	-0.458***	0.276*	0.020
	(0.050)	(0.163)	(0.158)	(0.166)	(0.164)

Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
Planning Large Bequest	0.033***	0.102***	0.073***	0.071***	-0.043**
	(0.007)	(0.024)	(0.023)	(0.021)	(0.021)
% Stock/Mutual Held	-0.003	-0.002	0.003	0.124***	-0.064
	(0.012)	(0.038)	(0.036)	(0.044)	(0.044)
Own Home	0.042***	0.046	0.026	0.021	0.005
	(0.012)	(0.039)	(0.038)	(0.034)	(0.033)
# of Children in Household	0.011**	-0.056***	-0.060***	0.033**	0.006
	(0.005)	(0.017)	(0.017)	(0.016)	(0.016)
At Least 1 Worker in HH	0.029***	0.149***	0.127***	0.000	0.010
	(0.008)	(0.027)	(0.026)	(0.021)	(0.021)
# of HH Residents	0.002	-0.003	-0.006	-0.003	0.013
	(0.003)	(0.011)	(0.011)	(0.010)	(0.010)
Percentage Change in HH Income	-0.000	0.000**	0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Percentage Change in HH Wealth	-0.000**	0.000	0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
New HH Job	0.007	0.006	0.011	0.020	-0.028
	(0.008)	(0.027)	(0.026)	(0.022)	(0.022)
New HH Unemployment	-0.030*	-0.092*	-0.091*	0.006	-0.015
	(0.016)	(0.054)	(0.052)	(0.045)	(0.045)
New HH Retiree	-0.035***	-0.047**	-0.031	0.009	-0.032*
	(0.006)	(0.021)	(0.020)	(0.017)	(0.016)
R-Squared	0.017	0.042	0.044	0.008	0.022
Number of observations	87,284	77,932	77,388	19,017	18,955

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Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
All Previous Controls	yes	yes	yes	yes	yes
Low Income (LI)	-0.014	-0.088***	-0.064**	-0.009	-0.000
	(0.010)	(0.033)	(0.032)	(0.026)	(0.025)
No Diploma # LI	-0.031	0.051	0.076	-0.014	-0.056
	(0.024)	(0.081)	(0.078)	(0.067)	(0.066)
Associates # LI	-0.018	0.201**	0.211**	-0.013	-0.031
	(0.030)	(0.097)	(0.094)	(0.080)	(0.079)
Bachelors # LI	-0.019	0.073	0.075	0.064	-0.048
	(0.021)	(0.069)	(0.066)	(0.050)	(0.049)
Masters # LI	-0.013	0.285***	0.247***	-0.000	0.034
	(0.028)	(0.091)	(0.088)	(0.067)	(0.066)
Doctorate # LI	0.026	0.242	0.300*	0.046	0.086
	(0.054)	(0.179)	(0.173)	(0.117)	(0.115)

Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
All Previous Controls	yes	yes	yes	yes	yes
Low Wealth (LW)	0.002	0.018	0.027	0.030	-0.010
	(0.011)	(0.037)	(0.036)	(0.030)	(0.030)
No Diploma # LW	0.016	0.128	0.096	-0.006	-0.057
	(0.026)	(0.088)	(0.086)	(0.076)	(0.075)
Associates # LW	-0.079**	-0.062	-0.004	0.008	-0.035
	(0.033)	(0.110)	(0.106)	(0.088)	(0.087)
Bachelors # LW	-0.007	-0.019	-0.005	-0.074	0.050
	(0.024)	(0.078)	(0.076)	(0.061)	(0.060)
Masters # LW	0.063**	0.052	0.003	0.046	-0.029
	(0.031)	(0.102)	(0.098)	(0.077)	(0.076)
Doctorate # LW	0.148**	-0.166	-0.221	-0.034	0.427**
	(0.066)	(0.217)	(0.209)	(0.177)	(0.175)

Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
All Previous Controls	yes	yes	yes	yes	yes
High Income (HI)	0.010	0.025	0.011	0.049	-0.018
	(0.013)	(0.043)	(0.042)	(0.033)	(0.032)
No Diploma # HI	-0.043	0.102	0.137	0.084	-0.179*
	(0.039)	(0.135)	(0.130)	(0.109)	(0.108)
Associates # HI	-0.034	-0.042	0.015	-0.044	0.081
	(0.033)	(0.107)	(0.104)	(0.086)	(0.085)
Bachelors # HI	0.009	0.064	0.068	-0.021	-0.007
	(0.021)	(0.069)	(0.067)	(0.048)	(0.048)
Masters # HI	0.018	0.068	0.065	-0.031	-0.035
	(0.025)	(0.083)	(0.081)	(0.062)	(0.061)
Doctorate # HI	0.054	-0.166	-0.137	-0.115	0.087
	(0.045)	(0.149)	(0.143)	(0.089)	(0.088)

Dependent Variable	Number of Life Policies	ln(Total Value of Policies)	ln(Average Policy Value)	# of Whole Policies	# of Term Policies
All Previous Controls	yes	yes	yes	yes	yes
High Wealth (HW)	-0.024*	-0.020	-0.024	0.079**	-0.070**
	(0.014)	(0.046)	(0.044)	(0.035)	(0.034)
No Diploma # HW	0.010	0.015	-0.065	-0.138	0.096
	(0.042)	(0.145)	(0.141)	(0.119)	(0.118)
Associates # HW	0.018	0.050	0.087	0.098	-0.054
	(0.039)	(0.129)	(0.125)	(0.101)	(0.100)
Bachelors # HW	-0.023	-0.092	-0.056	-0.137**	0.037
	(0.024)	(0.080)	(0.077)	(0.055)	(0.054)
Masters # HW	0.016	-0.150	-0.161*	-0.005	0.020
	(0.030)	(0.098)	(0.095)	(0.072)	(0.071)
Doctorate # HW	-0.067	-0.141	-0.107	-0.089	0.063
	(0.046)	(0.155)	(0.150)	(0.094)	(0.093)

Essays on Life Insurance

	Paper	Area of Research	Research Question	Key Findings	Target Journal
1	Heidesch & Carson, “A Primer on the Evolution of Life Insurance Within the United States”	Life Insurance Demand; Economic History	What were the primary determinants of life insurance demand for the first American consumers to ever utilize it?	Christian churches, via moral persuasion, played a significant role in affecting American consumer behavior with respect to life insurance.	Journal of Economic History
2	Heidesch, Carson, Ragin, and Watson: “Life Insurance Demand Update with a Focus on Religion and Generational Birth Cohorts”	Determinants of Life Insurance Demand	Is Christianity a determinant of life insurance demand within the United States?	Being a Christian member of older generational cohorts is positively associated with life insurance demand.	Journal of Risk and Insurance
3	Heidesch, Carson, and Ragin: “Life Insurance Demand at the Intersection of Race and Sex”	Life Insurance Demand; Consumer Behavior	Do consumer subgroups have unique determinants of demand?: An examination of Black female consumers at the intersection of race and sex.		

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Essays on Life Insurance

	Paper	Area of Research	Research Question	Key Findings	Target Journal
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3	Heidesch, Carson, and Ragin: “Life Insurance Demand at the Intersection of Race and Sex”	Life Insurance Demand; Consumer Behavior	Do consumer subgroups have unique determinants of demand?: An examination of Black female consumers at the intersection of race and sex.	The consumer subgroup of Black females have a unique set of determinants of life insurance demand.	AER Insights

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Essay 3: Updates/Revisions

Essay 3: Life Insurance Demand at the Intersection of Race and Sex

1. Add a brief description/definition of GBC Theory
2. Add lapse analyses along with the purchase analyses
3. What is the N of people who do not buy life insurance (add brief footnote/discussion)
4. Keep Slide 46 it the way it is, and add analyses where you control for BF, CF, CM, BM.
5. Add education to time series with whole life as a control.

3.1: Add a brief definition of GBC Theory.

- Generational birth cohort theory (Strauss and Howe, 1991), suggests there are likely changes in consumption patterns when examining demand across a set of generational birth cohorts.
- Dawson (1994) argues that the stark difference in economic classes of individuals that exist across the country were created as a result of the historic divisions of race within the United States.
- Building on the assumption Dawson is correct, I invoke the theorem by Mossin (1968) to lend support to the argument that different consumer subgroups, stratified by their intersections of race and sex, should be expected to behave differently from each other with respect to insurance utilization.
- The derivation of the utility functions between two individuals from separate consumer subroups should then be expected to differ, as they depend on the probability distributions that each individual (a product of the consumer socialization processes within their own consumer subgroup) will encounter (Mossin, 1968: Ward, 1974; John, 1999).
- This argument can also be extended to generational birth cohort theory. Again, because the different groups of individuals will arguably have utility functions derived from different experiences than individuals belonging to different generational birth cohort groups.

3.2: Add lapse analyses.

Table 44
Time Series, Year FE: Unweighted
DV = New Lapse Since Last Wave

	BF	CF	CM	BM
New HH Unemployment	-0.013	0.016*	0.041***	0.034**
	(0.018)	(0.009)	(0.010)	(0.017)
NegInc1	-0.001	-0.004	-0.001	-0.011
	(0.007)	(0.003)	(0.004)	(0.008)
NegInc2	-0.006	-0.007**	0.001	-0.001
	(0.007)	(0.003)	(0.004)	(0.008)
NegInc3	-0.002	0.002	0.002	0.002
	(0.008)	(0.003)	(0.004)	(0.008)
NegNW1	0.001	0.003	0.004	0.001
	(0.006)	(0.003)	(0.004)	(0.007)
NegNW2	-0.015**	0.001	-0.003	-0.004
	(0.007)	(0.003)	(0.003)	(0.008)
NegNW3	0.001	0.001	-0.005	-0.017**
	(0.008)	(0.003)	(0.003)	(0.008)
New Life Insurance	0.121***	0.123***	0.160***	0.111***
	(0.011)	(0.005)	(0.006)	(0.013)
Newly Divorced	-0.013	-0.020	0.040**	0.039
	(0.029)	(0.015)	(0.017)	(0.034)
New HH Retiree	-0.006	0.021***	0.012***	0.008
	(0.007)	(0.003)	(0.003)	(0.007)
Newly Widowed	-0.020	0.006	-0.025	0.047
	(0.023)	(0.014)	(0.025)	(0.037)
Natural Log of HH Income	0.003	0.003*	0.001	-0.001
	(0.004)	(0.002)	(0.003)	(0.005)
Natural Log of Total Wealth	0.001	-0.000	0.002**	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Natural Log of Total Debt	0.001	-0.000	0.001	0.001
	(0.001)	(0.000)	(0.000)	(0.001)
Liquidity	-0.001	0.003***	-0.005***	0.001
	(0.005)	(0.001)	(0.002)	(0.004)
HHAvgAge	-0.000	-0.001	0.003**	-0.003
	(0.002)	(0.001)	(0.001)	(0.002)
Age Squared	0.000	0.000*	-0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
At Least 1 Worker in HH	-0.012	-0.009**	-0.002	-0.010
	(0.009)	(0.004)	(0.004)	(0.009)
College	0.031	0.004	-0.010	0.032
	(0.062)	(0.012)	(0.022)	(0.036)
# of Children per Household	-0.001	0.001	0.004	-0.004
	(0.004)	(0.003)	(0.003)	(0.004)
R-Squared	0.022	0.028	0.032	0.028
Number of observations	8,063	32,913	28,941	5,035

Note: $^{*}p < .1, ^{**}p < .05, ^{***}p < .01$. SEs in parentheses.
Consumer subgroups: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

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Table 45
Cross Section Analysis of SW2: Weighted
DV = New Lapse Since Last Wave

	BF	CF	CM	BM
New HH Unemployment	0.010	0.075*	0.081*	0.005
	(0.036)	(0.042)	(0.044)	(0.021)
NegInc1	-0.024	-0.012*	-0.016	-0.013*
	(0.022)	(0.007)	(0.011)	(0.007)
NegInc2	-0.046***	0.000	-0.007	-0.002
	(0.017)	(0.010)	(0.010)	(0.010)
NegInc3	-0.037**	-0.010	-0.001	0.015
	(0.018)	(0.010)	(0.013)	(0.032)
NegNW1	0.012	0.001	0.025*	-0.005
	(0.014)	(0.012)	(0.013)	(0.008)
NegNW2	-0.015	0.006	-0.000	0.017
	(0.012)	(0.009)	(0.007)	(0.029)
NegNW3	0.055	0.015	0.015	-0.019**
	(0.041)	(0.012)	(0.013)	(0.008)
New Life Insurance	0.086	0.138***	0.149***	0.062*
	(0.057)	(0.035)	(0.028)	(0.033)
Newly Divorced	-0.060**	-0.043***	-0.016	0.100
	(0.028)	(0.015)	(0.017)	(0.062)
New HH Retiree	0.016	0.003	0.012	-0.005
	(0.037)	(0.007)	(0.010)	(0.014)
Newly Widowed	-0.059*	-0.019*	-0.015**	-0.048
	(0.030)	(0.011)	(0.006)	(0.030)
Natural Log of HH Income	0.015	0.003	0.001	0.000
	(0.010)	(0.003)	(0.003)	(0.004)
Natural Log of Total Wealth	-0.004*	-0.006**	-0.000	0.001
	(0.002)	(0.002)	(0.002)	(0.001)
Natural Log of Total Debt	-0.001	0.000	0.000	-0.000
	(0.002)	(0.001)	(0.001)	(0.001)
Liquidity	0.015	-0.014	-0.005	-0.000
	(0.017)	(0.015)	(0.005)	(0.001)
HHAvgAge	-0.002	0.002**	0.000	-0.000
	(0.003)	(0.001)	(0.001)	(0.001)
Age Squared	0.000	-0.000**	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
At Least 1 Worker in HH	-0.011	0.002	0.001	-0.006
	(0.018)	(0.008)	(0.010)	(0.013)
College	0.018	0.019**	0.011	0.012
	(0.022)	(0.009)	(0.009)	(0.018)
# of Children per Household	0.001	-0.001	0.003	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
R-Squared	0.082	0.089	0.087	0.047
Number of observations	68,866	73,181	73,181	68,981

Note: $^{*}p < .1, ^{**}p < .05, ^{***}p < .01$. SEs in parentheses.
Consumer subgroups: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

3.3 What is the N of people who do not buy life insurance?

Time Series Analysis: Unweighted Data

BF 69.1% own N=22,244	➉ 15,371 own ➉ 6,873 do not
CF 61.8% own N=83,382	➉ 51,531 own ➉ 31,851 do not
CM 71.2% own N=68,393	➉ 48,698 own ➉ 19,695 do not
➢BM 68.6% own ➢N=14,346	➉ 9,841 own ➉ 4,505 do not

Cross-Section Analysis @ SW2: Weighted Data

BF 71.5% own N=162,431	➉ 116,138 own ➉ 46,293 do not
CF 71.1% own N=171,143	➉ 121,683 own ➉ 49,460 do not
CM 76.9% own N=171,134	➉ 131,602 own ➉ 39,532 do not
➢BM 66.8% own N=168,009	➉ 112,230 own ➉ 55,779 do not

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3.4: Keep slide 46 the way it is, and add analyses where you control for BF, CF, CM, BM.

Cross-Section LPM (Model 1): SW2 - Weighted Analysis: Cohorts 3 - 6

	BF	CF	CM	BM
Age at Interview	0.008	0.007**	0.004	-0.001
	(0.008)	(0.003)	(0.003)	(0.006)
Age Squared	-0.000	-0.000*	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Professional Occupation	0.056	0.087***	0.049***	0.080*
	(0.045)	(0.016)	(0.014)	(0.046)
Years of Education	0.030***	0.028***	0.030***	0.030***
	(0.005)	(0.003)	(0.003)	(0.007)
Married/Partnered	0.123***	0.099**	0.275***	0.256***
	(0.033)	(0.045)	(0.045)	(0.057)
Separated	-0.004	-0.066	-0.011	-0.065
	(0.066)	(0.070)	(0.068)	(0.100)
Divorced	0.058	0.028	0.110**	0.043
	(0.045)	(0.044)	(0.044)	(0.069)
Widowed	0.104**	0.034	0.188**	0.139
	(0.049)	(0.045)	(0.071)	(0.109)
Christian	0.036	0.134***	0.054***	0.056
	(0.058)	(0.023)	(0.013)	(0.035)
Year=2000	-0.024	0.009	0.003	-0.051
	(0.041)	(0.017)	(0.016)	(0.043)
Year=2006	-0.038	-0.001	-0.052***	-0.061
	(0.036)	(0.019)	(0.016)	(0.046)
Year=2012	-0.101**	-0.039*	-0.050***	-0.164***
	(0.040)	(0.020)	(0.019)	(0.061)
R-Squared	0.711	0.725	0.814	0.715
Number of Observations	162,431	171,143	171,134	168,009

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Cross-Section LPM (Comparisons): SW2 - Weighted Analysis: Cohorts 3 - 6

	Full: All
Black Female	0.106
	(0.126)
Caucasian Female	0.046
	(0.123)
Caucasian Male	0.111
	(0.123)
Black Male	0.058
	(0.128)
Age at Interview	0.002
	(0.004)
Age Squared	-0.000
	(0.000)
Professional Occupation	0.068***
	(0.009)
Years of Education	0.029***
	(0.002)
Married/Partnered	0.198***
	(0.028)
Separated	-0.028
	(0.039)
Divorced	0.082***
	(0.026)
Widowed	0.123***
	(0.030)
Christian	0.083***
	(0.012)
Year=2000	0.006
	(0.011)
Year=2006	-0.027**
	(0.011)
Year=2012	-0.050***
	(0.016)
R-Squared	0.766
Number of Observations	172,168

Note: $^{*}p < .1$,$^{**}p < .05$,$^{***}p < .01$. Standard errors in parentheses.
Consumer subgroups legend: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

Cross-Section LPM (Comparisons): SW2 - Weighted Analysis: Cohorts 3 - 6

	Full: All	Full: BF referent	Full: CF referent	Full: CM referent	Full: BM referent
Black Female	0.106		0.060***	-0.005	0.049**
	(0.126)		(0.016)	(0.016)	(0.020)
Caucasian Female	0.046	-0.058***		-0.065***	-0.011
	(0.123)	(0.015)		(0.010)	(0.021)
Caucasian Male	0.111	0.008	0.066***		0.054**
	(0.123)	(0.016)	(0.010)		(0.022)
Black Male	0.058	-0.045**	0.013	-0.052**	
	(0.128)	(0.020)	(0.022)	(0.023)	
Age at Interview	0.002	0.005**	0.003	0.006**	0.004
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)
Age Squared	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Professional Occupation	0.068***	0.068***	0.068***	0.068***	0.068***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Years of Education	0.029***	0.029***	0.029***	0.029***	0.029***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Married/Partnered	0.198***	0.198***	0.198***	0.198***	0.198***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Separated	-0.028	-0.028	-0.028	-0.028	-0.028
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
Divorced	0.082***	0.082***	0.082***	0.082***	0.082***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Widowed	0.123***	0.123***	0.123***	0.123***	0.123***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
Christian	0.083***	0.083***	0.083***	0.083***	0.083***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Year=2000	0.006	0.006	0.006	0.006	0.006
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Year=2006	-0.027**	-0.027**	-0.027**	-0.027**	-0.027**
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Year=2012	-0.050***	-0.050***	-0.050***	-0.050***	-0.050***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
R-Squared	0.766	0.766	0.766	0.766	0.766
Number of Observations	172,168	172,168	172,168	172,168	172,168

Note: $^{*}p < .1$,$^{**}p < .05$,$^{***}p < .01$. Standard errors in parentheses.
Consumer subgroups legend: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

Cross-Section LPM (Comparisons): SW2 - Weighted Analysis: Cohorts 3 - 6

	Full: All	Full: BF referent	Full: CF referent	Full: CM referent	Full: BM referent	BF	CF	CM	BM
Black Female	0.106		0.060***	-0.005	0.049**				
	(0.126)		(0.016)	(0.016)	(0.020)				
Caucasian Female	0.046	-0.058***		-0.065***	-0.011				
	(0.123)	(0.015)		(0.010)	(0.021)				
Caucasian Male	0.111	0.008	0.066***		0.054**				
	(0.123)	(0.016)	(0.010)		(0.022)				
Black Male	0.058	-0.045**	0.013	-0.052**					
	(0.128)	(0.020)	(0.022)	(0.023)					
Age at Interview	0.002	0.005**	0.003	0.006**	0.004	0.008	0.007**	0.004	-0.001
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.008)	(0.003)	(0.003)	(0.006)
Age Squared	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000*	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Professional Occupation	0.068***	0.068***	0.068***	0.068***	0.068***	0.056	0.087***	0.049***	0.080*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.045)	(0.016)	(0.014)	(0.046)
Years of Education	0.029***	0.029***	0.029***	0.029***	0.029***	0.030***	0.028***	0.030***	0.030***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)	(0.003)	(0.003)	(0.007)
Married/Partnered	0.198***	0.198***	0.198***	0.198***	0.198***	0.123***	0.099**	0.275***	0.256***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.033)	(0.045)	(0.045)	(0.057)
Separated	-0.028	-0.028	-0.028	-0.028	-0.028	-0.004	-0.066	-0.011	-0.065
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.066)	(0.070)	(0.068)	(0.100)
Divorced	0.082***	0.082***	0.082***	0.082***	0.082***	0.058	0.028	0.110**	0.043
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.045)	(0.044)	(0.044)	(0.069)
Widowed	0.123***	0.123***	0.123***	0.123***	0.123***	0.104**	0.034	0.188**	0.139
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.049)	(0.045)	(0.071)	(0.109)
Christian	0.083***	0.083***	0.083***	0.083***	0.083***	0.036	0.134***	0.054***	0.056
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.058)	(0.023)	(0.013)	(0.035)
Year=2000	0.006	0.006	0.006	0.006	0.006	-0.024	0.009	0.003	-0.051
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.041)	(0.017)	(0.016)	(0.043)
Year=2006	-0.027**	-0.027**	-0.027**	-0.027**	-0.027**	-0.038	-0.001	-0.052***	-0.061
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.036)	(0.019)	(0.016)	(0.046)
Year=2012	-0.050***	-0.050***	-0.050***	-0.050***	-0.050***	-0.101**	-0.039*	-0.050***	-0.164***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.040)	(0.020)	(0.019)	(0.061)
R-Squared	0.766	0.766	0.766	0.766	0.766	0.711	0.725	0.814	0.715
Number of Observations	172,168	172,168	172,168	172,168	172,168	163,548	172,260	172,251	169,126

Note: $^{*}p < .1$,$^{**}p < .05$,$^{***}p < .01$. Standard errors in parentheses.
Consumer subgroups legend: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

Cross-Section LPM (Comparisons): SW2 - Weighted Analysis: Cohorts 3 - 6

	Full: All	Full: BF referent	Full: CF referent	Full: CM referent	Full: BM referent	BF	CF	CM	BM
Black Female	0.106		0.060***	-0.005	0.049**				
	(0.126)		(0.016)	(0.016)	(0.020)				
Caucasian Female	0.046	-0.058***		-0.065***	-0.011				
	(0.123)	(0.015)		(0.010)	(0.021)				
Caucasian Male	0.111	0.008	0.066***		0.054**				
	(0.123)	(0.016)	(0.010)		(0.022)				
Black Male	0.058	-0.045**	0.013	-0.052**					
	(0.128)	(0.020)	(0.022)	(0.023)					
Age at Interview	0.002	0.005**	0.003	0.006**	0.004	0.008	0.007**	0.004	-0.001
	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.008)	(0.003)	(0.003)	(0.006)
Age Squared	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000*	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Professional Occupation	0.068***	0.068***	0.068***	0.068***	0.068***	0.056	0.087***	0.049***	0.080*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.045)	(0.016)	(0.014)	(0.046)
Years of Education	0.029***	0.029***	0.029***	0.029***	0.029***	0.030***	0.028***	0.030***	0.030***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)	(0.003)	(0.003)	(0.007)
Married/Partnered	0.198***	0.198***	0.198***	0.198***	0.198***	0.123***	0.099**	0.275***	0.256***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.033)	(0.045)	(0.045)	(0.057)
Separated	-0.028	-0.028	-0.028	-0.028	-0.028	-0.004	-0.066	-0.011	-0.065
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)	(0.066)	(0.070)	(0.068)	(0.100)
Divorced	0.082***	0.082***	0.082***	0.082***	0.082***	0.058	0.028	0.110**	0.043
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)	(0.045)	(0.044)	(0.044)	(0.069)
Widowed	0.123***	0.123***	0.123***	0.123***	0.123***	0.104**	0.034	0.188**	0.139
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.049)	(0.045)	(0.071)	(0.109)
Christian	0.083***	0.083***	0.083***	0.083***	0.083***	0.036	0.134***	0.054***	0.056
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.058)	(0.023)	(0.013)	(0.035)
Year=2000	0.006	0.006	0.006	0.006	0.006	-0.024	0.009	0.003	-0.051
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.041)	(0.017)	(0.016)	(0.043)
Year=2006	-0.027**	-0.027**	-0.027**	-0.027**	-0.027**	-0.038	-0.001	-0.052***	-0.061
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.036)	(0.019)	(0.016)	(0.046)
Year=2012	-0.050***	-0.050***	-0.050***	-0.050***	-0.050***	-0.101**	-0.039*	-0.050***	-0.164***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.040)	(0.020)	(0.019)	(0.061)
R-Squared	0.766	0.766	0.766	0.766	0.766	0.711	0.725	0.814	0.715
Number of Observations	172,168	172,168	172,168	172,168	172,168	163,548	172,260	172,251	169,126

Note: $^{*}p < .1$,$^{**}p < .05$,$^{***}p < .01$. Standard errors in parentheses.
Consumer subgroups legend: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

3.5 Add education to time series with whole life control.

Time Series, Year FE: 2004 - 2018: Unweighted
DV = Natural Log of Total Life Insurance Coverage

	BF	CF	CM	BM
Age at Interview	-0.317***	-0.230***	-0.147***	-0.024
	(0.064)	(0.024)	(0.022)	(0.078)
Age Squared	0.003***	0.002***	0.001***	0.001
	(0.000)	(0.000)	(0.000)	(0.001)
Married/Partnered	-0.716*	0.000	-0.515*	0.107
	(0.399)	(0.350)	(0.302)	(0.485)
Separated	-0.794*	-0.117	-0.617*	0.568
	(0.435)	(0.368)	(0.323)	(0.529)
Divorced	-0.403	-0.179	-0.581*	0.161
	(0.413)	(0.358)	(0.311)	(0.514)
Widowed	-0.305	-0.223	-0.595*	0.067
	(0.398)	(0.353)	(0.304)	(0.500)
Planning Large Bequest	0.224***	0.115***	0.000	0.153*
	(0.080)	(0.041)	(0.038)	(0.091)
Own a Whole Life Policy	-0.078	0.076**	0.185***	-0.060
	(0.078)	(0.035)	(0.032)	(0.087)
% Stock/Mutual Held	-0.005	0.149	-0.044	0.025
	(0.182)	(0.103)	(0.081)	(0.065)
Own Home	0.021	-0.039	0.041	0.160
	(0.149)	(0.066)	(0.063)	(0.175)
Natural Log of HH Income	-0.056	-0.250**	-0.203*	-0.268
	(0.211)	(0.116)	(0.118)	(0.329)
LN of HH Inc Squared	0.003	0.014**	0.014**	0.015
	(0.012)	(0.006)	(0.006)	(0.017)
Natural Log of Total Wealth	-0.006	0.016	-0.005	-0.096**
	(0.039)	(0.020)	(0.019)	(0.046)
LN of Wealth Squared	0.002	-0.001	0.001	0.009**
	(0.003)	(0.002)	(0.001)	(0.004)
# of Children	-0.007	-0.052*	-0.035	-0.125**
	(0.058)	(0.030)	(0.026)	(0.053)
Child(ren) Joined HH	-0.142	0.000	-0.010	0.161
	(0.116)	(0.062)	(0.057)	(0.134)
Child(ren) Left HH	0.145	-0.015	-0.025	-0.058
	(0.101)	(0.046)	(0.040)	(0.114)
At Least 1 Worker in HH	0.013	0.171***	0.113***	0.271**
	(0.106)	(0.044)	(0.037)	(0.115)
# of HH Residents	0.007	-0.003	-0.008	0.015
	(0.037)	(0.020)	(0.019)	(0.046)
Percentage Change in HH Income	0.000***	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Percentage Change in HH Wealth	-0.000	0.000**	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.001)
New HH Job	0.118	0.066	-0.054	-0.163
	(0.110)	(0.042)	(0.035)	(0.110)
New HH Unemployment	-0.149	-0.103	-0.109	-0.236
	(0.201)	(0.089)	(0.075)	(0.193)
New HH Retiree	-0.136	-0.066*	-0.042	0.119
	(0.088)	(0.034)	(0.028)	(0.091)
R-Squared	0.074	0.035	0.013	0.037
Number of observations	7,133	24,985	24,063	4,614

Note: $^{*}p < .1$, $^{**}p < .05$, $^{***}p < .01$. Standard errors in parentheses.
Consumer subgroups legend: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

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Table 39
Time Series, Year FE: 2004 - 2018: Unweighted
DV = Natural Log of Total Life Insurance Coverage
Education and Whole Life Interaction

	BF	CF	CM	BM
all previous controls	yes	yes	yes	yes
Own Whole Life	-0.033	0.035	0.167***	-0.152
	(0.103)	(0.045)	(0.044)	(0.120)
Whole Life# No Diploma or Degree	-0.279	0.126	-0.165	0.110
	(0.200)	(0.108)	(0.102)	(0.200)
Whole Life# Associates	0.072	0.087	0.141	-0.430
	(0.332)	(0.141)	(0.145)	(0.358)
Whole Life# Bachelors	0.182	0.234**	0.092	0.617*
	(0.265)	(0.112)	(0.090)	(0.334)
Whole Life# Masters	-0.364	-0.084	0.147	1.173**
	(0.345)	(0.131)	(0.118)	(0.515)
Whole Life# Doctorate	2.327**	0.009	0.058	0.867
	(1.186)	(0.315)	(0.174)	(1.015)
R-Squared	0.076	0.035	0.013	0.040
Number of observations	7,133	24,985	24,063	4,614

Note: $^{*}p < .1, ^{**}p < .05, ^{***}p < .01$. SEs in parentheses.
Consumer subgroups: "BF" = Black Females: "CF" = Caucasian Females: "CM" = Caucasian Males: "BM" = Black Males

Thank you!

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Appendix

HRS Data

- Health and Retirement Survey Data.
  - Performed by the Institute of Social Research.
  - Housed at the University of Michigan.
  - Funded by the National Institute of Aging.
- Survey of households with individuals over the age of 50.
  - The sampling scheme is a "complex survey design".
- First survey answers were collected in 1992 and the latest survey year available is 2018.
- There are currently seven active cohorts, each sampled every two years, with a new cohort added every six years.

Cohort Nickname	Description	Born	First Year Surveyed
AHEAD	The Study of Assets and Health Dynamics Among the Oldest Old	1923 or earlier	1993
CODA	Children of Depression Age	1924 to 1930	1998
HRS	Initial/Original HRS Cohort	1931 to 1941	1992
WB	War Babies	1942 to 1947	1998
EBB	Early Baby Boomers	1948 to 1953	2004
MBB	Mid Baby Boomers	1954 to 1959	2010
LBB	Late Baby Boomers	1960 to 1965	2016

	Time Series, FE: Cohorts 3+
Intercept (respondent owns LI: yes/no)	0.449**
Age at Interview	0.007*
Age Squared	-0.000***
Married/Partnered	0.016
Separated	-0.012
Divorced	0.011
Widowed	0.025*
Planning Large Bequest	0.006***
% Stock/Mutual Held	0.003
Own Home	0.016***
Natural Log of HH Income	-0.016**
LN of HH Inc Squared	0.002***
Natural Log of Total Wealth	0.006***
LN of Wealth Squared	-0.000***
# of Children in Household	0.001
At Least 1 Worker in HH	0.049***
# of HH Residents	0.003**
Percentage Change in HH Income	0.000
Percentage Change in HH Wealth	0.000
New HH Job	-0.011***
New HH Unemployment	-0.050***
New HH Retiree	-0.009***
Year=1995	-0.032
Year=1996	0.008
Year=1998	0.004
Year=2000	-0.019
Year=2002	-0.033
Year=2004	-0.036
Year=2006	-0.059
Year=2008	-0.068
Year=2010	-0.097*
Year=2012	-0.109*
Year=2014	-0.112
Year=2016	-0.124
Year=2018	-0.120
Cohort Specific Wave=2 # War Babies	0.036***
Cohort Specific Wave=2 # Early BB	0.065***
Cohort Specific Wave=3 # War Babies	0.059***
Cohort Specific Wave=3 # Early BB	0.047***
Cohort Specific Wave=4 # War Babies	0.061***
Cohort Specific Wave=4 # Early BB	0.049***
Cohort Specific Wave=5 # War Babies	0.053***
Cohort Specific Wave=5 # Early BB	0.034***
Cohort Specific Wave=6 # War Babies	0.048***
Cohort Specific Wave=6 # Early BB	0.025**
Cohort Specific Wave=7 # War Babies	0.043***
Cohort Specific Wave=7 # Early BB	0.021**
Cohort Specific Wave=8 # War Babies	0.034***
Cohort Specific Wave=9 # War Babies	0.022*
All other cohort/waves included?	yes
R-Squared	0.052
Number of observations	202,393

Wide Format: DV example

	hhidpn	r1lifein	r2lifein	r3lifein	r4lifein	r5lifein	r6lifein	r7lifein	r8lifein	r9lifein	r10lifein	r11lifein	r12lifein	r13lifein	r14lifein
1	1010	1.yes	0.no	.	.	.	.	.	.	.	.	.	.	.	.
2	2010	0.no	1.yes	1.yes	1.yes	1.yes	.	.	.	.	.	.	.	.	.
3	3010	0.no	1.yes	1.yes	0.no	1.yes	1.yes	1.yes	1.yes	1.yes	0.no	1.yes	.	.	.
4	3020	1.yes	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	.	.
5	10001010	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	.
6	10003020	1.yes	1.yes	1.yes	1.yes	.	.	.	.	.	.	.	.	.	.
7	10003030	1.yes	1.yes	0.no	1.yes	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no
8	10004010	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	.	.	.	.
9	10004040	1.yes	1.yes	1.yes	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no
10	10013010	1.yes	.	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	.	.
11	10013040	1.yes	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no
12	10038010	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	0.no	0.no	0.no	0.no	0.no	0.no
13	10038040	0.no	1.yes	0.no	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	0.no	0.no
14	10050010	1.yes	1.yes	1.yes	0.no	1.yes	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	.
15	10059020	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	.d	0.no	0.no
16	10059030	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	1.yes	0.no
17	10063010	0.no	0.no	0.no	.	.	.	0.no	0.no	.	0.no	0.no	0.no	0.no	.
18	10075020	.m	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no	0.no
19	10075030	.	.	0.no	0.no	0.no	0.no	0.no	0.no	.	.	.	.	.	.
20	10083010	.	.	.	1.yes	1.yes	1.yes	1.yes	1.yes	0.no	.	.	.	.	.

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Long Format: DV example

	hhidpn	hacohort	rlifein	year	surveywave
1	1010	HRS	Yes	1992	1
2	1010	HRS	No	1994	2
3	2010	HRS	No	1992	1
4	2010	HRS	Yes	1994	2
5	2010	HRS	Yes	1996	3
6	2010	HRS	Yes	1998	4
7	2010	HRS	Yes	2000	5
8	3010	HRS	No	1992	1
9	3010	HRS	Yes	1994	2
10	3010	HRS	Yes	1996	3
11	3010	HRS	No	1998	4
12	3010	HRS	Yes	2000	5
13	3010	HRS	Yes	2002	6
14	3010	HRS	Yes	2004	7
15	3010	HRS	Yes	2006	8
16	3010	HRS	Yes	2008	9
17	3010	HRS	No	2010	10
18	3010	HRS	Yes	2012	11
19	3020	HRS	Yes	1992	1
20	3020	HRS	No	1994	2
21	3020	HRS	No	1996	3
22	3020	HRS	No	1998	4
23	3020	HRS	No	2000	5
24	3020	HRS	No	2002	6
25	3020	HRS	No	2004	7
26	3020	HRS	No	2006	8
27	3020	HRS	No	2008	9
28	3020	HRS	No	2010	10
29	3020	HRS	No	2012	11
30	3020	HRS	No	2014	12
31	10001010	HRS	No	1992	1
32	10001010	HRS	No	1994	2
33	10001010	HRS	No	1996	3
34	10001010	HRS	No	1998	4
35	10001010	HRS	No	2000	5
36	10001010	HRS	No	2002	6
37	10001010	HRS	No	2004	7

	Cohort Specific Wave														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Cohort Name (Wave 1 Year)															
AHEAD (1993)															
Frequency	7,928	6,848	5,766	4,810	3,921	3,220	2,568	2,015	1,412	1,083	782	471	266		41,090
Percent	3.06%	2.64%	2.23%	1.86%	1.51%	1.24%	0.99%	0.78%	0.55%	0.42%	0.30%	0.18%	0.10%		15.87%
CODA (1998)															
Frequency	2,278	2,098	1,932	1,758	1,599	1,428	1,224	1,085	873	626	424				15,325
Percent	0.88%	0.81%	0.75%	0.68%	0.62%	0.55%	0.47%	0.42%	0.34%	0.24%	0.16%				5.92%
HRS (1992)															
Frequency	12,335	11,278	10,800	10,458	9,903	9,565	9,230	8,739	8,345	7,759	7,249	6,484	5,588	4,455	122,188
Percent	4.76%	4.35%	4.17%	4.04%	3.82%	3.69%	3.56%	3.37%	3.22%	3.00%	2.80%	2.50%	2.16%	1.72%	47.18%
War Babies (1998)															
Frequency	2,501	2,391	2,363	2,278	2,217	2,147	2,113	2,039	1,914	1,722	1,474				23,159
Percent	0.97%	0.92%	0.91%	0.88%	0.86%	0.83%	0.82%	0.79%	0.74%	0.66%	0.57%				8.94%
Early BB (2004)															
Frequency	3,269	2,994	2,931	4,148	4,028	3,880	3,612	3,121							27,983
Percent	1.26%	1.16%	1.13%	1.60%	1.56%	1.50%	1.39%	1.21%							10.80%
Mid BB (2010)															
Frequency	4,720	4,667	4,437	4,133	3,405										21,362
Percent	1.82%	1.80%	1.71%	1.60%	1.31%										8.25%
Late BB (2016)															
Frequency	4,275	3,603													7,878
Percent	1.65%	1.39%													3.04%
Total															
Frequency	37,306	33,879	28,229	27,585	25,073	20,240	18,747	16,999	12,544	11,190	9,929	6,955	5,854	4,455	258,985
Percent	14.40%	13.08%	10.90%	10.65%	9.68%	7.82%	7.24%	6.56%	4.84%	4.32%	3.83%	2.69%	2.26%	1.72%	100.00%

- Initially begin with 42,124 respondent-level survey responses, from 1992 through 2018.
- Data is reshaped to long and empty responses are removed.
- Final full sample 258,985 survey responses, representing 41,734 respondents.

Univariate Comparison
1998-2008

Variable	Lapsed	No Lapse	Difference
	n=1,240	n=42,129	
Emergency Fund Hypothesis			
NewHHUnemployment	0.0347	0.0155	0.0192 ***
NegInc1	0.1581	0.1639	-0.0058
NegInc2	0.1435	0.1596	-0.0160
NegInc3	0.1774	0.1551	0.0223 **
NegNW1	0.2008	0.1712	0.0296 **
NegNW2	0.1637	0.1713	-0.0076
NegNW3	0.1581	0.1694	-0.0113
Policy Replacement Hypothesis			
NewLifeInsurance	0.248	0.0360	0.2116 ***
Life Cycle Variables			
Average HH Age	64.2762	67.4549	-3.1787 ***
Age < 60	0.3411	0.2619	0.0793 ***
Age61-66	0.3250	0.2445	0.0805 ***
Age 67_74	0.1992	0.2424	-0.0433 ***
Age 75 +	0.1347	0.2512	-0.1166 ***
NewDivorce	0.0081	0.0059	0.0022
NewHHRetire	0.2500	0.1776	0.0724 ***
NewWidow	0.0056	0.0059	-0.0002
HH Level Control Variables			
ln(HH Income)	10.7848	10.6352	0.1496 ***
ln(HH NetWorth)	11.5746	11.6723	-0.0977
ln(Debt)	3.4210	2.5314	0.8896 ***
Liquidity Measure	0.1511	0.2315	-0.0804 **
Number of Children	3.3508	3.2154	0.1354 **
HH Worker	0.6153	0.5300	0.0853 ***
College Degree for R or S	0.3621	0.2777	0.0844 ***

BF

n = 8,063

Variable	Mean	Std. dev.	Min	Max
NewLapse	0.0400595	0.196111	0	1
Lapse was Voluntary	0.0295175	0.1692626	0	1
NewHHUnemp	0.0200918	0.140323	0	1
NegInc1	0.185911	0.3890589	0	1
NegInc2	0.1535409	0.3605304	0	1
NegInc3	0.1390301	0.3459994	0	1
NegNW1	0.2785564	0.4483165	0	1
NegNW2	0.1365497	0.3433926	0	1
NegNW3	0.1158378	0.3200501	0	1
NewLI	0.0527099	0.2234676	0	1
NewDivorce	0.0083096	0.0907829	0	1
NewHHRetiree	0.17016	0.3757966	0	1
NewWidow	0.0111621	0.1050661	0	1
ln(HHInc)	10.24229	1.055455	0	15.197
ln(HHWealth)	9.812769	3.616587	0	16.542
ln(Debt)	3.75659	4.27145	0	13.305
Liquidity	0.1487613	0.5505756	-14.789	20.105
HHAvgAge	66.59413	9.277664	37	108
AgeSq	4418.411	1328.658	961	11664
WorkerinHH	0.5094878	0.499941	0	1
College	0.2026541	0.4020018	0	1
ChildrenperHH	3.484187	2.317668	0	11

CF

n = 32,913

Variable	Mean	Std. dev.	Min	Max
NewLapse	0.0290463	0.1679388	0	1
Lapse was Voluntary	0.020539	0.1418371	0	1
NewHHUnemp	0.0159511	0.1252884	0	1
NegInc1	0.1556832	0.3625602	0	1
NegInc2	0.1561389	0.3629925	0	1
NegInc3	0.1592988	0.36596	0	1
NegNW1	0.1492116	0.3563023	0	1
NegNW2	0.1714824	0.3769357	0	1
NegNW3	0.1718774	0.3772796	0	1
NewLI	0.0480053	0.2137808	0	1
NewDivorce	0.0053778	0.0731372	0	1
NewHHRetiree	0.1654361	0.3715794	0	1
NewWidow	0.0062589	0.0788666	0	1
ln(HHInc)	10.691	0.9970537	0	15.479
ln(HHWealth)	11.68512	2.669077	0	18.323
ln(Debt)	2.675638	4.015823	0	13.816
Liquidity	0.2361762	0.9516105	-60	100.000
HHAvgAge	68.21924	10.2068	27	104
AgeSq	4628.234	1489.306	441	10816
WorkerinHH	0.5186704	0.4996589	0	1
College	0.2892778	0.453434	0	1
ChildrenperHH	3.079756	1.877893	0	11

CM

n = 28,941

Variable	Mean	Std. dev.	Min	Max
NewLapse	0.0376974	0.1904667	0	1
Lapse was Voluntary	0.0284717	0.1663191	0	1
NewHHUnemp	0.0184859	0.1347026	0	1
NegInc1	0.1565945	0.3634243	0	1
NegInc2	0.1579766	0.3647253	0	1
NegInc3	0.1602225	0.3668186	0	1
NegNW1	0.1334439	0.3400597	0	1
NegNW2	0.1800214	0.3842119	0	1
NegNW3	0.1831312	0.3867807	0	1
NewLI	0.0451263	0.2075847	0	1
NewDivorce	0.0062541	0.0788366	0	1
NewHHRetiree	0.1771881	0.3818344	0	1
NewWidow	0.0027297	0.052176	0	1
ln(HHInc)	10.93113	0.9150473	0	16.423
ln(HHWealth)	12.11063	2.372643	0	18.272
ln(Debt)	2.597635	4.01854	0	14.221
Liquidity	0.2266133	0.6726179	-41	75
HHAvgAge	67.12928	9.662422	36	101
AgeSq	4786.906	1369.939	729	10201
WorkerinHH	0.5670502	0.4954924	0	1
College	0.3577623	0.47935	0	1
ChildrenperHH	3.097509	1.859034	0	11

BM

n = 5,035

Variable	Mean	Std. dev.	Min	Max
NewLapse	0.028997	.1678147	0	1
Lapse was Voluntary	0.0190665	.1367725	0	1
NewHHUnemp	0.0272095	.1627097	0	1
NegInc1	0.1793446	.3836787	0	1
NegInc2	0.1660377	.3721515	0	1
NegInc3	0.1328699	.3394678	0	1
NegNW1	0.2611718	.439317	0	1
NegNW2	0.1497517	.3568633	0	1
NegNW3	0.1209533	.3261054	0	1
NewLI	0.045283	.2079448	0	1
NewDivorce	0.0065541	.0806998	0	1
NewHHRetiree	0.1902681	.3925516	0	1
NewWidow	0.0053625	.0730395	0	1
ln(HHInc)	10.5645	.9915966	0	15.197
ln(HHWealth)	10.32894	3.289108	0	16.542
ln(Debt)	3.816772	4.353748	0	13.122
Liquidity	0.1464777	.5895878	-5.563706	31
HHAvgAge	65.44508	8.73109	41	101
AgeSq	4550.724	1225.729	1089	10201
WorkerinHH	0.5924528	.4914269	0	1
College	0.2284012	.4198441	0	1
ChildrenperHH	3.839126	2.407597	0	11