Determinants of Private Long-Term Care Insurance Purchase in Response to the Partnership Program

Haizhen Lin and Jeffrey T. Prince

Objective. To assess three possible determinants of individuals' response in their private insurance purchases to the availability of the Partnership for Long-Term Care (PLTC) insurance program: bequest motives, financial literacy, and program awareness.

Data Sources. The health and retirement study (HRS) merged with data on states' implementation of the PLTC program.

Study Design. Individual-level decision on private long-term care insurance is regressed on whether the PLTC program is being implemented for a given state-year, asset dummies, policy determinant variable, two-way and three-way interactions of these variables, and other controls, using fixed effects panel regression.

Data Extraction Methods. Analysis used a sample between 50 and 69 years of age from 2002 to 2010, resulting in 12,695 unique individuals with a total of 39,151 observations.

Principal Findings. We find mild evidence that intent to bequest influences individual purchase of insurance. We also find that program awareness is necessary for response, while financial literacy notably increases responsiveness.

Conclusions. Increasing response to the PLTC program among the middle class (the stated target group) requires increased efforts to create awareness of the program's existence and increased education about the program's benefits, and more generally, about long-term care risks and needs.

Key Words. Partnership for long-term care insurance program, private long-term care insurance, determinants of policy response

Only about 10 percent of elderly Americans have any kind of private insurance to cover their long-term care (LTC) needs (Brown and Finkelstein 2008). The majority of these individuals rely on Medicaid, which has caused several complications. First, this reliance exacerbates the financial burden of the government, especially given the increasing demand for LTC due to the aging of

the baby boomer generation. Second, it provides disincentives to increase the quality of LTC, primarily because of predetermined Medicaid reimbursement rates (Grabowski 2007; Konetzka and Werner 2010). Finally, it is associated with significant uncertainty and a large amount of out-of-pocket expenditures that can lead to welfare loss for the elderly population (Brown, Goda, and McGarry 2012).¹

Increasing private LTC insurance coverage rates could potentially address the above issues. One recent policy intervention designed to accomplish this task is the Partnership for Long-term Care Insurance program (PLTC or partnership program). This program is a major initiative partnering state Medicaid programs and private insurers in an attempt to increase the take-up of LTC insurance by older Americans. It offers individuals who purchase LTC insurance greater Medicaid asset protection. For traditional LTC insurance policies, an individual must spend down his assets to the state's asset limit (\$2,000 for a single person in most states and various amounts for a married couple) to be eligible for Medicaid. Under the PLTC program, policy holders are allowed to keep a certain amount of extra assets (which is generally equal to the amount of their insurance coverage) and still qualify for Medicaid after they use up their insurance coverage. While the partnership program was only available in four states at its inception, the passage of the Deficit Reduction Act (DRA) in 2005 allowed all states to adopt this program. By 2010, 33 states beyond the initial four pilot states had adopted it.

The partnership program has generated enthusiasm and optimism among policy makers and practitioners. However, the existing evidence suggests that adoption of the partnership program has, at best, a modest impact on LTC insurance purchasing. Perhaps more interesting, individuals with high-asset levels (80th percentile or \$465,000 in 1996 dollars) respond significantly to the program (increasing their likelihood of purchase by 15 percent), but individuals below the 80th percentile show virtually no response (Lin and Prince 2013). This is in spite of the fact that the program is explicitly aimed at middle-income individuals, who are considered most likely to be on the margin for Medicaid if confronted with LTC expenses.

Address correspondence to Haizhen Lin, Ph.D., Department of Business Economics and Public Policy, Kelley School of Business, Indiana University, 1309 E. Tenth St., Bloomington, IN 47405; e-mail: hzlin@indiana.edu. Jeffrey T. Prince, Ph.D., is with the Department of Business Economics and Public Policy, Kelley School of Business, Indiana University, Bloomington, IN.

Lin and Prince (2013) have left an important question unexplored: what could potentially explain the differential responses to availability of the PLTC program along individuals' wealth levels? This paper aims to provide insights on other important predictors beyond wealth levels. The recent repeal of the Community Living Assistance Services and Support Act (CLASS Act) in 2013 has left the U.S. government in a precarious situation with rising LTC costs and no further strategy for addressing them. A thorough understanding of the determinants of response to the PLTC program can guide future policy attempts to increase participation in this (and possibly future) program(s).

We draw three plausible drivers of purchases from the existing literature on LTC insurance, and explicitly investigate whether these factors could potentially explain individuals' differential responses to the PLTC program. These factors include the following: intent to bequest, financial literacy, and program awareness. While there are many factors that might predict LTC insurance purchase overall, these three are particularly relevant toward explaining differential responses in LTC insurance purchase behavior to the introduction of the partnership program. Specifically, as the partnership program can increase permanently sheltered assets, responses to this feature may differ depending on individuals' intent to ultimately bequest assets. Moreover, as the availability and features of the partnership program (and more generally, information regarding LTC risks and needs) are not universally known and understood, it is natural to expect that an individual's level of financial literacy and/or awareness level of the program will help determine his or her likelihood of responding to the program.

BACKGROUND AND PRIOR LITERATURE

The PLTC Insurance program was initiated and developed by the Robert Wood Johnson Foundation in the 1980s. Unlike other policy instruments that work to reduce the costs associated with purchasing LTC insurance (e.g., tax subsidies), the PLTC program aims to increase insurance take-up by offering the added benefit of LTC insurance through easier access to Medicaid coverage.

It is common knowledge that Medicaid covers LTC for individuals that pass various eligibility tests, such as income and medical need. There is concern that because of Medicaid's role as the payer of last resort, individuals are disincentivized to purchase private LTC insurance to protect their LTC needs

(Brown and Finkelstein 2008). The introduction of the PLTC program aims to reduce such disincentives by allowing individuals who have purchased LTC insurance to keep an additional amount of assets above the Medicaid threshold, which in most cases equals the amount covered by the insurance plan, and still qualify for Medicaid coverage.

The PLTC program seems to offer a win–win solution. Individuals can protect themselves and not forsake the benefits of using Medicaid. The government would cut its spending on LTC if more individuals purchased LTC insurance.² There are also other benefits associated with increased insurance take-up. For example, consumers would be granted with more options, as some nursing homes might not cover Medicaid patients. Also, having more patients paid by private insurance would encourage nursing home providers to increase quality of care to compete for those patients, because these patients are considered more profitable than Medicaid patients.

Optimism about the PLTC program culminated in the inclusion of a section of the DRA of 2005 that provides permission to all other states, in addition to the four pilot states (California, Connecticut, Indiana, and New York), to enact the PLTC program. By 2010, another 33 states had adopted the partnership program. The rollout of the program can be summarized as follows: 2006 (Idaho, Minnesota, and Nebraska); 2007 (Florida, Georgia, Kansas, Maine, Missouri, Montana, North Dakota, New Hampshire, Nevada, Ohio, Pennsylvania, South Dakota, and Virginia); 2008 (Arkansas, Arizona, Colorado, New Jersey, Oklahoma, Oregon, Rhode Island, Tennessee, and Texas); 2009 (Alabama, Kentucky, Louisiana, Maryland, South Carolina, Wisconsin, and Wyoming); and 2010 (Iowa).³

The existing evidence of the impact of the PLTC program has so far been very limited. We are only aware of two studies: McCall et al. (1998) and Lin and Prince (2013). McCall et al. (1998) offer an examination of the types of individuals that have purchased PLTC policies in the original four states. Lin and Prince (2013) take advantage of the rollout of the PLTC program after 2005 to analyze the impact of the program on LTC insurance purchases. They find that the implementation of the PLTC program has had, at best, a modest impact on insurance take-up. More interestingly, however, they find that when allowing for differential responses across wealth levels, high-asset individuals (above 80th percentile or \$465,000 in assets) largely increase their likelihood of purchase (3 percentage points, or a 15 percent increase of the baseline coverage rate for those individuals), while individuals below the 80th percentile show virtually no response.

POTENTIAL DETERMINANTS OF INDIVIDUALS' RESPONSE TO THE PROGRAM

Findings from Lin and Prince (2013) suggest that only high-asset individuals respond to the PLTC program. As argued by Brown and Finkelstein (2008), the private LTC insurance market is very small, primarily because of the existence of the Medicaid implicit tax, a phenomenon that a large part of the premium for a private policy pays for benefits that simply replace benefits that would otherwise have been provided by Medicaid. The PLTC program aims to increase private insurance coverage by reducing this Medicaid implicit tax and increasing an individual's likelihood of qualifying for Medicaid. However, as this implicit tax is lowest at high wealth levels, the PLTC program is also expected to have the least effect on reducing such a tax for the rich. Furthermore, to the extent that there is a Medicaid stigma, it seems plausible that this may be disproportionately high among the rich, which would further serve to make them less responsive to the PLTC program. Consequently, it was largely unexpected that the rich would be the primary responders.

The middle-asset group has been considered the target of the PLTC program (e.g., Meiners 2009) ever since the inception of the program. This is because middle-asset individuals are more likely to go on Medicaid than the rich but have substantial assets they would like to protect, as compared to the poor. It may seem obvious *ex ante* that the middle-asset group would be most likely to respond—the rich and poor see the added benefit of faster Medicaid coverage as minimal, as the former likely will not need it and the latter will tap into Medicaid quickly anyway.

The fact that the wealthy are the ones responding to the program despite the above theoretical arguments suggests there are other drivers of program response that should be considered. In this paper, we consider several additional potential drivers of individuals' response to the program, each of which could potentially explain a higher response among the wealthy. To the extent that these additional factors are only correlated with, and not determined by, wealth, they can suggest useful avenues for policy changes to help spur participation among the middle-asset group.

The first additional factor we consider is bequest motive. Several papers (e.g., Sloan and Norton 1997; Lockwood 2011; Brown, Goda, and McGarry 2012) have assessed the relationship between LTC insurance purchasing behavior and bequest motives.⁴ In doing so, they cite various reasons why bequest motives may influence LTC insurance purchases, for example, via a

direct increase in demand due to altruism or an impact on the opportunity cost of precautionary saving. Specifically in our case, as the partnership program can increase permanently sheltered assets, individuals' responses to this feature may differ depending on their intent to ultimately bequest assets. If high-asset individuals are more likely to have bequest intent, it could help explain the disproportionate response of the rich.

The second factor that could drive differential responses to the PLTC program is financial literacy. Previous work has found that financial literacy is associated with better retirement planning (Lusardi and Mitchell 2007, 2014) and that cognitive ability plays an important role in purchasing Medigap insurance plans (Fang, Keane, and Silverman 2008). It is reasonable to argue that individuals with a high-asset endowment might be more likely to display higher levels of financial literacy. In this case, response to the PLTC program by the rich might be explained by their level of financial literacy.

The last factor, arguably the most important one, is program awareness. Although the PLTC program has been in place since the 1990s in four pilot states, it was not until after the passage of the DRA in 2005 that the program started to expand throughout the country. Given that the program is still in its early development stage, the availability and features of the program are not universally known and understood. McCall et al. (1998) find that having talked with a financial planner strongly predicts purchase of LTC insurance, which implies that variation in awareness of the partnership program and its benefits may predict response rates to incentives in this market. We hypothesize that the rich are more likely to be exposed to the program. This is possible because they might be more likely to talk to financial planners or have better access to information through the use of the Internet.

Note that Internet use is particularly useful for our study because the Internet provides the most comprehensive and reliable information about the partnership program. In particular, most websites advocating the PLTC program published useful information about the program. For example, the secretary of Health and Human Services launched the National Clearinghouse for Long-Term Care Information website in 2006 to educate consumers about the partnership program and their needs for LTC. In addition, all adopting states have used their government websites to provide comprehensive details about their partnership programs. Most of these websites have also stressed the fact that Medicare only covers postacute care and not extended LTC, an important piece of information that likely affects an individual's LTC insurance purchase decision.

DATA AND MODEL

Data and Construction of Key Variables

Our main data source is the health and retirement study (HRS) for the years 2002–2010. The HRS is a longitudinal biannual household survey dataset for the elderly and near elderly in the United States. The data offer detailed information about each respondent's demographics, financial wealth, insurance coverage, and health conditions.

Particularly useful to our study, the HRS data contain variables that can measure the three factors that we discuss above. To measure bequest intent, we observe each individual's self-assessed importance of leaving an inheritance to his or her heirs. This information was collected in the 1992 survey and has been used in other studies such as Sloan and Norton (1997) and Lockwood (2011). We construct a binary variable equaling one if the respondent indicates that leaving an inheritance is "very important." To measure awareness levels and financial literacy, we observe whether an individual uses the Internet and whether he or she ever held a job in finance. The former can serve as a proxy for general awareness of the partnership program, as many of the details of the program for each adopting state are available online (which was confirmed by our conversations with several state partnership program directors). The latter serves as a proxy for financial literacy.⁵ It also offers a proxy for an individual's ability to understand the benefits of the PLTC program due to financial training. We then construct binary variables equaling one if the individual used the Web by 2008 or ever held a finance-related job, respectively.⁶

The HRS data are merged with state policy adoption data using each individual's information concerning state of residence. Most of the policy data were collected from a Thomson Reuters database through <http://w2.dehpg-net/LTCTPartnership/>. More details regarding the source of the data on implementation and the program can be found in Lin and Prince (2013).

Table 1 provides summary statistics of the variables used in the analysis. The final sample consists of a total of 39,151 observations for 12,695 unique individuals. All the statistics are calculated using individual sampling weights. Over the entire sample, the average insurance take-up is about 11 percent. On average, about 37 percent of the observations have been exposed to the PLTC program in the data. Regarding our measure of bequest intents, awareness level, and financial literacy, about 22 percent of the observations think leaving an inheritance is very important, about 61 percent use the Internet to gather

information and check email, and about 10 percent had any job experience related to finance.

Table 2 reports the fraction of individuals (and its standard deviation) that purchased private insurance based on the value of several key explana-

Table 1: Summary Statistics

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>N</i>
Long-term care insurance	0.115	0.319	0	1	39,151
States adopted PLTC	0.367	0.482	0	1	39,151
Age	60.138	4.838	50	69	39,151
Married	0.689	0.463	0	1	39,151
Self-reported health	2.649	1.100	1	5	39,151
BMI	28.549	5.903	7	82.700	39,151
Number of children	2.882	1.899	0	19	39,151
(Log) assets	11.528	2.502	0	18.178	39,151
(Log) income	10.503	1.496	0	16.798	39,151
Leaving Inheritance is very important	0.224	0.417	0	1	18,679
Uses Web as of 2008	0.613	0.487	0	1	35,805
Worked in finance	0.093	0.291	0	1	31,914

Notes. All figures use individual weights and change minimally without weighting. The sample includes a total of 39,151 observations for 12,695 unique individuals. The final sample varies for each regression due to missing data on the three key explanatory variables: bequest, Internet use, and finance-related jobs. Self-reported health ranges from 1 to 5, with 1 being excellent and 5 being poor.

Table 2: Fraction of Purchasers of LTC Insurance

<i>Variable</i>	<i>% of Individual with LTC Insurance</i>	<i>SD</i>
States adopted PLTC		
1	12.851	33.466
0	10.768	30.998
Leaving inheritance is very important		
1	11.144	31.469
0	13.486	34.157
Web use as of 2008		
1	14.831	35.541
0	6.990	25.498
Worked in finance		
1	15.436	36.129
0	11.907	32.388
Asset dummies		
Low	6.391	24.459
Medium	13.022	33.655
High	20.131	40.098

tory variables. For example, almost 13 percent of the sample purchased insurance in states that adopted the PLTC program, and the number is about 11 percent for nonadopting states. For the three key drivers that we specifically explore in this paper, we find that those who think leaving an inheritance is not very important, those who use the Web, and those who have ever had a finance-related job tend to have a higher purchase rate of LTC insurance. Unsurprisingly, as asset levels increase, insurance purchase rates also go up.

Empirical Specifications

To allow for differential responses to the program according to the realization of these dichotomous variables as well as asset levels, we estimate the following linear probability models controlling for state fixed effects, year fixed effects, state-level linear time trends, individual fixed effects, and time-varying individual characteristics.⁷ Our basic model, presented in equation (1), allows for a differential effect of the program according to asset level, and the extended model, presented in equation (2), allows for the effect to also differ according to an additional factor, X (detailed below).

$$y_{it} = \alpha + \gamma_1 A_{it}^{Low} P_{st} + \gamma_2 A_{it}^{Med} P_{st} + \gamma_3 A_{it}^{High} P_{st} + Z_{it}\beta + \eta_t + \sigma_s + \omega_s t + \mu_i + \varepsilon_{it} \quad (1)$$

$$\begin{aligned} y_{it} = & \alpha + \gamma_1 A_{it}^{Low} P_{st} + \gamma_2 A_{it}^{Med} P_{st} + \gamma_3 A_{it}^{High} P_{st} \\ & + \gamma_4 A_{it}^{Low} P_{st} I(X_{it} = 1) + \gamma_5 A_{it}^{Med} P_{st} I(X_{it} = 1) \\ & + \gamma_6 A_{it}^{High} P_{st} I(X_{it} = 1) + Z_{it}\beta + \gamma_7 A_{it}^{Low} I(X_{it} = 1) \\ & + \gamma_8 A_{it}^{Med} I(X_{it} = 1) + \gamma_9 A_{it}^{High} I(X_{it} = 1) + \eta_t \\ & + \sigma_s + \omega_s t + \mu_i + \varepsilon_{it} \end{aligned} \quad (2)$$

The dependent variable, y_{it} , is a dichotomous variable indicating whether an individual i has private LTC insurance coverage at year t . The policy variable P_{st} is a dichotomous variable indicating whether the partnership program is being implemented in a state s at year t . The three asset dummies (A_{it}^{Low} , A_{it}^{Med} , and A_{it}^{High}) indicate low assets (below the 50th percentile or \$145,000 in the data), medium assets (50th to 80th percentile), or high assets (above the 80th percentile or \$465,000), respectively.⁸ Z_{it} consists of time-varying individual characteristics: age, marital status, self-reported health,

body mass index (BMI), income (logarithm), and number of children. The remaining components of the model include time fixed effects (η_t), state fixed effects (σ_s), state-level time trends (ω_{st}), and individual fixed effects (μ_i). Note that with the inclusion of individual fixed effects, state fixed effects are identified through individuals moving across states over time. The final term, ε_{it} , captures unobservables at the individual-state-year level that impact the decision to purchase LTC insurance.

In the extended model, we use variable X to denote each of the three dichotomous variables defined above to capture bequest motives, financial literacy, and program awareness. The model estimates whether, given an asset level, response to the program depends on X , and whether differential responses to the program along the asset dimension depend on X (captured by γ_4 – γ_6). Note that we also control for $A_{it}^{Low}I(X_{it} = 1)$, $A_{it}^{Med}I(X_{it} = 1)$, and $A_{it}^{High}I(X_{it} = 1)$ in the above specification.

RESULTS

Table 3 summarizes our main results, where we consider three plausible drivers of individuals' response to the partnership program: bequest intent, financial literacy, and awareness levels.⁹ The first column replicates the results in Lin and Prince (2013), which suggest that the effect of the PLTC program was entirely driven by the rich. The second column suggests that bequest motives may be predictive of response to the program. Specifically, wealthy individuals with relatively high bequest motives respond to the program less than wealthy individuals with relatively low bequest motives (as captured by the point estimate of -0.044 , which represents 4.4 percentage points, or a 26 percent decrease from the baseline coverage rate of 17 percent for the rich).¹⁰ This result is consistent with the idea that wealthy individuals with bequest motives are less responsive to insurance incentives. This may be the case if they are more likely to self-insure (Lockwood 2011). However, while this is a suggestive finding, the coefficient is not statistically significant (though it does have p -value below .12). Further, these results are for a select group that answered the bequest question in 1992; in particular, this subsample is notably older, with a mean age of 64.6 as compared to 60.1 for the whole sample. Consequently, as might be expected, this group in general responds less to the PLTC program, as they are relatively closer to an age when purchasing LTC insurance is in general less attractive. For these reasons, we take this difference in response due to bequest motive as suggestive only. Interestingly, we even find a

Table 3: Estimates for the Effect of the PLTC Program, Allowing for Differential Effects According to Bequest Incentives, Knowledge of Finance, and Internet Usage

<i>Variable</i>	<i>Baseline Model</i>	<i>X = I (Bequest Very High)</i>	<i>X = I (Worked in Finance)</i>	<i>X = I (Uses Web for Information)</i>
PLTC*LowAssets	-0.015 (0.009)	-0.027* (0.012)	-0.010 (0.011)	-0.014 (0.010)
PLTC*MidAssets	-0.005 (0.009)	-0.007 (0.009)	-0.004 (0.012)	-0.016 (0.012)
PLTC*HighAssets	0.025** (0.008)	0.016 (0.016)	0.035** (0.013)	-0.021 (0.017)
PLTC*LowAssets* (X = 1)		0.010 (0.021)	-0.027 (0.020)	0.008 (0.009)
PLTC*MidAssets* (X = 1)		0.004 (0.019)	0.042 ⁺ (0.024)	0.023 ⁺ (0.012)
PLTC*HighAssets* (X = 1)		-0.044 (0.028)	0.031 (0.037)	0.063** (0.015)
MidAssets	0.005 (0.006)	-0.003 (0.008)	0.003 (0.008)	0.006 (0.011)
HighAssets	0.001 (0.007)	-0.003 (0.013)	-0.005 (0.008)	0.010 (0.012)
Observations	39,151	18,679	31,914	35,805
R ²	0.015	0.027	0.020	0.018

Notes. All regressions include a constant term, individual fixed effects, year fixed effects, and state linear time trends, as well as controls for income, age, marital status, self-reported health, BMI, and number of children. All regressions also include asset-level dummies interacting with the dummy for X = 1. Robust standard errors, clustered at the state level, are in parentheses. Individual weighting is used to represent the whole population. Results with no weighting are very similar. R² is for within variation.

**Significant at the 1% level; *significant at the 5% level; ⁺significant at the 10% level.

negative response for those with low assets. This may be due to PLTC plans being required to have minimum coverage levels. If the program crowds out any low-coverage plans, it would raise the average plan price (*ceteris paribus*) and possibly dissuade low-asset individuals from making a purchase.

The last two columns of Table 3 indicate that financial literacy and awareness levels are predictive of response to the program. Regarding financial literacy, we find that middle-asset individuals who are financially literate do notably respond to the program, while those who are not (according to our proxy) do not. To be more specific about the magnitude of the effect, middle-asset individuals with finance-related job experience are found to increase their insurance take-up by 4.2 percentage points, or a 35 percent increase from the baseline coverage of 12 percent for the middle-asset group. High-asset individuals also respond strongly to the program, whether financially literate or not; however, the response is notably stronger among those who are. This last finding is not statistically significant, although the point estimate is quite large (three percentage points on a base of about 17 percent).

Regarding awareness levels, use of the Internet for information is clearly a necessary condition for response to the program. Even the wealthy show no response if they do not use the Internet. By contrast, the wealthy using the Internet for information do respond to the partnership program by increasing their insurance take-up by 6.3 percentage points, or a 37 percent increase from the baseline coverage. We find a similar although smaller effect for the middle-asset group; members of this group with access to the Internet have increased the rate of purchase by 2.3 percentage points (or a 19 percent increase from the baseline coverage). Hence, the Internet appears to proxy for a very baseline awareness level. Taken together, these results suggest that awareness, as proxied by Web usage, is a requirement for individuals to respond to the program, and response is bolstered when one has a stronger understanding of the benefits, as proxied by experience in the financial sector.

We conclude this section by noting that, while these additional variables (importance of bequest, Internet usage, and finance job experience) may proxy for bequest intent, program awareness, and understanding of program benefits, they may also capture other variables that affect LTC insurance purchasing behavior. This could have consequences when trying to make causal interpretations.¹¹ In response to this concern, we note the following. First, our additional variables vary at the individual level (not the individual-year level), so any other variables correlated with “importance of bequest,” “Internet usage,” or “financial experience” that affect LTC insurance purchases are captured by our individual-level fixed effects. Consequently, our causal interpretation is flawed only if our three additional variables are correlated with other variables that generate a differential response to the partnership program. One such variable might be wealth; however, we allow for a differential response along wealth levels, and our results indicate that wealth differences cannot explain the differential responses we find along these three additional variables. Although we cannot identify an obvious variable that would both generate a differential response to the partnership program for reasons other than bequest motive and/or awareness and be correlated with one of our additional measures, we concede that one may exist. Our causal interpretations above should be taken with that caution in mind.

CONCLUSION

In this paper, we analyzed three possible determinants of the response in private LTC insurance purchases to availability of the partnership program:

bequest motives, financial literacy, and program awareness. Controlling for these variables may dampen the wealth effects found in Lin and Prince (2013) and/or prove to be additional determinants of individuals' program response, beyond wealth. We found mild evidence that intent to bequest influences individual purchases of the partnership program. Regarding program awareness, however, we found strong evidence that awareness, as proxied by Internet usage, is crucial to explaining differential response to the PLTC program. Furthermore, financial literacy notably increases responsiveness. In particular, financial literacy is sufficient to produce a response to the program by individuals with middle-level assets, although still not to the extent it does for those with high assets. Finally, the strong persistence of a wealth effect despite these added controls suggests that the Medicaid implicit tax may preclude some lower asset individuals from even considering private insurance. Reduction in the Medicaid implicit tax alone through the implementation of the PLTC program does not seem to be sufficient to substantially increase private coverage especially for lower asset individuals, which is consistent with previous findings of Brown and Finkelstein (2008).

Our findings, especially those regarding financial literacy and awareness, add to the existing literature on saving and insurance purchase behavior for the elderly population. Furthermore, given the importance of considering financial literacy and awareness, it is also possible that the role of wealth would be reduced further using even more precise or complete measures of these factors than those available with our data.

To the extent that our variables measuring experience in the financial sector and usage of the Internet sufficiently capture financial literacy and program awareness, respectively, our findings can suggest useful avenues for policy changes to help spur participation among the middle-asset group. First, efforts to increase awareness of the program among the middle class may be particularly crucial. Our results show that Web usage is a critical predictor of individuals' response to the PLTC program, so campaigns (e.g., radio, print) that direct the senior population to the many online resources for LTC insurance and the PLTC program could be fruitful. With the advent of Healthcare.gov (through the Affordable Care Act), along with the more established Medicare.gov, there may be the potential to increase awareness through cross-promotion of, and links to, states' PLTC plan offerings via these national, and highly utilized, websites. Such cross-promotion might also be particularly fruitful during individuals' initial enrollments in Medicare or Social Security, or reenrollments in Medicare Part D or Advantage plans. In addition, simplified explanations of the financial benefits of the partnership

program on websites themselves and other campaigns may prove beneficial, considering our findings about financial literacy.

While the above policy suggestions may be effective in light of our results, we recognize their effectiveness may be limited. For example, it may be especially difficult to direct elderly individuals currently not utilizing the Internet toward websites with information on the PLTC program in their state. If we assume information about the PLTC program will be primarily disseminated over the Internet and can be effective in encouraging LTC insurance purchases, time alone may be what is needed to see improvements in purchase rates, as a more Internet-savvy generation ages past 50. Of course, it may also simply be the case that initiatives to increase awareness and knowledge of the related financials for the PLTC program have limited potential. If so, alternative approaches to the partnership program (and the tax subsidies that have also been implemented) may merit consideration, depending on how strong a priority it is to increase coverage for LTC among the general population per se.

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NOTES

1. Note that market failures such as high market loads, meaning the expected benefit of a policy is much lower than the premium, would provide disincentives to purchase private LTC insurance. However, Brown and Finkelstein (2008) have concluded that eliminating those market failures will not significantly increase the insurance coverage rate in the presence of Medicaid.
2. How the PLTC program could potentially lead to savings in Medicaid spending might not seem straightforward. Meiners (2009) provides a thorough discussion over four potential areas of savings: reduction in asset transfers to qualify for Medicaid, care management assistance and preferred provider choices to control cost, earned income on protected assets could be contributed to the cost of care, and

consumer over-insurance. He argues that savings from reduction in assets transfers and consumer over-insurance in particular could be substantial.

3. With the exception of California, all adopting states have reciprocity, which allows policyholders to receive asset protection when relocating to other participating states.
4. Previous work has also shown the importance of bequest motives in wealth accumulation and demand for life insurance and annuities, such as Bernheim (1991); Bernheim, Skinner, and Weinberg (2001); Dynan, Skinner, and Zeldes (2002); and Kopczuk and Lupton (2007).
5. Lusardi and Mitchell (2011) use respondents' answers to three survey questions to measure financial literacy. However, one limitation of using this data is limited sample size (about 1,600 unique individuals). We find the results are hard to interpret due to loss of precision. See Lusardi and Mitchell (2014) for an excellent review of recent developments in research on financial literacy.
6. HRS provides data on Web usage since 2002. Our analysis uses the 2008 data. Although not reported in the paper, we have also used alternative years' data (e.g., year 2002 and year 2006) to measure Web usage, and the results are consistent.
7. Using a logistic model has produced very similar patterns of results. We choose a linear model largely for the sake of easy interpretation of the results.
8. We also considered specifications where the policy variable interacts with each of the top three deciles: 70th–80th, 80th–90th, and above the 90th percentile. Our results showed a relatively small effect of the program for individuals in the 70th to 80th percentile, and a notably large effect for the top two deciles. This finding suggests that the 80th percentile is a sensible asset cutoff point for identifying differential effects of the program. Note also that our results hold if we define the low-asset group using the 40th percentile as the cutoff.
9. Results including estimates for all of our fixed effects and state-level time trends are available upon request. Note that results are qualitatively similar if we code missing cases for each X as “unknown” and include them in the model.
10. Note that all the baseline coverage rates were calculated using data from 1996 to 2004 prior to the implementation of the partnership program.
11. One related concern is that during our study period, some states also adopted tax subsidies for purchasing LTC insurance, so our identification might be flawed. We address this concern by controlling for the adoption of tax subsidies for each state and find largely similar results.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.