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Public Health Insurance and Household Portfolio Choices: Unraveling Financial "Side Effects" of Medicare.

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Abstract

Large, unpredictable and not fully insurable health-care costs represent a source of background risk that might deter households' financial risk taking. Using panel data from the Health and Retirement Study and fixed-effects estimation, we test whether universal health insurance, like Medicare for over-65 Americans, shields against this risk promoting stockholding. Households in poor health, who face a higher risk of medical expenses, are less likely to hold stocks than their healthier counterparts. Yet, this gap is mostly eliminated by Medicare eligibility. Notably, the offsetting is primarily experienced by households without private health insurance over the observation period.

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1. Introduction

There is a large consensus among economists and policy makers that the rise of health-care costs has become an increasingly important contributor to household financial risk, in most cases responsible for household large outstanding debt and bankruptcy. This phenomenon has been widely documented for the U.S., where financial hardship caused by out-of-pocket medical expenses is a large and growing problem. Cunningham (2009) estimates that in 2007 about 19% of the U.S. population had problems paying medical bills (up from 15% in 2003). Doty et al. (2008) find that in 2007 about 41% of Americans between 19 to 64 years of age had problems paying medical bills, a percentage up from 34% in 2005. Since 2001, the likelihood of medical expenses being cited in personal bankruptcy filings has steadily increased and was at 62% in 2007 (Himmelstein et al., 2009). According to Cohen and Kirzinger (2013), in the first half of 2011, one in five persons under age 65 struggled to pay medical bills. Even though Medicare coverage reduces the risk of out-of-pocket medical expenses, older Americans are still at risk of catastrophic losses due to benefit gaps (Goldman and Maestas, 2013). More recently, Austin (2014) documents that, as of 2013, medical debt is the main factor in 18% to 26% of all consumer bankruptcies, while a recent poll by the New York Times and CBS News reveals that for 46% of households basic medical care is a hardship (New York Times, 2014).

Noteworthy, the fear of financial bankruptcy may prevent people from seeking medical help and/or adhering to prescribed treatments in order to reduce health-related costs. This, in turn, may lead to even worse financial outcomes, as preventative treatments are not rendered and patients end up using expensive ER care as their health worsens (Gindi et al., 2012).

To the extent that health-related costs are large, unpredictable, and not fully insurable, they constitute a source of background risk. According to economic theory, when individuals face background risks, they should be less

willing to bear other risks (Kimball, 1993) and might alter their financial behavior in two ways. The first is to increase precautionary saving (Kotlikoff, 1986; Skinner, 1988; Palumbo, 1999; Atella et al., 2006); the second is to reduce exposure to other financial risks (Pratt and Zeckhauser, 1987; Kimball, 1993; Gollier and Pratt, 1996; Goldman and Maestas, 2013). In this paper, we focus on the second channel and assess to which extent medical expenditure risk affects household decisions to invest in risky financial assets.

Medical expenditure risk is a function of both the risk of health shocks and health insurance coverage. Other things being equal, individuals in poor health status face a higher risk of incurring out-of-pocket medical costs than those in good health. Similarly, the likelihood of large out-of-pocket medical expenses is higher for uninsured than for insured individuals. The role of insurance in reducing the background risk due to unexpected medical expenses has been recently analysed across several European countries by Atella et al. (2012) using the SHARE data. They show that the presence of a public, universal health care program, as opposed to a private or mixed insurance system, can reduce this risk, thus playing an important role in shaping household portfolio choices with enormous implications for funds allocation.

In this study, we extend this research by identifying and quantifying the relative importance of poor health status and insurance coverage in determining health-related background risk and, through it, household portfolio choices. For this purpose, we exploit the exogenous change in insurance coverage implied by the transition of the U.S. population to Medicare. The universal health insurance coverage offered by Medicare has the effect of reducing the risk of large and unpredictable medical expenditures for everyone over the age of 65 (Barcellos and Jacobson, 2015).[2] Importantly,

[2] Eligibility can also occur before age 65, e.g. for disable people. Yet, about 95% of the U.S. population becomes eligible for Medicare at age 65.

the intensity of such reduction varies with health status and/or with pre-Medicare health insurance coverage. In fact, other things being equal, individuals in poor health status and/or without (or with low) private insurance coverage before Medicare eligibility may experience a larger reduction in background risk when they become Medicare eligible.

Using longitudinal data from the Health and Retirement Study (HRS), we adopt a fixed-effects estimation strategy to address the endogeneity of health status and private insurance choices, thereby identifying 1) the role of poor health status on risky portfolio investments; 2) the role of a reduction in background risk stemming from Medicare coverage in promoting financial risk taking; 3) how this latter effect varies with the presence of health insurance prior to Medicare eligibility.

Our results show that Medicare offsets the negative effect of poor health status on household financial risk taking at both the intensive and the extensive margins and this effect is economically relevant. Specifically, Medicare eligibility perfectly counterbalances the negative effect of poor health status, which is estimated to decrease the likelihood of holding stocks by 2.2 percentage points. Furthermore, we document that this effect is mainly driven by households without health insurance, for which the reduction in background risk when they become Medicare eligible is larger: for these households Medicare eligibiliy results in a net increase of stockholiding of 1.8 percentage points, which represents a sizeable 18% increment from a 10% average stockownership probability within this group. Our estimates are robust in terms of sign, magnitude and statistical significance to a wide range of samples selections and model specifications used to rule out potential threats to our identification strategy.

The remainder of the paper is organized as follows. We review the relevant literature in Section 2 and the main features of the Medicare system in Section 3. Section 4 provides a description of the data set, while Section 5

describes the identification strategy and the empirical model. Section 6 presents the results of the empirical analyses and Section 7 discusses a series of robustness checks. Section 8 concludes.

2. The literature

This paper contributes to both the literature studying the effect of Medicare on health and economic outcomes and the one investigating the role of health status and the risk of large medical expenses on household portfolio choice.

Within the first stream of literature, Gruber and Madrian (2002) focus on retirement choices and report that, despite 50% of working Americans would prefer to retire by age 62, 63% of them delay retirement until they are eligible for Medicare in the absence of other forms of health insurance (private or employer-supplied). Other studies have analysed the effect of Medicare on health care utilization, health status and mortality. Card et al. (2008) estimate that Medicare eligibility is associated with an increase in the use of health care services and a reduction in death rates for individuals admitted to the ER. More relevant for this study are the contributions assessing the role of Medicare in reducing out-of-pocket medical costs. For example, Finkelstein and McKnight (2008) report a 40% decline at the top 25% of the out-of-pocket medical expenditure distribution and almost a 50% decline at the top 10%. Khwaja (2010) and Barcellos and Jacobson (2015) find that Medicare reduces out-of-pocket medical expenditure by 33% at the mean and by 53% for the top 5% spenders, with medical-related financial strain halved after 65.[3]

The second stream of literature related to our study focuses on the association between health status and household investment decisions. Using

[3] A recent study by Mazumder and Miller (2016) shows that the positive effects on household financial wellbeing documented for Medicare are observed in the general uninsured population residing in Massashusetts after the state enacted a major health care reform similar to the Affordable Care Act. In particular, they find that the reform reduced household debt, third-party collections, number of personal bankruptcies and improved credit scores.

data from the Health and Retirement Study (HRS), Rosen and Wu (2004) show that being in fair or poor health significantly reduces the probability of holding risky assets as well as the share of wealth held in those assets. Exploiting the same data, Berkowitz and Qiu (2006) find that health shocks affect portfolio choices, albeit indirectly via a reduction in financial wealth. Edwards (2008) shows that individuals who assign a higher probability to the event that medical expenses would exhaust their household savings in the next five years hold safer portfolios. Coile and Milligan (2009) estimate that the diagnosis of new chronic illnesses significantly reduces the probability of holding stocks. Fan and Zhao (2009) find evidence of portfolio rebalancing after a health shock, with households shifting investment from riskier toward safer financial assets. Love and Smith (2010) estimate significant health effects on stockholding for married households, but not for singles. Finally, Cardak and Wilkins (2009) use the Household Income and Labour Dynamics in Australia (HILDA) Survey and show that the relationship between poor health status and risky asset holding becomes insignificant once risk and time preference variables are controlled for. This points to the importance of accounting for time-invariant individual traits when performing empirical analyses of household portfolios, an issue that we address via fixed-effects estimation. The authors also argue that Australia's protective universal health care system might as well play a role in explaining the absence of a direct link between health status and stockholding, but do not examine this matter further.

Only a few studies have tried so far to investigate the role played by health insurance in reducing the risk of out-of-pocket medical expenses and, through it, in encouraging financial risk taking. Goldman and Maestas (2013) focus on Medicare beneficiaries and exploit differences in the degree of medical expenditure risk stemming from different supplemental insurance arrangements. Their results support the hypothesis that individuals who face less medical expenditure risk are more likely to hold stocks. Along the same line, Atella et al. (2012) take advantage of the heterogeneity of European

national health care systems to show that current health status and future health risks both affect the decision to hold risky assets, albeit only in countries with less protective health care systems. In a recent contribution, Christelis et al. (2014) apply a (fuzzy) regression discontinuity design to assess the causal impact of the abrupt reduction in the health-expenditures risk at age 65, implied by Medicare eligibility, on stockholding. They estimate a statistically significant effect only for singles with a relatively high level of education.

3. Access to Medicare in USA.

Medicare is a Federal health insurance program. Eligibility for Medicare is automatic for people who are at least 65 and have worked at least 40 quarters in covered employment or have a spouse who did. Coverage is also available to younger individuals with severe kidney disease and recipients of Social Security Disability Insurance (DI).[4]

The program comprises four parts. Two main parts are for hospital and medical insurance (Part A and Part B) and two additional parts provide flexibility and prescription drugs (Part C and Part D). Hospital insurance (Part A) helps to pay for in-patient care in a hospital, skilled nursing facility (following a hospital stay), some home health care and hospice care, and is generally available without paying a monthly premium since payroll taxes are used to cover these costs. Medicare Part B works as Supplementary Medical Insurance (SMI). It helps pay for physician visits, outpatient hospital visits, home health care costs, and other services for the aged and disabled.

[4]According to Medicare guidelines, individuals before age 65 are eligible if: (i) entitled to Social Security disability benefits for 24 months and/or for Lou Gehrig's disease (amyotrophic lateral sclerosis); (ii) receive a disability pension from the railroad retirement board and meet certain conditions; (iii) have permanent kidney failure (dialysis or underwent a kidney transplant) and meet certain conditions; (iv) child or widow(er) aged 50 or older of someone who's worked long enough in a government job through which Medicare taxes were paid, meeting the requirements of the Social Security disability program. More details can be found at https://www.ssa.gov/pubs/EN-05-10043.pdf.

Enrolment in Part B is voluntary, requires a monthly premium, and patients must meet an annual deductible before coverage actually begins. Medicare Part C, also known as Medicare Advantage Plans or "Medicare + Choice," allows users to design a custom plan that can be more closely aligned with their medical needs.[5] Finally, Medicare Part D (into effect since January 1, 2006) requires payment of a premium and a deductible and provides a private insurance option for Medicare beneficiaries to purchase subsidized coverage for the costs of prescription drugs.

Currently, the Medicare program covers 95% of the U.S. population over the age of 65 and is expected to grow considerably in terms of enrolees in the coming years due to the ageing of the U.S. population and to the introduction of the Affordable Care Act (see e.g. Blumenthal et al. 2015, and Davis et al., 2015). [6]

4. The dataset

We use data from the Health and Retirement Study (HRS), a multipurpose, longitudinal household survey representing the U.S. population over the age of 50. Since 1992, the HRS has surveyed age-eligible respondents and their spouses every two years to track transitions from work into retirement, to measure economic well-being in later life and to monitor changes in health status as individuals age. In particular, respondents are surveyed on a variety of economic and health outcomes, including employment, health-insurance status, physical and mental health, income, as well as housing and financial wealth. Initially, the HRS consisted of individuals born 1931-1941 and their

[5] These plans enlist private insurance companies to provide some of the coverage, but details vary based on the program and eligibility of the patient. Some Advantage Plans team up with health maintenance organizations (HMOs) or preferred provider organizations (PPOs) to provide preventive health care or specialist services. Others focus on patients with special needs such as diabetes.

[6] According to Klees et al. (2014), in 2013, Part A covered almost 52 million enrollees with benefit payments of $261.9 billion, Part B covered almost 48 million enrollees with benefit payments of $243.8 billion, and Part D covered over 39 million enrollees with benefit payments of $69.3 billion.

spouses, but additional cohorts have been added in 1993, 1998, 2004, and 2010. As of 2012, the number of individuals ever interviewed by the HRS is 37,319 belonging to 25,272 sampled households.

We use data from the RAND-HRS, version O, over the period 1992-2012. The RAND-HRS is a large user-friendly subset of the HRS that combines data from all waves, adds information that may have been provided by the spouse to the respondent's record, has consistent imputation of financial variables, and consistent definition and naming of variables.

Since our focus is on how public health insurance might help sheltering the risk of out-of-pocket medical expenses, we restrict our analysis to individuals between 55 and 75 years of age, a 10-year window around Medicare eligibility age. Following Goldman and Maestas (2013), we also drop Medicaid recipients, in view of their limited stock of financial wealth. This leaves us with an unbalanced panel of 17,584 unique households, spanning the 1992-2012 period, for a total of 69,285 household-time observations.

5. The identification strategy and the empirical model

Our analysis focuses on both the extensive and intensive margins of a household's decision to hold risky financial assets. Within this framework, we assume that household portfolio choices are influenced by their socioeconomic and health characteristics, as well as by the degree of insurance against unpredictable health-related costs.

Medical expenditure risk is a function of both health status and health insurance coverage. Other things being equal, individuals in poor health status face a higher risk of incurring out-of-pocket medical costs than those in good health. Similarly, the likelihood of large out-of-pocket medical expenses is higher for uninsured than for insured individuals. For these reasons, within the U.S. context we expect the background risk reduction induced by Medicare to have a larger effect on the financial decisions of individuals in poor health

than on those in good health. Also, this effect should be more evident for those not covered by other forms of health insurance before being eligible for Medicare.

Given this setup, our empirical analysis aims at testing the following hypotheses:

Hyp.1: Individuals in poor health face a higher risk of large and unpredictable medical expenses, which reduces their willingness to take financial risks;

Hyp.2: For these individuals, to the extent that Medicare induces a reduction in background risk, their low propensity to take financial risks may be mitigated;

Hyp.3: This mitigating effect is larger for households not covered by other forms of health insurance before Medicare eligibility.

In order to empirically test these hypotheses, we adopt the following specification:

$$Y_{it} = \gamma_1 D_{it}^{Med} + \gamma_2 PoorH_{it} + \gamma_3 \left(PoorH_{it} \cdot D_{it}^{Med}\right) + X_{it}'\beta + \tau_t + \eta_i + \varepsilon_{it} \quad (1)$$

where the subscripts i and t denote households and time, respectively. The dependent variable in equation (1), Y_{it}, is either a binary indicator for stockownership or the share of stocks on total household financial wealth. The regression equation features a binary indicator for poor health status, $PoorH_{it}$, a dummy for Medicare eligibility, D_{it}^{Med}, and their interaction, besides a vector of controls X_{it}. The terms, τ_t, and η_i represent time and household fixed effects, respectively. Finally, ε_{it} is an idiosyncratic error.

Our analysis is carried out having households, rather than individuals, as observation units since data on asset holdings are only available at the

household level. [7] The implicit assumption maintained throughout the paper is that household members take investment decisions jointly, conditional on their individual characteristics, including their health status, health insurance coverage and risk of incurring out-of-pocket medical expenses.

In equation (1), γ_2 measures whether household financial risk-taking is deterred by poor health status. According to Hyp.1, we expect γ_2 to be negative. The parameter γ_3 captures the extent to which the effect on portfolio choices of a reduction in background risk stemming from Medicare eligibility is different for households in poor and good health. According to Hyp.2, we expect γ_3 to be positive. In order to test Hyp.3, we estimate equation (1) separately for households with and without private insurance coverage. In fact, if Medicare reduces the risk of large out-of-pocket medical expenses, we would expect this reduction in background risk to be larger for households without any other form of health insurance. Along these lines, Hyp.3 is verified if the parameter γ_3 is larger for those households not covered by private health insurance before Medicare eligibility.

In order to guarantee the causal interpretation of our estimates, endogeneity issues and potential confounding effects need to be recognized and ruled out. First of all, health status is bound to be correlated with observable and unobservable characteristics driving investment decisions (e.g., wealth accumulation and risk aversion). We overcome this problem by controlling for a wide range of relevant variables (X_{it}) and by allowing for household fixed effects (η_i).

Second, households in poor and good health before Medicare eligibility, which for the vast majority means before age 65, may exhibit diverging trends in their risky asset holding. These pre-Medicare trends may produce differences in observed financial behaviors after Medicare eligibility, which

[7] Definitions of Medicare eligibility and poor health status at the household level are provided in section 5.1. below.

may be incorrectly attributed to the differential reduction in background risk implied by Medicare across households with different health status. Although we document the absence of diverging trends in stockownership for households in poor and good health before the age of 65, in all our regressions the vector of controls, X_{it}, includes health-group-specific age trends, capturing differential behaviors in stockholding before Medicare eligibility between households in good and poor health.[8]

Third, given the fixed-effects model specification, the identification of γ_3 relies on: i) households who are always in a poor health status and become Medicare eligible; ii) households who are Medicare eligible but change their health status. In this latter case, we can have two possible transitions: from good to poor health and from poor to good health. The first type of transition would impose an attenuation bias on our parameter of interest γ_3 and, therefore, does not threaten the validity of our conclusions: a positive and significant parameter estimate would reinforce the plausibility of Hyp.2. The transition from poor to good health is, instead, more problematic, as households may decide to take on more financial risk not because of the reduction in background risk implied by Medicare, but because of their improved health. In our sample, the transition from poor to good health is rather rare (about 4%) and that the likelihood of it taking place remains virtually constant across different ages. We also check whether such transition might induce an increase in stockholding, which could be erroneously attributed to the reduction in background risk implied by Medicare, by comparing the estimates for the full sample with those for the sub-sample of individuals who do not change health status after age 65. Similar coefficients across these two samples reduce concerns about the transition from poor to

[8] We regress stockownership (and share of risky assets) on age, poor health status and their interaction using the subsample of households younger than 65. In both regressions, there is no statistical evidence of differential age trend between households in good and poor health.

good health after Medicare eligibility driving the results and jeopardizing our identification strategy.

A further issue is represented by the fact that health status near age 65 may worsen because individuals, especially those in poor health, may wait until they are Medicare eligible to seek the care they need. In this scenario, a positive γ_3 might reflect mean reversion in health for those in poor health, rather than a differential reduction in background risk implied by universal health coverage (i.e., Ashenfelter's dip as in Ashenfelter, 1978 and Ashenfelter and Card, 1985). To address this problem, we compare the estimates for the full sample with those for the sub-sample of individuals who do not change health status in the 60-65 window range.

Finally, in order to test Hyp. 3, we estimate equation (1) on the sub-samples of households with and without private health insurance before Medicare eligibility. We expect the parameter γ_3 to be larger for the latter, who should experience a more substantial reduction in background risk. Cleary, households with and without health insurance are different in many respects. In our regression analysis, we control for a wide range of demographics and household characteristics. Importantly, unobserved heterogeneity, which may lead to different insurance and investment decisions across these two groups, is accounted for via household fixed effects. Apparently, private health insurance can be purchased to supplement Medicare coverage and this choice is endogenously determined by household changing circumstances over time. To ensure private health insurance status homogeneity within the two sub-samples, we compare households with and without private health insurance over the entire observation period, rather than just before Medicare eligibility.

5.1 *Variables definition*

In our empirical analysis, we consider two dependent variables reflecting the extensive and intensive margins of a household's decision to hold risky assets. The participation choice is modelled via a dichotomous variable taking value 1 if the household owns stocks, mutual funds, and investment trusts, and 0 otherwise. The allocation choice is analysed using the share of risky assets (stocks, mutual funds, and investment trusts) over the total value of household financial wealth.

We rely on the self-reported general health status variable provided by the HRS, in which respondents rate their health as: *excellent*, *very good*, *good*, *fair*, *poor*. The indicator for household poor health status takes value 1 if at least one between the household financial respondent and his/her partner reports their health status being poor, and 0 otherwise.[9] Similarly, the indicator for Medicare eligibility at the household level is set equal to 1 when at least one household member is eligible for Medicare. Following Medicare guidelines, we consider as Medicare eligible all individuals over the age of 65 and all individuals entitled to Social Security Disability benefits, regardless for their age.[10] In order to capture the reduction in background risk implied by Medicare for households in poor health status, the interaction variable, $D_{it}^{Med} \times PoorH_{it}$, takes value 1 if at least one household member in poor health status is Medicare eligible and 0 otherwise.[11]

We adopt different specifications of equation (1), depending on the variables featuring the vector X_{it}. In the baseline specification, we control for

[9] We have also explored a different categorization, where the indicator for household poor health takes value 1 if at least one between the financial respondent and the spouse report being in fair or poor health.

[10] As discussed in Section 3, Medicare eligibility conditions are extremely detailed, with several specific cases to consider according to health status, work condition and civil status. Our classification is as accurate as it can be given the information available in the public release of HRS the data.

[11] For single households, the indicators for poor health status and Medicare eligibility of the partner are both set to 0.

marital status, via an indicator taking value 1 for couple households and 0 otherwise, and non-linearly for age (of the household financial respondent) by means of dummies for the following age brackets: [55-59], [60-64], [65-69] and [70-75]. Pre-Medicare trends in risky asset holding for households in good and poor health are also accounted for.[12] Household economic condition is captured through separate indicators for the financial respondent and his/her partner being currently working for pay (as above, the working condition of the partner is set to 0 for single households) and for household income and net wealth quintile dummies.[13] Finally, we control for time trend in risky asset holding via wave-specific dummies.

We amend the baseline specification by considering the risk of future health deterioration on household portfolio choices. To this end, we follow Atella et al. (2012), who propose a novel measure of future health risk based on engagement in risky behaviors (namely smoking, drinking and having a sedentary life-style), as-of-yet asymptomatic diseases (namely high blood pressure, high blood cholesterol and osteoporosis), and grip strength.[14] Thus, in our second specification we include indicators for smoking, drinking and of sedentary lifestyle. These indicators take value 1 whenever either the financial respondent or his/her partner reports engaging in the aforementioned behaviors and 0 otherwise. In our richest and preferred specification, we add

[12] We first estimate a cubic polynomial in age for households in good and poor health on the subsample of individuals below the age of 65. We then project this until age 75 and use it as a control in our regression equation. As an alternative, we have also estimated a cubic polynomial on the distance in months from age 65. Both approaches return similar estimates and provide strong statistical support for the absence of diverging pre-Medicare trends for households in good and poor health.

[13] Net wealth is the sum of the financial and real assets of the household (including the value of properties) net of financial liabilities.

[14] Due to differences in data availability between the HRS and SHARE, we cannot adopt the exact definition of "future health risk" as the one proposed by Atella et al. (2012). More precisely, while the variables capturing risky behaviors (smoking, drinking and sedentary lifestyle) are fully comparable across the two surveys, the ones on asymptomatic diseases are not, as there is no information on high blood cholesterol and osteoporosis in the HRS. Moreover, HRS data on grip strength have a high number of missing observations, which mine its reliability.

controls for conditions that, while as-of-yet asymptomatic, might entail health deterioration in the future, namely high blood pressure, diabetes and obesity. The indicators for high blood pressure and diabetes take value 1 when at least one between the financial respondent and his/her partner has been diagnosed with the condition, and 0 otherwise. Similarly, the dummy for obesity takes value 1 if the body mass index of one between the financial respondent and the spouse is greater or equal than 30, and 0 otherwise.

We check the robustness of our results to the inclusion of additional controls. Specifically, we consider whether the household (either the financial respondent or the spouse) holds a life insurance policy as well as its probability of leaving a bequest of $10,000 or more (obtained by averaging the probabilities of bequeathing $10,000 or more reported by the respondent and, if present, the spouse). We also control for cognitive ability as measured by total word recall score (the sum of immediate and delayed word recall).[15] We create an indicator for poor cognitive ability which takes value 1 if at least one household member has a total word recall score below the sample median. Finally, we account for difficulties in activities of daily living (ADL) and instrumental activities of daily living (IADL). The ADL score, ranging from 0 to 5, sums difficulties in bathing, dressing, eating, getting in/out of bed and walking across the room; the IADL score, ranging from 0 to 3, sums difficulties with using the phone, managing money, and taking medications. We create household-level indicators taking value 1 if at least one between the financial respondent and the spouse has any difficulty with ADL and IADL (i.e., has a ADL/IADL score greater than 0).

Throughout the analysis, we use the same set of controls for both the extensive and the intensive margin regressions, as there is no compelling

[15] Respondents are read a list of 20 words and asked to recall them in no particular order immediately (which gives the immediate word recall score) and after approximately five minutes (which gives the delayed word recall score).

reason to adopt different specifications for the stock-market participation and the portfolio allocation decisions (Rosen and Wu, 2004).

5.2 *Descriptive statistics*

Table 1 reports descriptive statistics of the variables used in the empirical analysis. The sample consists of an unbalanced panel of 17,584 unique households observed over the period 1992-2012. The total sample size consists of 69,285 household-wave observations. In our sample 29.3% of households hold risky assets, which, on average, constitute 18.8% of total household financial wealth. Couple households represent 60% of the sample, with the average age of the financial respondent being 64. About 10% of households have at least one member who reports being in poor health and 54% of households have at least one Medicare-eligible member. The average (median) yearly income is approximately $60,000 ($36,500) and the average (median) net wealth about $385,000 ($148,000). Less than 25% of sampled households have a member doing some physical activity; 61% have a member who drinks at least one alcoholic beverage a day and 23% one who smokes. Finally, in 63% of the households at least one member has been diagnosed with high blood pressure, in 25% at least one member has been diagnosed with diabetes and in 39% at least one member is classified as obese.

Life insurance policies are widespread, as 76% of households in the sample hold one. Bequest motives are quite apparent in that the average household probability of leaving an inheritance of $10,000 or more is slightly less than 70%. Finally, in 37% of the households at least one between the respondent and the spouse performs poorly in cognitive test; in 11% and 5% of the households one member has some difficulty with daily living activities and instrumental daily living activities, respectively.

[TABLE 1 HERE]

6. Econometric analysis

In Table 2 we estimate a fixed-effect linear probability model for the decision to hold risky assets.[16] The columns refer to three different specifications, the baseline (column 1), the one adding controls for risky behaviors (column 2) and the one adding also controls for asymptomatic conditions (column 3).

Consistently with previous studies, we find supportive evidence to our first hypothesis: households in poor health status have, on average, a significantly lower probability of holding risky assets. Specifically, being in poor health reduces the probability of holding risky assets by about 2.2 percentage points across all model specifications. Our main parameter of interest, γ_3, is positive and statistically significant, thus supporting our second hypothesis of a differential reduction in the background risk of incurring large out-of-pocket medical expenses implied by Medicare for households in poor and good health. Interestingly, Medicare eligibility almost perfectly counterbalances the negative effect of poor health status on the likelihood of holding risky assets. Such offsetting effect is economically important given that about 30% of sampled households hold stocks in their portfolios and only 15% of those in poor health do so.[17]

Concerning time-varying socio-economic variables, we observe a strong and positive gradient for both income and wealth, while the other demographics correlate rather weakly with investment decisions. Contrary to

[16] We have also estimated equation (1) via fixed-effect Logit. The corresponding results only partially replicate those presented in the text. In this case, however, the sample size is greatly reduced as the estimation of a Logit model with fixed effects requires individuals without internal variation on the dependent variable to be dropped from the analysis.

[17] When we adopt a broader definition of household poor health status (at least one member reports being in fair or poor health), both the negative effect of poor health on stockholding and the sheltering effect of Medicare are, not surprisingly, weakened. Nonetheless, they retain the expected sign.

what Atella et al. (2012) report for Europe, the risk of possible future health deterioration, as captured by smoking, drinking and sedentary behavior as well as by asymptomatic diseases, does not seem to play a role in shaping household portfolio decisions. A potential explanation for this different finding is in data quality between the HRS and SHARE, with the latter presenting a much lower rate of missing observations on variables used as proxies for future health status. Most likely, such different result is driven by differences in the estimation method adopted in the two studies. In Atella et al. (2012), the effect of future health status on investment decisions is identified off of cross-sectional variation in risky behaviors and asymptomatic conditions. In this paper, it is identified off of within-individual variation in such variables, which is rather modest.

[TABLE 2 HERE]

Next, we test Hyp. 3. As discussed in Section 5, we proceed by first dropping all households whose ownerhisp of private health insurance changes over time and then by estimating equation (1) separately on the sub-samples of households with and without private health insurance. In Table 3 we present the results of this exercise, based on the estimation of our most complete specification (as in column 3 of Table 2). The first column of Table 3 reports the results obtained using the sub-sample of households who have never changed their insurance status over the observation period.[18] Columns 2 and 3 present the estimates for the sub-samples "without" and "with" private insurance, respectively. In line with Hyp. 3, the parameters γ_2 and γ_3 are economically sizeable and statistically significant for households without private health insurance, but of much lower magnitude and not statistically different from zero for those with private health insurance. Specifically, for the households without private health insurance, poor health status decreases

[18] We are left with 8,969 unique households after dropping from our original dataset the 8,615 households that changed private health insurance ownership over the observation period.

the likelihood of holding stocks by 3 percentage points, while the reduction in background risk implied by Medicare eligibility increases it by 4.8 percentage points. The resulting net increase is 1.8 percentage points, which represents a sizeable 18% increment from a 10% average stockownership probability within this group. The *p-value* for the null hypothesis that the sheltering effect of Medicare is larger for households without private insurance than for their counterparts with private insurance is 0.07.

[TABLE 3 HERE]

In Tables 4 and 5, we repeat all the above analyses focusing on the intensive margin of household stockholding. In these fixed-effects regressions, the dependent variable is the fraction of household financial wealth held in risky assets.[19] The results in Table 4 confirm the negative effect of poor health on stockholding and the offsetting impact of Medicare eligibility, althoug the latter is substantially smaller than in Table 2 and not precisely estimated.

[TABLE 4 HERE]

In Table 5, we split the sample by health insurance status and find strongly supportive evidence for our third hypothesis, as poor health (parameter γ_2) and Medicare eligibility (parameter γ_3) affect the decision of how much wealth to hold in risky assets for households without private health insurance, but not for those with private health insurance. Specifically, we estimate that, among households without private insurance, having at least a member in poor health status decreases the fraction of wealth held in stocks by 6.7 percentage points. Such negative effect is completely offset by becoming Medicare eligible. The null hypothesis that γ_3 is the same for households with

[19] Alternative econometric methods could be used to model this limited dependent variable (e.g. Tobit model, fractional variable model). While relaxing the assumption of linearity, these methods do not allow to include individual fixed-effects. We prefer to estimate a linear regression model with individual fixed-effects, while acknowledging its limitation in this context.

and without insurance is rejected (at any conventional significance level) in favor of the alternative that is greater for the latter.

[TABLE 5 HERE]

7. Robustness checks

In this section we test the robustness of our main results to: (i) richer model specifications featuring additional controls; (ii) excluding households who transit from poor to good and from good to poor health before and after and Medicare eligibility; (iii) excluding individuals who report working for pay during the observation period; (iv) limiting our sample to couples; (v) fictitiously changing the age of Medicare eligibility from 65 down to ages 60-64 (placebo regressions).[20]

7.1 Additional controls

In Table 6, we augment our richest specification with further controls and present regressions results for both the extensive and intensive margins. Specifically, we take into account household ownership of a life insurance policy, the probability of leaving a bequest, cognitive ability, difficulties with ADL and IADL.[21] Column (1) shows that households with life insurance are 2 percentage points more likely to participate in the stock market, on average. A higher probability of leaving a bequests of at least $10,000 is associated with a higher likelihood of stockownership, although the estimated coefficient is rather small to be economically relevant. No significant effects are found for poor cognitive ability and ADL/IADL difficulties.[22] While the inclusion of

[20] We performed two additional robustness checks, where we focus on the HRS cohort only to isolate cohort effects and exclude households with zero financial wealth. The results of these regressions, available upon request, are in line with the empirical evidence reported so far.

[21] Due to the large number of missing values for these variables, the sample size in Table 6 is substantially smaller than the one used for the regressions in Tables 3 and 5.

[22] Christelis et al. (2010) find that poor cognitive ability is a strong deterrent for stock-market participation in a cross-section of European older adults. We attribute the difference between

these additional variables in the regression equation implies a notable reduction in sample size, it does not affect the estimated coefficients of interest and the conclusions drawn in the previous sections. In columns (3)-(4) and (7)-(8), we still find a negative and statistically significant effect of poor health status on stockholding at both the extensive and intensive margins and a counterbalancing role of Medicare, which is substantially larger for households without private forms of health insurance.

[TABLE 6 HERE]

7.2 Health status changes before and after age 65

A legitimate concern is that Medicare eligibility may induce changes in health status, rather than in background risk, which may ultimately produce our findings. For instance, Medicare may increase the likelihood that individuals transit from poor to good health as access to health care services improves. In this scenario, a positive estimate for γ_3 would stem from health improvements triggered by Medicare, rather than from a reduction in background risk implied by the availablity of universal health insurance. Additionally, in anticipation of Medicare, individuals on the verge of 65 may decide to delay medical care until they become Medicare eligible. This may cause health status to worsen immediately before age 65 and to improve thereafter. Again, a positive estimate for γ_3 in this case should not be attributed to the reduction in background risk brought about by Medicare.

In order to address these concerns, we repeat our regressions using the sub-samples of respondents who did not change their health status before or after age 65. More precisely, our first robustness check excludes from the sample households changing their health status after Medicare eligibility (age

their finding and ours to the different estimation methods and to the fact that cognitive ability exhibits limited within-individual variation (which is the source of variation we exploit).

65-75). Our second robustness check excludes from the sample households with health status transitions occurring between 60 to 64 years of age, that is, before qualifying for Medicare.

Tables 7 and 8 report the results for these exercises for the extensive and intensive margins, respectively. As it can be seen, all our hypotheses receive further support from the data. Households in poor health can afford increase their holding of risky assets after Medicare due to a larger reduction in background risk compared to their counterparts in good health. The sheltering role of Medicare is significantly more prominent for those without any form of health insurance prior to Medicare.

It is worth noting that, compared to the baseline results in Table 3 (Table 5), recalled for convenience in Columns (1) and (2), the estimate of γ_3 is almost 25% (15% to 30%) larger when households who experience health transitions after Medicare are excluded from the sample. This indicates that, since the most frequent transition at older ages is from good to poor health, which should discourage risky asset holding, our baseline estimate of γ_3 can be interpreted as a lower bound of the sheltering role of Medicare.

[TABLES 7 AND 8 HERE]

7.3 Excluding individuals who are working for pay

Another potential confounding effect is the transition from work to retirement. This is likely to affect the background risk faced by individuals as it typically implies a shift from a relatively more volatile source of income – earnings – to a more stable one – pension benefits and annuities. Since normal retirement age is around 65 for most of our sampled individuals, the cessation of productivity risk associated with retirement, especially for those in poor health, may, at least partially, drive our results. To address this issue, we restrict our analysis to households whose financial respondent reports not

working for pay during the observation period and who should, therefore, experience little or no change in income risk over time.[23]

Table 9 presents the results of the analysis using this selected sample. As shown in columns (3)-(4) and (7)-(8), Hyp. 1 and 2 are confirmed: we find an adverse effect of poor health on the likelihood of holding risky assets, which is offset by the availability of universal health insurance through Medicare. Again, this counterbalancing effect is found only for households without any other form of private health insurance. Yet, our third hypothesis receives less support from the data, as the differences between estimates referring to households with and without private health insurance are now less pronounced and not statistically significant. This finding, however, can be rationalized on the basis of the specific sample selection adopted here. By excluding individuals working for pay, we are presumably dropping households with employer-provided health insurance. As a result, those who report having private health insurance are more likely to hold individually contracted and, likely, less generous policies. This, in turn, makes "insured" and "uninsured" in Table 9 more comparable in terms of reduction in background risk associated with Medicare eligibility.

[TABLE 9 HERE]

7.4 Limiting the sample to couples and focusing on both members Medicare eligible

In Table 10, we repeat the exercise presented in Tables 3 and 5 excluding from the sample single respondents. We also experiment with a

[23] This sub-sample consists for the most part of retirees (82%) and individuals who are not in the labor force (11%). Roughly 4% are disabled and about 3% report being unemployed. Excluding the latter does not affect the estimates either qualitatively or quantitatively. The same is found when we exclude households where both the financial respondent and the spouse do not work for pay (all results available upon request).

narrower definition of household Medicare eligibility using an indicator that takes value 1 if *both* couple members are Medicare eligible, and 0 otherwise. In this case, differences across insurance groups are more marked. In particular, for couples without private insurance, poor health status reduces the likelihood of holding stocks by 4.5 percentage points, while it entails virtually no change in the likelihood of holding stocks among couples with private insurance. The offsetting effect of Medicare eligibility is equal to 6.8 percentage points for the average couple without private coverage. It is of a much lower magnitude and indistinguishable from zero for couples with private insurance. The null hypothesis that the parameter γ_3 is equal for these two sub-samples is rejected at any conventional significance level in favor of the alternative that it is greater for households without private insurance. Comparison with the results in Table 3 provides suggestive evidence that the sheltering role of Medicare is proportionally stronger in a couple household where *both* members are Medicare eligible, which, as a consequence, enjoy a larger reduction in background risk. In fact, the net increase in the proabability of holding risky assets for households in poor health who become Medicare eligible is 1.8 for the whole sample and 2.3 for couples. In the case of intensive margin, the estimates show a negative health effect of 7.9 percentage points and a counterbalacing effect of Medicare of 8.5 percentage points.

[TABLE 10 HERE]

7.5 Placebo regressions

As placebo tests, we re-estimate our preferred model specification after moving the Medicare eligibility age treshold from 65 down to to ages 64-60. This allows us to check whether our findings are determined by Medicare or by some other confounding factors/events. Results for both the extensive and the intensive margins are presented in Table 11 . As the treshold moves down from age 65 the magnitude of our parameters of interest is monotonically

reduced and statistical significance is lost. When the threshold is positioned at age 64, the results are similar to those discussed above. This finding could be explained by some households anticipating portfolio decisions as they are on the verge of enrolling in Medicare. Also, since our data are collected every two years and we do not consider the month of birth, we may not discriminate well individuals who are "close" and "far" from the 65 age threshold. Some individuals treated as 64-year olds in our analysis may as well be already eligible for Medicare.

[TABLE 11 HERE]

8. Conclusions

In this paper we aim to gauge the potential sheltering effect of universal health insurance - such as the one provided by Medicare to individuals older than 65 in the U.S. - against the background risk of unpredictable medical expenses and to assess the consequences of this for household portfolio choice. Exploiting the transition to Medicare eligibility and fixed-effects estimation allowed by the longitudinal nature of the HRS data, we identify the causal effect of the reduction in background risk implied by Medicare on household stockholding. We also document how this effect varies across households with different health status and different insurance coverage, which are likely subject to different risks of large and unpredictable medical costs.

Our results can be summarized as follows. First, health status determines household decisions to invest in stocks at both the extensive and intensive margins. Consistently with the notion of background risk, a poorer health status, entailing a higher risk of out-of-pocket medical expenditures, induces households to reduce their exposure to other sources of financial risk, including the one implied by stockholding. Second, in line with previous results found for Europe by Atella et al. (2012), we show that this effect can be mitigated by universal health insurance as the one guaranteed by Medicare

to American adults over the age of 65. Third, this estimated sheltering effect is heterogeneous across households, being significantly larger for those uninsured before Medicare eligibility.

Our results are extremely robust to different model specifications and sample selection criteria used to rule out possible confounding effects. These include, but are not limited to, the reduction in income volatility associated with the transition from earnings to pension/annuity that is likely to happen around the same age individuals become Medicare eligible, as well as endogenous changes in health status induced by Medicare. Additionally, our parameters of interest are larger in magnitude for couples where both members are covered by Medicare, indicating that these households enjoy a larger reduction in background risk and, thus, can afford relatively riskier portfolio allocations.

The estimated sheltering role of universal health insurance offered by Medicare is economically relevant. If we consider that as of 2012 the U.S. population aged 65 and older was about 41 millions, that about 25% of these individuals invest in risky assets and that about 10% are in poor health status, then our estimates indicate that approximately 1 million households are not deterred from holding stocks thanks to the reduction in background risk provided by Medicare coverage. Based on these numbers, simple back-of-the-envelope calculations indicate that Medicare is able to keep about 3 billion dollars of household wealth invested in the stock market.

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TABLES

Table 1: Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max	Obs
Holding risky assets	0.293	0.455	0	1	69,285
Share invested in risky assets	0.188	0.321	0	1	60,123
Poor Health	0.095	0.293	0	1	69,285
Medicare Eligibility	0.544	0.498	0	1	69,285
Age	64.170	6.033	55	75	69,285
Couple	0.599	0.490	0	1	69,285
Working	0.485	0.500	0	1	69,285
Total income	60,612	276,196	0	60,000,000	69,285
Net Wealth	384,953	1,117,461	-438,3000	90,6000,000	69,285
Smoking	0.227	0.419	0	1	69,285
Drinking	0.610	0.488	0	1	69,285
No exercise	0.764	0.424	0	1	69,285
High blood pressure	0.634	0.482	0	1	69,285
Diabetes	0.246	0.431	0	1	69,285
Obese	0.390	0.488	0	1	69,285
Has life insurance	0.758	0.429	0	1	68,692
Probability of leaving 10k+ bequest	69.745	36.072	0	100	61,220
Poor cognitive abilities	0.369	0.483	0	1	60,782
Has difficulty in Activities of Daily Living	0.112	0.315	0	1	65,140
Has difficulty in Instrumental Activities of Daily Living	0.049	0.215	0	1	65,136

Table 2: Baseline specifications: Extensive margin.

	(1)	(2)	(3)
Medicare Eligibility	0.005	0.005	0.005
	(0.007)	(0.007)	(0.007)
Poor Health	-0.022	-0.022	-0.022
	(0.007)	(0.007)	(0.007)
Medicare Eligibility X Poor Health	0.021	0.021	0.021
	(0.010)	(0.010)	(0.010)
Working for Pay, respondent	-0.005	-0.006	-0.006
	(0.005)	(0.005)	(0.005)
Working for Pay, spouse	0.000	0.000	0.000
	(0.006)	(0.006)	(0.006)
Couple	-0.009	-0.011	-0.011
	(0.008)	(0.008)	(0.008)
Income, 2nd quintile	0.006	0.006	0.006
	(0.005)	(0.005)	(0.005)
Income, 3rd quintile	0.023	0.022	0.022
	(0.006)	(0.006)	(0.006)
Income, 4th quintile	0.060	0.060	0.060
	(0.006)	(0.006)	(0.006)
Income, 5th quintile	0.082	0.082	0.082
	(0.008)	(0.008)	(0.008)
Wealth, 2nd quintile	0.033	0.033	0.033
	(0.005)	(0.005)	(0.005)
Wealth, 3rd quintile	0.086	0.086	0.086
	(0.007)	(0.007)	(0.007)
Wealth, 4th quintile	0.166	0.166	0.166
	(0.009)	(0.009)	(0.009)
Wealth, 5th quintile	0.247	0.248	0.248
	(0.011)	(0.011)	(0.011)
Smoking		0.011	0.011
		(0.007)	(0.007)
Drinking		0.005	0.005
		(0.005)	(0.005)
No exercise		0.002	0.002
		(0.004)	(0.004)
High blood pressure			0.001
			(0.006)
Diabetes			-0.002
			(0.007)
Obese			-0.002
			(0.005)
Constant	0.172	0.164	0.164
	(0.016)	(0.017)	(0.017)
Observations	69,285	69,285	69,285
R-squared	0.035	0.035	0.035
Number of households	17,584	17,584	17,584

Note: Robust standard errors in parentheses.

Table 3: Baseline specifications, by private health insurance: Extensive margin.

	Insurance sample	Without Health Insurance	With Health Insurance
	(1)	(2)	(3)
Medicare Eligibility	0.008	0.007	0.011
	(0.011)	(0.012)	(0.015)
Poor Health	-0.029	-0.030	-0.025
	(0.011)	(0.010)	(0.018)
Medicare Eligibility X Poor Health	0.027	0.048	0.006
	(0.015)	(0.015)	(0.025)
Observations	28,001	7,653	20,348
R-squared	0.036	0.037	0.039
Number of households	8,969	3,025	5,944

Note: Robust standard errors in parentheses.

Table 4: Baseline specifications: Intensive margin.

	(1)	(2)	(3)
Medicare Eligibility	0.004	0.004	0.004
	(0.006)	(0.006)	(0.006)
Poor Health	-0.017	-0.018	-0.018
	(0.007)	(0.007)	(0.007)
Medicare Eligibility X Poor Health	0.009	0.009	0.009
	(0.009)	(0.009)	(0.009)
Working for Pay, respondent	-0.001	-0.001	-0.001
	(0.004)	(0.004)	(0.004)
Working for Pay, spouse	0.004	0.003	0.003
	(0.005)	(0.005)	(0.005)
Couple	-0.004	-0.005	-0.005
	(0.007)	(0.007)	(0.007)
Income, 2nd quintile	0.003	0.003	0.003
	(0.004)	(0.004)	(0.004)
Income, 3rd quintile	0.012	0.012	0.012
	(0.005)	(0.005)	(0.005)
Income, 4th quintile	0.028	0.028	0.028
	(0.006)	(0.006)	(0.006)
Income, 5th quintile	0.032	0.032	0.032
	(0.006)	(0.006)	(0.006)
Wealth, 2nd quintile	0.028	0.028	0.028
	(0.005)	(0.005)	(0.005)
Wealth, 3rd quintile	0.063	0.063	0.063
	(0.006)	(0.006)	(0.006)
Wealth, 4th quintile	0.117	0.117	0.117
	(0.007)	(0.007)	(0.007)
Wealth, 5th quintile	0.172	0.172	0.172
	(0.009)	(0.009)	(0.009)
Smoking		0.001	0.001
		(0.006)	(0.006)
Drinking		0.003	0.003
		(0.004)	(0.004)
No exercise		0.004	0.004
		(0.003)	(0.003)
High blood pressure			-0.000
			(0.005)
Diabetes			-0.001
			(0.006)
Obese			0.001
			(0.004)
Constant	0.067	0.062	0.062
	(0.014)	(0.015)	(0.015)
Observations	60,123	60,123	60,123
R-squared	0.027	0.027	0.027
Number of households	15,854	15,854	15,854

Note: Robust standard errors in parentheses.

Table 5: Baseline specifications by private health insurance: Intensive margin.

	Insurance sample	Without Health Insurance	With Health Insurance
	(1)	(2)	(3)
Medicare Eligibility	0.002	0.007	0.003
	(0.009)	(0.014)	(0.011)
Poor Health	-0.032	-0.067	-0.018
	(0.011)	(0.020)	(0.013)
Medicare Eligibility X Poor Health	0.011	0.067	-0.014
	(0.014)	(0.024)	(0.017)
Observations	23,786	4,653	19,133
R-squared	0.030	0.034	0.032
Number of households	7,743	2,060	5,683

Note: Robust standard errors in parentheses.

Table 6: Robustness Check I: Additional controls

VARIABLES	Extensive Margin				Intensive Margin			
	Full sample	Insurance sample	Without Health Insurance	With Health Insurance	Full sample	Insurance sample	Without Health Insurance	With Health Insurance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Medicare Eligibility	0.007	0.002	0.008	0.005	0.005	-0.003	0.005	-0.003
	(0.008)	(0.013)	(0.013)	(0.017)	(0.006)	(0.010)	(0.016)	(0.012)
Poor Health	-0.029	-0.040	-0.031	-0.039	-0.022	-0.037	-0.064	-0.027
	(0.009)	(0.013)	(0.013)	(0.019)	(0.008)	(0.012)	(0.024)	(0.014)
Medicare Eligibility X Poor Health	0.025	0.032	0.046	0.018	0.012	0.020	0.060	0.003
	(0.011)	(0.018)	(0.018)	(0.027)	(0.010)	(0.015)	(0.028)	(0.018)
Has life insurance	0.022	0.015	-0.002	0.023	0.008	0.004	-0.011	0.008
	(0.006)	(0.010)	(0.010)	(0.015)	(0.005)	(0.009)	(0.013)	(0.012)
Probability of leaving 10k+ bequest	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)
Poor cognitive abilities	-0.001	0.006	0.000	0.008	0.000	0.000	-0.003	0.001
	(0.004)	(0.006)	(0.007)	(0.007)	(0.003)	(0.005)	(0.008)	(0.006)
ADLA difficulty	0.005	0.005	0.003	0.005	0.001	-0.002	-0.003	-0.002
	(0.005)	(0.009)	(0.010)	(0.012)	(0.004)	(0.007)	(0.012)	(0.009)
IADLA difficulty	0.009	0.012	0.002	0.017	0.013	0.019	0.008	0.023
	(0.007)	(0.011)	(0.011)	(0.016)	(0.006)	(0.010)	(0.015)	(0.013)
Observations	58,657	23,728	5,997	17,731	51,436	20,486	3,767	16,719
R-squared	0.035	0.037	0.041	0.040	0.026	0.028	0.038	0.030
Number of households	16,296	8,019	2,590	5,429	14,721	6,967	1,777	5,190

Note: Robust standard errors in parentheses.

Table 7: –Robustness Check II: Excluding health status transitions, extensive margin.

	Full sample		Excluding health status transitions between 65 and 75		Excluding health status transitions between 60 and 64	
	Column (3) Table 3	Column (4) Table 3	Without Health Insurance	With health insurance	Without Health Insurance	With health insurance
	(1)	(2)	(3)	(4)	(5)	(6)
Medicare Eligibility	0.007	0.011	0.013	0.011	0.010	0.010
	(0.012)	(0.015)	(0.014)	(0.016)	(0.013)	(0.016)
Poor Health	-0.030	-0.025	-0.023	-0.012	-0.040	-0.020
	(0.010)	(0.018)	(0.011)	(0.019)	(0.011)	(0.020)
Medicare Eligibility X Poor Health	0.048	0.006	0.059	0.002	0.060	-0.000
	(0.015)	(0.025)	(0.021)	(0.033)	(0.017)	(0.027)
Observations	7,653	20,348	6,436	19,216	6,975	19,764
R-squared	0.037	0.039	0.033	0.038	0.035	0.039
Number of households	3,025	5,944	2,643	5,724	2,799	5,821

Note: Robust standard errors in parentheses.

Table 8: –Robustness Check II: Excluding health status transitions, intensive margin.

	Full sample		Excluding health status transitions between 65 and 75		Excluding health status transitions between 60 and 64	
	Column (3) Table 5	Column (4) Table 5	Without Health Insurance	With health insurance	Without Health Insurance	With health insurance
	(1)	(2)	(3)	(4)	(5)	(6)
Medicare Eligibility	0.007	0.003	0.010	0.006	0.005	0.003
	(0.014)	(0.011)	(0.016)	(0.012)	(0.015)	(0.012)
Poor Health	-0.067	-0.018	-0.046	-0.014	-0.090	-0.013
	(0.020)	(0.013)	(0.019)	(0.014)	(0.026)	(0.014)
Medicare Eligibility X Poor Health	0.067	-0.014	0.077	-0.010	0.087	-0.017
	(0.024)	(0.017)	(0.034)	(0.024)	(0.031)	(0.018)
Observations	4,653	19,133	3,966	18,073	4,320	18,602
R-squared	0.034	0.032	0.029	0.032	0.032	0.032
Number of households	2,060	5,683	1,806	5,468	1,925	5,566

Note: Robust standard errors in parentheses.

Table 9: Robustness Check III: Excluding households whose financial respondent is working for pay

VARIABLES	Extensive Margin				Intensive Margin			
	Full sample	Insurance sample	Without Without Health Insurance	With Health Insurance	Full sample	Insurance sample	Without Health Insurance	With Health Insurance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Medicare Eligibility	-0.004	-0.002	0.000	0.001	-0.009	-0.021	-0.003	-0.026
	(0.009)	(0.014)	(0.012)	(0.024)	(0.008)	(0.013)	(0.016)	(0.017)
Poor Health	-0.027	-0.033	-0.017	-0.046	-0.021	-0.036	-0.036	-0.034
	(0.009)	(0.013)	(0.011)	(0.027)	(0.009)	(0.014)	(0.019)	(0.019)
Medicare Eligibility X Poor Health	0.029	0.048	0.060	0.039	0.010	0.018	0.076	-0.012
	(0.012)	(0.019)	(0.017)	(0.034)	(0.011)	(0.018)	(0.027)	(0.023)
Observations	35,682	13,664	5,267	8,397	30,282	11,113	3,177	7,936
R-squared	0.033	0.035	0.045	0.038	0.024	0.027	0.048	0.028
Number of households	12,293	5,468	2,391	3,077	10,805	4,521	1,575	2,946

Note: Robust standard errors in parentheses.

Table 10: Robustness Check III: Couple households only, both members Medicare eligible

VARIABLES	Extensive Margin				Intensive Margin			
	Full sample	Insurance sample	Without Health Insurance	With Health Insurance	Full sample	Insurance sample	Without Health Insurance	With Health Insurance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Medicare Eligibility	-0.004	0.001	0.012	0.001	0.008	0.013	-0.006	0.017
	(0.008)	(0.016)	(0.019)	(0.019)	(0.007)	(0.012)	(0.020)	(0.014)
Poor Health	-0.019	-0.018	-0.045	-0.004	-0.014	-0.019	-0.079	-0.007
	(0.010)	(0.015)	(0.016)	(0.021)	(0.009)	(0.013)	(0.024)	(0.015)
Medicare Eligibility X Poor Health	0.021	0.014	0.068	-0.019	0.013	0.000	0.085	-0.027
	(0.013)	(0.022)	(0.023)	(0.030)	(0.011)	(0.018)	(0.035)	(0.021)
Observations	41,481	16,925	3,037	13,888	37,614	15,274	2,043	13,231
R-squared	0.035	0.037	0.056	0.038	0.029	0.032	0.062	0.033
Number of households	10,672	5,327	1,216	4,111	9,936	4,849	881	3,968

Note: Robust standard errors in parentheses.

Table 11: Robustness Check IV: Placebo regressions.

VARIABLES	60		61		62		63		64	
	(1) Without health insurance	(2) With health Insurance	(3) Without health insurance	(4) With health Insurance	(5) Without health insurance	(6) With health Insurance	(7) Without health insurance	(8) With health Insurance	(9) Without health insurance	(10) With health Insurance
Extensive margin										
Treatment	-0.012	0.051	0.004	0.010	-0.009	-0.000	0.001	0.018	0.002	-0.000
	(0.022)	(0.016)	(0.014)	(0.012)	(0.013)	(0.011)	(0.013)	(0.011)	(0.015)	(0.012)
Poor Health	-0.030	-0.007	-0.027	0.010	-0.027	-0.007	-0.030	-0.016	-0.031	-0.024
	(0.019)	(0.026)	(0.018)	(0.025)	(0.017)	(0.023)	(0.016)	(0.023)	(0.016)	(0.022)
Treatment X Poor Health	0.028	-0.027	0.024	-0.056	0.029	-0.030	0.037	-0.020	0.043	0.000
	(0.022)	(0.030)	(0.021)	(0.029)	(0.021)	(0.029)	(0.021)	(0.029)	(0.021)	(0.029)
Observations	6,402	19,541	6,402	19,541	6,402	19,541	6,402	19,541	6,402	19,541
R-squared	0.035	0.040	0.035	0.039	0.035	0.039	0.036	0.039	0.036	0.039
Number of households	2,578	5,788	2,578	5,788	2,578	5,788	2,578	5,788	2,578	5,788
Intensive margin										
Treatment	-0.012	0.023	-0.008	0.003	-0.006	-0.000	0.016	0.010	0.019	0.003
	(0.025)	(0.013)	(0.018)	(0.009)	(0.016)	(0.008)	(0.016)	(0.008)	(0.017)	(0.009)
Poor Health	-0.101	-0.026	-0.091	-0.015	-0.078	-0.020	-0.091	-0.021	-0.088	-0.027
	(0.031)	(0.021)	(0.029)	(0.020)	(0.026)	(0.019)	(0.026)	(0.018)	(0.024)	(0.017)
Treatment X Poor Health	0.069	-0.006	0.059	-0.024	0.046	-0.017	0.063	-0.019	0.067	-0.008
	(0.033)	(0.024)	(0.031)	(0.023)	(0.030)	(0.023)	-0,04	(0.023)	(0.029)	(0.023)
Observations	3,982	18,393	3,982	18,393	3,982	18,393	3,982	18,393	3,982	18,393
R-squared	0.035	0.032	0.035	0.031	0.034	0.031	0.036	0.031	0.037	0.031
Number of households	1,776	5,537	1,776	5,537	1,776	5,537	1,776	5,537	1,776	5,537

Note: Robust standard errors in parentheses.