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Wealth, Assets, and the Affordability of Health Insurance

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Abstract

A recent paper based on the standard model of health insurance take-up finds that 25% to 75% of the uninsured appear to be able to afford insurance. However, the standard model only uses current income to approximate family wealth. In this paper, we examine family wealth and asset holdings across the uninsured and insured in the 2002 MEPS. We find that the standard model severely overestimates private insurance enrollment for the low income with low wealth, and underestimates enrollment for the low income with high wealth. The life cycle asset model corrects this and consistently predicts enrollment better than the standard model. For example, for people without an employer-sponsored insurance offer, the standard model underestimates enrollment for the low income-high wealth group by 26.7 percentage points, while the life cycle model only underestimates by 4.4 percentage points. Overall, we find that 26% to 59% of the uninsured appear to be able to afford insurance once assets are taken into account. In particular, the lowest decile of income ($7,000) will not have a 75% probability of take-up until they have accumulated $135,000 in assets in 2002 dollars. JEL No. I11, L11

1 Introduction

Recent research by Bundorf and Pauly (2006) finds that health insurance is affordable to 25%-75% of the nonelderly who are currently uninsured. In this research, if a large proportion of people within a given income bracket level has insurance coverage, the remaining group is assumed to be able to afford coverage. These findings would suggest that lack of health insurance is mainly driven by differences in risk preferences, time discount rates, and, ultimately, tastes for insurance rather than a problem of affordability. This conclusion is based on the assumption that current income is an adequate proxy for economic resources available to individuals. Such a conclusion, if true, has important policy implications—namely that subsidies for health insurance premiums would not be as effective.

If asset holdings and net wealth of people with health insurance are similar to asset holdings and net wealth among those who are uninsured, then the conclusion that health insurance take up decisions are driven mainly by differences in tastes rather than differences in purchasing power would be valid. However, there is an alternative explanation for the seemingly "puzzling" health insurance purchase decisions. It is generally accepted that consumption decisions are driven by lifetime economic resources rather than solely by current income. Fluctuations in current income may make it less than ideal in measuring lifetime economic resources available to individuals. An individual with unusually high income in the current period may chose to save it rather than buy health insurance. Similarly, an individual with unusually low income in the current period may seem like he cannot afford health insurance, but he purchases health insurance because he has sufficient savings.

In this paper, we try to shed light on this question by presenting data on the asset holdings and net wealth of individuals by health insurance status and current income. Using data from the Medical Expenditure Panel Survey for 2002, we find that asset holdings and net wealth are significantly lower among the uninsured even after controlling for current income.

The paper is organized as follows. First, Section 2 sets up an empirical model of the impact of wealth on health insurance enrollment. Section 3 describes the data. Section 4 discusses the empirical results. Section 5 concludes with a discussion.

2 Theory

It is well known that current models of health insurance enrollment leave much unexplained. For example, Bundorf and Pauly (2006) show that between 25% and 75% of the uninsured appear to be able to afford insurance. For lack of data, most of these take-up papers to date have used the standard pre-1950's Keynesian model of consumption, $c_t = \alpha + \beta y_t$, where y_t is current income and c_t is current consumption, including the purchase of health insurance. However, macroeconomic research has found that the Keynesian model does not work well in explaining consumption behavior. In particular, while income fluctuates highly over time, consumption is very smooth over time, contrary to the Keynesian model.

In 1953, two consumption models emerged as working papers to try to improve upon the Keynesian model—the life cycle model by Franco Modigliani and R. Brumberg (1954) and the permanent income model by Milton Friedman (1957). Both models are forward-looking models of consumption, hypothesizing that consumption is not based on current income, but on people's expected income and wealth over the lifetime. The life cycle model claims that to smooth consumption over time, especially in light of the elderly years when there is no earned income, consumers must forgo some consumption early in life to accumulate wealth for the later years. Thus, in the Ando and Modigliani (1963) life cycle model, current consumption is hypothesized to be a function of current income and also a function of where the consumer is in her life cycle, which can be approximated by the current level of her accumulated assets: $c_t = \alpha + \beta y_t + \gamma A_t$, where A_t are assets. Ando and Modigliani estimated this model for the period right after World War II and found that $\beta = 0.06$ and

$\gamma = 0.7$, showing that assets do indeed matter in terms of current consumption.

A potential weakness of the Ando and Modigliani life cycle model was that it still assumed that consumption was exposed to temporary fluctuations in current income. Friedman's permanent income model was slightly different. He proposed that consumption was based only on permanent income: $c_t = \alpha + \beta PI_t$, where PI_t is the permanent income or average income that the consumer expects over the rest of her life from time t. The current income fluctuates about the permanent income, $y_t = PI_t + \epsilon$, while the permanent income is a function of physical assets and human capital. Permanent income can be explicitly defined as the sum of nonhuman wealth and human wealth which is the present discounted value of current and future labor income. In this study we have direct measures of nonhuman wealth, while human wealth is presented by the combination of current disposable labor income, age, and education. The Permanent Income Hypothesis suggests that households look into the future in deciding the amount of current consumption. Conventional practice in the literature has been to proxy permanent income by a fixed distributed lag of current and past disposable income. However, there is no theoretical basis for expectations about future variables to be adequately explained by past data. Therefore, in this study we chose to predict permanent income using age, education and job type to proxy for potential human capital, and current assets.

Another weakness of the Ando and Modigliani model was that it predicted that savings would occur only in order to smooth out consumption over time. However, Kimball (1990) noted the additional importance of precautionary savings in order to smooth out consumption over risky contingencies. The precautionary savings motive claims that to maintain relatively constant consumption over time, households facing greater risks have a stronger incentive to save to protect against these risks. Starr-McCluer (1996) argued that the precautionary savings motive suggests that households without health insurance to protect against health-related risks should have accumulated more assets than households with

health insurance. Using data from the 1989 Survey of Consumer Finances, however, she finds the opposite. Higher levels of wealth are associated with insured households rather than uninsured households. Thus, she rejected the precautionary savings motive in the private health insurance market.[1]

In our study, we compare three consumption models to empirically test the decision to purchase health insurance. Instead of regressing wealth on insurance as did Starr-McCluer, we regress the decision to purchase health insurance on various measures of income, permanent income, and wealth along with other control variables. Our first model is the Keynesian ***standard income model***:

$$HI = \alpha + \beta y + X\delta + \epsilon, \tag{1}$$

where $HI = 0/1$ indicates the purchase of *private* health insurance, y is current income, and X is a vector of covariates, such as education, age, etc. We estimate (1) using ordinary least squares. Next, we use a version of Ando and Modigliani's ***life cycle model***:

$$HI = \alpha + \beta y + \gamma_1 A + \gamma_2 HOME\ OWNER + \gamma_3 IRA\ OWNER + X\delta + \epsilon, \tag{2}$$

where A is total net worth of the consumer's family assets, $HOME\ OWNER = 0/1$ indicates that someone in the family owns the home in which the person lives, and $IRA\ OWNER = 0/1$ indicates that someone in the family owns an IRA. We include these two ownership variables in addition to total net worth (A) in order to best approximate where someone is in their life cycle. We estimate (2) using ordinary least squares.

Finally, we use the latent variable version of Friedman's ***permanent income model***. First, we model permanent income PI^* as a latent, unobserved variable. This gives rise to

[1]However, the precautionary savings motive has been found in the public health insurance market. The expansion of social insurance programs reduces risk and thus reduces the motive for precautionary savings. Gruber and Yelowitz (1999) test the precautionary savings motive by examining the impact of expansions in Medicaid eligibility in the late 1980s and early 1990s on the savings rate among the newly eligible population. They find that Medicaid eligibility has a strong negative effect on wealth holdings.

the following structural model.

$$PI^* = \mu_1 + \mu_2 A + \mu_3 HOME\ OWNER + \mu_4 IRA\ OWNER + X\mu_5 + \epsilon, \tag{3}$$

$$y = \zeta PI^* + u, \tag{4}$$

$$HI = \alpha + \beta PI^* + X\delta + w. \tag{5}$$

Following Greene (1993), we use two stage least squares to estimate a reduced form of this latent variable model. That is, we substitute equation (3) into equation (4) for PI^*. We then predict $\hat{y} = \zeta PI^*$ in (4) and substitute this into equation (5) for PI^*. This provides the following two stage least squares estimate of the permanent income model above in (3)-(5):

$$y = \zeta_1 + \zeta_2 A + \zeta_3 HOME\ OWNER + \zeta_4 IRA\ OWNER + X\zeta_5 + \eta, \tag{6}$$

$$HI = \alpha + \beta\hat{y} + X\delta + w, \tag{7}$$

where $\eta = \zeta\epsilon + u$. Thus, equation (7) gives us an estimate of health insurance enrollment based on permanent income, where $\hat{y}$ is a constant multiple of permanent income, $\hat{y} = \zeta PI$.

3 Data

The data for the analysis are from the Medical Expenditure Panel Survey (MEPS), sponsored by the Agency for Healthcare Quality and Research. MEPS is a stratified and clustered random sample of households designed to yield nationally representative estimates of the civilian, noninstitutionalized population. Data collected include insurance coverage, medical expenditures, insurance premiums, and a wide range of other health-related and socioeconomic characteristics. We use the full year population for 2002. The unit of analysis is a person aged 19 to 64. The sample includes 21,514 adults.

The family is defined as the health insurance eligibility unit—adults who are married and their children who can typically be eligible to purchase a family coverage. Although insurance status is person-level, economic resource measures are constructed at the family level. The assumption is that economic resources are shared among family members. We then assign each person her family-level income, assets, and wealth. Income is constructed as the sum of all income reported by family members. Assets also refer to the sum of all assets reported by family members. MEPS collects data on financial assets, nonfinancial assets, and debt.

Overall, there are eleven asset types, including residential home, second homes, other real estate, farm or business, transportation vehicles, stocks and bonds, individual retirement accounts, checking accounts, other savings such as jewelry and debt. For nonfinancial assets, MEPS collects data on the market value of the asset as well as any debt owed. Using these variables we construct the net value of each asset. We construct three measures of wealth: liquid assets, financial assets, and net worth. "Liquid assets" include checking accounts, savings accounts and money market funds. "Financial assets" include liquid assets plus stocks, government and corporate bonds, mutual funds, certificates of deposits, IRA, Keogh and 401K accounts. "Net worth" includes financial assets plus the net value of residential property, other real estate, business equity, transportation vehicles, other savings (such as jewelery, collection for investment purposes, rights in a trust or estate, annuities) minus debts (such as credit card balances, medical debts, and life insurance policy loans).

All estimates are at the person level and are weighted to represent the U.S. civilian noninstitutionalized population. Standard errors are corrected for the complex design of the MEPS, using Taylor series linearization of the variance (Stata 9.0 survey commands are used).

4 Results

4.1 Asset Disparities Between the Insured and Uninsured

Table 1 presents differences in wealth holdings between insured and uninsured adults. Insurance status is person-level. Nonelderly adults aged 19 to 64 are classified into three insurance categories: private insurance, public insurance, and no coverage. Insurance status is as of the end of the year. We chose end of year insurance status as asset data is collected at the end of the year. Those with any private coverage are in the "private insurance" category. Persons with no private coverage but with public coverage are in the "public insurance" category. Persons without any private or public coverage are in the uninsured category. Our focus is on the differences of asset holdings between the privately insured and the uninsured. Therefore we chose not to present the asset holdings of those with public insurance in Table 1. Those with public insurance tend to have much lower asset holdings compared to the privately insured and the uninsured.

The appropriate measure of wealth to consider is not clear a priori. Liquid assets are most readily converted to cash. On the other hand, other assets can also eventually be converted to cash. Therefore, we present three measures of wealth: liquid assets, financial assets, and net worth. Like Starr-McCluer (1996), we find that insured people have higher levels of wealth than uninsured people of the same income. Median liquid assets are $1,457 among privately insured adults, while the median among the uninsured is $0. The difference between privately insured and uninsured adults is greater based on financial assets: median for privately insured is $10,000 versus $0 for the uninsured. The median net worth of privately insured adults is $84,281 versus $4,009 for the uninsured.

Insured adults differ from uninsured adults in terms of income, age, and education. But even within sociodemographic groups, insured adults have substantially higher median

wealth holdings than adults without insurance. The top panel in Table 1 shows that with the exception of adults with family income below $15,000, the median assets of privately insured adults always exceed those of uninsured adults in the same income group. The next two panels of Table 1 show that the median assets of privately insured adults always exceed those of uninsured adults in the same age and education groups.

In Table 2, we present the percentage of non elderly adults who own any liquid assets, financial assets, and who have positive net worth by insurance status. Compared to the uninsured, privately insured adults are significantly more likely to own assets. Among privately insured adults, 73 percent own any liquid assets compared to 44 percent among the uninsured. Among privately insured adults, 81 percent own any liquid assets compared to 47 percent among the uninsured. Among privately insured adults, 96 percent have positive net worth compared to 80 percent among the uninsured. In fact, home ownership, ownership of other residential property, financial assets, interest bearing accounts, and retirement accounts are significantly lower among the uninsured compared to the privately insured (not shown) . Table 2 also shows that privately insured adults are more likely to own assets compared to the uninsured in the same income, age and education groups.

Table 3 presents median wealth holdings of non elderly adults contingent upon asset ownership. Among adults with any liquid assets, the median liquid assets for the privately insured is $3,110 compared to $1,000 among the uninsured. Among adults with any financial assets, the median financial assets for the privately insured is $20,834 compared to $1,609 among the uninsured. Among adults with positive net worth, the median net worth for the privately insured is $91,710 compared to $9,488 among the uninsured. Table 3 also show that conditional on asset ownership, the median assets of privately insured adults always exceed those of uninsured adults in the same income, age and education groups.

4.2 The Role of Wealth in Private Insurance Enrollment

We estimate and compare the three models: the standard income model of equation (2), the life cycle asset model of equation (3), and the permanent income model of equations (6) and (7). The population for the analysis is adults aged 19 to 64 year olds in 2002. The dependent variable is whether the person has private health insurance as of the end of the year. Insurance status is person-level. Nonelderly adults aged 19 to 64 are classified into two insurance categories: private insurance, and no private insurance. Insurance status is as of the end of the year. Those with any private coverage are in the "private insurance" category. Persons with no private coverage but with public coverage and persons without any private or public coverage are in the "no private coverage" category.

We examine the role of assets in the three health insurance models separately for two groups: adults who live in families in which at least one person who has an offer of employment-related group insurance (the offer sample), and adults who live in families in which no one has an offer of employment-related group insurance (the no offer sample). There are two significant differences between these two groups which can lead to differential effect of assets on health insurance purchase decisions. The first is that those with offers of employment-related group insurance face a much lower price for health insurance than those without offers. The second is that income is lower among the no offer group.

Regression Sample Characteristics

Table 4 presents descriptive statistics for the two samples. There are 12,546 observations in the offer sample and 8,968 observations in the no offer sample. Among adults who live in families with offers 94 percent have private health insurance whereas only 29 percent of adults who live in families without offers have private health insurance. Family level income is significantly higher among the offer sample. Only 5 percent of the offer sample are in the lowest quartile of the income distribution compared to 47 percent of the no offer

sample. Nearly 42 percent of the offer sample is in the top quartile of income compared to 12 percent among the no offer sample.[2] Family level wealth is also significantly higher among the offer sample. Only 12 percent of the offer sample are in the lowest quartile of the wealth distribution compared to 37 percent of the no offer sample. About 37 percent of the offer sample is in the top quartile of the wealth distribution compared to 18 percent among the no offer sample.[3] Home ownership is 72 percent among the offer sample versus 41 percent among the no offer sample. Similarly, 54 percent among the offer and 16 percent among the no offer sample own retirement savings accounts.

MEPS includes questions on attitudes toward health insurance, risk-taking behavior, and the medical care system contained in a self-administered questionnaire asked of adults. Respondents are asked whether they agree strongly, somewhat, are uncertain, disagree somewhat, or disagree strongly with these statements. As in Monheit and Vistnes (2006), we use the following three:

- "Health insurance is not worth the money it costs."
- "Im more likely to take risks than the average person."
- "Im healthy enough that I really dont need health insurance."

We code those who somewhat or strongly disagree with the first statement as having a strong preference for health insurance ("worth it"=1). We code those who somewhat or strongly disagree with the second statement as being more risk averse than the average person ("more risk averse"=1). We code those who somewhat or strongly agree with the third statement as having a weak preference for health insurance ("healthy"=1).

[2]We constructed income quartiles for the offer and no offer samples combined. First quartile: income<$17,000, second quartile: $17,000<=income<$36,000, third quartile: $36,000<income<=$67,000, fourth quartile: $67,000<=income.

[3]We constructed net worth quartiles for the offer and no offer samples combined. First quartile: net worth<$1,000, second quartile: $1,000<=net worth<$26,000, third quartile: $26,000<net worth<=$135,000, fourth quartile: $135,000<=net worth).

Among the offer sample 70 percent and among the no offer sample 59 percent said that health insurance was worth the money it costs. Among the offer sample 69 percent and among the no offer sample 61 percent said that they were more risk averse than the average person. Among the offer sample 8 percent and among the no offer sample 12 percent said that they were healthy enough that they did not need health insurance. In addition, among adults in the offer group, 7 percent reported being in poor physical or mental health compared to 17 percent among the no offer group. Among adults in the offer group, 31 percent reported having a chronic condition compared to 17 percent among the no offer group.

Among the offer sample 9 percent had less than a high school degree compared to 25 percent among the no offer sample. Among the offer sample 35 percent had a high school degree compared to 39 percent among the no offer sample. Among the offer sample 24 percent had some college education compared to 21 percent among the no offer sample. Among the offer sample 32 percent had a college degree compared to 16 percent among the no offer sample. Among adults with offers, 66 percent were married compared to 38 percent among the no offer adults. Among adults with offers, 10 percent were not working compared to 38 percent among the no offer adults. Table 4 also shows that the offer and no offer samples are different in terms of race and ethnicity. Among adults with offers, 10 percent were Hispanic, 10 percent were black, not Hispanic, 5 percent were Asian, not Hispanic and 75 percent were other race, not Hispanic. Among adults with no offers, 19 percent were Hispanic, 15 percent were black, not Hispanic, 4 percent were Asian, not Hispanic, and 63 percent were 'other' race, not Hispanic.

Regression Results

In Table 5, we first examine the standard income model. In the offer sample of column 1, health insurance enrollment increases with income. Moving from the first quartile of income to the highest quartile of income causes enrollment to increase 19 percentage points from 77.5% to 96.7%, a 25% increase. However, when we add assets to income in the life

cycle model of column 2 (in the offer sample), this 19 percentage point effect on enrollment decreases to 16 percentage points. Moving from the first quartile of wealth to the highest quartile of wealth causes enrollment to increase by 2.9 percentage points. Home ownership adds 1.6 percentage points to insurance enrollment, and IRA ownership adds 2.7 percentage points to insurance enrollment. Thus, in the life cycle model, for people with an employer-sponsored insurance offer, the effect of assets on enrollment is relatively small compared to the income effect.

However, for people without an insurance offer, the wealth effect is larger than the income effect. In the life cycle model in the no offer sample of column 5, moving from the lowest to highest quartiles of income increases enrollment by 15.2 percentage points, as opposed to 29.5 percentage points when wealth increases from the lowest to highest quartile. While the home ownership effect is no longer significant in the no offer sample, the IRA effect is much larger, adding 12.9 percentage points to enrollment. Thus, wealth and assets play a much larger role than income in enrollment when the person has no employer-sponsored insurance offer. Moreover, comparing the life cycle model with the standard model in the no offer sample, adding assets increases the R^2 by 20%, from 25.4 to 30.4.

In columns 3 and 6 of Table 5 we have the permanent income model estimates, which use predicted income quartile rather than actual income quartile. That is, the permanent income model reshuffled people across income quartiles based on what their permanent income was estimated to be (based on wealth holdings). In the offer sample, 43% of people with current income in income quartile one were moved to income quartile two based on permanent income, and 3% were moved to the top income quartile. For people with current income in quartile two, 68% were shifted down to quartile one, while 12% were pushed to the top quartile. For people with current income in quartile three, 66% were moved to quartile one and 30% were moved to the top quartile. Thus, almost all of the third quartile people were reassigned a different income quartile. Finally, for people with current income in the

top quartile, 28% were moved to the bottom quartile, while most of the others remained at the top. The pattern was similar in the no offer sample, except that the reassignment to the bottom quartile was more severe. For those with current income in quartile two, 94% were reassigned to the bottom quartile. Similarly, 83% in the third quartile were shifted to the bottom quartile, while 51% in the top quartile were dropped to the bottom.

Thus, we see that current income is not a good proxy for permanent income. With people now reclassified into income quartiles based on permanent income, we see in columns 3 and 6 of Table 5 that the permanent income effect is smaller than the current income effect in the standard Keynesian model for both the offer and no offer sample. However, while the permanent income effect is small in the offer sample—a 3.6 percentage point increase in enrollment moving from the bottom to top income quartile—the permanent income effect is still large in the no offer model; a move from the bottom to top quartile is associated with a 25.9 percentage point increase in enrollment.

To best compare all three models, in Table 6 we examine how well their predicted enrollment levels approximate the actual enrollment level for four groups of people in (1) the bottom income quartile and bottom wealth quartile; (2) the bottom income quartile and top wealth quartile; (3) the top income quartile and bottom wealth quartile; and (1) the top income quartile and top wealth quartile. Thus, we examine 4*2 cases (4 in each the offer and no offer samples). Overall, the life cycle asset model performed better than the standard model in 7 of 8 cases. In general, the standard model overestimates enrollment for the low income-low wealth group and underestimates enrollment for the low income-high wealth group. The life cycle model dampens this bias. This dampening correction can be quite large. In the no offer model, the standard model underestimates enrollment for the low income-high wealth group by 26.7 percentage points (33.3 versus an actual rate of 60), while the life cycle model only underestimates by 4.4 percentage points (55.6 versus 60).

In contrast, the permanent income model simply underestimates the low income and overestimates the high income, regardless of wealth. As a result, the permanent income model performed better than the standard model in only 3 of 8 cases. However, if we consider the most complex groups of people to be the low income-high wealth group and the high income-low wealth group, the permanent income model performed better than the standard model in 3 of these 4 complex cases. However, the permanent income model only outperformed the life cycle model in one case. In that case of the low income-high wealth with an offer, both the life cycle and standard models severely underestimated take-up, while the permanent income model was fairly accurate (94.6 versus an actual rate of 92.6).

As a sensitivity test, we reran these regressions of Tables 5 and 6 with the publicly insured taken out of the samples. The results were robust. We also reran the regressions for the offer sample controlling for the price of the insurance using estimates of the out-of-pocket premium based on state and firm size in the Insurance Component of the MEPS. The results were robust.

Finally, to compare our model to Bundorf and Pauly (2006), we ran a regression similar to their regression. We subset to age 25-64 with no public insurance, with both offer and no offer samples grouped together. To replicate their model, we regressed private insurance enrollment on income, income squared, married, and family sized. This estimate gave Bundorf and Pauly's main result, 75% of the uninsured can afford insurance (based on the criteria that their predicted probability of enrollment be above p=50%). The lower bound estimate was 24% of the uninsured can afford insurance when we used a p=70% criteria.[4] However, when we add our asset variables to the Bundorf and Pauly regression, we find that only 59% of the uninsured can afford insurance when p=50%, and only 26% can afford it when p=70%. Thus, low assets do explain why many of the uninsured cannot afford

[4]Bundorf and Pauly get a lower bound estimate of 25% using p=80% with 2000 data. However, using 2002 data we only estimate that 11% can afford insurance when p=80%.

insurance when current income might indicate otherwise.

5 Discussion

We have found that the standard model using only current income to approximate wealth performs poorly at predicting health insurance enrollment for many subgroups of people. In particular, the standard model severely overestimates private insurance enrollment for the low income with low wealth, and underestimates enrollment for the low income with high wealth. The life cycle asset model corrects this and consistently predicts enrollment better than the standard model. The permanent income model does not perform as well as the life cycle model, but does perform better than the standard model in the cases of low income-high wealth and high income-low wealth. The life cycle asset model appears to perform better than the permanent income model since it seems that assets have a direct impact on health insurance enrollment. This may be partially due to an asset protection effect. It is well known that common measures of the insurance risk premium (such as the Pratt measure, $-\sigma^2 \frac{U''(W)}{2U'(W)}$), the willingness to pay for insurance, can either increase or decrease with wealth W. Thus, our estimates may be picking up this insurance asset protection effect in addition to a wealth effect. Future research should try to tease out these two effects.

Our results have significant policy implications. First, our results show that policies that only provide temporary subsides to augment the current income of the uninsured will have a minor impact on take-up. The reason is that assets matter more than current income in predicting take-up for those without a employer-sponsored offer of insurance. Second, our research shows that the assets needed to induce take-up among the poor are considerable large. In Figure 1, for each income decile, we show the minimum family net asset level in 2002 required for a 75% probability of take-up.[5] For the lowest decile of income ($7,000),

[5]Figure 1 is estimated with a life cycle asset model of Table 5, but with the offer and no offer sample combined.

the required asset level is $135,000. That is, the severely poor will not take up insurance with a 75% probability until they have, for example, a house with $135,000 in equity). As expected this required asset level declines with income. At around $67,000 in income, the required asset level is -$2,000, perhaps indicating an asset protection effect. This level then rises back up to around $10,000 for higher incomes, perhaps indicating a counterbalancing propensity to self-insure at higher income levels. Future research should examine these asset protection and self-insurance motives of the wealthy in greater detail.

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Table 1: Median Wealth Holdings of Nonelderly Adults by Insurance Status in 2002

	Liquid Assets		Financial Assets		Net Worth	
	Privately Insured	Uninsured	Privately Insured	Uninsured	Privately Insured	Uninsured
All Adults	$1,457	$0	$10,000	$0	$84,281	$4,009
Family Income:						
<$15K	0	0	0	0	2,894	181
$15K-30K	195	0	578	0	9,246	3,978
$30K-50K	780	100	3,927	215	43,016	12,906
$50K-100K	2,249	976	20,902	3,205	120,883	66,835
Above $100K	5,831	6,039	81,140	31,763	293,797	179,303
Age:						
<35	978	0	3,004	0	20,706	1,494
35-44	1,375	0	11,733	0	88,812	6,305
45-54	1,973	0	19,886	0	131,014	14,780
55-64	2,434	99	31,269	294	186,941	41,103
Education:						
<High School	196	0	950	0	26,814	1,472
High School Degree	699	0	3,908	0	60,998	4,020
Some College	1,459	100	8,974	284	73,841	5,981
College Degree	3,601	785	33,370	1,207	148,754	19,549

1. All amounts are in 2002 dollars.
2. Wealth holdings are family level.
3. Family is defined as health insurance eligibility units.
4. Nonelderly adults include those aged 19 to 64 years old.
5. “Liquid assets” include checking accounts, savings accounts and money market funds. “Financial assets” include liquid assets plus stocks, government and corporate bonds, mutual funds, certificates of deposits, IRA, Keogh and 401K accounts. “Net worth” includes financial assets plus the net value of residential property, other real estate, business equity, transportation vehicles, other savings (such as jewelry, collection for investment purposes, rights in a trust or estate, annuities) minus debts (such as credit card balances, medical debts, life insurance policy loans).

Table 2: Percentage of Nonelderly Adults Who Own Assets by Insurance Status in 2002

	Liquid Assets		Financial Assets		Net Worth	
	Privately Insured	Uninsured	Privately Insured	Uninsured	Privately Insured	Uninsured
All Adults	73%	44%	81%	47%	96%	80%
Family Income:						
<$15K	44	27	48	29	79	64
$15K-30K	60	45	66	48	92	85
$30K-50K	70	58	78	61	97	94
$50K-100K	80	69	89	76	99	97
Above $100K	84	79	94	86	100	99
Age:						
<35	69	40	75	43	93	75
35-44	74	47	83	50	97	85
45-54	76	45	85	49	98	87
55-64	76	54	84	57	98	88
Education:						
<High School	59	26	64	28	91	68
High School Degree	69	43	76	46	95	81
Some College	75	58	82	62	97	88
College Degree	81	67	90	71	98	93

1. All amounts are in 2002 dollars.
2. Wealth holdings are family level.
3. Family is defined as health insurance eligibility units.
4. Nonelderly adults include those aged 19 to 64 years old.
5. “Liquid assets” include checking accounts, savings accounts and money market funds. “Financial assets” include liquid assets plus stocks, government and corporate bonds, mutual funds, certificates of deposits, IRA, Keogh and 401K accounts. “Net worth” includes financial assets plus the net value of residential property, other real estate, business equity, transportation vehicles, other savings (such as jewelry, collection for investment purposes, rights in a trust or estate, annuities) minus debts (such as credit card balances, medical debts, life insurance policy loans).

Table 3: Median Wealth Holdings among Nonelderly Adults with Asset Ownership by Insurance Status in 2002

	Liquid Assets		Financial Assets		Net Worth	
	Privately Insured	Uninsured	Privately Insured	Uninsured	Privately Insured	Uninsured
All Adults	$3,110	$1,000	$20,834	$1,609	$91,710	$9,488
Family Income:						
<$15K	988	492	1,648	685	6,399	2,986
$15K-30K	990	803	2,786	1,147	11,130	6,493
$30K-50K	1,956	1,000	8,938	1,784	45,992	15,473
$50K-100K	3,911	2,484	29,269	8,713	123,098	69,212
Above $100K	8,817	9,068	91,988	51,477	293,830	182,334
Age:						
<35	2,000	957	8,530	1,140	26,656	4,554
35-44	2,943	978	21,501	1,412	92,510	12,012
45-54	3,911	1,393	31,673	3,942	135,278	24,949
55-64	4,929	1,807	48,630	6,191	193,860	54,995
Education:						
<High School	1,643	699	4,928	961	37,002	6,894
High School Degree	1,975	886	11,990	1,164	67,464	8,751
Some College	2,929	1,172	16,453	1,998	81,104	9,297
College Degree	5,000	1,967	43,997	8,474	152,665	26,867

1. All amounts are in 2002 dollars.
2. Wealth holdings are family level.
3. Family is defined as health insurance eligibility units.
4. Nonelderly adults include those aged 19 to 64 years old.
5. “Liquid assets” include checking accounts, savings accounts and money market funds. “Financial assets” include liquid assets plus stocks, government and corporate bonds, mutual funds, certificates of deposits, IRA, Keogh and 401K accounts. “Net worth” includes financial assets plus the net value of residential property, other real estate, business equity, transportation vehicles, other savings (such as jewelry, collection for investment purposes, rights in a trust or estate, annuities) minus debts (such as credit card balances, medical debts, life insurance policy loans).

Table 4 Descriptive Statistics: Means

Variable	Offer	No Offer
Private insurance	.935	.290
Public insurance	.009	.188
Family income	$69,109	$29,906
Family net worth	$193,900	$118,488
Home owner	.718	.411
IRA owner	.542	.164
Most apt to believe “insurance is worth the costs”	.701	.588
Most apt to “not take risks”	.690	.614
Most apt to believe ``healthy enough not to need insurance”	.083	.122
Family size	2.7	2.1
Poor phy or mental health	.072	.170
Any of 8 chronic conditions	.314	.359
Education<High School	.092	.246
High School Degree	.345	.392
Some College	.240	.206
College Degree	.323	.156
Married	.658	.376
Not working	.098	.375
Age	40.7	39.9
Male	.492	.487
Hispanic	.104	.187
Black	.101	.145
Asian	.049	.036
Other	.746	.632
Northeast	.205	.162
Midwest	.243	.201
South	.340	.379
West	.212	.257
N	12,546	8,968

Table 5: Estimated Effects of Wealth on Private Insurance Enrollment

	Probability of Private Insurance Enrollment					
	Offer			No Offer		
	Standard Income Model	Life Cycle Asset Model	Permanent Income Model	Standard Income Model	Life Cycle Asset Model	Permanent Income Model
Income 17K-36K	0.121*** (0.019)	0.110*** (0.019)	-0.049*** (0.012)	0.038*** (0.014)	0.004 (0.014)	-0.054 (0.037)
Income 36K-67K	0.170*** (0.018)	0.147*** (0.019)	0.035 (0.044)	0.223*** (0.022)	0.128*** (0.022)	0.224*** (0.085)
Income 67K-340K	0.192*** (0.019)	0.162*** (0.019)	0.036*** (0.007)	0.316*** (0.029)	0.152*** (0.030)	0.259*** (0.029)
Net Worth 1K-26K	--	0.026** (0.012)	--	--	0.033** (0.014)	--
Net Worth 26K-135K	--	0.035*** (0.012)	--	--	0.163*** (0.025)	--
Net Worth 135K-9,256K	--	0.029** (0.013)	--	--	0.295*** (0.032)	--
Home owner	--	0.016* (0.009)	--	--	0.000 (0.020)	--
Ira owner	--	0.027*** (0.005)	--	--	0.129*** (0.023)	--
"Insurance worth it"	0.011** (0.006)	0.010* (0.006)	0.013** (0.006)	0.071*** (0.013)	0.068*** (0.012)	0.073*** (0.013)
Risk averse	0.007 (0.005)	0.007 (0.005)	0.008 (0.005)	0.021* (0.012)	0.015 (0.011)	0.018 (0.012)
Healthy, no need for insur.	-0.026** (0.011)	-0.027** (0.011)	-0.026** (0.011)	-0.024 (0.017)	-0.022 (0.017)	-0.018 (0.018)
Household size=2	-0.064*** (0.011)	-0.068*** (0.011)	-0.064*** (0.011)	-0.004 (0.017)	-0.029* (0.016)	0.013 (0.018)
Household size=3	-0.070*** (0.012)	-0.076*** (0.012)	-0.067*** (0.012)	-0.100*** (0.022)	-0.122*** (0.021)	-0.066*** (0.022)
Household size=4	-0.082*** (0.012)	-0.089*** (0.012)	-0.078*** (0.013)	-0.092*** (0.022)	-0.100*** (0.021)	-0.059** (0.023)
Poor health	-0.005 (0.010)	-0.004 (0.010)	-0.010 (0.010)	-0.077*** (0.015)	-0.050*** (0.014)	-0.092*** (0.015)
Chronic condition	-0.003 (0.005)	-0.002 (0.005)	-0.003 (0.005)	0.000 (0.013)	0.008 (0.013)	0.000 (0.013)
High School Degree	0.037*** (0.012)	0.035*** (0.012)	0.043*** (0.012)	0.056*** (0.012)	0.042*** (0.012)	0.078*** (0.012)
Some College	0.046*** (0.012)	0.044*** (0.012)	0.053*** (0.013)	0.161*** (0.016)	0.127*** (0.016)	0.185*** (0.016)
College Degree	0.053*** (0.012)	0.049*** (0.012)	0.061*** (0.012)	0.193*** (0.021)	0.128*** (0.021)	0.196*** (0.023)
Married	0.016 (0.011)	0.017 (0.011)	0.025** (0.011)	0.061*** (0.017)	0.041** (0.016)	0.084*** (0.017)
Unemployed	-0.067*** (0.010)	-0.068*** (0.010)	-0.066*** (0.011)	0.017 (0.012)	0.017 (0.011)	-0.006 (0.012)
Age 35-44	0.036*** (0.007)	0.031*** (0.007)	0.041*** (0.007)	-0.068*** (0.015)	-0.092*** (0.014)	-0.056*** (0.015)
Age 45-54	0.036*** (0.007)	0.029*** (0.007)	0.039*** (0.007)	-0.012 (0.016)	-0.063*** (0.016)	0.006 (0.017)
Age 55-64	0.035*** (0.008)	0.025*** (0.009)	0.036*** (0.009)	0.153*** (0.020)	0.050** (0.020)	0.178*** (0.020)
Male	-0.014*** (0.005)	-0.014*** (0.005)	-0.011** (0.005)	-0.023** (0.010)	-0.021** (0.010)	-0.018* (0.010)
Black	0.039*** (0.014)	0.041*** (0.014)	0.039*** (0.014)	0.046*** (0.017)	0.054*** (0.016)	0.051*** (0.017)
Other	0.056*** (0.014)	0.053*** (0.014)	0.054*** (0.014)	0.063* (0.035)	0.054 (0.034)	0.077** (0.037)
White	0.064*** (0.011)	0.056*** (0.010)	0.065*** (0.011)	0.136*** (0.014)	0.105*** (0.013)	0.153*** (0.014)
R2	8.3	9.0	6.3	25.4	30.4	23.3

*Note: *** Significant at 99%.** Significant at 95%.* Significant at 90%.*. Regressions include 4 region dummies.

Table 6: Predicted Private Insurance Enrollment Rates

Lowest and highest income-wealth quartiles	Actual Rate	Standard Income Model	Life Cycle Asset Model	Permanent Income Model
Offer				
Low income, low wealth	73.2%	77.1% (2.2)	**75.0% (2.3)**	88.5% (1.5)
Low income, high wealth	92.6	77.7 (2.1)	80.0 (2.2)	**94.6 (1.2)**
High income, low wealth	96.5	**96.1 (1.3)**	91.7 (1.7)	91.9 (1.4)
High income, high wealth	97.6	97.5 (1.2)	**97.6 (1.2)**	97.0 (1.2)
No Offer				
Low income, low wealth	11.1	14.6 (2.6)	**11.3 (2.6)**	17.9 (2.6)
Low income, high wealth	60.0	33.3 (3.0)	**55.6 (3.8)**	47.6 (3.1)
High income, low wealth	35.5	51.9 (3.7)	**29.9 (4.2)**	28.5 (2.8)
High income, high wealth	74.2	67.7 (3.5)	**74.2 (3.7)**	63.2 (3.4)

Notes: Bold face numbers are those estimates that are closest to the actual enrollment rate. Low income is 0 to $7k, high income is $67k+, low wealth is under $1k, and high wealth is $135k+.

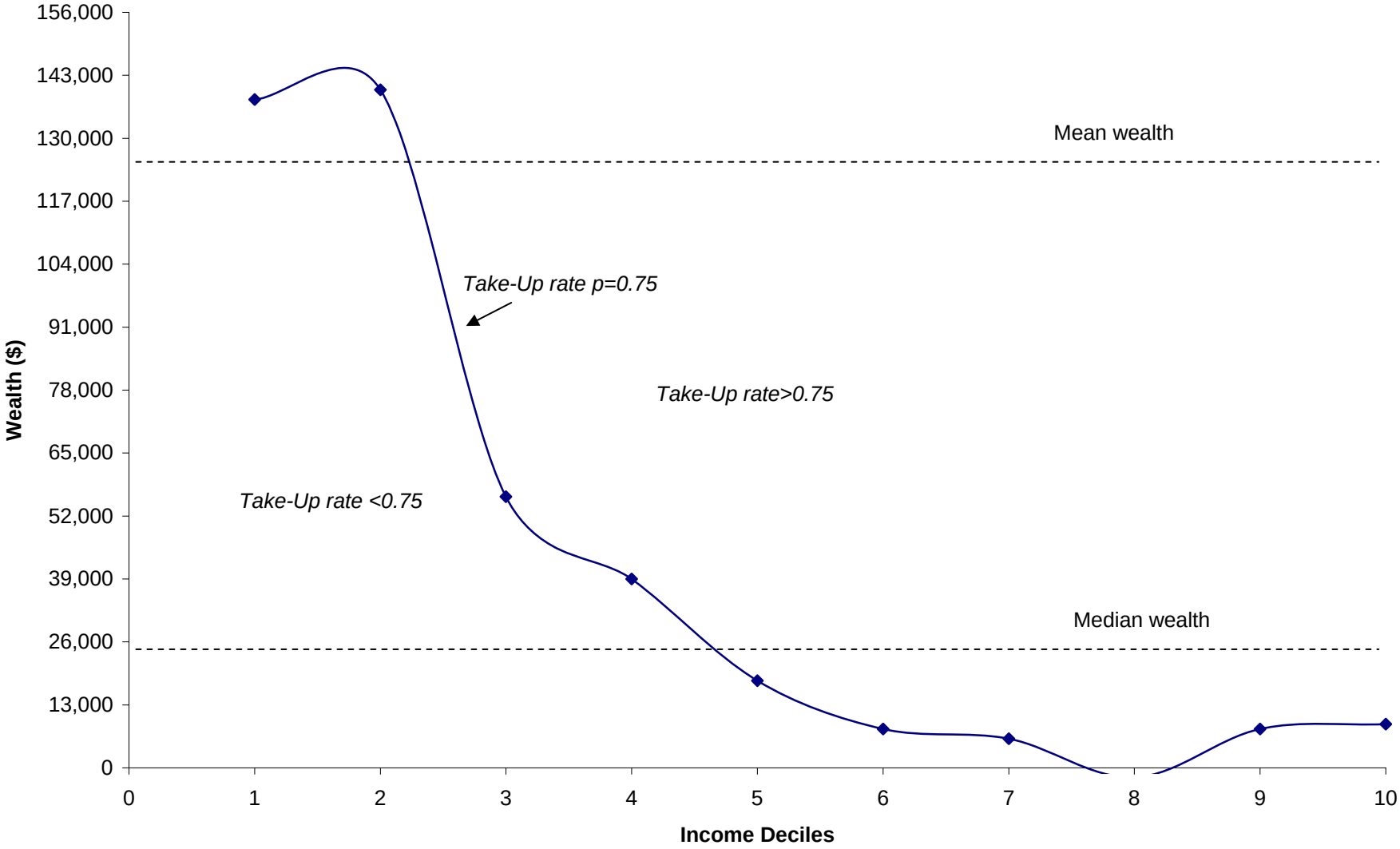

Figure 1. The Asset-Income Trade-Off: The minimum wealth required for a 75% take-up rate