

Public Health Insurance and SSI Program
Participation Among the Aged

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Abstract

Previous researchers have noted that the ‘categorical’ Medicaid eligibility accompanying the welfare programs Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) often far exceeds the value of these programs’ cash benefits. It may be the case that the accompanying health insurance, not the cash benefit, is often the decisive factor in welfare participation. If so, welfare participation should decrease when cash and health insurance benefits are unbundled. We present a simple model of program participation with heterogeneous valuation of health insurance and transaction costs of participation. We evaluate the following four implications of the model: 1) SSI participation declines with the expansion of alternative routes to Medicaid (i.e., noncategorical Medicaid); 2) the availability of noncategorical Medicaid increases Medicaid participation among SSI nonparticipating eligibles; 3) the average SSI benefit collected by welfare recipients is higher when noncategorical Medicaid is available; and 4) the average SSI benefit rejected by nonparticipating SSI eligibles is higher when noncategorical Medicaid is available. Overall, the findings on the model’s testable implications are mixed. The estimates imply strikingly large effects of the presence of alternative routes to Medicaid on both SSI and Medicaid participation, but the results for the hypotheses about SSI benefit amounts are sensitive to controls for recipient characteristics.

I. Introduction

It has long been noted that the ‘categorical’ Medicaid eligibility accompanying the welfare programs Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) may often far exceed the value of these programs’ cash benefits. Research by Blank (1989), and Yelowitz (1995) on AFDC and by Yelowitz (1998, 2000) on SSI provide empirical evidence on the hypothesis that some participants in cash welfare are chiefly attracted to these programs for the accompanying health insurance. While Blank (1989) does not find support for decreases in AFDC participation due to Medically Needy programs, Yelowitz (1998, 2000) finds support for the hypothesis. In all cases, the hypothesis test is based on the prediction of declining welfare program participation when alternative Medicaid participation routes are available.

If welfare program participation were costless, every eligible household facing a positive expected benefit (either from the cash program, the accompanying health insurance, or both) would enroll in the program. The fact that there are relatively large numbers of individuals who appear eligible for either AFDC or SSI but who do not enroll suggests the existence of participation-d discouraging transaction costs (both practical and psychic). If there are differential costs to enrollment in cash welfare and health insurance, then ‘unbundling’ health benefits by creating alternative routes to Medicaid participation should make no household worse off and will make some households better off because they do not wish to access health insurance through the welfare system.

This paper begins by following the previous literature in estimating SSI program take-up of the aged as a function of Medicaid-alternative policy and other factors. Our findings are qualitatively similar to Yelowitz’s (1998, 2000) previous work, in that availability of

noncategorical Medicaid helps explain the nonparticipation of apparent SSI-program eligibles. We then ask the important follow-up question, “do the SSI-eligibles whom we identify as attracted away from SSI participation due to Medicaid alternatives actually enroll in Medicaid?” Obtaining a credible answer to this question is complicated by several factors, discussed in detail below. We also sketch out a simple theory of program participation of heterogeneous households that generates predictions about the distribution of actual and expected cash SSI benefits when alternative routes to Medicaid vary in their availability. The theory also implies that the characteristics of welfare recipients and nonparticipating eligibles will systematically differ according to the alternative Medicaid policies faced.

The next section discusses the basic theory and derives hypotheses. In section III, we present the pertinent features of SSI and Medicaid policy. Section IV presents our methodological approach and describes our data. Section V contains empirical findings. The paper concludes with a summary and discussion of the findings.

II. Theoretical Discussion and Hypotheses

Understanding the behavior of “nonparticipating eligibles” is essential to arguments about why people might respond differently to SSI when its health insurance component (or a substitute for this component) is offered separately. Consider a simple model in which there are two programs. The first is a welfare program (SSI) paying a cash benefit and providing health insurance. The second is a stand-alone Medicaid program. Suppose that there is a transaction cost to participating in each program, with the net benefit to participating in SSI given by $V(SSIBENE, H^*) - t_S$ and the net value to participating in the noncategorical Medicaid program given by $V(H^*) - t_M$. ‘SSIBENE’ is the expected SSI benefit amount, H^* is the value of health

insurance coverage, and t_M and t_S are the transaction costs of participation in the two programs.

Assume that $V(SSIBENE, H^*) \geq V(H^*)$ for all values H^* . Utility maximizing agents participate in the program that solves

$$V^* = \max\{V(SSIBENE, H^*) - t_S, V(H^*) - t_M, 0\},$$

subject to the unit being eligible for both programs (note that people also have the option not to participate in any program, yielding base utility 0).¹

Under these assumptions, it is evident that in the simplest case of a world without transaction costs, eligible people will participate in SSI if it offers them at least a 1 cent benefit. Since SSI includes Medicaid coverage, this is how *all* SSI-eligible individuals would obtain health insurance; there would be no need for them to consider alternative routes to Medicaid.^{2,3}

Now consider a situation where transaction costs are non-negligible, but $t_M = t_S$ for all individuals. The participation problem then becomes

$$V^* = \max\{V(SSIBENE, H^*) - t_M, V(H^*) - t_M, 0\}$$

Assuming a distribution of transaction costs across individuals, there will be some individuals for whom the transaction cost exceeds the combined value of the SSI benefit and categorical Medicaid. If $V(SSIBENE, H^*) \geq V(H^*)$, these people will not participate in SSI, nor will they participate in noncategorical Medicaid. Now consider those whose benefit from SSI participation exceeds their transaction cost. These individuals participate in SSI. Under these strong assumptions, *no one* participates in alternative Medicaid programs; to do so would require

¹ We set base utility equal to zero for ease of exposition. In a more detailed model of participation, one would have to consider utility inside and outside welfare based on factors such as the treatment of income inside and outside welfare.

² Of course, people who do not qualify for SSI might still be interested in alternative routes to health insurance, but this class does not concern us.

³ There are some nuances to the categorical Medicaid eligibility of SSI recipients. For now, we make the simplifying assumption that SSI receipt comes with an entitlement to Medicaid.

the person to turn down the option of receiving the same health insurance benefit *plus* a cash payment in the SSI program, which is clearly suboptimal. Under these conditions, an SSI-eligible person is never worse off choosing SSI over categorical Medicaid.

The simple model reveals that in order for noncategorical Medicaid to attract people out of SSI, it must be less costly to participate in noncategorical Medicaid than in SSI.⁴ Direct examination of the extent to which these transaction costs differ remains an interesting subject for research, but in this paper we treat this issue as an implicit, rather than explicit, empirical question. Our hypothesis tests proceed under the assumption that it is more costly to enroll in SSI than in noncategorical Medicaid.⁵ A larger transaction cost of SSI participation than that of noncategorical Medicaid rationalizes participation in the noncategorical programs in the presence of a positive expected SSI benefit. That is, there are cases in which

$$0 < V(SSIBENE, H^*) - t_S < V(H^*) - t_M .$$

This framework's central testable implication is that SSI participation declines in the presence of available alternative routes to Medicaid coverage. If true, noncategorical Medicaid programs are one explanation for the phenomenon of SSI nonparticipating eligibles studied by McGarry (1996), Warlick (1982), and Hill (1990). Note that for consistency, individuals who are nonparticipating SSI-eligibles due to the availability of alternative Medicaid ought to be observed actually participating in Medicaid.

⁴ Components of transactions costs include stigma about cash programs, difficulty of the application process, and information costs. For example, arguments consistent with a lower cost of entry to noncategorical Medicaid would include that people do not think receiving health insurance is as shameful as receiving cash assistance and that hospitals or medical providers have self-interest in providing information about noncategorical Medicaid and/or helping with the application process.

⁵ Yelowitz's (1998) discussion of aged Medicaid "take up" provides evidence of the take-up of various routes. If the value of HI offered is roughly equal in the two programs, then programs with greater take-up rates presumably have a lower transaction cost.

There are further testable implications from a simple model with heterogeneous and exogenous distributions of transaction costs and health insurance valuations across the population. First, SSI-eligibles require a larger cash benefit to participate in SSI when noncategorical Medicaid is available than when it is not, because health insurance is available at a lower transaction cost through the noncategorical program. When health insurance can only be obtained through SSI, people with a relatively high valuation of health insurance will settle for low cash benefits, dragging down the average benefit collected by participants. Not only does the prediction of lower observed cash benefits in the presence of noncategorical Medicaid apply to participants, the same prediction holds for *nonparticipating* SSI-eligibles, who should reject higher expected SSI cash benefits when Medicaid is available separately from SSI than when it is not.

Finally, this simple framework implies a link between state Medicaid policies, an individual's valuation of Medicaid, and SSI take-up. In the extreme case where the value of health insurance offered through various public policies is equal,⁶ an individual's valuation of health insurance should not affect SSI take-up when noncategorical Medicaid is available. If alternative routes to Medicaid are not available, then the valuation of health insurance ought to have a strong influence on SSI participation given the welfare program's exclusive provision of public health insurance. More realistically, since health may independently influence the transaction costs of program participation, we test a weaker hypothesis that the individual's valuation of health insurance has a *weaker* effect on SSI take-up when noncategorical Medicaid is available than when it is not.⁷

⁶ This supposition is manifestly false, since coverage offered through noncategorical programs provides a subset of the benefits of Medicaid offered through SSI. We discuss relaxing this assumption in the discussion of implementation.

⁷ Note that empirical findings on this hypothesis are not presented in this draft.

III. Background

The basic empirical approach involves exploiting variation in Medicaid policy for the aged over time and across states at a point in time. This section provides background information on the SSI program, established in 1974, and the alternative routes to Medicaid for the aged that have been introduced over the years.

SSI Policy

Supplemental Security Income (SSI) is a welfare program serving the elderly and disabled. Its benefits are more generous than AFDC/TANF. The federal component of the program paid maximum monthly benefits of \$579 to individuals and \$869 to couples in 2005 (there is a one-third reduction if the receiving unit lives in another's household). The federal benefit has been cost-of-living adjusted since its establishment in 1974. States may also provide a state supplemental payment (SSP) that they finance themselves. It is possible for individuals to qualify for only the SSP, although most aged SSI recipients receive both state and federal benefit components. The generosity of the SSPs has declined over the years and is usually quite modest. In 2005, for example, 22 states provided a supplement to aged individuals receiving SSI, but the median value of the state supplement was just 6% of the federal benefit for individuals.

SSI is a means-tested program that imposes strict limits on other income and assets. \$20 per month of unearned, non-welfare income (most typically in the form of a regular social security benefit) is disregarded in the income test, along with \$65 and half of remaining earned income. Social Security is the most common form of unearned income received by aged SSI recipients, while aged recipients report practically no earned income. Other welfare income reduces the SSI benefit dollar-for-dollar without disregard. The income disregards are not

indexed for inflation, nor are the program's asset limits. The asset limits of \$2,000 for individuals and \$3,000 for couples apply to financial wealth (importantly, housing equity is excluded from the asset test) and have been in place since the mid-1980s. Figure 1 shows that the SSI-aged participation rate of the aged, as estimated for our sample, declined steadily over the sample period. In a typical year, we estimate an SSI take-up rate among eligibles of 46.2 percent.⁸

Access to Medicaid via SSI

In most states, SSI recipients are automatically eligible for Medicaid as members of the “categorically needy” (i.e., welfare-receiving) class. However, under section 209(b) of the Social Security Amendments of 1972, states are allowed to establish an alternative set of Medicaid eligibility standards for SSI participants. These standards are typically stricter than those for SSI, and therefore in “209(b) states” it may be possible to find individuals who receive SSI benefits but who do not have Medicaid coverage. States that provide an SSP may also choose whether to cover their SSP-only beneficiaries with Medicaid, or to restrict Medicaid eligibility to those who meet the income and asset limits governing federal eligibility.

Public Health Insurance Alternatives of the Elderly

The low-resource elderly face large potential expenses for health care and a confusing web of eligibility rules for public programs. The three major potential sources of health insurance are private insurance, the federal program Medicare, for which practically all elderly qualify, and Medicaid. In the present paper, we ignore the issue of private insurance.

Medicare

⁸ The take-up rate is calculated using the SSI income-eligibility weights described below. Take-up rates range from a high of 49 percent in the 1988 panel to a low of just 43 percent in the 1994 panel.

Enacted in 1965 under Title XVIII of the Social Security Act, Medicare is a federal health insurance program for the elderly. The two major components of Medicare are Part A and Part B. Three months prior to the 65th birthday, the Social Security Administration mails each covered person a postcard that indicates whether their coverage is for Part A, Part B, or both.

Medicare Part A, Hospital Insurance (HI), is automatic for those insured under Social Security or Railroad Retirement, and there is usually no part A premium payment. Those who are not covered and are at least 65 can purchase HI coverage by paying a part A premium. Part A helps pay for inpatient hospital care, skilled nursing facility care after a hospital stay (with a 100 day limit), hospice care (with a 150 day limit), and some health care. While most individuals in Part A pay no premium, there are significant deductibles for hospital stays (e.g., \$736 per spell in 1995), and per day coinsurance payments for hospital and skilled nursing facilities.

Most people pay a monthly premium for Medicare Part B, Supplementary Medical Insurance (SMI). Part B helps pay for doctors' services, outpatient hospital care, and some other medical services when medically necessary. In 2002, the typical monthly premium was \$54. Part B also has an annual deductible (this amount has held steady at \$100 for some time), as well as a 20% coinsurance payment. In addition, the insured is responsible for all charges above Medicare-allowed amounts. The only prescription drug coverage under Part B is for chemotherapy. Relative to the very low incomes of SSI recipients, Medicare Part B premia and Medicare Part A and B copayments are substantial (we do not discuss the new Part D drug plan, as it came into existence long after our sample frame).

The "Original Medicare Plan" is a pay-per-visit health plan. The aged can use Original Medicare at any doctor, hospital, or provider accepting Medicare patients. Attempts have been

made to introduce managed care elements into Medicare through “Medicare + Choice Plans” (also known as “Medicare Part C”). These HMO or FFS plans are not available everywhere. “Medicare + Choice” plans may offer additional benefits not offered in the Original Medicare Plan, such as prescription drugs or more hospital days.

Health insurance that supplements Original Medicare Plan coverage by providing additional services and covering Medicare co-payments and premia is available for purchase in the private market. In 1992, such “Medigap” plans were standardized.⁹ Individuals may purchase such plans themselves, and some employers offer gap coverage to their retirees through “group plans.” As discussed below, the federal government has also enabled Medicaid funds to be used to pay premia and co-payments in what are effectively publicly-provided Medigap plans.

Noncategorical Medicaid

This section briefly outlines the major ways that the aged can access Medicaid without participating in SSI. As noted in Bruen et al (1999), “Medicaid eligibility for the aged, blind, and disabled is very complex and confusing, with multiple ways of covering the same population. Coverage...varies considerably by state, with many states not taking advantage of available options to extend coverage beyond that required by federal law.” Perhaps the simplest available alternative resulted from the “special income rule” enacted in OBRA 1986, in which the federal government gave states the option to cover all aged and disabled individuals with incomes up to 100% of the federal poverty line (FPL) with some exceptions. The first exception is for 209(b) states, where the state’s (possibly) different SSI rules may be used to determine counted income (otherwise all cash income is counted, as this is how income is defined for the purpose of measuring poverty). Second, states with Medically Needy (MN) programs (discussed next) have the option of using the resource standard from their MN programs if they are more

⁹ Older nonstandard Medigap plans are in effect, although no longer available for purchase.

generous than 100% of the FPL. Without exception, the Medicaid package offered must be equivalent to that provided for the categorically eligible (i.e., SSI recipients).

States may also run a Medically Needy (MN) program as an alternative route to Medicaid eligibility. Generally, MN programs are accompanied by a “spend-down” provision, meaning that a person’s resources are evaluated for Medicaid eligibility after deducting their out-of-pocket medical expenditures. The MN program formula specifies that maximum income (after medical expenditures) must not exceed 133 and 1/3 percent of the state’s AFDC payment level for a similar type of family (since enactment of welfare reform, this amount continues to be based on 1996 AFDC benefit levels). Spend-down may take the forms of medical expenses, remedial care expenses, or even a premium payment to the state. Note that spend-down is not a prerequisite for participation in MN, because individuals with income below the state limit may enroll in the MN program even without significant medical bills. However, the AFDC-based income standards are usually much lower than the income standard for elderly SSI recipients.

Importantly, coverage of the *aged* is optional for states with MN programs, with the exception of 209(b) states. The 209(b) states must allow spend-down for the aged, whether they establish a MN program or not. If a 209(b) state does not want to offer a MN program, it must still set up a special “209(b) spend down” program for the aged, where the income and resource limits established for their 209(b) option apply. In 2002, 35 states and the District of Columbia had medically needy programs. 34 states plus the District of Columbia included the aged in their medically needy program.¹⁰

¹⁰ The welfare reform of 1996 changed the treatment of immigrants in both Medicaid and SSI programs. Immigrants arriving after August 22, 1996 face a mandatory 5-year ban on Medicaid and SSI benefits (there are exceptions for refugees and asylees). States choose whether to offer Medicaid once the 5-year period has passed.

Medicare Buy-In Programs¹¹

In addition to being a health insurance plan in its own right, Medicaid can be used as a supplementary plan to Medicare, filling two major Medicare service gaps, long-term care and prescription drug benefits, for those who are dually eligible. In addition, the Medicare buy-in programs allow states to use Medicaid funds to assist the low-income elderly with their Medicare premia and co-payments. Sears (2001-2002) estimates a take-up rate of all the buy-in/savings programs of 61% in 1999, with states achieving especially high enrollment among SSI recipients. Because our work focuses on those who are eligible for SSI, we only discuss the Qualified Medicare Beneficiary (QMB) buy-in program. The remaining buy-in programs only apply to individuals who are wealthier than the individuals we study.

Beginning in 1988, individuals who qualify for Medicare but do not qualify for Medicaid, whose income is below 100% of FPL, and whose assets are under \$4,000 (twice the individual SSI asset limit) or \$6,000 (twice the couple SSI asset limit) became eligible for the Qualified Medicare Beneficiary Program (QMB). QMB Pays Medicare premiums (Parts A & B), annual deductibles, and coinsurance amounts. These payments are funded by the state Medicaid program at the standard federal match rate. In many states, SSI beneficiaries are automatically enrolled in QMB. In June 2002, there were 368,572 “QMBs” whose Part A was paid for them. QMB was expanded under OBRA 1990 so that all states must pay part B premiums for households up to 110% of FPL as of January 1, 1993, and up to 120% of FPL as of January 1, 1995.

Initially, QMBs could not be full Medicaid beneficiaries, but Congress removed these restrictions. Still, not all aged who qualify for QMB are eligible for Medicaid services. Only those who are entitled to Medicaid through other channels fall in the “QMB-Plus” category. For

¹¹ These programs are also known as “Medicare savings programs.”

example, a person who qualifies both for QMB and for the state's Medically Needy program will be entitled to both Medicaid and Medicare services, with QMB paying the latter's premia and copayments. Dual entitlement (a Medicaid-Medicare combination) likely provides better health insurance than Medicaid coverage only, because it is easier to find doctors who accept Medicare than Medicaid, and there is evidence that the service received by Medicaid-covered individuals is inferior to that received by those covered by other modes of insurance.

Figure 2 shows the percentage of aged Medicaid recipients in the SIPP who are receiving SSI. There is a clear downward trend in the share of Medicaid participation of the aged that is accounted for by SSI recipients, consistent with greater access through alternative routes (but also consistent with the overall decline in SSI recipiency among the aged). In 1987, 8 in 10 aged Medicaid recipients is an SSI recipient. By 1995, however, barely two-thirds of Medicaid recipients are SSI enrollees. While the Medicaid participation of all aged is roughly constant over our sample period despite the introduction of alternative routes, the importance of the SSI route to Medicaid was declining nevertheless.

IV. Empirical Implementation

As discussed in section II, a simple theory allowing for heterogeneity in transaction costs and health insurance valuation generates numerous testable implications about the effect of alternative routes to Medicaid on SSI participation, Medicaid participation, and the SSI benefit levels that nonparticipants reject and participants receive. In order to assess the effect of an individual's access to Medicaid via alternative routes on SSI participation, we first estimate a simple SSI take-up equation:

$$(1) SSI_i = 1(\alpha_1 ALTELIG_i + \alpha_2 SSIBENE_i + X_i \gamma + \varepsilon_i > 0)$$

An SSI-eligible individual participates in SSI if the term in parentheses is positive. SSI take-up is specified as a function of the individual's access to non-categorical Medicaid (*ALTEG*, which equals one if an individual meets the asset and income restrictions of at least one of MN, OBRA 1986, or QMB plus), the expected cash benefit (*SSIBENE*), and other factors reflecting the benefits and transaction costs of SSI participation (X). We hypothesize that $\alpha_1 < 0$ and $\alpha_2 > 0$, so that the propensity to take up SSI increases with the cash benefit level that SSI provides but declines in the presence of alternative means of obtaining Medicaid. The vector X includes categorical variables based on an individual's age, education level, marital status, household composition, race, and gender, and a full set of interactions among the categories.

The estimation sample consists of aged individuals who appear to be SSI-eligible based on their income and assets. A person who is identified as SSI-eligible meets the SSI asset criterion and has a positive expected computed SSI benefit ($SSIBENE > 0$). Because there may be error in our guess of income-eligibility, we weight observations by the probability that they are eligible, rather than ruling out observations that fail to meet the exact criterion of ' $SSIBENE > 0$ '. Following McGarry (1996), the income-eligibility weights are derived under the assumptions that measurement error in *SSIBENE* is distributed normally and that an unbiased estimate of the measurement error variance can be calculated from comparing the SSI benefits of actual recipients with the value of *SSIBENE* that is calculated for them. With an estimate of the measurement error of *SSIBENE* in hand, we compute $Pr(SSIBENE > 0)$ for each individual in the sample and use these calculated probabilities as income-eligibility weights; in essence, those with large calculated values of *SSIBENE* are weighted highly in the estimation because the probability that they are actually income-eligible is large, even if *SSIBENE* is measured with

error. Following McGarry (1996), we assume that our guess of asset eligibility for the SSI program is correct.

One concern is that *ALTELIG* may be endogenously determined. People may manipulate their incomes in order to become eligible for SSI, and this may incidentally result in eligibility for the means-tested health insurance programs. We take the approach of Yelowitz (2000), originated by Currie and Gruber (1996), to correct this problem. Following Yelowitz, we divide the sample into age-race-education cells. After applying each state's policy to each of the cell members in each year, an overall eligibility rate is computed for the cell. Repeating this process for every state-year combination yields an eligibility rate that is independent of the distribution of individual characteristics within a state and year. That is, differences in this simulated eligibility rate across state-years for the same cell are solely accounted for by differences in policy across states and time. The instrumental variable is then constructed by assigning each person an eligibility rate according to their state of residence, relevant year, and cell membership. This variable, *SIMELIG*, can either replace *ALTELIG* in specification (1) or can be used as an instrumental variable for it.

Similarly, McGarry (1996) emphasizes that *SSIBENE* may be endogenous. (In fact, this seems a more immediate concern for estimating SSI participation than the endogeneity of *ALTELIG*). One option is to replace *SSIBENE* with the state's maximum SSI benefit. Alternatively, we can obtain an instrument for *SSIBENE* by regressing it on the maximum benefit and other variables that determine benefit amounts (including type of receiving unit – couple or individual, and factors influencing outside income) or by applying the Currie-Gruber (1996) procedure to generate a source of SSI eligibility that is independent of potentially exogenous individual characteristics.

As noted above, we wish to investigate whether nonparticipating-SSI-eligibles actually take advantage of alternative routes to Medicaid when they are available. This estimation serves as a check on the plausibility of the results from estimation of (1) with regard to α_1 . For the sample of nonparticipating SSI-eligibles, we estimate the specification

$$(2) \text{MCAID}_i = 1(\beta_1 \text{ALTELG}_i + X_i \delta + v_i > 0)$$

The hypothesized sign of β_1 in (2) is positive, indicating that alternative routes to Medicaid increase Medicaid participation. Again, X contains variables that reflect the benefits and transaction costs of Medicaid enrollment. As in (1), we take a probabilistic approach to determining SSI eligibility, but we assume that actual SSI receipt is measured correctly. The possible endogeneity of the Medicaid-eligibility variable is even more obvious in the context of estimating Medicaid. As in the case of specification (1), an instrument is constructed that is exogenous with respect to individual characteristics.

Consistent estimates of the parameters of (2) is complicated by the fact that the sample is selected for SSI-nonparticipation – the sample is comprised of individuals who appear eligible for a welfare program but do not take it up. Our model posits that there is a rational basis for at least some of this nonparticipation, but it is entirely possible that much nonparticipation is idiosyncratic and difficult to explain. Our model also indicates that transaction costs are relatively high for SSI nonparticipants. Since it seems likely that transaction costs for noncategorical Medicaid participation and SSI are positively correlated, there may be a high concentration of high-cost individuals in our estimation sample for the Medicaid participation model. More formally, if transaction costs of both programs are positively correlated at the individual level, then $Cov(\varepsilon_i, v_i) > 0$. In short, we have likely selected a group of people whose observed behavior differs systematically from the population at large in a way that makes them

less likely to participate in *any* public programs, including noncategorical Medicaid. In order to account for this sample selection, in some specifications we employ a generalization of Heckman’s (1979) selection-correction technique by including flexible higher-order polynomials in the probability of SSI nonparticipation (the propensity score) as additional terms in equation (2).

In section II we also developed predictions about the distribution of SSI benefits based upon whether a state offers alternative routes to Medicaid. With regard to actual participants, the average benefit received is predicted to be greater in states with more expansive noncategorical Medicaid policies, conditional on other factors that independently influence the average benefit amount. A specification that tests this hypothesis is as follows.

$$(3a) \text{ SSIBENA}_i = \alpha_1 \text{ALTELG}_i + X_i \gamma + \varepsilon_i$$

SSIBENA is the actual benefit received by the SSI participant. *X* includes the state’s maximum benefit, household structure variables that also enter the SSI benefit formula, and demographic factors associated with transaction costs.

Similarly, we compute the expected benefit and estimate

$$(3b) \text{ SSIBENE}_i = \alpha_1 \text{ALTELG}_i + X_i \gamma + \varepsilon_i$$

for the sample of potential SSI eligibles who do not participate (again we take a probabilistic approach to eligibility but assume that SSI participation itself is measured accurately in our sample). We also compute expected benefits for all potential eligibles and estimate (3b) for the entire sample, pooling SSI participants and nonparticipants. Our central hypotheses in these models involve the sign of α_1 , which should be positive.

V. Data and Findings

Our data come from the Survey of Income and Program Participation (SIPP) panels for 1987-1995. The SIPP is a large household survey that collects information on income, assets, and program reciprocity. Each interview wave of the SIPP asks respondents about their income and activities in the previous 4 months. The unit of observation is the person-month (all months are used in each panel). Our final estimation samples are identical to those used in Yelowitz (2000), except that we only study households consisting of individuals living alone, while Yelowitz (2000) makes no restrictions with regard to household type¹². We make this restriction because we find that SSI eligibility is very poorly predicted for other household types. In particular, among actual SSI recipients, less than 50 percent are determined to be SSI-eligible for the other household categories (the accuracy rate is just 37 percent for couples, and rates are even lower when other people live in the household), whereas 88 percent of lone individuals are estimated to be SSI-eligible.¹³ Our policy data on the SSI and Medicaid-alternative programs come from various publications, such as the U.S. Committee on Ways and Means *Green Book* and the *Medicaid Source Book* from selected years.

Table 1 presents descriptive statistics for our basic samples – all SSI eligibles, SSI participants, SSI nonparticipating eligibles who report being covered by Medicaid, and SSI nonparticipating eligibles who are not covered by Medicaid. To calculate these statistics, we apply the SSI income-eligibility weights to our entire sample of 22,371 asset-eligible aged individuals.

Average estimated expected SSI benefits are more than 500% higher for participants than for both groups of nonparticipants – \$241.87 per month versus \$31.17 or \$45.64 – consistent

¹² We thank Aaron Yelowitz for making his data from Yelowitz (2000) available on-line.

¹³ Some of this inaccuracy may be generated by using household-level income and asset variables, following Yelowitz (2000). In subsequent work, we will try to improve our eligibility assessments for SSI recipients using person-level asset and income data.

with a positive effect of benefits on SSI take-up. SSI participation is also strongly associated with self-reported health status, which may reflect demand for categorical Medicaid eligibility. Other than race, no other observable factor seems to be associated with the SSI participation decision. In particular, an estimated 74% of SSI recipients are eligible for alternative routes to Medicaid, which does not differ markedly from the overall 73% eligibility rate among all SSI-eligible units.

More importantly, the 1747 nonparticipating eligibles who receive some Medicaid coverage outside of the SSI program appear to differ from other nonparticipating eligibles along two important dimensions. First, on average they report being in worse health status, with only 40% reporting that their health is “good” or “excellent”, compared to 48% among those who are not covered by Medicaid. Second, 79% of this group is estimated to be eligible for MN, OBRA 1986, or QMB, relative to 71% of the nonparticipating eligibles who do not report any Medicaid coverage. Clearly, some care must be taken in making inferences based on these descriptive statistics, as evidenced by the fact that among those reporting receipt of alternative Medicaid coverage, 21% are not deemed to actually be eligible for such coverage. This discrepancy highlights the importance of calculation errors in measuring income and asset levels, as discussed above, and provides another justification for using instrumental variable estimators of equations (1)-(4). Also, it is worth reemphasizing that a comparison of the two samples of SSI participants may be misleading, since these samples are non-randomly selected in the sense that they have chosen not to enroll in a program for which they are eligible.

Table 2 presents further suggestive evidence on the importance of alternative routes to Medicaid on SSI and Medicaid participation. Column (1) reports the estimated SSI participation rate among all elderly living alone in the SIPP from 1987 to 1995 (see also Figure 1). As is

evident from the table, overall SSI participation declined from 9.9% in 1987 to 8.0% in 1995. Interestingly, the decline in SSI participation closely mirrors the timing of the decline in the share of Medicaid recipients who are receiving SSI, given in column (3). Column (4) presents the yearly sample fraction of the elderly who are eligible for at least one of the three alternative routes to Medicaid (QMB, MN, and OBRA 1986). This fraction increased dramatically from 1988 to 1991 (from 8.3% to 21.5%) as the QMB program was phased in nationally. While some care should be taken in drawing inferences from any apparent similarities in timing, the striking increase in alternative eligibility leads the decline in SSI participation and share of Medicaid recipients in SSI by roughly two years, suggesting that one explanation for the patterns in Table 2 involves newly-eligible individuals entering QMB instead of SSI. We next turn to a more formal analysis of the effect of the expansion in alternative routes to Medicaid on SSI participation.

SSI Participation

We next estimate SSI participation as a function of the availability of alternative routes into Medicaid. This is the straightforward approach taken in much past work. In the current version of this paper, we ignore the endogeneity of the expected SSI benefit with respect to SSI participation, which should not affect consistency of α_1 in equation (1) if we use *SIMELIG* to instrument for *ALTELIG*, given that *SIMELIG* is independent of individual characteristics that influence expected SSI benefits. However, estimates of α_2 will likely be biased due to both measurement error in *SSIBENE* and its endogeneity with respect to the SSI take-up decision.

Columns (1) through (3) present estimates of linear probability models of (1). The first row presents the coefficients on *ALTELIG* while the second presents those associated with

SSIBENE. Column (1), which displays estimates of models that do not include any other covariates, indicates that eligibility for non-categorical Medicaid reduces SSI take-up by roughly 13.1 percentage points among SSI eligibles, a large estimate relative to the estimated baseline SSI take-up rate of 46.3 percent. This estimate is largely insensitive to the inclusion of individual-level controls for household composition, marital status, education, race, and age. In this specification, the estimated coefficient of *ALTEG* is -0.143 (0.016), as reported in column (2). Column (3) presents the findings from a specification that adds indicators for state of residence; these too change the point estimate only modestly. The estimated impact of expected SSI benefits on take-up is robust across specifications, with a \$100 increase in expected SSI benefit levels estimated to increase SSI take-up rates by 12.2 to 13.2 percent (recall, however, that this coefficient is overstated if participants manipulate their incomes to become SSI-eligible).

Columns (4) through (6) display analogous results for models in which alternative Medicaid eligibility is instrumented with *SIMELIG*, using the Currie-Gruber (1995) procedure. The estimated coefficient on *ALTEG* increases to -0.438 (0.089) when no other controls are included, an effect nearly equal to the baseline SSI take-up rate. In contrast to the OLS estimates, the IV estimates of the impact of *ALTEG* are quite sensitive with respect to the inclusion of additional covariates, due in large part to a lack of precision. The standard errors of the IV estimates are roughly five times as large as the corresponding OLS ones when state indicators are not included, and over twenty-five times as large in the specification including state fixed effects. In this latter model, reported in column (6), precision is sufficiently poor that the huge point estimate of -0.636 (0.469) is insignificantly different from zero at conventional

levels. In contrast, the coefficient on expected SSI benefits appears largely insensitive to the inclusion of additional covariates.

The estimates in Table 3 imply that, regardless of whether or not one uses a potentially exogenous source of variation in alternative Medicaid eligibility as an instrumental variable, non-SSI routes to Medicaid are predicted to substantially decrease SSI participation rates. These findings are qualitatively consistent with the findings in Yelowitz (2000), but we also wish to determine whether the individuals who opt out of SSI actually end up enrolling in the alternative programs.¹⁴ In the following subsection, we attempt to shed some light on this issue.

Medicaid Participation of SSI Nonparticipating Eligibles

As a follow-up to the SSI participation equation, we also estimate whether SSI nonparticipating eligibles are more likely to enroll in noncategorical Medicaid when it is more widely available. Table 4 presents the findings. The top panel presents OLS and 2SLS findings with various sets of additional controls. The OLS estimates indicate small but significantly positive effects of Medicaid eligibility on Medicaid participation among SSI nonparticipants. The 2SLS estimates using *SIMELIG* to instrument for the individual's alternative Medicaid eligibility status are three to four times larger than the OLS estimates, and remain significant.

Panel B controls for selection into the nonparticipating SSI-eligibles group by including a third-order polynomial in the probability of SSI participation in each specification. This procedure generalizes the well-known "Heckman 2-step" methodology by relaxing the assumption of joint normality of the error terms in equations (1) and (2), while controlling for selection into SSI nonparticipation on characteristics that may also influence Medicaid enrollment. Accounting for selection slightly reduces the OLS coefficient estimates, which is

¹⁴ A difference between our implementation and Yelowitz's (2000) is that we do not include the SSI eligibility criterion in the construction of our Medicaid eligibility variable and instrument. Our policy variables are restricted to eligibility for the noncategorical Medicaid programs.

counter to what we expected (recall that the program participation behavior of nonparticipating SSI-eligibles would possibly be idiosyncratic and difficult to explain). The 2SLS estimates, in contrast, are much larger when selection is accounted for in this way. While selection bias influences estimates in the direction we expected, at first glance the coefficient estimates appear implausibly large, considering that just 16.0 percent of SSI non-participating eligibles take up Medicaid.

In order to gauge the magnitude of the estimated effects, recall from Table 2 that the OBRA 1986 expansions and the national phase-in of the QMB program from 1989 to 1992 increased alternative Medicaid coverage by roughly 12 percentage points. Under the extreme assumption that all of this increase occurs among the SSI-eligible population, which comprises roughly one-third of the sample of those living alone in the SIPP, alternative Medicaid coverage increased by approximately 36 percentage points ($=12 / (1/3)$) among SSI-eligibles. In our preferred specification including individual covariates but not state indicators, the effect of alternative coverage on Medicaid participation is 0.396, which implies that the QMB and OBRA 1986 expansions increased Medicaid participation by at most 14.2 ($= 36 * 0.396$) percentage points, which is of a similar magnitude to the 16.0 percent Medicaid participation rate among SSI non-participating eligibles, averaged over all panels, and considerably below the 20.7 percent participation rate reached by the end of the sample period. Put in this light, the coefficient estimates appear to suggest quite large but not unreasonable effects of non-categorical Medicaid expansions on Medicaid coverage.

The Value of Actual and Expected SSI Benefits

A second set of hypotheses concerns the relationship between the generosity of Medicaid policies and the level of benefits accepted by SSI participants or rejected by nonparticipating

eligibles. Recall that when alternative routes to Medicaid are available in their state, individuals are predicted to require a higher SSI cash benefit to be attracted into the program. Figure 3 plots the cumulative distributions of expected benefits for samples of SSI participants and nonparticipating eligibles, which we have further sub-divided according to whether they reside in a state with “generous” Medicaid policies, as defined by whether the proportion of those eligible for non-categorical Medicaid is greater than the median among all state-year cells in the SIPP sample. For both participating and nonparticipating groups, the cumulative distribution of expected benefits is shifted to the left for those in less generous states, as theory predicts.

Restricting attention to the conditional means of expected SSI benefit levels rather than the distributions as a whole, we can further pursue this issue in a regression framework that allows us to control for systematic differences in the inhabitants of various states that are related to both Medicaid policy and expected SSI benefits. Table 5 presents these estimates, which are based on equations (3a) and (3b). For both SSI participants and nonparticipating eligibles, a more expansive state Medicaid policy predicts a higher expected benefit. However, this finding is sensitive to the inclusion of controls for other factors influencing the maximum benefit. For instance, when only the maximum SSI benefit offered in the state is included as a covariate, the impact of *SIMELIG* becomes significantly negative. This conspicuous sign reversal is due to the fact that states offering relatively generous Medicaid coverage also have generous SSI policies, which induces a mechanical correlation between *SIMELIG* and expected SSI benefit levels. The addition of individual controls reduces the impact of *SIMELIG* to levels that are not significantly different from zero. These findings imply that, contrary to expectations, generous Medicaid policies are not associated with increased expected SSI benefit levels for either participants or non-participating eligibles.

VI. Discussion and Conclusions

We present evidence of the effect of alternative routes into Medicaid coverage on outcomes such as SSI participation, Medicaid participation, average cash benefit levels of SSI participants, and average rejected benefits among those who are eligible for SSI but do not participate. Using a potentially exogenous source of variation in eligibility for non-categorical Medicaid – the fraction of a representative sample eligible for Medicaid under each state- and year-specific policy regime – instrumental variables estimates imply that the presence of an alternative route to Medicaid coverage decreases SSI participation by roughly 14 to 40 percentage points among eligible aged individuals. We then address the central question of whether the SSI-eligible individuals who are drawn away from SSI participation due to Medicaid alternatives actually enroll in Medicaid. Our preferred estimates suggest that expanded Medicaid options increase non-SSI Medicaid participation by as much as 14 percentage points among SSI-eligible units. These estimates are robust to corrections for nonrandom selection into the sample of non-participating eligible units, with the implied effects modestly increasing after accounting for selection.

We also develop a simple theory of program participation among households with heterogeneous transaction costs of program participation and preferences for insurance that generates predictions about the distribution of actual and expected cash SSI benefits when alternative routes to Medicaid vary in their generosity. Contrary to the predictions of the model, we find no evidence that average expected SSI benefit levels are higher under more inclusive Medicaid regimes for either participants or non-participating eligibles.

Although we obtain mixed results for the model's testable implications, there is some support for the hypothesis that for many individuals, the primary attraction of SSI lies in its

associated Medicaid coverage. The SSI and Medicaid participation equation estimates also are consistent with an underlying assumption that stigma or transaction costs depress SSI enrollment to a greater extent than non-SSI Medicaid participation. In the presence of differential costs to enrollment in cash welfare and public health insurance, and given that policymakers have had difficulty affecting these costs, ‘unbundling’ health benefits from SSI by creating alternative routes to Medicaid participation could improve the welfare of a sizeable number of individuals who do not wish to access health insurance through the welfare system.

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Table 1: Descriptive Statistics of SSI Eligibles by Take-Up Status

	<i>ALL SSI Eligibles</i>	<i>SSI Participants</i>	<i>Non-participants with Medicaid</i>	<i>Non-participants without Medicaid</i>
Expected SSI Benefit	135.16 (203.92)	241.87 (181.75)	31.17 (175.25)	45.64 (175.25)
Medicaid Recipient	0.55 (0.50)	1.00 (0.01)	1.00 --	0.00 --
State Maximum SSI Benefit	477.91 (100.11)	476.54 (97.44)	483.74 (92.45)	478.28 (104.41)
Over 75	0.53 (0.50)	0.50 (0.50)	0.49 (0.50)	0.56 (0.50)
White	0.72 (0.45)	0.64 (0.48)	0.77 (0.42)	0.79 (0.41)
Female	0.84 (0.36)	0.86 (0.35)	0.83 (0.37)	0.83 (0.37)
Any Earnings	0.03 (0.17)	0.01 (0.09)	0.04 (0.19)	0.05 (0.22)
Alternate Medicaid Eligible	0.73 (0.44)	0.74 (0.44)	0.79 (0.40)	0.71 (0.45)
Simulated Alternate Eligibility	0.19 (0.05)	0.19 (0.05)	0.19 (0.05)	0.18 (0.05)
Health Good	0.39 (0.49)	0.30 (0.46)	0.40 (0.49)	0.48 (0.50)
Average Eligibility Weight	0.67 (0.26)	0.82 (0.16)	0.54 (0.20)	0.55 (0.27)
Sample Size	22371	5372	1747	15252

Notes:

Each observation is a (potential) SSI-receiving unit satisfying the age requirement. The expected SSI benefit is measured on a monthly basis in nominal dollars.

Table 2: SSI Participation and Take-Up Rates, and the Share of SSI Recipients among Medicaid Recipients, by Year

Year	<i>SSI Participation Rate</i>	<i>SSI Take-up Rate</i>	<i>Share of Medicaid Recipients in SSI</i>	<i>Share of Elderly Covered By QMB, MN, and OBRA1986</i>
	(1)	(2)	(3)	(4)
1987	0.099	0.477	0.804	0.077
1988	0.109	0.494	0.824	0.083
1989	0.106	0.479	0.794	0.175
1990	0.097	0.484	0.781	0.167
1991	0.099	0.467	0.763	0.215
1992	0.096	0.469	0.729	0.203
1993	0.086	0.443	0.689	0.194
1994	0.084	0.430	0.671	0.202
1995	0.080	0.452	0.659	0.181
Overall	0.094	0.463	0.734	0.181

Notes:

1) Sample sizes = 2620 (1987), 5709 (1988), 3989 (1989), 4999 (1990), 9025 (1991), 11,758 (1992), 12,360 (1993), 10,103 (1994), 3416 (1995)

Table 3: OLS and IV Estimates of the Effects of Alternative Medicaid Eligibility and SSI Benefits on SSI Participation

	<i>OLS</i>			<i>2SLS</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
Alt. M'caid Eligibility	-0.131 (0.017)	-0.143 (0.016)	-0.165 (0.016)	-0.438 (0.089)	-0.142 (0.078)	-0.636 (0.469)
SSI Benefit Amount (100's)	0.122 (0.004)	0.122 (0.003)	0.132 (0.004)	0.143 (0.006)	0.131 (0.005)	0.161 (0.027)
R ²	0.25	0.32	0.38	0.18	0.32	0.35
Controls		X	X		X	X
State fixed effects			X			X

Notes:

1) Sample size = 22,371

2) "Controls" include sets of indicator variables for household composition, marital status, education, race, age, and state of residence.

Table 4: OLS and IV Estimates of the Effects of Alternative Medicaid Eligibility and SSI Benefits on non-SSI Medicaid Participation

<i>Panel A: No selection correction</i>						
	<i>OLS</i>			<i>2SLS</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
	0.054 (0.015)	0.054 (0.015)	0.048 (0.015)	0.141 (0.055)	0.175 (0.050)	0.275 (0.096)
Controls		X	X		X	X
State fixed effects			X			X
<i>Panel B: Selectivity-Corrected</i>						
	<i>OLS</i>			<i>2SLS</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
	0.049 (0.016)	0.047 (0.016)	0.041 (0.015)	0.218 (0.139)	0.395 (0.197)	0.825 (0.567)
Controls		X	X		X	X
State fixed effects			X			X

Notes:

1) Sample size = 16,999

2) "Controls" include sets of indicator variables for household composition, marital status, education, race, age, and state of residence.

3) Columns (1) and (2) treat alternative Medicaid eligibility as exogenous, while columns (3) and (4) use state- and year-specific Medicaid eligibility laws as an excluded instrument for individual Medicaid eligibility.

Table 5: OLS Estimates of the Effects of Alternative Medicaid Eligibility on Expected SSI Benefits of SSI Participants and Non-participating Eligibles

	SSI Participants			Nonparticipating Eligibles		
	<i>Control Set</i>			<i>Control Set</i>		
	(1)	(2)	(3)	(1)	(2)	(3)
Coefficient on <i>SIMELIG</i>	881.04 (74.430)	-155.9632 (46.437)	-50.42429 (44.461)	764.8 (34.390)	-100.19 (45.599)	-57.70854 (42.244)
R ²	0.07	0.21	0.26	0.03	0.13	0.15

Notes:

1) Sample sizes = 5372 for SSI Participants, and 16999 for Nonparticipating Eligibles.

2) Control set (2) adds state maximum SSI benefit levels, and control set (3) adds sets of indicator variables for household composition, marital status, education, race, and age.

Figure 1: SSI Participation Rate among Aged

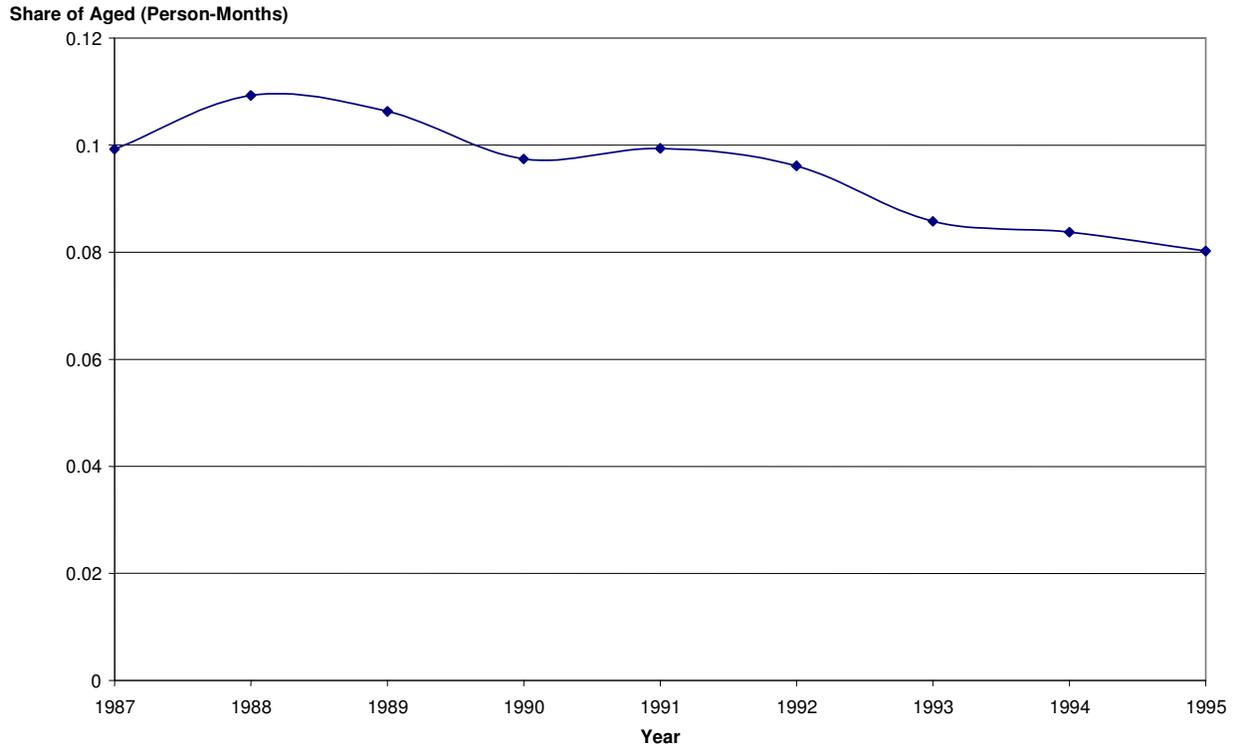


Figure 2: Share of SSI Recipients in Medicaid

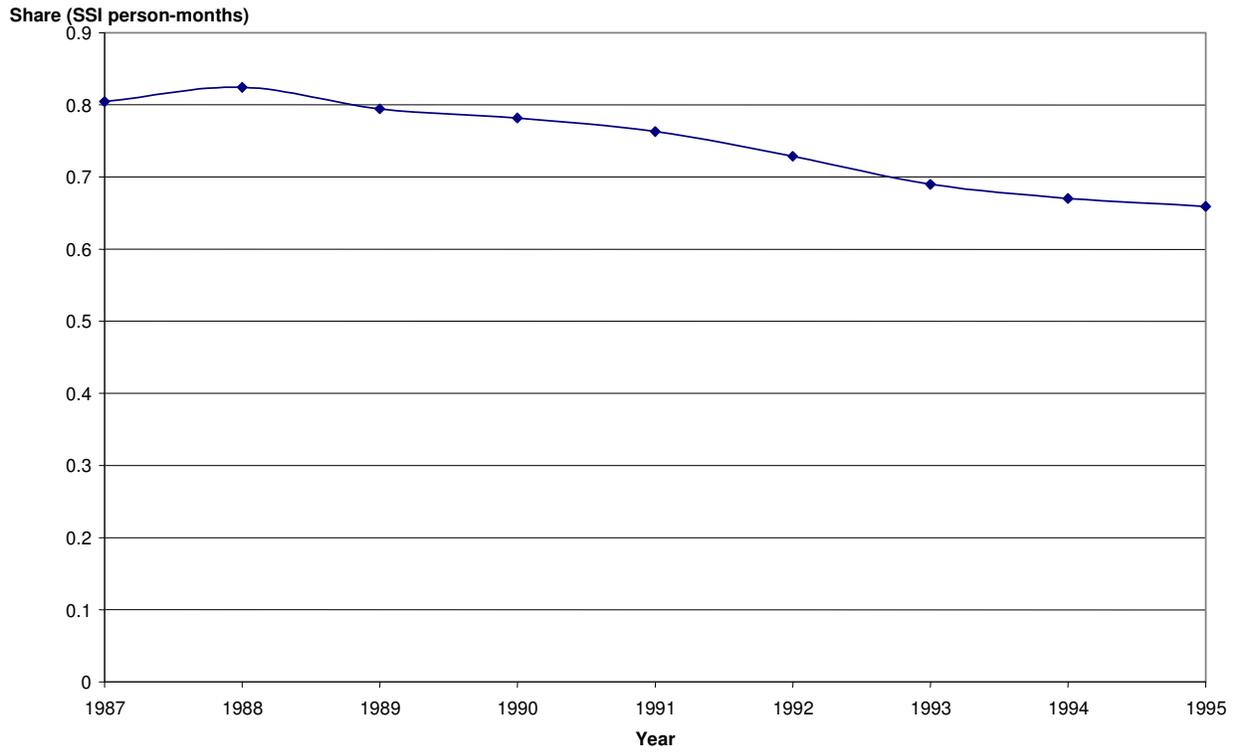


Figure 3

