Using the Medicare Buy-In Program to Estimate the Effect of Medicaid on SSI Participation

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USING THE MEDICARE BUY-IN PROGRAM TO ESTIMATE THE EFFECT OF MEDICAID ON SSI PARTICIPATION*

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Abstract

This paper assesses the importance of receiving public health insurance through the Medicaid program on participation in Supplemental Security Income (SSI) for the elderly. The implementation of the Qualified Medicare Beneficiary (QMB) program offered a substitute for the Medicaid coverage, and expanded health insurance eligibility to a higher income level than SSI. While the QMB program offered an alternative health insurance source (which may reduce SSI participation), the introduction may have increased awareness about the SSI program (and hence, participation). The net effect was to reduce SSI participation. The effects were particularly strong for African-Americans and for those with less than a high school diploma. Roughly half of the QMB participants were previously covered by SSI and Medicaid. The calculations suggest that the QMB program was not as expensive as it might first appear because of reductions in SSI expenditure.

JEL Classifications: H53, I38, J14
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I. INTRODUCTION

The Supplemental Security Income (SSI) program in the U.S. provides assistance to elderly, blind and disabled individuals who are poor. It is federally financed and administered by the Social Security Administration. While much more attention has been focused on the Aid to Families with Dependent Children (AFDC) program, which primarily targets poor single-parent families, more money was spent on cash relief for SSI recipients in 1993: $23.6 billion compared to $22.3 billion.[1] In addition to cash, SSI recipients receive public health insurance through the Medicaid program. Medicaid provides a second important benefit for participating in SSI: in fiscal year 1993, Medicaid expenditure for elderly, categorically needy SSI recipients amounted to $14.1 billion.[2]

Several studies have examined the importance of health insurance for working age adults in the labor market.[3] Little is known, however, about the quantitative importance of Medicaid on the SSI participation of the elderly. The key obstacle in assessing this effect is that, until recently, Medicaid eligibility had been closely related to SSI eligibility in most states. This study analyzes the introduction of the Qualified Medicare Beneficiary (QMB) program, enacted in different states from 1987 to 1992, which offered health insurance coverage to the elderly without the need to participate in SSI. The QMB program offered some of the same benefits that an elderly SSI recipient would receive from Medicaid, including the payment of Medicare premiums, deductibles, and copayments.[4] Moreover, the QMB program expanded Medicaid coverage to individuals with higher incomes and assets than the SSI program.

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[1] U.S. House of Representatives, *Overview of Entitlement Programs* [1994].

[2] U.S. Department of Health and Human Services, "Medicaid Statistics: Program and Financial Statistics Fiscal Year 1993."

[3] For instance, see Madrian [1994], Holtz-Eakin [1994] and Gruber and Madrian [1994] for evidence on job mobility, Gruber and Madrian [1995] for evidence on early-retirement, and Cutler and Madrian [1996] for evidence on hours of work. Cutler [1995] provides a nice summary of these studies.

[4] Throughout the paper I will use the terms "QMB coverage" and "Medicaid coverage" interchangeably, because they offer similar services.

The primary goal of this paper is to document the link between the QMB program and the SSI participation decision. I find that the QMB program significantly reduces SSI participation, particularly among African-Americans and the less educated. The coefficient estimates suggest that in the absence of the QMB buy-in program, SSI participation would have been 25 to 40 percent higher in 1992 than it actually was. The caseload growth in the elderly SSI population would have looked very similar to the caseload growth of the disabled SSI population, a group who were not eligible for QMB. In addition, the QMB program was considerably less expensive than one would infer from simply calculating the increased health care expenditure because of reductions in SSI expenditure for cash benefits.

The rest of the paper is arranged as follows. Section II outlines some relevant features of the SSI, Medicaid, and QMB programs. In particular, it reviews how the income eligibility limits for QMB and SSI are computed. The difference between those limits is a measure of how closely linked Medicaid and SSI are. It will subsequently be used as the key independent variable in the regression analysis. This section also shows the cross-sectional and time-series variation in the QMB program. Section III models the potential effects on SSI participation from the introduction of the QMB program, and considers the role of information. By providing an alternative source of health insurance, the QMB program may reduce SSI participation. If QMB increases awareness about other transfer programs to the elderly, however, then it can increase SSI participation. Section IV provides a data description. I use repeated cross-sections of the March Current Population Survey from the calendar years 1987 to 1992 -- the period when the QMB expansions were being phased in. This section shows that the link between SSI and Medicaid became weaker over time -- especially for those with low income and no private health insurance coverage. Section V presents the empirical results and cost implications. Section VI concludes.

II. BACKGROUND ON SSI, MEDICAID, AND QMB PROGRAMS

A. The SSI Program

SSI was introduced in 1974 by the federal government, replacing old-age assistance programs previously run by the states. The federal program paid a real monthly maximum benefit of $446 to an individual and $669 to a couple in 1994. In addition, roughly half of the states supplement the federal SSI benefit. In 1994, the median state's supplement (conditional on providing a supplement) was $39 per month to a couple, though the supplement exceeded $100 per month in several states.

To be eligible for SSI, the recipient's monthly income must be less than a state-specific limit.[5] This limit, in turn, will be vital in determining how much the budget constraint changes from the QMB laws, and in constructing a sensible independent variable in the regression analysis. If all of an individual's income is in the form of non-wage income, then the SSI limit is determined as:

$$(1) \qquad I^* = (G^{FED} + G^{STATE}) + D$$

where I^* is the maximum monthly income for SSI eligibility, G^{FED} and G^{STATE} represent the federal and state monthly SSI grant for a recipient with zero income, and D represents the monthly standard deduction (equal to $20).

If all of the individual income is in the form of wages, then the limit is:

$$(2) \qquad I^* = (G^{FED} + G^{STATE})/\tau + (D+EXP)$$

where τ represents the benefit reduction rate (equal to 50 percent), EXP represents a monthly work expense deduction (equal to $65), and the other variables are defined above. Therefore an individual in California (who was provided a monthly supplemental benefit of $157 in 1994) could earn up to $1,291 in wages (=(446+157)/0.5+(20+65)) and still retain SSI eligibility. Alternatively, he could receive up to $623 in non-labor income (perhaps through Social Security) and still retain SSI eligibility. This same individual in Florida would not receive a state supplement, and could earn only up to $977 in wages or receive $466 in non-labor income. Finally, consider the SSI income limit if the individual in California

[5] In addition, there are asset requirements (known as "resource tests"). A single recipient may not have more than $2000 in liquid assets and a married recipient may not have more than $3000. The value of the recipient's home is not included, however.

had a portion of earnings and a portion of Social Security income. Assuming the individual received $200 per month in Social Security benefits, then the limit is computed as follows. After applying the $20 standard deduction, we first subtract the $180 Social Security income from the $603 grant, leaving $423. The earnings level that brings the grant to zero is therefore $911 (=(423/0.5)+65). The sum of social security income, $200, and total earnings, $911, gives the limit of $1,111.[6]

B. The Medicaid Program and QMB Expansions

In most states, SSI participation automatically entitles the recipient to Medicaid coverage.[7] In thirty-one states (and Washington D.C.) this coverage is automatic, and in another seven it is granted if the recipient completes a second application with the state agency that administers the Medicaid program. In several states, Medicaid eligibility is not automatic. Twelve states, known as Section 209(b) states, have Medicaid requirements that are more restrictive than the SSI requirements. These states may impose more restrictive income or asset requirements or require an additional application.

Forty-one states also offer Medicaid coverage through the Medically Needy (MN) program to elderly who incur high medical expenses and "spend-down" to the MN income level. This optional program turns out to be less important for the elderly who are contemplating participating in SSI, because the MN income limit tends to be lower than the SSI income limit and the scope of Medicaid services is more limited.[8]

Table 1 illustrates a timeline for the QMB legislation, and the income limits for QMB eligibility

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[6] In the analysis that follows, I compute an individual's SSI limit by first taking his Social Security income level as non-labor income, and then assuming the remainder of his income can potentially be in the form of wages.

[7] These states are known as Section 1634 states.

[8] In July 1987, for instance, the Medically Needy level exceeded the SSI level in only two states, and these differences were smaller than $10 per month (U.S. House of Representatives, [1988]).

over time through various federal mandates (the date of implementation is January 1). Starting in 1987, the states were given additional options to expand Medicaid to the elderly. These changes serve as the primary source of variation in the Medicaid program to identify its importance on SSI participation in this study. The Omnibus Reconciliation Act of 1986 (OBRA) gave states the option to extend Medicaid up to 100 percent of the poverty line for elderly who qualified for Medicare Part A coverage and met certain asset limits. The Medicaid program was responsible for paying Medicare part B premiums along with coinsurance and deductible amounts. OBRA 1986 also gave states the option to provide full Medicaid benefits (rather than just cost-sharing for Medicare) to elderly who had income below a state-established standard. The Medicare Catastrophic Coverage Act of 1988 (MCCA) made the Medicare buy-in option mandatory, and phased in QMB eligibility over time. In addition, five states (Hawaii, Illinois, North Carolina, Ohio and Utah) were permitted to phase-in the mandate on a different schedule. Finally, OBRA 1990 increased the income limit to 110 percent of the poverty line in 1993, and to 120 percent in 1995. Those covered by the 1990 law changes were designated "Specified low-income Medicare beneficiaries" (or SLMBs). For SLMBs, the state was required to pay Medicare part B premiums, but not the coinsurance or deductibles.

Table 2 documents the QMB income limits (expressed as a percentage of the poverty line) from voluntary state adoptions between 1987 and 1992. From 1987 to 1990, several states implemented the QMB expansions prior to the federal mandates. These states typically adopted an income limit of 100 percent of the poverty line. The states included California, the District of Columbia, Florida, Hawaii, Maine, Massachusetts, Mississippi, New Jersey, New York, Pennsylvania, and South Carolina. These voluntary adoptions create additional variation to identify the effect of the QMB laws on SSI participation.[9]

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[9] As with any empirical study that relies on variation in program rules across states, the issue of legislative endogeneity arises. In particular, the states that implemented the QMB program prior to the federal mandates may have done so to reduce the SSI rolls. While it is difficult to think of compelling

This QMB coverage itself represents a valuable benefit to an elderly individual. In 1993, the national average actuarial value of the QMB program was $950, and the minimum benefit was $439 (the annual Medicare part B premium for a QMB who received no services during the year). Out of pocket costs would be reduced by over $2,300 per year for a beneficiary who has a typical hospitalization and skilled nursing facility stay during the year.[10]

Figure I-a illustrates aggregate trends in Medicaid coverage for the elderly between 1975 and 1991 from HCFA data.[11] The "Medicaid Beneficiaries without Cash Assistance" category (which includes QMBs) shows a clear increase in growth starting around 1987. The "Medicaid Beneficiaries with Cash Assistance" category (which includes SSI recipients) shows a steady downward trend throughout the period, both before and after 1987. While other time-varying factors clearly help explain the changes in Medicaid coverage for beneficiaries with cash assistance (such as income and asset growth among the elderly), it is possible that the introduction of the QMB program may contribute to the decline.[12] To better examine recent QMB enrollment, Figure I-b shows data on the elderly for later fiscal years, broken out into more detailed categories.[13] The QMB caseload increased 62 percent between 1991 and 1993. By

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instruments for early QMB implementation, there are five reasons to believe that this potential problem may be small. First, states were only allowed to implement QMB expansions for the elderly if they also implemented Medicaid expansions for pregnant women and children. This means the cost of getting the elderly off SSI is greatly increased. Second, SSI is mainly financed by the federal government, meaning that the state's incentive to move recipients off the program is reduced. Third, the subsequent empirical results are not sensitive to restricting the sample to states who were brought into compliance by the federal mandates. Fourth, Section III shows that the theoretical impact of the QMB expansions is ambiguous. Thus, states may not have had enough information to assess whether the QMB expansions would remove senior citizens from SSI. Fifth, the link between QMB and SSI participation is never mentioned in congressional hearings on the QMB program (U.S. House of Representatives [1992]).

[10] General Accounting Office [1994].

[11] U.S. House of Representatives [1993].

[12] Since the real SSI benefit has remained nearly constant over time, it is unlikely that it can help explain changes in the SSI caseload.

[13] The sources for these data are U.S. Department of Health and Human Services, various editions.

1993, the number of elderly QMB participants exceeded the number of Medically Needy recipients and the number of non-cash categorically needy recipients. By 1993, QMB participants made up nearly 25 percent of the elderly Medicaid population.

III. THEORETICAL CONSIDERATIONS

A. Basic Model

I assume that an elderly individual (or household) maximizes his utility subject to a budget constraint. Utility is assumed to be a function of leisure and consumption goods, U(L,C), and the price of consumption goods is normalized to $1 per unit. The individual may have some form of non-labor, non-transfer income (for instance income through Social Security or private pensions). If the elderly individual chooses to work, he earns a wage, w^0, in the labor market. This results in the budget set ABC in Figure II.

By introducing the SSI system, the government offers a grant (G) and reduces it at a tax rate (τ).[14] This results in the budget set given by ADEC. After the introduction of SSI, the recipient's after tax wage falls from w^0 to $(1-\tau)w^0$ on the part of the budget segment spanning DE. The income limit where SSI eligibility ends is a weighted average of the limits given in equations (1) and (2) in Section II.A, depending on the mix of non-labor, non-transfer income and earnings.

SSI's treatment of Medicaid benefits is quite different from its treatment of cash benefits. A recipient receives Medicaid when participating in SSI and loses it completely when leaving SSI. This creates the budget segment given by AFGEC. Clearly the loss of Medicaid creates a certain segment of the budget set (segment EH) where the individual could receive higher utility by instead locating at point

[14] For simplicity, I do not include the standard deduction or work expenses discussed in the prior section in the figure, but the predictions will continue to hold by adding in this detail. In addition, Figure II also assumes that the value of the QMB program is equal to the value of Medicaid when on SSI. Again, the predictions will continue to hold by making more realistic assumptions.

G. This discrete loss of health insurance benefits is known as the "Medicaid notch." The QMB expansions change the budget set further, by allowing a recipient to receive Medicaid to a higher income limit without the need to participate in SSI. This now changes the budget set to AFGIJC. Compared to the budget set before the QMB expansions (segment AFGEC), this model predicts that SSI participation should fall, or remain unchanged if there was no behavioral response. The reasoning behind this prediction is that all the new {L,C} bundles on segment GI occur where the individual does not participate in SSI.[15]

An increase in earnings is not the only way for an individual to leave SSI. As Moffitt [1983] notes, welfare could be stigmatizing. The utility function discussed earlier could then be modified to $U(L,C,P_{SSI},P_{QMB})$ where P stands for the disutility of participation in the SSI or QMB programs. If collecting a cash handout is more stigmatizing than collecting Medicaid alone, then an individual who was initially on SSI may decide to leave after the QMB expansions, and thus give up his cash benefits.

B. The Role of Information

The model in Section III.A assumed perfect awareness about SSI benefits, but this assumption is clearly false.[16] If awareness about SSI is a serious problem, then the QMB expansions could increase SSI participation. Some states took active efforts to inform QMB recipients of their eligibility, including the

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[15] While not the focus of this paper, several other predictions emerge as well. First, the QMB expansions should increase labor force participation but have an ambiguous effect on hours of work and earnings. Second, the fall in SSI participation should be bigger than the increase in labor force participation. These are discussed in a similar context in Yelowitz [1995]. Without panel data, however, it is not possible to convincingly explore the labor supply predictions. While, in principle, some individuals may enter the labor force from the expansions, it is more likely that those who are currently working and on SSI would increase their labor supply. While the QMB expansions offer incentives for those currently on SSI to increase their earnings, they also offers perverse incentives for those off of SSI. Thus, it is important to condition on where the individual was initially located on the budget set before the QMB program.

[16] The role of program awareness and outreach efforts is discussed in Coe [1985] and Hill [1990].

distribution of press releases, toll-free lines, brochures, fact sheets, and public service announcements.[17] Another possibility is that some health shock may land the individual in the hospital, where he learns about the QMB program and other welfare benefits that are available to him. In either case, he perceives his original budget set (before the QMB expansions) to be ABC rather than AFGEC, and after the expansions is AFGIJC. In this case, the expansions may increase SSI participation: after learning about SSI, he may choose to enroll in SSI and locate somewhere along the segment FG, or he may choose to not enroll, and locate somewhere along segment GIJC.

IV. DATA DESCRIPTION

A. Operationalizing the QMB Expansions

As described in Section III.A and III.B, changes in QMB law could increase or decrease SSI participation. The budget constraint in Figure II illustrates a way to represent the QMB expansions. Essentially, the QMB expansions amount to changing the income limit for Medicaid, possibly above the SSI income limit. By setting the price of consumption goods to $1 per unit, the y-axis in this figure measures the maximum income limit for Medicaid before and after the QMB expansion. This can be denoted as:

$$(3) \qquad GAIN = \max\{QMB\text{-}SSI,0\}$$

where QMB stands for the Medicaid income limit (in dollars) and SSI stands for the SSI income limit. GAIN therefore represents the increase in the income limit for Medicaid above and beyond the income limit for SSI -- in other words, how drastically has the budget constraint for the individual changed. I take the maximum of this number and zero, because there are instances when a QMB expansion (to, say, 85 percent of the poverty line) is less generous than the SSI income limit. In this case, the Medicaid income limit is not lowered, rather it remains unchanged.

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[17] General Accounting Office [1994].

Measuring QMB is straightforward: the Medicaid income limit is imputed for a person based on his state of residence and time period. The SSI income limit is computed from the state rules, time period, family circumstances, and the individual's nonlabor, nontransfer income. By including GAIN as an explanatory variable for SSI participation, the preceding analysis shows we would expect a negative coefficient -- intuitively, breaking the link between Medicaid and SSI will reduce SSI participation.

In addition to the variable GAIN, I include three other policy variables. The first is the SSI limit itself. Raising the SSI income limit (everything else held constant) will increase SSI participation. The second is a dummy variable for whether the individual's state had implemented a QMB expansion. If individuals learn about SSI through the QMB program, then the implementation could increase participation. Finally, I include a dummy variable for whether the respondent lived in a 209(b) state -- that is, a state where he must file a separate application for Medicaid and possibly face stricter standards for Medicaid eligibility. Because of these hassles, living in a 209(b) state should reduce SSI participation.

B. Current Population Survey Data, 1987-1992

I use repeated cross sections from the March Current Population Survey (CPS). The CPS is a nationally representative data set that surveys approximately 50,000 households. In addition to demographic characteristics, the March annual demographic file provides retrospective information on income and health insurance sources such as SSI income, Social Security income, and Medicaid. Therefore the 1988-1993 surveys provide information from calendar years 1987 to 1992.

The CPS provides some advantages and disadvantages compared to other data sets, such as the Survey of Income and Program Participation (SIPP), for examining Medicaid's impact. The CPS is an excellent starting point, because it provides data in a more timely fashion, which facilitates examining recent law changes. In addition, the CPS uniquely identifies every state and has larger sample sizes than the SIPP. The CPS has some drawbacks, however. The key outcome, SSI participation, is defined as

whether the respondent received any SSI income in the previous year. This retrospective information could be subject to recall bias. Also, even if the QMB program removed the elderly from the SSI rolls part way through the year, the respondent would still correctly claim he participated in SSI. Thus, this aggregation likely understates the effectiveness of the QMB laws. In addition, the respondent may not report SSI participation, either because of confusion about the program's name (such as the distinction between SSI and AFDC) or because of the stigma in admitting welfare participation. Finally, the CPS does not directly report asset holdings, a point I address later. The SSI eligibility rules prohibit individuals with more than $2,000 in assets (and families with more than $3,000) from applying to the program.

From the CPS, I extract all respondents age 65 and beyond. I exclude individuals with imputed information on SSI eligibility. In addition, I exclude elderly respondents who do not report Medicare coverage, since QMB eligibility requires the individual to be eligible for Medicare (this eliminates roughly 5 percent of the elderly sample).[18] To the remaining observations, I attach information on QMB eligibility

[18] Of the 94,479 individuals who met other selection criteria, 3,881 did not report Medicare coverage. Since this is a surprisingly high number of elderly not reporting coverage, I took several steps to investigate this further. First, a large part of this mystery appears to be that the respondent's age is taken as of March 1 of the survey year, while the Medicare coverage question is reported as of the previous calendar year. Therefore a respondent who was 64 during the previous year but turned 65 in January or February would correctly report no Medicare coverage. Of the 3,881 individuals who do not report Medicare coverage, more than 25 percent are exactly 65 years old. As a contrast, less than 6 percent of the 90,598 individuals who report Medicare coverage are exactly 65. Second, the age distribution of those without Medicare is much younger. More than 50 percent of this sample reports being age 65, 66 or 67 (compared to roughly 18 percent of those with Medicare coverage). If the individual misinterprets "Medicare coverage" as visiting the doctor, then younger individuals may be less likely to report coverage since they are less likely to visit the doctor. Currie and Gruber [1994, 1996] make a similar argument for low participation rates from Medicaid expansions targeted towards pregnant women and children. Third, the SSI participation rate is only 0.5 percent for those without Medicare (compared to 4.3 percent for the remaining sample). This implausibly low number suggests that they are not categorically eligible. Finally, none report having Social Security income in the previous year, again suggesting that their age was less than 65. I therefore exclude these individuals -- they may be categorically ineligible for SSI, and they may misreport or misinterpret the survey questions. Including them in the regressions does not alter the conclusions on QMB policy, though some of the other policy variables change.

derived from documentation from the Intergovernmental Health Policy Project.[19]

The CPS sample consists of 90,598 observations.[20] Table 3 shows the means of the variables used in the analysis. The dependent variable, SSI participation averages 4.3 percent. The participation rate in the CPS is around 2 percentage points lower than from administrative sources. From 1987 to 1992, the SSI participation rate among all elderly ranged from 6.5 to 6.8 percent in administrative data.[21] Similar to the participation rate, the caseload numbers are understated in the CPS. The SSI caseload computed from the CPS ranged from 949,000 to 1,111,000 during this period, while the administrative data ranged from 1,433,000 to 1,471,000.

While not shown, several of the policy variables change quite dramatically over time. The variable GAIN -- the increase in the income limit above the SSI limit, averages $236. It increases more than ten-fold during the period, from an average of $36 in 1987 (when only a few states had implemented optional mandates) to an average of $499 in 1992 (when binding federal mandates forced all states to cover all senior citizens under the poverty line). The variation in social security income (which has a mean of $8,647 and a standard deviation of $4,664) leads to considerable variation in the SSI income eligibility limit, that averages $7,754. The demographic composition of the sample remains fairly stable over time. Family size averages 1.8 people. The average age of the respondent is 74 years (this increases slightly, from 73.8 to 74.2 during the period). Approximately 6.6 percent of the sample are African-American and 91.6 percent are white. Around 4.6 percent are Hispanic. Nearly 60 percent are female,

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[19] The imputation procedure could produce measurement error, since the actual income limit for an individual or household is also a function of other non-labor income, not just Social Security. This would, in turn, bias the coefficient on Medicaid eligibility in my specifications toward zero.

[20] Appendix Table 1 shows all the sample selection criteria.

[21] The administrative numbers come from U.S. House of Representatives, *Overview of Entitlement* Programs [1994]. A small part of the gap comes from the 4 percent of elderly SSI participants who are institutionalized. They are counted in the administrative data, but not surveyed by the CPS. Another part of the gap may come through the sample selection criteria -- those with imputed values were dropped. Nonetheless, the CPS numbers are still under-reported.

and more than 20 percent are veterans. More than one-half of the sample are currently married, and more than one-third are widowed. Around 42 percent did not complete high school, while 23 percent had some college education. The table also breaks the sample out into SSI recipients and non-recipients. The two groups differ considerably along many of the demographic dimensions. SSI recipients are more likely be non-white, or of Hispanic origin. They are far less educated, more likely to be single, more likely to be female, and have lower levels of Social Security income. They tend to live in more generous SSI states, as reflected through the SSI limit.

Figures III, IV and V show trends in SSI participation and Medicaid participation, using the CPS data. As with SSI, Medicaid participation corresponds to participation at any point during the year. Clearly time-varying factors other than QMB should affect program participation -- such as changes in economic conditions, social security benefits, retiree health benefits, and the Medicare program. These other stories will be addressed in the subsequent regression analysis. If the QMB expansions are having an effect, however, it is likely that the link between SSI and Medicaid would become weaker from 1987 to 1992. This would correspond to the gap between Medicaid and SSI participation becoming wider among the elderly. Moreover, if the QMB program is having an effect, then the gap should grow faster for certain groups -- such as those with low income and those lacking private health insurance.

Figure III shows program participation for the entire CPS sample. The darker lines show the mean participation rates, and the lighter lines show the 95 percent confidence bands. Several features stand out. First, Medicaid participation is not rare among the elderly -- around 7 to 8 percent of non-institutionalized elderly participate in any given year. From 1987 to 1992, Medicaid participation rose from 7.11 to 8.07 percent, an increase of 0.96 percentage points (the standard error is 0.30).[22] SSI participation rose only slightly, from 4.12 to 4.37 percent. The increase is not significant, however. Second, SSI participation

[22] The Medicaid numbers reported in the CPS are similar to other data sets. Monheit and Schur [1989] find that 7.6 percent of elderly report Medicaid participation in the 1987 National Medical Expenditure Survey.

and Medicaid participation were never perfectly correlated, even before the QMB expansions. In 1987, a smaller gap exists -- due to the Medically Needy and General Assistance programs which also provide Medicaid to poor senior citizens. The gap between Medicaid and SSI participation does indeed grow over time. It widens particularly after 1990, when most states were required to provide QMB coverage to 100 percent of the poverty line. Medicaid and SSI participation rates differ by 3 percentage points from 1987 to 1989, by 3.2 percentage points in 1990, and by 3.6 percentage points in 1991 and 1992.

Many individuals in figure III are clearly not eligible for either program because their income is too high. Figures IV-a, IV-b and IV-c break out the trends by three income categories. While total income may be endogenous to the program rules, the purpose here is to see whether one "at-risk" group -- those with total income under $10,000 -- responds more to the QMB expansions. Figure IV-a shows that Medicaid participation jumped from 16.5 to 19.7 percent for poor individuals. During same time, SSI participation fell slightly from 12.3 to 12.0 percent. The gap gets much wider, going from 4.2 percentage points in 1987, to roughly 6 percentage points from 1988 to 1990, and finally to 7.7 percentage points in 1992. Figure IV-b looks at those with real incomes between $10 and $50 thousand, and Figure IV-c examines those with real income over $50 thousand. Since SSI eligibility is determined by monthly income rather than annual income, some richer individuals may participate if their income fluctuates during the year. The SSI and Medicaid participation levels are much lower, and show no clear trend. For the moderate-income group, SSI participation increased from 1.3 to 1.8 percent, and this increase is statistically significant. Medicaid participation grew from 4.0 to 4.3 percent. The gap got smaller, falling from 2.7 to 2.4 percentage points. For the high-income group, the estimates are quite noisy. SSI participation ranges from 0.5 to 1 percent, and Medicaid participation from 2 to 3 percent.

Figures V-a compares a second "at-risk" group, those without private health insurance coverage, to those with private coverage in Figure V-b. Just as with total income, however, private health insurance coverage could be endogenous to program rules. Cutler and Gruber [1996] show that expansions in

Medicaid for pregnant women and children resulted in substantial "crowd-out" of private health insurance. The same could be true for the elderly -- in fact, the intent of the QMB laws was to crowd out private Medigap plans. Therefore, the composition of the groups may not necessarily remain stable over time. With that in mind, Medicaid participation increased and the gap widened for those without private health insurance plans in Figure V-a. SSI participation remained constant at 13.2 percent, while Medicaid coverage increased from 18.3 to 21.5 percent. Having private coverage was associated with very low SSI participation levels, around 0.5 percent. For this group, Medicaid participation declined and the gap narrowed -- if anything, link between SSI and Medicaid was tighter in 1992 than in 1987.

V. RESULTS

This section is divided into five parts. The first part sets up the regression framework and explains how the estimates account for other stories that could potentially contaminate the inferences. It then presents results from the full CPS sample, along with cost estimates of the QMB program. The second part illustrates how the QMB effect varies by demographic group. The last three parts check the robustness of the initial findings. The third part addresses, in a crude way, some concerns about asset holdings. The fourth part checks the robustness of the findings to other parameterizations of the policy variables that do not rely on the individual's social security income. The fifth part explores the comparability of the "treatment" and "control" groups.

A. Basic Results from the Full CPS Sample

The outcome of interest is whether or not the respondent participated in SSI. For ease of presentation, I show results from a linear probability model.[23] The preferred specification (presented in

[23] The results are qualitatively similar from a logit or probit model. The standard errors on the linear probability model are corrected for heteroscedasticity. In addition, all models control for group correlations within state-year-income cells. Moulton [1986] explains that the standard errors can be

Table 4, column 3, and all the tables that follow) is:

$$(4) \quad SSI_i = \alpha + \beta GAIN_{ijtk} + \gamma QMB\_ELIG_{ijt} + \delta SSI\_LIM_{ijtk} + \zeta X_i + \Sigma_j\Sigma_k\eta_{jk}S_{ij}I_{ik} + \Sigma_t\Sigma_k\theta_{tk}T_{it}I_{ik} + \varepsilon_i$$

where SSI_i is an indicator variable equal to 1 if the *i*th individual participated in SSI, $GAIN_{ijtk}$ represents the dollar difference between the QMB and SSI income eligibility limits as a function of state, time and social security income, QMB_ELIG_{ijt} is an indicator variable equal to 1 if the *i*th individual's state had implemented any QMB expansion, SSI_LIM_{ijtk} represents (in dollars) the SSI income eligibility limit, X_i is a vector of other individual characteristics that may affect SSI participation (such as age, gender, ethnicity and race), S_{ij} is a dummy variable indicating the state of residence (j=1,...,50), I_{ik} is a dummy variable indicating Social Security income category, in $5,000 intervals up to $30,000 (k=1,...6), and T_{it} is a dummy variable for calendar year (t=87,...,91). The coefficients α, β, γ, δ, ζ, η, and θ will be estimated, and ε_i is an error term assumed to be uncorrelated with the explanatory variables. The model in Section III predicts that $\beta<0$, $\delta>0$, and $\gamma>0$.

By including S_{ij} and T_{it}, the specification controls for unmodeled state-specific or time-specific factors that may affect SSI participation. If these omitted variables are correlated with $GAIN_{ijtk}$ and affect SSI participation, then the coefficient β will be biased without their inclusion. In 1990, for instance, Congress established federal minimum standards for marketing and selling Medigap policies.[24] If this nationally-uniform reform in the Medigap insurance market reduced SSI participation (because the private health insurance alternative to Medicaid became more attractive), then the coefficient on GAIN may also capture this effect without the time dummies. Inclusion of state dummies could control for variation in access to or quality of health care facilities.

The SSI income eligibility limit is calculated based on the generosity of state and federal benefits,

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understated without correcting for these correlations.

[24] General Accounting Office [1991].

household composition, and the individual's or family's nonlabor, nontransfer income through Social Security. This study exploits this additional variation in the limit due to nonlabor income because SSI law requires that SSI applicants file for all other benefits for which they are entitled. Since its inception SSI has been viewed as the "program of last resort." That is, after evaluating all other income, SSI pays what is necessary to bring an individual to the statutorily prescribed income floor.[25]

As of September 1992, 68 percent of aged SSI recipients also received Social Security. Social security benefits are the single highest source of income for SSI recipients.[26] The more income the family receives through Social Security, the lower the SSI income limit (with the limiting case being the SSI income limit calculated in equation 1 in Section II). While other sources of nonlabor income (such as pension income, dividends and interest) could be included, I prefer to exclude these more portable sources that could be transferred to the respondent's children if the parent anticipated participating in SSI.[27]

I was also concerned that Social Security income itself may be correlated with SSI participation in ways other than its direct effect on the SSI income eligibility limit and GAIN. For instance, if respondents with higher Social Security income have more attachment to the labor force or a larger stigma cost of participating in SSI, then the estimate on the SSI income limit and the variable GAIN may not represent variation in program rules, but rather different preferences. To control for this possibility, I included a set of dummy variables for different levels of Social Security income. Moreover, I added interactions of these 6 income dummies with the 50 state dummies, and also with the 5 time dummies. These interactions may help control for the possibility that states have other transfer programs for the poor elderly or have different amounts of bureaucracy in applying for SSI. Similarly, if other programs (such

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[25] U.S. House of Representatives, *Overview of Entitlement Programs* [1993].

[26] U.S. House of Representatives, *Overview of Entitlement Programs* [1993].

[27] See McGarry and Schoeni [1995] for evidence on transfer behavior from elderly parents to their children.

as the General Assistance program) were being scaled back in all states over time, its effect on SSI participation would come through the interaction of T_{it} and I_{ik}. I will explore this point later, by using other measures of the SSI limit that do not rely on the individual's measure of Social Security income.

Table 4 presents the findings on SSI participation for the full sample.[28] As we move across the three columns, the model adds more detailed set of dummy variables. In all specifications, increasing the Medicaid income limit significantly reduces SSI participation. The most careful specification, column (3), corresponds to the model in equation (4). The coefficient estimate on GAIN reads: increasing the income limit for Medicaid by $1,000 beyond the SSI limit would result in a reduction in SSI participation of 3.5 percentage points. In the absence of the QMB expansions this model implies that SSI participation would have been 1.8 percentage points higher, or 25 to 40 percent higher than it actually was, because the fully phased-in QMB expansions increased GAIN by roughly $500 in 1992.[29] In terms of number of people leaving SSI, this corresponds to 434,000 to 588,000, depending on the data source. Since administrative numbers from HCFA show that 885,000 senior citizens were covered by QMB in calendar year 1992, roughly half of those covered were previously insured by Medicaid through SSI.[30] Figure VI plots out the actual and predicted SSI participation probabilities over time, using the model in column (3). The model underpredicts participation in the earlier years, and overpredicts in the later years. The figure also

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[28] In alternative specifications, I have include a state-specific time trend to control for omitted factors within a state that vary over time (such as changing economic conditions) that may be correlated with GAIN and affect SSI participation. The conclusions from these specifications are similar to the ones presented. I have also calculated the SSI limit using all non-labor, non-transfer income instead of just Social Security income. In these specifications, I again arrive at similar conclusions about the efficacy of the QMB laws.

[29] Since the SSI participation rates are probably underreported in the CPS, this range encompasses the administrative and CPS data.

[30] This number is computed by taking a weighted average of the number of QMB participants in FY 1992 (which runs from October 1991 to September 1992) and the number of participants in FY 1993. Since 840,000 were covered in FY 1992, and 1,022,000 were covered in FY 1993, this weighted average is 0.75*840,000+0.25*1,022,000=885,000 participants.

shows what the SSI participation rates would have looked like in the absence of the QMB program (these numbers are computed by setting GAIN equal to zero). In this case, SSI participation would be much higher, especially after 1990.

It is not possible to directly compare my number to other estimates, because no previous study has estimated the impact of Medicaid on SSI participation.[31] Similar estimates exist in AFDC literature, however. Yelowitz [1995] finds that increasing the Medicaid income limit above the AFDC income limit by $1,000, for a family of three, results in a 1.8 percentage point drop in AFDC participation. Thus, it appears that Medicaid is more important in the SSI participation decision of the elderly than in the AFDC participation of female heads.

Does this help us understand how expensive the QMB program really was? In 1992, the average payment to an aged individual was $196 per month, and to an aged couple was $414 per month. Thus the average aged recipient received around $2400 in SSI benefits during that year. The results from above imply that the aged SSI caseload would have been between 434,000 and 588,000 higher than the 1,471,000 actual aged SSI recipients if the QMB buy-in program did not exist. By taking the lower and upper bound of the caseload estimates, this implies a saving to the SSI program of between $883 million and $1,411 million. On the other hand, around 1.4 million QMB beneficiaries had joined by the end of 1992 (General Accounting Office [1994]). If these beneficiaries valued the buy-in coverage at its actuarial value (roughly $950 per year), then this implies a cost of $1,330 million. Thus, the QMB program was considerably less expensive than one would calculate from simply examining the increased health care expenditure, and may have even been self-financing through reductions in SSI participation.

The second policy variable asks whether the respondent's state had enacted any form of the QMB

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[31] To the best of my knowledge, just one other study tries to model any aspect of the Medicaid program in the elderly's SSI participation decision. McGarry [1995] tests whether automatic entitlement to Medicaid, that is not living in a 209(b) state, affects SSI participation. Her insignificant findings on 209(b) are similar to the findings in my study.

buy-in program. From 1989 onward, every state was forced by federal mandate to implement the program, but there is variation across states in 1987 and 1988. If learning about the SSI program is facilitated through the existence of the QMB program, then the sign on this variable should be positive. Table 4, column (3) shows that the existence of the QMB program is associated with an increase in SSI participation of 1.3 percentage points. This significant positive association also appears in most of the alternative specifications in the subsequent sections.

The results on increasing the SSI limit are weaker than those on increasing the Medicaid limit. Increasing the SSI limit by $1,000 is associated with an increase in SSI participation of 0.2 percentage points, and is marginally significant for the full sample. Moreover, the economic magnitude is twenty times smaller than the effect of increasing the limit in the first column The coefficient also varies in sign and statistical significance in the models that follow. The coefficient is correctly signed for demographic groups that are more disadvantaged, but usually imprecisely estimated for other groups.

The findings on the demographic variables in the first column are expected. African-Americans, other non-whites, and those of Hispanic origin have significantly higher propensities to participate in SSI. These groups are more likely to be familiar with other welfare programs such as AFDC, and live in urban areas with greater access to welfare offices. Being female increases participation, while being a veteran lowers participation by 1.5 percentage points. This is reasonable since veterans may have pension income or alternative sources of health insurance coverage from the military. Those with less than a high school diploma are significantly more likely to participate in SSI. Again, this could reflect a history of welfare participation, lower stigma costs, superior information about SSI, lower income, or lack of pension coverage. Relative to respondents who completed high school, being in the dropout group raises the participation probability by 3.75 percentage points. Respondents who completed at least some college are less likely to participate compared to those who just completed high school, but the difference in participation rates is not as dramatic. Finally, the age variables show that SSI participation initially rises

with age (until age 80) and then falls.

B. Demographic Differentials in the effect of QMB

Several studies find different responses to welfare policy across demographic groups. To analyze the ultimate incidence of the QMB reforms, it is important to see whether all groups benefited equally by the QMB coverage.

Table 5, columns (1) and (2), divides the sample into married and single individuals. For both groups the QMB expansions reduce SSI participation, though the effect is about 50 percent smaller for single respondents (and not significant). The coefficients on several explanatory variables change signs and the coefficient estimates on others change magnitude, which suggests an interaction effect between them and marital status. Most notably, the SSI limit has a much bigger positive effect on single individuals, an effect that is larger than from increasing the QMB limit by the same dollar amount. Being a single woman raises the probability of SSI participation, while being a married woman lowers it. While it may seem puzzling that being female lowers SSI participation, recall that both Social Security income and marital status are controlled for. Age has little effect on single individuals, but has similar effects to the full specification for married households. Taken at their point estimates, the fully phased in QMB expansions would decrease the married SSI caseload by 45 percent, while just 5 percent for single individuals.

Does the effect vary by race? I examine this in columns (3) and (4) by dividing the sample into African-Americans and whites (I exclude the other non-white category from the analysis). While increasing the income limit results in significant reductions in SSI participation for both groups, the estimated effect is much stronger for African-Americans, and we can reject that the coefficients are equal. Increasing the income limit by $500 reduces SSI participation by more than 4.8 percentage points for African-Americans. The African-American caseload would have been 30 percent higher in 1992 without

the buy-in program. This strong result might be driven by the fact that African-Americans are less likely to have retiree health insurance from a previous employer, so they may be more dependent on SSI to provide a health insurance policy. A policy change that offered health insurance coverage off of SSI would therefore have stronger effects. Chulis, et al. [1993] find that 20.2 percent of elderly African-Americans only had employer sponsored retiree health insurance, compared with 34.6 percent of whites. Another explanation is that African-Americans are better informed about the availability of welfare benefits, which implies that the introduction of the QMB program would be less likely to increase SSI participation. This may explain the insignificant coefficient on QMB eligibility in column (3).

Columns (5) and (6) examine gender differences. The expansions appear to have a greater effect on reducing the SSI participation for women than men, though the caseload reductions from a $1,000 change in the income limit are similar. Again, this may be due to the availability of retiree health insurance. Chulis, et al. [1993] also find gender differences in private health insurance coverage. Approximately 38 percent of men had retiree health insurance through their employer, compared to 30 percent of women. Finally, education differences are examined in columns (7), (8) and (9). These columns show, successively, that the buy-in program had larger effects on the less educated. Increasing GAIN by $1,000 leads to a fall in SSI participation of 4.9 percentage points for high school drop-outs, whereas the same policy change leads to a fall of just 0.9 percentage points for college educated respondents.

C. Accounting for Asset Holdings

The preceding estimates have ignored the fact that an individual must also have low asset levels to qualify for SSI. Unlike other segments of the population, many senior citizens do indeed have assets. The liquid asset limit is currently $2,000 for individuals and $3,000 for married couples. The asset limits changed modestly during this period, but were always very low.

The Social Security Administration (SSA) is quite vigorous in enforcing the asset rules. It receives information from the Internal Revenue Service on an applicant's nonwage income, mainly interest payments submitted to IRS by financial institutions, dividend income, and unemployment compensation. SSA currently examines cases where this reported income exceeds the limit by $41.

Unfortunately, the CPS only has crude measures of assets. I amend the model to include three measures. I include a dummy variable for whether the respondent owned his home. While the SSI rules do not count a home in determining eligibility, owning a home is correlated with other forms of wealth. I also include a dummy variable for whether the respondent's family had any income in the form of interest, dividends, or rent. Finally, I add a dummy variable for whether the sum of these three income sources was greater than $300 per year. Assuming that the rate of return on these assets is 10 percent, this sum would correspond to having asset holdings in excess of $3,000 -- making the respondent categorically ineligible for SSI.[32]

Table 6 shows the results. Column (1) directly includes these variables in the regression, as well as the other covariates in the baseline specification. Compared to the model that omitted these asset variables, the coefficient estimate barely changes. The adjusted R^2 increases, however. In addition, all three asset variables have significant negative effects on SSI participation. The second column examines 8,251 individuals who have all three of these asset variables set equal to zero. For this group, the effect of GAIN is much stronger than for the whole sample, as expected. The final column examines 46,910 individuals with all the asset variables set equal to one. The effect of the QMB reforms on this group is around 30 times smaller than the effect is on those without any assets.

[32] It is not clear that including these asset variables as exogenous is entirely appropriate, which is why they are not in the baseline specification. Hubbard, Skinner, and Zeldes [1995] point out that saving behavior could be a function of social insurance programs, in which case the decision to participate in SSI and have asset holdings should be modeled jointly.

D. Parameterizations of the Policy Variables Not Using An Individual's Social Security Income

All of the prior estimates rest on the assumption that Social Security income is exogenous. While this may be reasonable, there are two key arguments on why Social Security's influence may not just come through the policy variable GAIN (and the SSI limit, as well). First, preferences vary across individuals. If a person has a strong labor force attachment during his life and a high stigma cost to welfare participation, then he is likely to have high Social Security benefits.[33] This translates into a lower SSI limit and a higher value of GAIN. Since this person also has a lower propensity to participate in SSI, then the larger value of GAIN associated with this person could lead to a spurious finding that the QMB laws reduce SSI participation.

If the model were only estimated within a single state at a point in time, then the variation in GAIN would reflect preferences rather than the budget constraint -- which means that we do not learn about the QMB laws. By and large, this is addressed through the comparisons across states and over time within a given income group. By including INCOME controls (or interactions of STATE*INCOME and TIME*INCOME), the variation in the GAIN variable comes from changes in the QMB laws within a given income group.[34] Conceptually, the regression compares groups of individuals with similar Social Security levels who live in different states, or similar income groups in different time periods who face different Medicaid regimes.

A second criticism of using Social Security income is that it may be endogenous to the SSI

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[33] Eissa [1995] makes a similar argument about preferences in the context of identifying labor supply elasticities of married women. To surmount the problem, she examines the relative changes in labor supply for those women in the 99th and 75th income percentiles (conditioning on the husband's labor income and other non-labor income), both before and after Tax Reform Act of 1986. Poterba, Venti and Wise [1995] examine the effect of 401(k) eligibility on saving. They argue that while 401(k) eligibility is not random overall, it is approximately random with respect to saving behavior, given income. By including a series of indicator variables for income intervals, and interactions with 401(k) eligibility they identify the effect of 401(k) eligibility within income group.

[34] That is, variation comes from STATE*TIME and STATE*TIME*INCOME variation.

program rules. To understand why, we need to understand how Social Security benefits are determined. The benefits are computed based on average indexed monthly earnings (AIME), the age at which benefits are drawn, the recipient's family status, and current earnings levels for those between the ages of 62 and 69. While a person approaching the age of 65 who is contemplating SSI participation may not be able to substantially influence the AIME level (since it is determined from the recipient's 40 highest years of earnings), he has some choice over his retirement age. If he retires at age 62, he gets just 80 percent of the Social Security benefit he would receive at 65. If he delays retirement past 65, the benefits increase by 3 percent per year (until age 72). Moreover, his work (and hence, welfare) decisions between ages 62 and 69 influence his Social Security benefit through the retirement earnings test.

Because of both concerns, it is important to try measures of GAIN (and the SSI limit) that do not rely on the individual's own Social Security income. I reestimated the model including measures of Social Security income constructed from the mean (and also, median) social security values within a birth cohort-marital status-education-race-year cell.[35] In this way, the construction of GAIN is not as susceptible to the criticism that it is influenced by an individual's decisions. It does have a tradeoff, however, in that it adds a great deal of measurement error to the policy variables. Table 7 presents the results.[36] In both columns, raising the limit still reduces SSI participation, while raising the SSI limit increases it. The coefficient estimate on GAIN is less than one-half of the size in the baseline specification, however. To some extent, this is expected, because of the measurement error in GAIN.

E. How Comparable are the "Treatment" and "Control" groups?

The whole motivation for using some source of nonlabor income to construct GAIN is that many

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[35] Birth cohorts range from 1898 to 1928. Race includes white, African-American and other. Education includes less than 8th grade, grades 9 to 11, grade 12, and grade 13 and beyond. Marital status is 0 or 1.

[36] Note that these models include STATE and TIME fixed effects, but not interactions with income.

elderly are not going to be on the margin of SSI participation. This section explores whether the prior findings are very sensitive to changes in the sample selection, and to constructing GAIN using finer intervals of Social Security income.

I modify the baseline specification by restricting the sample to elderly individuals who report Social Security income of less than $7,500. By doing so, the aim is to restrict the sample to individuals who are "at-risk" to participating in SSI. In addition, the previous income categories were somewhat large -- there could be a fair degree of heterogeneity even within the INCOME cell. A person with $4,999 in Social Security income may not be comparable to a person with $1, but the previous specifications would classify them in the same group.

From this smaller sample of 40,680, I classify individuals into 15 income intervals ranging from $0-500, $500-1000, ... , up to $7000-$7500. For each individual in that interval, I assign the midpoint of the Social Security value to construct GAIN (i.e. $250 for the first category, and $7,250 for the last). Therefore, for all individuals within an income group, in one state at a single point in time, will have the SSI limit.

Table 8 shows the means of observable variables for each group. Casual inspection shows that the demographic variables stay fairly steady across income groups. There appear to be differences in observable characteristics between those with very low levels of Social Security income (i.e. $250-$1750) and those with somewhat higher levels (i.e. over $3,000), however. In particular, the number of people in a household drops for the higher income groups, while the percentage who are female or single increases. SSI participation declines for higher income categories, starting at $2,750. For lower income categories, however, the pattern is not as clear. In particular, the first income category has a much higher participation rate than the other categories close to it. Finally, the Medicaid policy was not binding for income groups below $4,250.

Table 9 presents three additional specifications, motivated by the patterns in the previous table.

The first column shows the results for all individuals with income less than $7,500. The model includes interactions of the 15 income categories with the state dummies, as well as with the time dummies. The second column excludes those in the lowest income group of $0 to $500, since Table 8 shows some differences between this group and the others. The third column includes those with incomes between $4,000 and $7,500, since the QMB expansions only change the budget constraint for this part of the sample.

The first two columns present very similar findings on QMB policy, but very different findings on changing the SSI limit. In both cases, increasing the QMB limit reduces SSI participation. The coefficient on the SSI limit falls dramatically by eliminating this first group, however. The final column, which only examines groups where GAIN was positive, shows smaller findings than the first two columns. In addition the SSI income limit variable is incorrectly signed.

Overall, three conclusions can be made from this section. First, at least on observable characteristics, there are not dramatic differences between the income categories. Second, by looking at those who are on the margin for SSI eligibility, the impact of the QMB law increases compared to the full sample. Third, the findings on the SSI limit are more sensitive in this framework. Dropping the lowest income category affects the results on the SSI income limit.

VI. CONCLUDING REMARKS

While the majority of policy attention devoted to the QMB program has focused on the less than full take up rates, the program appears to have the consequence of reducing SSI participation. This paper has shown sizable effects on SSI participation of decoupling health insurance coverage from SSI eligibility. The QMB expansions show the most dramatic effects for African-Americans and the least educated. Cost estimates show that the program may come close to paying for itself.

During the eighties and nineties, the caseload growth of disabled SSI beneficiaries shot up

dramatically, while the caseload growth of elderly SSI beneficiaries was minimal. Why then do I focus my analysis on the elderly population? The first reason is practicality. The definition of the elderly group remained constant during the sample period and this group is clearly identifiable in the CPS data. In contrast, only self-reported, rather than objective, measures of disability are available in the CPS data. In addition, disability reporting may be a function of the generosity of the SSI program.[37] Also, there were some changes in evaluating disability over the sample period. For instance, the Supreme Court's *Sullivan v. Zebley* decision in 1990 resulted in a revised definition of disability for children under the age of 18. The second reason is policy oriented. If we can explain why the elderly caseload remained stable (while the caseloads of other entitlement programs such as AFDC, Food Stamps and Medicaid increased dramatically), then we may be able to offer policy proposals that will control the caseload growth in other programs.

Recent proposals for Medicaid will cut back on the QMB expansions for elderly (and perhaps also the Medicaid coverage of pregnant women and children). This study helps illustrate the full consequences for costs, by emphasizing the link to SSI. By scaling back eligibility, the states may assist senior citizens to move onto the federal SSI rolls.

The analysis will be extended in three directions. First, this paper has focused on the effects of delinking the Medicaid and SSI program. It has not focused on the role of health in determining SSI participation. A more complete model of SSI participation that accounted for the effects of health, along the lines of Wolfe and Hill [1995] could help answer what type of person was likely to leave SSI from the QMB program. Second, it is important to know the extent to which the QMB program crowded-out private Medigap purchases. Cutler and Gruber [1996] find that a significant fraction of newly covered

[37] The CPS question asks those who did not work the following question: "What was the main reason ... did not work in 19.," for which ill/disabled is a potential response. If the decision to work and the decision to participate in SSI are jointly determined, then selecting disabled individuals could lead to selection bias.

Medicaid beneficiaries among pregnant women and children formerly had some sort of private coverage. To the extent that the QMB coverage simply displaces private coverage, it does not reduce the number of uninsured. A similar crowd-out effect for the elderly may occur in the Medigap market. Finally, since it appears that Medicaid is an important determinant of SSI participation for the elderly, is the same true for the disabled population? Could offering health insurance off of SSI slow down the caseload growth in disabled SSI program? In Yelowitz [1996], I use the variation in Medicaid expenditure across states and over time as a proxy for its value, to assess Medicaid's importance on SSI participation. In that work, I also find that Medicaid significantly influences SSI participation.

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Table 1: Timeline of Expansions in Medicaid Program for the Elderly

OBRA 1986: Effective 1987. Gave states the option to expand Medicaid to 100% of poverty level. The states were allowed to cover the cost sharing provisions of Medicare, or to provide full Medicaid benefits.

MCCA 1988: Effective 1989. Mandated all states to expand QMB/Medicaid coverage. States were allowed to phase in QMB coverage.

OBRA 1990: Effective 1991. Speeded up the phase in schedule from MCCA 1988, and further increased the income limit (eventually to 120% of poverty level). For beneficiaries between 100 and 120% of poverty line, the state was only required to pay for Medicare part B premiums.

Phase-in schedule from federal mandates for QMB program, expressed as a percentage of the poverty line						
	1989	1990	1991	1992	1993-94	1995
Other 45 states and DC	85	90	100	100	110	120
HI, IL, NC, OH, UT	80	85	95	100	110	120

Source: Intergovernmental Health Policy Project, various editions.

Table 2: Implementation of the QMB program over time. Income Limit expressed as percentage of the FPL)

State	1987	1988	1989	1990	1991	1992
Alaska	100	100	100	100	100	100
Arkansas	---	85	85	90	100	100
California	100	100	100	100	100	100
Colorado	---	85	85	90	100	100
Connecticut	100	100	100	100	100	100
DC	100	100	100	100	100	100
Florida	90	100	100	100	100	100
Hawaii	---	---	100	100	100	100
Illinois	---	---	80	85	95	100
Kentucky	---	---	100	100	100	100
Louisiana	---	---	85	100	100	100
Maine	---	100	100	100	100	100
Massachusetts	100	100	100	100	100	100
Mississippi	---	---	100	100	100	100
New Jersey	100	100	100	100	100	100
North Carolina	---	---	80	85	95	100
Ohio	---	---	80	85	95	100
Utah	---	---	80	85	95	100
Schedule for all other states	---	---	85	90	100	100

Source: Intergovernmental Health Policy Project, various editions.

Table 3: Summary Statistics, 1987-1992

Name	Full sample	SSI Recipient	Non-Recipient	Range	Other comments
SSI Participation	0.0425	1.0000	0.0000	{0,1}	"Did ... receive SSI in previous year?"
Medicaid Participation	0.0754	0.9102	0.0383	{0,1}	"Did ... receive Medicaid in previous year?"
GAIN	236 (408)	109 (322)	242 (410)	[0,1416]	=max{QMB Limit-SSI Limit,0}, measured in dollars
SSI Limit	7754 (3280)	8741 (3809)	7710 (3248)	[4320,29580]	Accounts for non-labor income received through Social Security, assumes remainder of income is earnings.
Eligible for QMB?	0.7571	0..7716	0.7565	{0,1}	Had the QMB program been implemented in the respondent's state?
Lives in 209(b) state?	0.2479	0..2283	0.2487	{0,1}	Does the respondent live in a "Section 209(b)" state?
Respondent's Age	74.00 (6.53)	75.42 (6.93)	73.93 (6.50)	[65,90]	Age as of March 1 of survey year
Total number of people in family	1.860 (0.920)	1.764 (1.193)	1.864 (0.906)	[1,18]	
Number of own children under 18 in family	0.0248 (0.2277)	0.0524 (0.3235)	0.0235 (0.2224)	[0,8]	
African-American	0.0659	0.2428	0.0580	{0,1}	
White	0.9166	0.7152	0.9258	{0,1}	
Other non-white	0.0173	0.0420	0.0162	{0,1}	
Hispanic origin	0.0461	0.1904	0.0397	{0,1}	
Education in years	10.95 (3.39)	7.42 (3.70)	11.11 (3.29)	[0,18]	
Less than high school diploma	0.4225	0.8095	0.4053	{0,1}	
At least some college	0.2355	0.0456	0.2440	{0,1}	
Married	0.5371	0.2145	0.5515	{0,1}	
Widowed	0.3619	0.5391	0.3540	{0,1}	
Social Security Income	8647 (4664)	4082 (3032)	8849 (4620)	[0,42999]	Annual social security income for all members of family
Female	0.5918	0.7623	0.5842	{0,1}	
Veteran	0.2223	0.0430	0.2302	{0,1}	

Notes: Author's tabulation of 1988-1993 March Current Population Survey. Standard deviations in parenthesis. Full sample is 90,598 observations. There are 3,854 SSI recipients, and 86,744 non-recipients.

Table 4: Full sample CPS Results 1987-1992, using Social Security Income

	(1)	(2)	(3)
GAIN/1000	-0.0392	-0.0355	-0.0355
=max{QMB_LIM-SSI_LIM,0}	(0.0025)	(0.0025)	(0.0036)
Eligible for QMB?	0.0146	0.0126	0.0126
	(0.0032)	(0.0032)	(0.0039)
SSI Limit /1000	0.0012	0.0018	0.0018
(assuming social security income)	(0.0005)	(0.0006)	(0.0010)
Total number of people in family	-0.0010	-0.0010	-0.0010
	(0.0011)	(0.0011)	(0.0013)
Number of own children under 18 in family	-0.0023	-0.0010	-0.0010
	(0.0043)	(0.0043)	(0.0044)
Hispanic origin	0.1104	0.1093	0.1093
	(0.0056)	(0.0055)	(0.0124)
African-American	0.0865	0.0816	0.0816
	(0.0045)	(0.0045)	(0.0060)
Other non-white	0.0607	0.0622	0.0622
	(0.0091)	(0.0090)	(0.0130)
Female	0.0048	0.0049	0.0049
	(0.0017)	(0.0017)	(0.0016)
Veteran	-0.0154	-0.0152	-0.0152
	(0.0016)	(0.0016)	(0.0019)
Married	-0.0405	-0.0402	-0.0402
	(0.0028)	(0.0029)	(0.0049)
Did not complete high school	0.0379	0.0375	0.0375
	(0.0014)	(0.0014)	(0.0024)
Some college	-0.0082	-0.0077	-0.0077
	(0.0010)	(0.0010)	(0.0011)
Respondent's age	0.0042	0.0037	0.0037
	(0.0022)	(0.0022)	(0.0021)
$Age^2/100$	-0.0026	-0.0023	-0.0023
	(0.0014)	(0.0014)	(0.0014)
Adjusted R^2	0.1333	0.1462	0.1462
Other controls	STATE, TIME, INCOME	STATE*INCOME, TIME*INCOME	STATE*INCOME, TIME*INCOME, group correlations within state*time*income cluster

Notes: All specifications run as linear probability models. Heteroskedastic consistent standard errors in parenthesis. Current Population Survey, March Annual Demographic File, 1988-1993. Sample size is 90,598. Mean of dependent variable is 0.0425. A dummy variable for 209(b) state was included in the specification, but was not significant and therefore not reported

Table 5: Demographic Differentials in CPS Results 1987-1992, using Social Security income

	(1)	(2)	(3)
GAIN/1000	-0.0155	-0.0076	-0.0972
=max(QMB_LIM-SSI_LIM,0)	(0.0046)	(0.0058)	(0.0189)
Eligible for QMB?	0.0058	0.0120	0.0381
	(0.0044)	(0.0068)	(0.0221)
SSI Limit /1000	0.0044	0.0219	0.0176
(assuming social security income)	(0.0015)	(0.0025)	(0.0042)
Total number of people in family	-0.0032	-0.0012	-0.0049
	(0.0014)	(0.0020)	(0.0039)
Number of own children under 18 in family	0.0108	-0.0079	0.0222
	(0.0076)	(0.0056)	(0.0177)
Hispanic origin	0.0612	0.1603	-0.0018
	(0.0087)	(0.0187)	(0.0392)
African-American	0.0454	0.0997	---
	(0.0071)	(0.0078)	
Other non-white	0.0771	0.0462	---
	(0.0172)	(0.0163)	
Female	-0.0029	0.0154	0.0446
	(0.0013)	(0.0038)	(0.0092)
Veteran	-0.0142	-0.0293	-0.0571
	(0.0016)	(0.0048)	(0.0114)
Married	---	---	-0.1247
			(0.0201)
Did not complete high school	0.0186	0.0535	0.0811
	(0.0018)	(0.0038)	(0.0104)
Some college	-0.0029	-0.0174	-0.0383
	(0.0009)	(0.0024)	(0.0104)
Respondent's age	0.0042	0.0001	-0.0162
	(0.0025)	(0.0034)	(0.0131)
$Age^2/100$	-0.0024	-0.0002	0.0122
	(0.0017)	(0.0022)	(0.0086)
Observations	48667	41931	5972
Adjusted R^2	0.0960	0.1679	0.1999
Mean of dependent variable	0.0169	0.0722	0.1567
Sample	Married	Single	African-American

Notes: All specifications run as linear probability models. Heteroskedastic consistent standard errors in parenthesis. Current Population Survey, March Annual Demographic File, 1988-1993. STATE*INCOME and TIME*INCOME fixed effects and a constant term are included all specifications. All models correct for intercorrelations within each STATE*TIME*INCOME cell. A dummy variable for 209(b) state was included in the specification, but was not significant and therefore not reported.

Table 5, continued

	(4)	(5)	(6)
GAIN/1000	-0.0279 (0.0035)	-0.0385 (0.0042)	-0.0209 (0.0038)
Eligible for QMB?	0.0096 (0.0035)	0.0160 (0.0048)	0.0080 (0.0044)
SSI Limit/1000	-0.0003 (0.0010)	0.0054 (0.0013)	-0.0001 (0.0009)
Total number of people in family	-0.0002 (0.0013)	-0.0021 (0.0018)	-0.0012 (0.0015)
Number of own children under 18 in family	-0.0023 (0.0044)	-0.0022 (0.0061)	0.0033 (0.0058)
Hispanic origin	0.1164 (0.0127)	0.1431 (0.0160)	0.0617 (0.0089)
African-American	---	0.1096 (0.0075)	0.0379 (0.0059)
Other non-white	---	0.0656 (0.0154)	0.0583 (0.0148)
Female	0.0009 (0.0015)	---	---
Veteran	-0.0142 (0.0018)	-0.0037 (0.0049)	-0.0243 (0.0022)
Married	-0.0299 (0.0048)	-0.0604 (0.0061)	-0.0174 (0.0046)
Did not complete high school	0.0334 (0.0022)	0.0463 (0.0031)	0.0223 (0.0021)
Some college	-0.0067 (0.0011)	-0.0148 (0.0016)	-0.0016 (0.0012)
Respondent's age	0.0045 (0.0020)	0.0004 (0.0028)	0.0081 (0.0030)
$Age^2/100$	-0.0030 (0.0013)	-0.0002 (0.0018)	0.0081 (0.0030)
Observations	83051	53619	36979
Adjusted R^2	0.1202	0.1618	0.1117
Mean of dependent variable	0.0331	0.0548	0.0248
Sample	White	Female	Male

Table 5, continued

	(7)	(8)	(9)
GAIN/1000	-0.0557 (0.0067)	-0.0187 (0.0034)	-0.0094 (0.0023)
Eligible for QMB?	0.0171 (0.0082)	0.0099 (0.0037)	0.0045 (0.0029)
SSI Limit/1000	0.0102 (0.0019)	-0.0038 (0.0011)	-0.0002 (0.0008)
Total number of people in family	-0.0024 (0.0020)	-0.0011 (0.0015)	0.0027 (0.0021)
Number of own children under 18 in family	-0.0072 (0.0063)	0.0082 (0.0067)	0.0118 (0.0098)
Hispanic origin	0.1191 (0.0139)	0.0555 (0.0122)	0.0524 (0.0155)
African-American	0.0864 (0.0071)	0.0594 (0.0094)	0.0175 (0.0068)
Other non-white	0.0853 (0.0183)	0.0343 (0.0138)	0.0148 (0.0140)
Female	0.0095 (0.0030)	0.0003 (0.0020)	-0.0008 (0.0019)
Veteran	-0.0334 (0.0039)	-0.0101 (0.0020)	-0.0045 (0.0019)
Married	-0.0809 (0.0087)	-0.0070 (0.0045)	-0.0152 (0.0039)
Did not complete high school	---	---	---
Some college	---	---	---
Respondent's age	0.0058 (0.0041)	0.0010 (0.0032)	-0.0012 (0.0025)
Age^2/100	-0.0038 (0.0027)	-0.0006 (0.0021)	0.0009 (0.0017)
Observations	38281	30974	21343
Adjusted R^2	0.1804	0.0617	0.0349
Mean of dependent variable	0.0815	0.0180	0.0082
Sample	Less than HS	Completed HS	College

Table 6: Accounting for Asset Holdings

	(1)	(2)	(3)
GAIN/1000 =max{QMB_LIM-SSI_LIM,0}	-0.0342 (0.0034)	-0.0979 (0.0164)	-0.0029 (0.0014)
Eligible for QMB?	0.0118 (0.0037)	0.0548 (0.0198)	0.0028 (0.0012)
SSI Limit /1000 (assuming social security income)	0.0023 (0.0010)	0.0284 (0.0042)	0.0001 (0.0003)
Homeowner? (1=yes)	-0.0453 (0.0034)	---	---
Have asset income from interest, dividends or rent? (1=yes)	-0.0523 (0.0036)	---	---
Value of asset income > $300 per year? (1=yes)	-0.0165 (0.0021)	---	---
Observations	90598	8251	46910
Adjusted R^2	0.1741	0.2351	0.0232
Mean of dependent variable	0.0425	0.2004	0.0034
Sample	All	Individuals with all asset variables = 0	Individuals with all asset variables = 1

Notes: All specifications run as linear probability models. Heteroskedastic consistent standard errors in parenthesis. Current Population Survey, March Annual Demographic File, 1988-1993. All specifications also include same variables as the baseline specification (Table 4, column 3).

Table 7: Policy variables that do not use individual Social Security income, on the full sample

	(1)	(2)
GAIN/1000 =max{QMB_LIM-SSI_LIM,0}	-0.0135 (0.0035)	-0.0147 (0.0036)
Eligible for QMB?	0.0089 (0.0040)	0.0093 (0.0041)
SSI Limit /1000	0.0034 (0.0010)	0.0045 (0.0011)
Total number of people in family	-0.0023 (0.0011)	-0.0024 (0.0011)
Number of own children under 18 in family	0.0036 (0.0047)	0.0035 (0.0047)
Hispanic origin	0.1260 (0.0101)	0.1258 (0.0102)
African-American	0.0985 (0.0054)	0.0969 (0.0053)
Other non-white	0.0716 (0.0128)	0.0692 (0.0128)
Female	0.0080 (0.0017)	0.0080 (0.0017)
Veteran	-0.0135 (0.0020)	-0.0135 (0.0020)
Married	-0.0538 (0.0040)	-0.0572 (0.0043)
Did not complete high school	0.0416 (0.0026)	0.0414 (0.0026)
Some college	-0.0072 (0.0011)	-0.0072 (0.0011)
Respondent's age	-0.0015 (0.0022)	-0.0014 (0.0022)
$Age^2/100$	0.0009 (0.0015)	0.0009 (0.0015)
Adjusted R^2	0.0883	0.0885
GAIN computed from:	Average social security income within cohort-year-education-race-marital status cell	Median social security income within cohort-year-education-race-marital status cell
Other controls	STATE and TIME, and group correlations within state*time cluster	STATE and TIME, and group correlations within state*time cluster

Notes: All specifications run as linear probability models. Heteroskedastic consistent standard errors in parenthesis. Current Population Survey, March Annual Demographic File, 1988-1993. Sample size is 90,598. Mean of dependent variable is 0.0425. A dummy variable for 209(b) state was included in the specification, but was not significant and therefore not reported

Table 8: Summary Statistics Broken Out by Social Security income category

Soc. Sec. Income	250	750	1250	1750	2250	2750	3250	3750	4250	4750	5250	5750	6250	6750	7250
SSI Participation	0.17	0.02	0.06	0.09	0.18	0.23	0.18	0.16	0.12	0.10	0.05	0.04	0.02	0.02	0.02
Policy variables															
GAIN	0	0	0	0	0	0	0	0	27	177	311	326	347	351	352
QMB Eligible?	0.77	0.77	0.79	0.69	0.64	0.69	0.69	0.68	0.68	0.70	0.70	0.70	0.71	0.73	0.75
SSI	13,425	13,383	13,523	11,759	9,952	9,278	9,005	8,469	7,742	7,229	6,849	6,750	6,452	6,502	6,566
209(b) state	0.24	0.25	0.23	0.27	0.26	0.26	0.27	0.23	0.26	0.26	0.25	0.23	0.25	0.24	0.26
Demographic variables															
# People	1.89	1.86	1.84	1.81	1.69	1.60	1.68	1.65	1.62	1.62	1.60	1.57	1.59	1.58	1.65
# Kids	0.05	0.04	0.02	0.05	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.03	0.03	0.02	0.03
Hispanic	0.10	0.07	0.03	0.06	0.08	0.08	0.07	0.07	0.03	0.06	0.05	0.05	0.04	0.04	0.04
Black	0.09	0.07	0.07	0.13	0.14	0.14	0.14	0.13	0.12	0.12	0.08	0.08	0.07	0.07	0.06
Other	0.04	0.02	0.04	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Female	0.61	0.59	0.56	0.65	0.69	0.75	0.71	0.71	0.72	0.73	0.73	0.72	0.70	0.68	0.62
Veteran	0.22	0.24	0.24	0.21	0.17	0.14	0.14	0.14	0.13	0.12	0.13	0.13	0.14	0.16	0.19
Married	0.44	0.50	0.59	0.43	0.27	0.22	0.26	0.25	0.23	0.22	0.23	0.24	0.24	0.30	0.34
Educ<12	0.42	0.42	0.35	0.40	0.53	0.57	0.54	0.55	0.53	0.55	0.53	0.53	0.49	0.45	0.44
Educ>12	0.26	0.25	0.30	0.27	0.19	0.16	0.17	0.16	0.17	0.16	0.16	0.16	0.17	0.20	0.21
Age	73.15	73.01	72.68	72.13	74.36	74.93	74.68	74.77	74.70	75.05	74.99	75.38	75.48	75.02	74.63
Observations	3262	714	690	732	1295	1468	2068	2675	2783	3468	3981	3501	5144	4061	4838

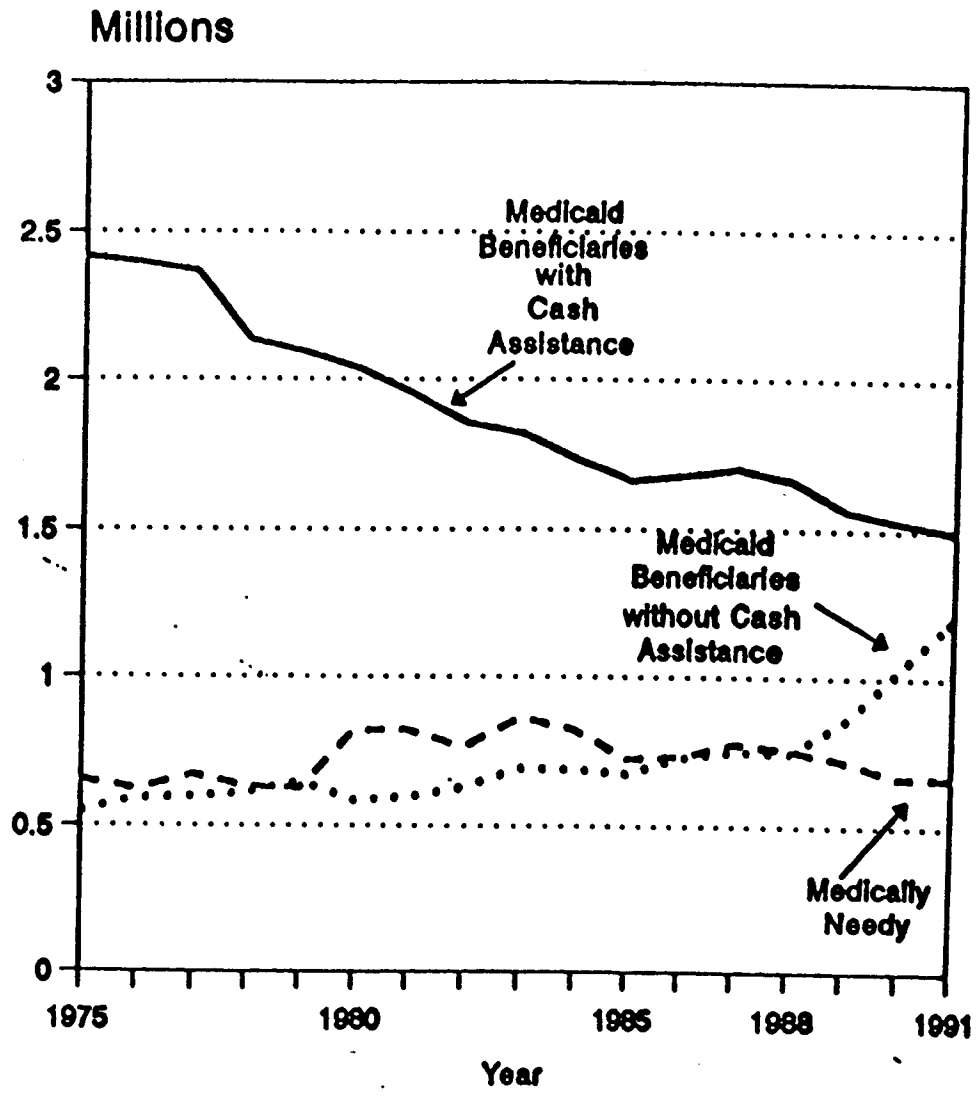
Table 9: Restricting the sample to those on the margin of SSI participation and using $500 income intervals

	(1)	(2)	(3)
GAIN/1000 =max(QMB_LIM-SSI_LIM,0)	-0.0589 (0.0049)	-0.0511 (0.0049)	-0.0144 (0.0049)
Eligible for QMB?	0.0305 (0.0061)	0.0277 (0.0062)	0.0040 (0.0068)
SSI Limit /1000 (assuming social security income)	0.0040 (0.0008)	0.0009 (0.0008)	-0.0050 (0.0017)
Total number of people in family	-0.0072 (0.0019)	-0.0086 (0.0019)	-0.0041 (0.0019)
Number of own children under 18 in family	0.0032 (0.0068)	0.0082 (0.0069)	0.0034 (0.0071)
Hispanic origin	0.1584 (0.0118)	0.1229 (0.0104)	0.0740 (0.0105)
African-American	0.1099 (0.0074)	0.1031 (0.0076)	0.0635 (0.0082)
Other non-white	0.0981 (0.0185)	0.0550 (0.0156)	0.0597 (0.0193)
Female	0.0018 (0.0036)	-0.0018 (0.0037)	0.0008 (0.0034)
Veteran	-0.0464 (0.0043)	-0.0447 (0.0044)	-0.0317 (0.0042)
Married	-0.0525 (0.0058)	-0.0290 (0.0060)	0.0380 (0.0081)
Did not complete high school	0.0663 (0.0032)	0.0595 (0.0032)	0.0381 (0.0030)
Some college	-0.0190 (0.0026)	-0.0196 (0.0025)	-0.0138 (0.0025)
Respondent's age	0.0099 (0.0040)	0.0086 (0.0040)	0.0117 (0.0040)
$Age^2/100$	-0.0067 (0.0026)	-0.0059 (0.0026)	-0.0074 (0.0026)
Observations	40680	37418	27776
Adjusted R^2	0.1651	0.1498	0.0925
Mean of dependent variable	0.0791	0.0769	0.0491
Sample	All individuals with Soc. Sec. Income < $7500, SSI limit constructed from midpoint of interval	Same as (1) except exclude those with income <$500	Same as (1) except exclude those with income<$4000

Notes: All specifications run as linear probability models. Heteroskedastic consistent standard errors in parenthesis. Current Population Survey, March Annual Demographic File, 1988-1993. STATE*INCOME and TIME*INCOME fixed effects and a constant term are included all specifications. All models correct for intercorrelations within each STATE*TIME*INCOME cell. A dummy variable for 209(b) state was included in the specification, but was not significant and therefore not reported.

FIGURE I-a

Aged Medicaid Beneficiaries by Eligibility Status, FY 1975-FY 1991



Source: Medicaid Source Book, Background Data and Analysis (A 1993 Update)

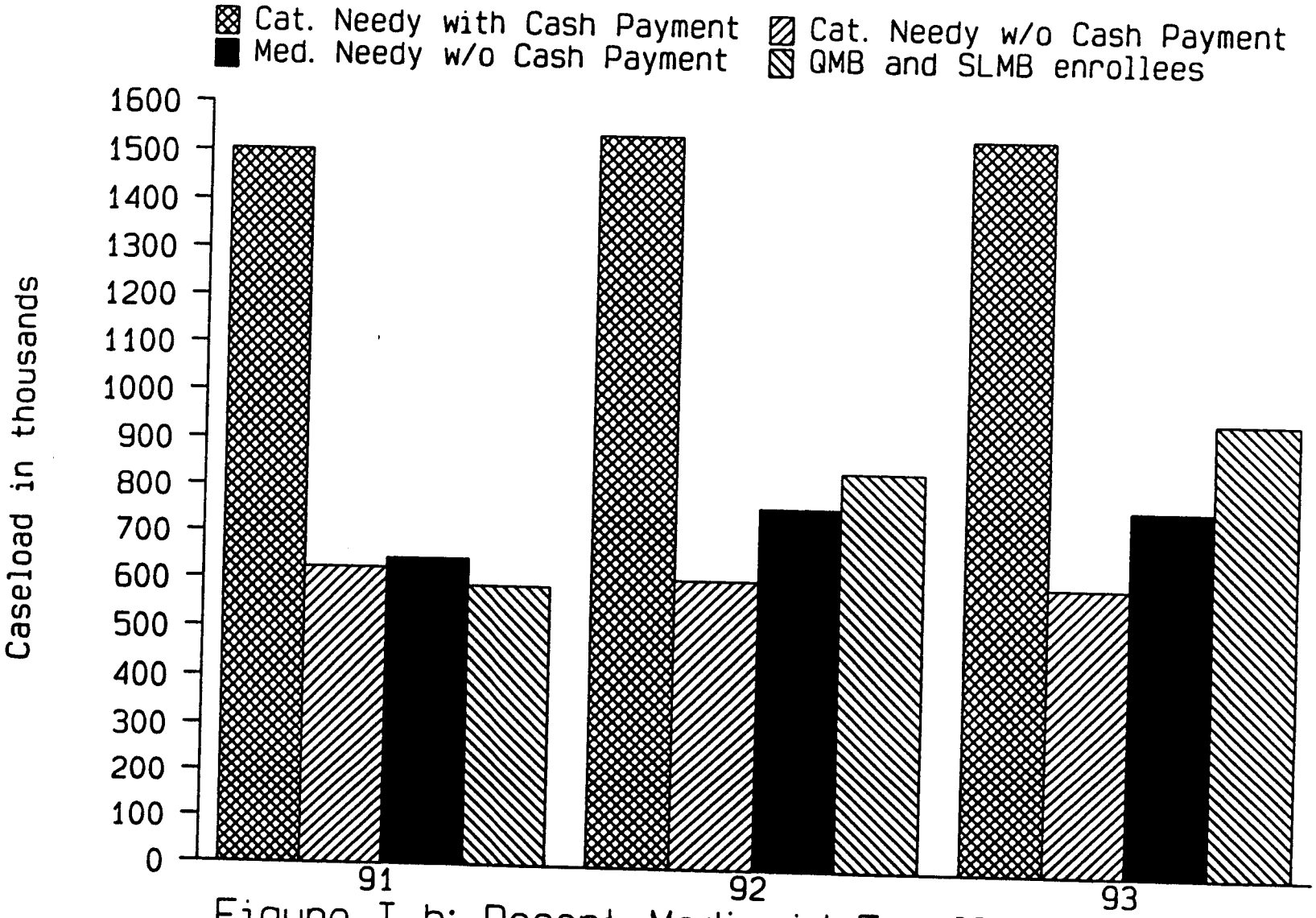
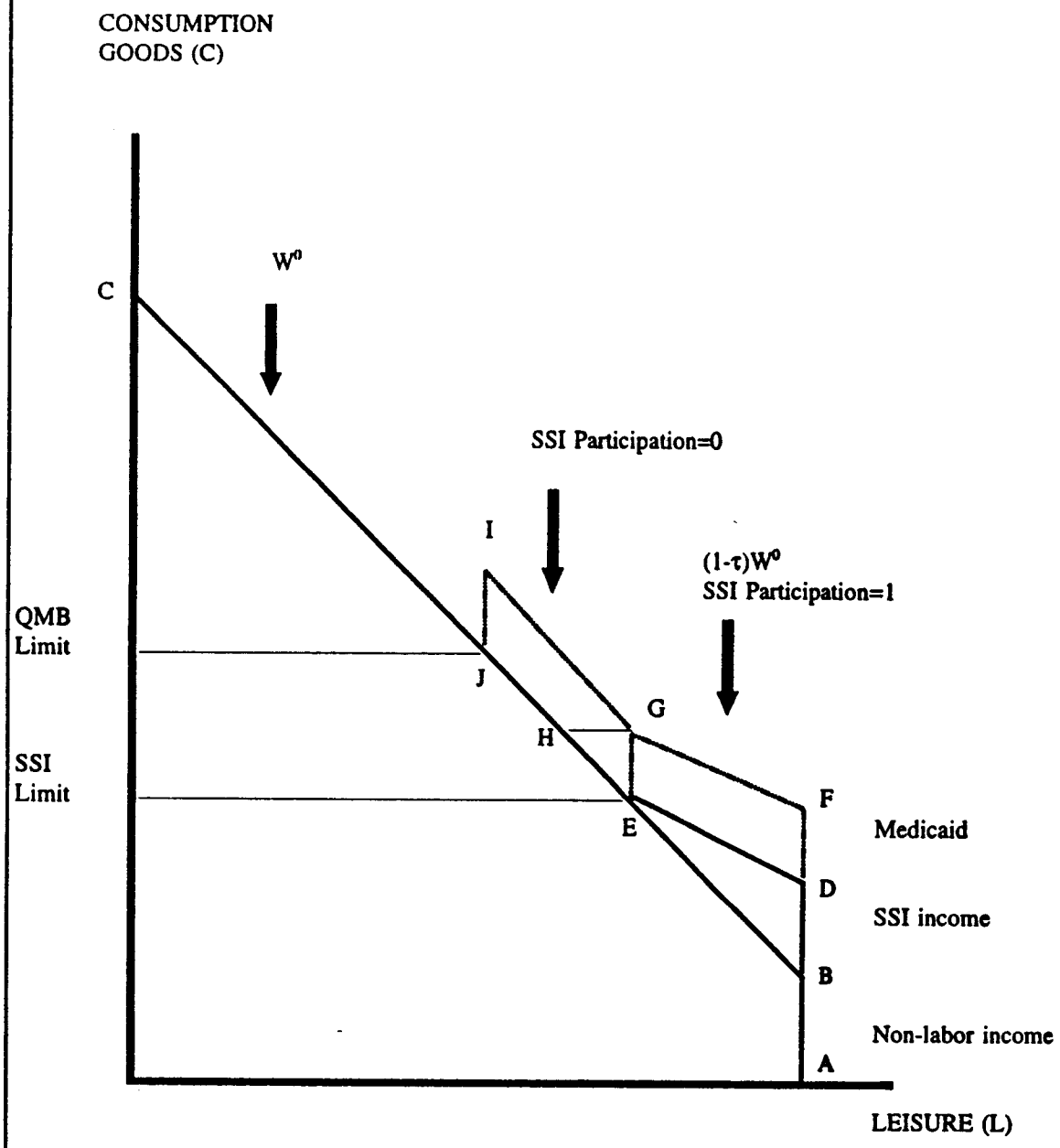


Figure I-b: Recent Medicaid Enrollment

FIGURE II


CONSUMPTION
GOODS (C)
C
W^0
SSI Participation=0
I
$(1-\tau)W^0$
SSI Participation=1
QMB
Limit
J
G
H
SSI
Limit
F
E
Medicaid
D
SSI income
B
Non-labor income
A
LEISURE (L)

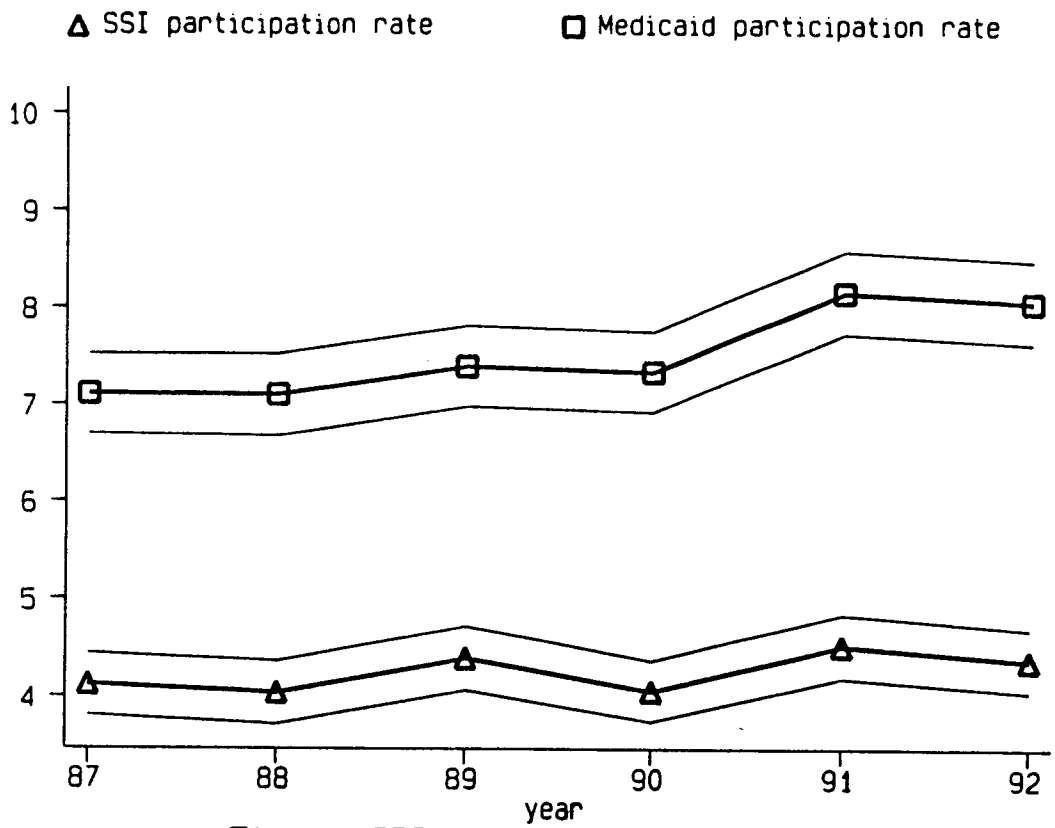


Figure III: All Individuals

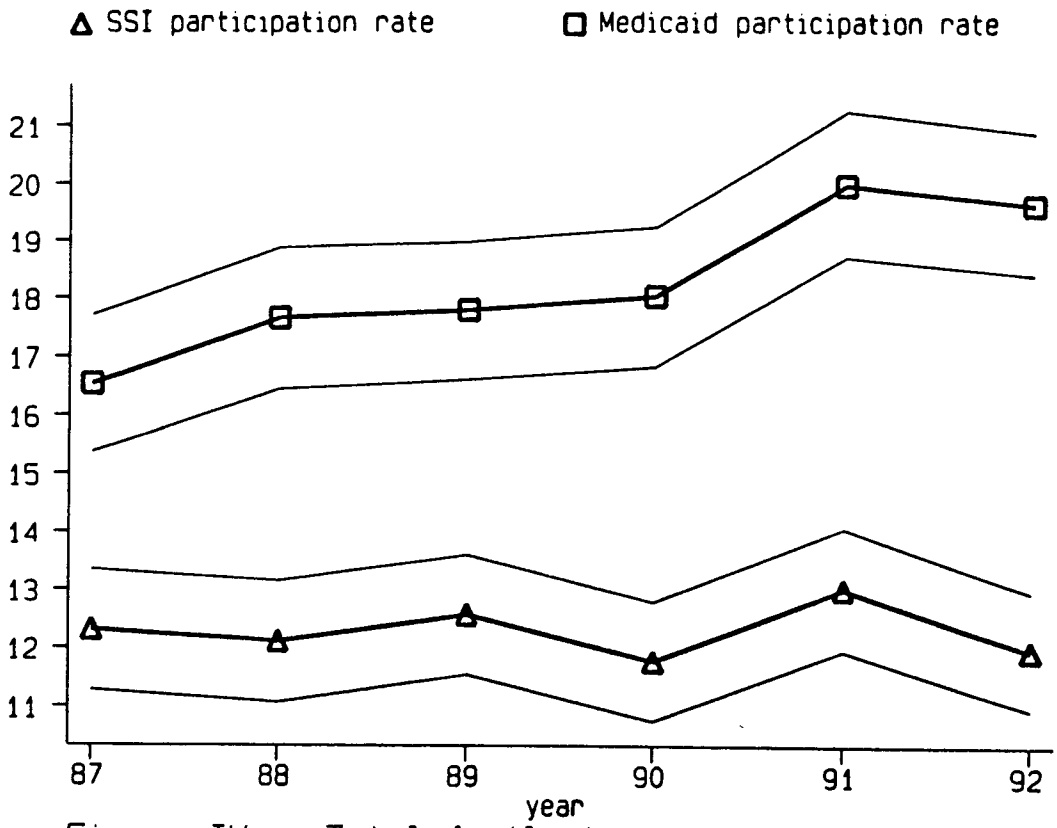


Figure IV-a: Total family income < $10,000

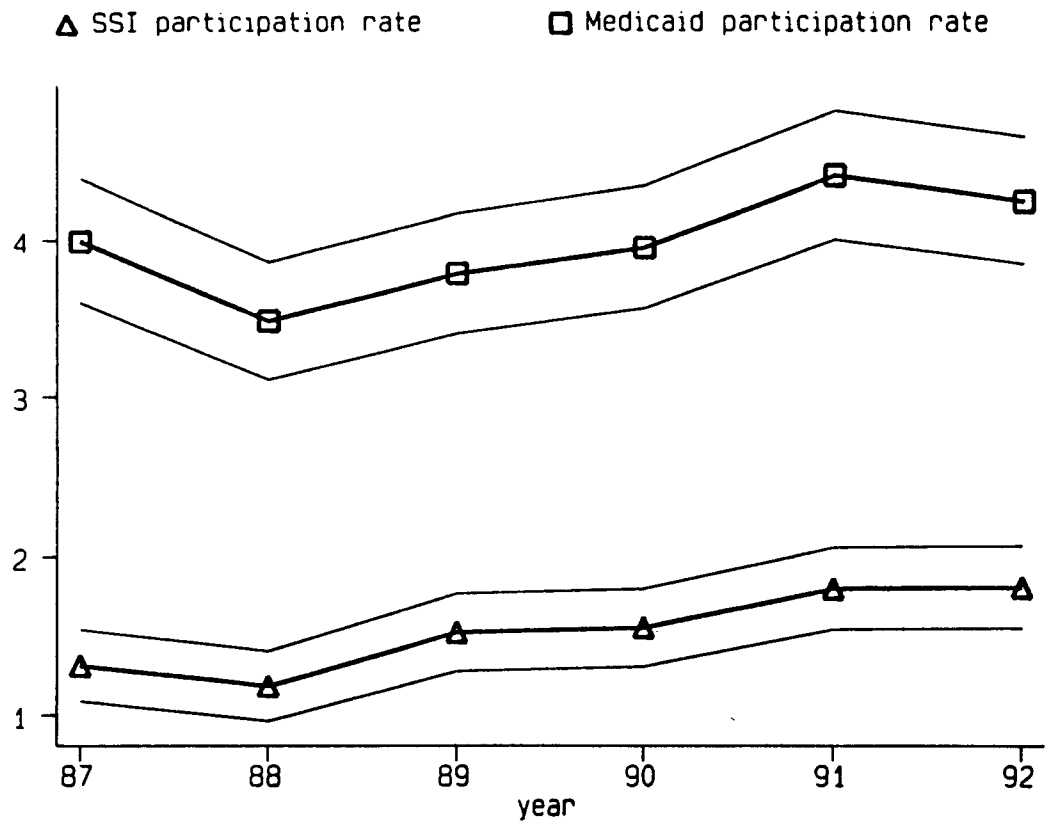


Figure IV-b: Total family income between $10,000 and $50,000

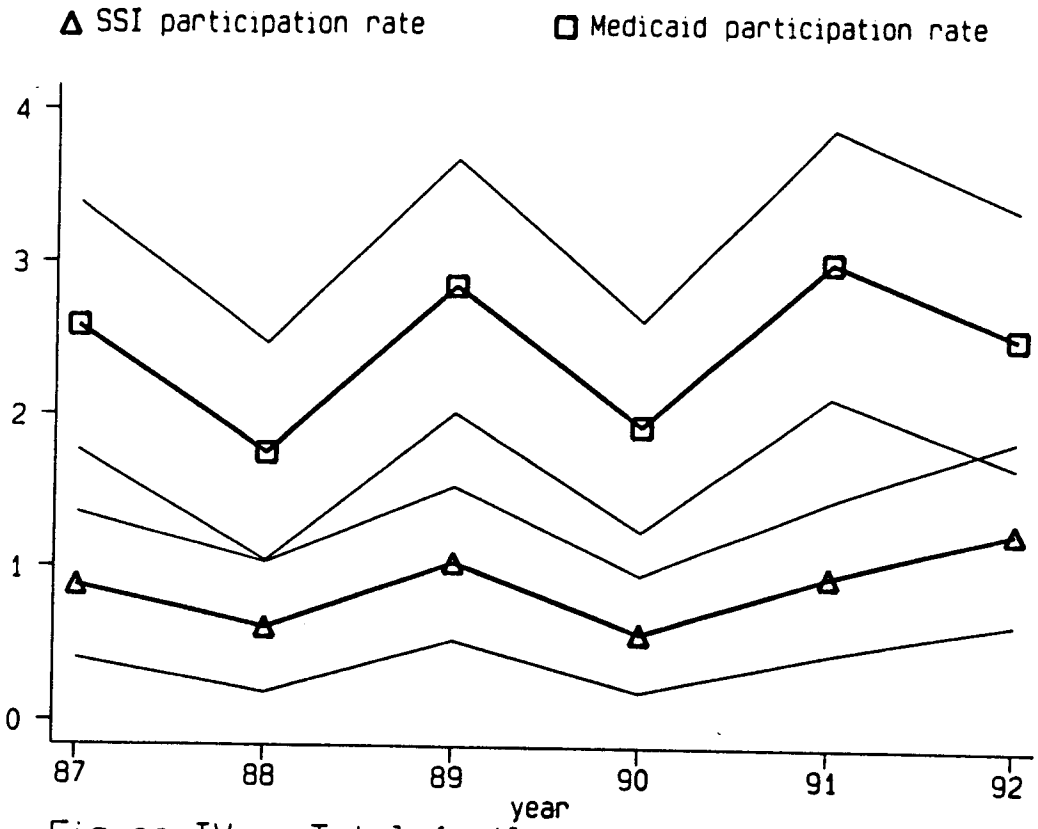


Figure IV-c: Total family income > $50,000

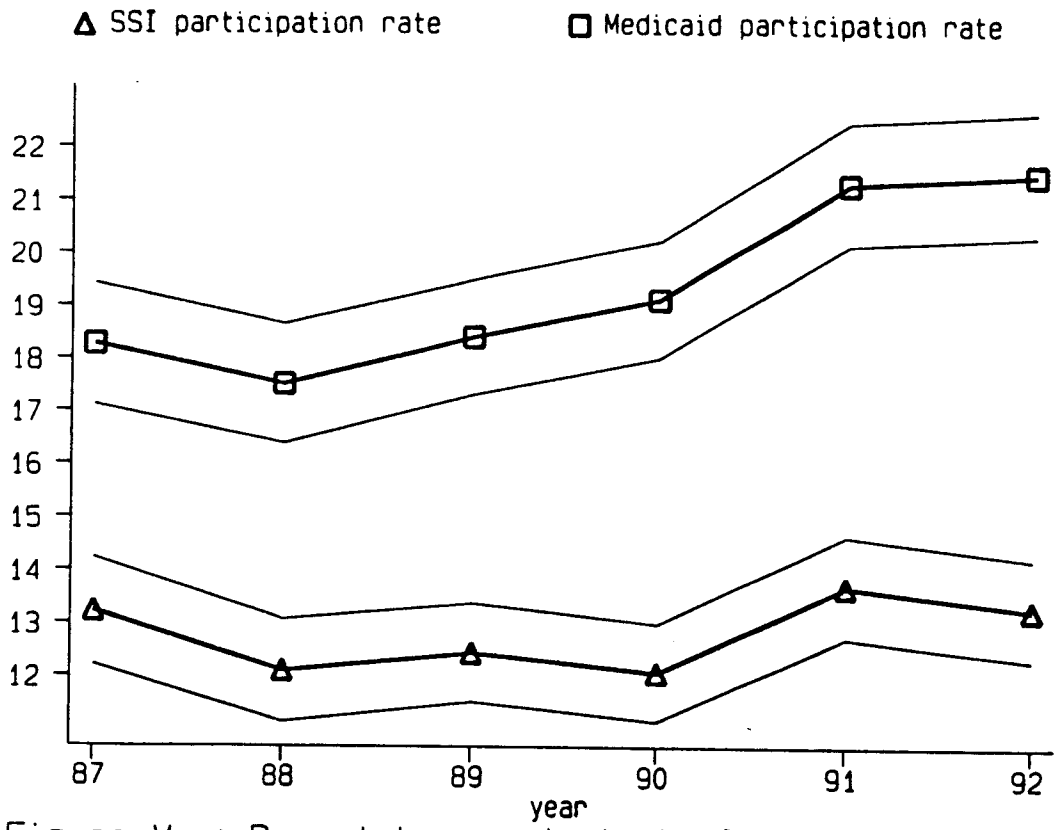


Figure V-a: Do not have private health insurance

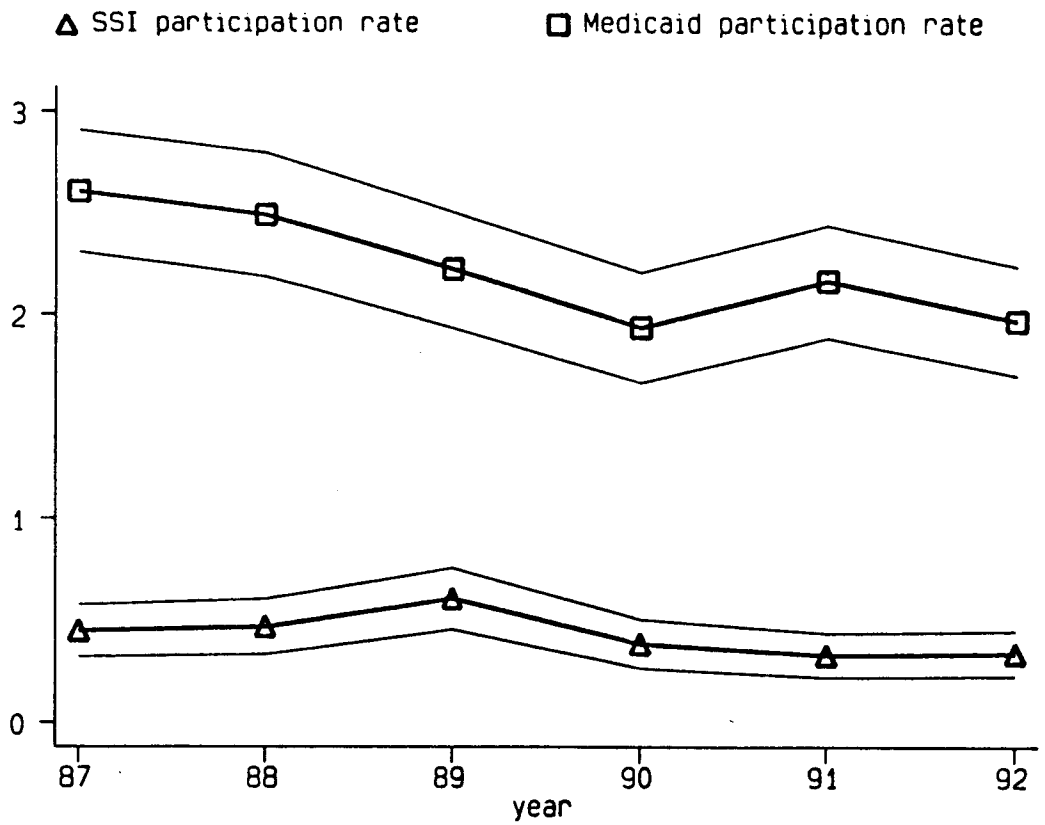


Figure V-b: Have private health insurance

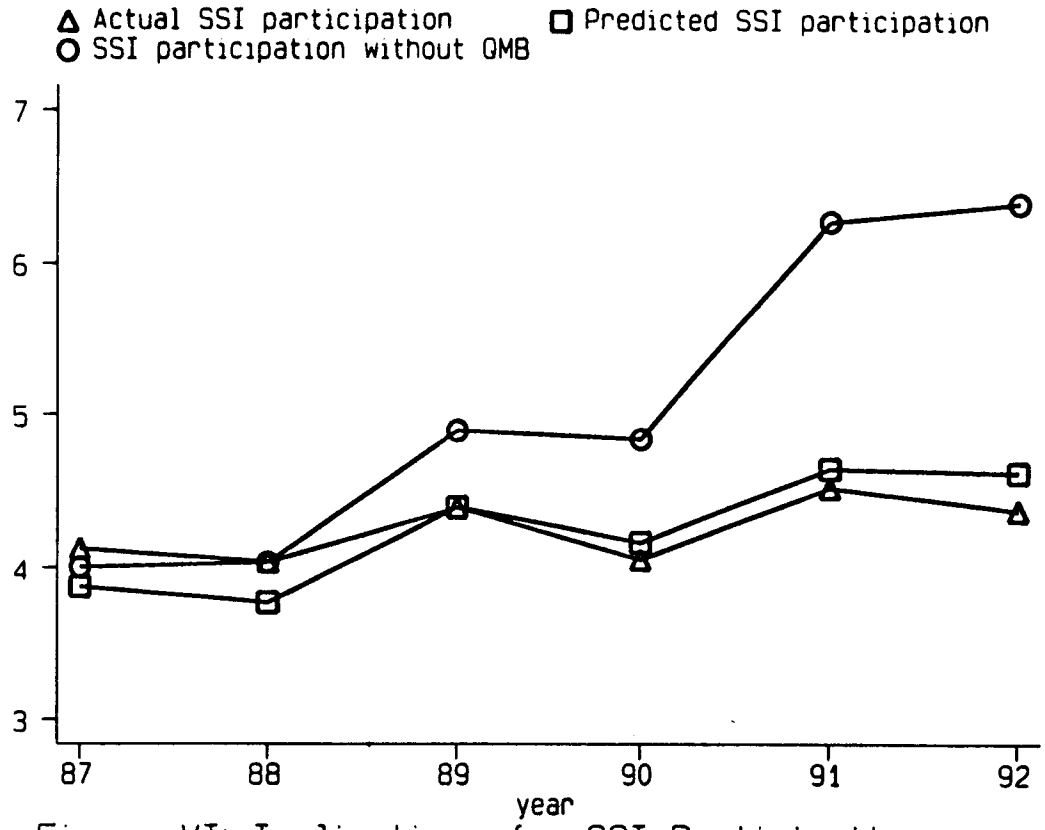


Figure VI: Implications for SSI Participation

Appendix Table 1

Sample selection criteria -- CPS extract						
	March 1988	March 1989	March 1990	March 1991	March 1992	March 1993
Initial observations	155,980	144,687	158,079	158,477	155,796	155,197
>64 years (A_AGE>64)	18,610	17,740	18,902	19,043	18,954	19,074
No imputed Medicaid part.(I_MCAID=0)	18,151	17,320	18,469	18,539	18,508	18,615
No imputed SSI income (I_SSIYN=0)	18,071	17,247	18,382	18,471	18,450	18,533
No imputed Medicare part. (I_MCARE=0)	16,936	16,170	17,102	17,195	17,249	17,226
No imputed age (APAGE=0)	16,868	16,103	17,049	17,147	17,212	17,167
No imputed marital status (APMARITL=0)	16,809	16,049	17,007	17,087	17,165	17,139
No imputed spouse number (APSPOUSE=0)	16,608	15,760	16,674	16,763	17,023	16,998
No imputed sex (APSEX=0)	16,584	15,728	16,641	16,734	16,990	16,976
No imputed race (APRACE=0)	16,574	15,722	16,634	16,729	16,982	16,969
No imputed highest grade attended (APHGA=0)	16,494	15,657	16,584	16,662	16,882	16,906
No imputed CHAMPUS part. (I_CHAMP=0)	16,289	15,428	16,347	16,427	16,675	16,650
No imputed Soc. Sec. Income (I_SSYN=0)	16,288	15,425	16,344	16,426	16,672	16,648
No imputed public assist. income (I_PAWYN=0)	16,200	15,350	16,271	16,342	16,609	16,584
No imputed disability (I_DISHP=0)	16,183	15,341	16,255	16,336	16,597	16,564
No imputed health insurance (I_HIYN=0)	15,858	14,953	15,918	16,017	16,228	16,218
No imputed pension plan (I_PENPLA=0)	15,661	14,834	15,811	15,884	16,176	16,113
Has Medicare (MCARE=1)	15,035	14,210	15,102	15,187	15,534	15,530