

Responses to Declining Retiree Health Benefit Coverage

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Abstract

Employer-provided health insurance for workers who retire before age 65 has fallen rapidly over the last decade. We examine the extent to which falling coverage by retiree health benefits has led to a delay in retirement using several waves of the Health and Retirement Survey.

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Employer-provided retiree health benefits are of two kinds — those covering early retirees (those younger than 65) and those covering Medicare-eligible retirees (those 65 and older). The two types of retiree benefits pose different issues. Early retiree benefits provide a bridge to Medicare for dislocated workers or who decide to leave the labor force before age 65 (and have the financial means through savings or a private pension). Early retiree health benefits have important implications for labor supply and retirement behavior that we investigate further in this paper. Retiree health benefits for older workers generally supplement Medicare so that retirees have comprehensive health insurance. Without these supplemental benefits, retirees must buy private less-generous Medigap insurance or enroll in Medicare Advantage (Medicare Part C, which is a private plan administered through Medicare) if they want something approaching comprehensive coverage.

In this paper, we focus on the provision of early retiree benefits and their implications for both policy and the retirement behavior of individual workers. The next section describes the extent to which workers are covered by retiree health benefits, examines trends in that coverage over time, and discusses reasons for the trends. The following two sections then examine the relationship between early retiree benefits and retirement behavior using data from the Health and Retirement Study. This exercise sheds light on the importance of retiree health benefits and their interaction with government-provided health insurance for older individuals.

1. Retiree Health Benefits over Time

How widespread are retiree health benefits, and what has happened to retiree health coverage over time? Figures 1 through 4 show, for various types of employers, trends in the percentage who offer retiree health benefits to their workers. The data underlying the figures

come from the Insurance Component of the Medical Expenditure Panel Survey (MEPS-IC), a survey of employers conducted for the U.S. Department of Health and Human Services. Figure 1 shows that about 20 percent of private employers offered retiree health benefits in 1997, and this had fallen to about 13 percent by 2003. Figure 2 shows that large employers are far more likely than private employers taken as a whole to offer retiree health benefits. A comparison of Figure 1 and 3 shows that government employers are much more likely to offer retiree health benefits than are private employers. Moreover, in contrast to private employers, public employers are growing more likely to offer retiree health benefits (Figure 3). This growth appears to be confined to local government employers, however, as the percentage of state government employers offering retiree health benefits has fallen since 1997 (Figure 4). Nevertheless, 75 percent or more of state government employers still offered retiree health benefits in 2003.

The above figures pertain to employers offering retiree health benefits. But what percentage of workers are covered by retiree health benefits? Fronstin (2005, pp. 15-16) has generated estimates from the Survey of Income and Program Participation showing that, in 1997, about 50 percent of workers aged 45 to 64 expected to receive retiree health benefits upon retirement. This percentage had dropped to roughly 47 percent by 2002. For males, the percentages are slightly higher, 57 percent in 1997, and 51 percent in 2002. These latter percentages are comparable to those for the HRS sample we examine in the next two sections. What is especially interesting about Fronstin's estimates, though, is that they far exceed the percentage of retired individuals who report actually receiving retiree health benefits (Fronstin 2005, pp. 12-15). In 1997, 39 percent of early retirees and 28 percent of Medicare-eligible retirees reported that they were receiving retiree health benefits, and these figures had fallen to 28 percent and 26 percent by 2002. It is reasonable to infer that many workers who expect retiree health benefits do not receive them.

Fronstin (2001, 2005) and Schieber (2004) attribute the decline in retiree health benefit coverage largely to Financial Accounting Statement No. 106 (FAS 106) — "Employers' Accounting for Postretirement Benefits Other Than Pension" — which the Financial Accounting Standards Board approved in December 1990. FAS 106 requires employers to treat promised retiree health benefits as financial liabilities in their financial statement starting with fiscal years after December 15, 1992. The result was reconsideration of promised retiree health benefits and, in many cases, reduction or elimination of those promises.

Two more recent factors may also lead employers to curtail early retiree health benefits. First, a federal court ruling in 2000 held that it is discriminatory for an employer to provide early retirees more generous health benefits than those provided by the employer and Medicare (combined) to retirees age 65 and older (U.S. Government Accountability Office 2004). As Moon (2004) points out, this ruling and subsequent rules will make it harder for employers to provide health benefits to early retirees. Second, the new Medicare prescription drug benefit (Medicare Part D) could induce employers to cut retiree health benefits on the grounds that the government now offers adequate coverage at age 65. As Moon (2004) points out, for employers who are planning to reduce or eliminate retiree health benefits, the Medicare drug benefit offers an excuse for opting out.

On the other hand, it is also possible that employers have reduced retiree health benefits out of a recognition that the baby-boom generation, which makes up a disproportionate part of the labor force, is aging and may be difficult to replace. *The Economist* (2006) has quoted human resource managers who say they are concerned that "When the baby-boomer generation retires, many companies will find out too late that a career's worth of experience has walked out the door, leaving insufficient talent to fill the void." It follows that reducing retiree health benefits could be part of a deliberate strategy to slow the loss of older skilled workers to retirement.

2. Governmental and Individual Responses to Changes in Retiree Health Benefits

The response to reduced availability of retiree health benefits can be of two kinds. One is a governmental response — the federal government could extend existing programs or create new ones to cover individuals who retire before age 65 and otherwise would not have health insurance coverage. The other response is individual — workers may change their labor supply behavior and work more or longer because if they do not, they or their dependents will not be covered by health insurance.

Much public discussion in recent decades has suggested that a governmental response would be appropriate. Efforts to create universal health insurance coverage — through a single payer or some other means — would obviously eliminate the problem implied by declining employer-provided retiree coverage. Government provision of health insurance would in turn have other consequences — workers who might otherwise continue working would retire because they would not need to work in order to maintain health insurance coverage. Understanding the labor supply consequences of government provision of health insurance is an important part of appraising the benefits and costs of such policies.

In the absence of a government response to declining retiree health benefits, however, we would expect workers who are nearing retirement — those aged 55 to 64 — to increase their labor supply and remain longer in the labor force. For many workers, continuing work until age 65 or later is not a social problem but a fact of life. Indeed, in many cases, work in later years is in intrinsically rewarding and gives individuals a sense of purpose and value, as psychologists often point out. In at least two cases, however, lack of health insurance for jobless workers under age 65 may well be viewed as a problem with social implications. First, for an older worker in poor health who withdraws from the labor force, in-kind transfers of health care may be necessary to

maintain an acceptable living standard. Second, for an older worker who suffers permanent layoff due to structural change, job search assistance or retraining may be helpful or necessary for a return to work, and government assistance with health benefits in the interim may be appropriate.

Whether one favors government intervention in response to declining retiree health benefits is more likely to depend on ideology than on labor supply estimates. Indeed, a prolific group of health policy researchers and opinion leaders have come to view health insurance as a good that should be provided universally (see, for example, Quadagno 2005). Nevertheless, the cost of government provision of retiree health benefits is clearly a function of the labor supply response of workers. It follows that estimates of workers' labor supply response to retiree health benefits constitute an important part of the debate over government provision of retiree health benefits.

Much empirical research has investigated the effects of pensions, social security, and assets on the decision to retire, but relatively little research has examined the impact of health insurance coverage on retirement.¹ Previous research has used data from the Retirement History Survey, conducted mainly during the 1970s (Rust and Phelan 1997), the Survey of Income and Program Participation (Karoly and Rogowski 1994, Madrian 1994), the Current Population Survey (Gruber and Madrian 1995), and the National Medical Expenditure Survey (Madrian 1994). These studies uniformly conclude that availability of retiree health benefits (or continuation coverage in the case of Gruber and Madrian) significantly increases the probability that an older worker will retire.

Hurd and McGarry (1993), Rogowski and Karoly (2000), and Blau and Gilleskie (2001) examine the relationship between retirement (or retirement expectations in the case of Hurd and McGarry) and retiree health benefits using the Health and Retirement Study (HRS, Institute for

¹ See Gruber and Madrian (2004) for a more complete review of the literature.

Social Research, University of Michigan). The HRS has the unique advantage of being longitudinal and including questions on both retirement and the availability of retiree health benefits. As a result, studies based on these data are among the most convincing in this literature. Hurd and McGarry (1993) examine Wave 1 (1992) of the HRS and find that workers eligible to receive retiree health benefits that are partly or fully paid by the employer are significantly less likely than other workers to report that they expect to work past age 62. Rogowski and Karoly (2000) and Blau and Gilleskie (2001) take advantage of multiple waves of the HRS and find that older workers with an offer of retiree health benefits are significantly more likely to retire than workers without such an offer. Rogowski and Karoly find that workers with retiree health benefits are about 60 percent more likely to be retired four years later than those without. They also find that the retirement probability is insensitive to the extent of retiree health benefit cost sharing. Blau and Gilleskie also find that workers with retiree health benefits are more likely to retire, but in contrast to Rogowski and Karoly, they find cost sharing reduces the retirement probability — workers whose benefits are wholly paid by the employer are 80 percent more likely to retire over a two-year period, whereas those who must pay are only 26 percent more likely to retire.

3. Further Evidence on Retiree Health Benefits and Retirement

In this section we examine the HRS data further and extend the results of Rogowski and Karoly (2000). Rogowski and Karoly used data from Waves 1 and 3 (1992 and 1996) of the Health and Retirement Study to examine retirement transitions of a cohort of men born between 1931 and 1941. These men were working full-time (at least 35 hours per week) in 1992 and were surveyed again (that is, were still alive and had not dropped out of the sample) in 1996.

We extend the work of Rogowski and Karoly (2000) in two ways. The first is minor

— whereas Rogowski and Karoly used the alpha release version of HRS Wave 3 (1996), we are able we use the final version 4.0 (released in September 2003). Our purpose is to replicate their results and check whether data changes following the alpha release of Wave 3 result in different findings (in all important respects except one, they do not). Second, we use more recent waves of the HRS to examine retirement behavior as this cohort of workers ages. Rather than examine a single transition from full-time work in 1992 to retirement in 1996, we examine transitions to retirement in 1998, 2000, 2002, and 2004 using Waves 4, 5, 6, and 7 of the HRS. This is useful because in 1996, only the oldest of the men in HRS cohort were age 65 — the youngest were just 55.

3.1. Empirical Model and Data

Rogowski and Karoly (2000) specify a probit model of the conditional probability that individual i (who is working in year t) will be retired in year $t+n$:

$$\Pr(\text{retired}_{i,t+n} = 1 | \bullet) = F[\beta_0 + \beta_1(\text{rhb}_{it}) + \beta_2(\text{rhbcost}_{it}) + \beta_3(\text{pension}_{it}) + \beta_4(\text{socsec}_{it}) + \beta_5(\text{health}_{it}) + \beta_6(\mathbf{X}_{it})] \quad (1)$$

where rhb_{it} denotes a set of dummies indicating whether the worker was offered retiree health benefits in year t , rhbcost_{it} is a set of indicators of cost sharing associated with retiree health benefits (if offered) in year t , pension_{it} is a set of indicators of whether the worker was included in a pension plan (or plans), socsec_{it} is a dummy indicating whether the worker expected to receive Social Security benefits, health_{it} is a set of variables modeling the health of the worker, and \mathbf{X}_{it} is set of demographic variables. Again, Rogowski and Karoly specify the retirement equation as a probit (F denotes the standard normal cumulative density), although a linear probability model would serve just as well.

We are mainly interested in the relationship between coverage by retiree health benefits in

1992 (rhb_{it} in equation 1) and retirement in subsequent years. Rogowski and Karoly model coverage by retiree health benefits using a set of five mutually exclusive dummy variables:

- a dummy equal to 1 if the worker had employer-provided health insurance (EHI) in 1992 but *no offer of retiree health benefits*² (this is the reference category) (10.6 percent of the 1992 baseline sample of 3,135 are in this group³)
- a dummy equal to 1 if the worker had EHI and *would receive health benefits if he retired* (58.1 percent of the sample)
- a dummy equal to 1 if the worker had EHI and *did not know* whether he would receive retiree health benefits (11.6 percent of the sample)
- a dummy equal to 1 if the worker had no EHI but was *covered by some other type of health insurance* (9.1 percent of the sample)
- a dummy equal to 1 if the worker had *no health insurance* coverage (10.7 percent of the sample)

As mentioned earlier, Fronstin (2005) found that roughly 57 percent of men ages 45-64 reported being covered by retiree health benefits in the 1997 SIPP, so the percentage of workers covered by retiree health benefits in the 1992 HRS (58.1 percent) seems reasonable. Nevertheless, further investigation of retiree health benefit coverage would be useful, especially longitudinal evidence on whether the expectations of workers who expect retiree health benefits are realized.

A second set of dummy variables models the extent to which the cost of retiree benefits is shared by the employer ($rhbcost_{it}$):

- a dummy equal to 1 if *workers and retirees must make the same payments* for retiree health benefits (the reference category) (28.0 percent of the sample)
- a dummy equal to 1 if *neither workers nor retirees pay* for retiree health benefits (11.4

² The question reads, “Is the health insurance plan [that currently covers you] available to people who retire?” Later waves of the HRS ask explicitly whether the retiree health benefit plan covers workers who retire before age 65.

³ Sample percentages are from our replications. Rogowski and Karoly did not report sample moments.

percent of the sample)

- a dummy equal to 1 if *retirees pay more than workers* for retiree health benefits (7.0 percent of the sample)
- a dummy equal to 1 if *retirees pay less than workers* for retiree health benefits (1.3 percent of the sample)
- a dummy equal to 1 if the worker *did not know* what retirees pay for health benefits (10.2 percent of the sample)

Note that these sample percentages sum to 58.1, the percentage of men in the sample who report they would receive health benefits if they retired.

A third set of dummies ($pension_{it}$, again mutually exclusive) models whether the worker was included in a pension plan or tax-deferred savings plan through his work in 1992:

- a dummy equal to 1 if the worker was *not included in any pension plan* or didn't know whether he was included (the reference category) (39.0 percent of the sample)
- a dummy equal to 1 if the worker was included in one or more a *defined contribution* pension plans (but not included in any defined benefit plans) (18.0 percent of the sample)
- a dummy equal to 1 if the worker was included in a one or more *defined benefit* pension plans (but no defined contribution plans) (24.9 percent of the sample)
- a dummy equal to 1 if the worker was included in *both a defined contribution and a defined benefit* pension plan (17.4 percent of the sample)
- a dummy equal to 1 if the worker said he was included in pension plan but *didn't know the type* (0.7 percent of the sample)

Nearly two-fifths of this sample was not covered by any employer-sponsored pension plan in 1992, typical of the population of working men in 1992.

The Social Security indicator ($socsec_{it}$) equals 1 for workers who report they have Social

Security now or expect it in the future. This includes nearly 92 percent of the sample.

Rogowski and Karoly include two variables to capture each worker's health status ($health_{it}$). The first is body mass index (BMI) — weight in kilograms divided by height in meters — which has come to be widely used in the development literature as a measure of maximum physical capacity. (The sample mean is 48.4.) The second is a dummy equal to 1 for workers who report having two or more chronic health conditions, such as high blood pressure, diabetes, cancer, chronic lung disease, heart disease, stroke, or arthritis (53.9 percent of the sample falls into this group).

The demographic controls included in the model (\mathbf{X}_{it} in equation 1) are age in 1992 (sample mean = 55.2), an indicator equal to 1 for nonwhites (22.7 percent of the sample), an indicator equal to 1 for married workers (84.6 percent of the sample), and years of schooling (sample mean = 12.5). Rogowski and Karoly also included a variable indicating the length of time between the Wave 1 and Wave 3 interviews because that time varies across respondents (the mean time between interviews was 46.3 months).

3.2. Replication of Rogowski and Karoly

Table 1 shows the results of our efforts to replicate Rogowski and Karoly's findings. Their original results are displayed in the left panel, and ours are in the right panel. Note that our sample is slightly larger than Rogowski and Karoly's and that 18 percent of the workers in our sample (compared with 16 percent in theirs) were retired in 1996. Because Rogowski and Karoly did not report sample moments, it is difficult to comment on other differences between the two samples, but superficially, at least, the samples appear to be similar.

Each panel in Table 2 gives probit β s, P-values, and marginal effects (each marginal effect gives the expected percentage point change in the probability of retirement from a one-unit

change in the independent variable). Whatever the differences between the samples, our replicated findings are generally in line with theirs — in particular, we find that workers covered by retiree health benefits in 1992 are 10 percentage points more likely to be retired in 1996, within a percentage point of Rogowski and Karoly’s point estimate. Given that the sample mean retirement probability is 18 percent, this is a 55 percent change. Also, like Rogowski and Karoly, we find that cost sharing of retiree benefits is unrelated to the probability of retirement, except that we find workers who do not know what retirees pay for health coverage are less likely to retire. (Another minor difference: We find a higher probability of retirement than Rogowski and Karoly for workers with health insurance coverage other than employer-provided in 1992.)

Our replication differs from Rogowski and Karoly’s in one important way. Rogowski and Karoly found that workers covered by defined contribution and defined benefit pension plans in 1992 were 5 to 7 percentage points (or 30 to 40 percent) more likely to be retired in 1996, whereas our replication suggests these workers were 14 to 15 percentage points (about 75 to 80 percent) more likely to be retired. The difference is statistically significant and economically meaningful. Rogowski and Karoly note that, because retiree health benefits and pension coverage are correlated, models that omit retiree health benefits will give upward-biased estimates of the impact of pension coverage on retirement. We have not explored this point with our sample, but our estimates of pension impacts on retirement are higher than those obtained by Rogowski and Karoly even when they omit retiree health benefits.

3.3. Further Findings

Our second extension of Rogowski and Karoly is to examine the retirement behavior of the HRS cohort as it ages. Specifically, for full-time male workers who were observed in 1992, we observe the retirement status of those who were still alive and had not left the study in 1998,

2000, 2002, and 2004 (rather than in 1996 only) and examine whether that status was correlated with the availability of retiree health benefits and other 1992 covariates. The equations we estimate are essentially similar to equation 1.⁴ The difference is that, for each successive equation, we are observing a transition that takes place over a longer period of time.

Table 2 displays the findings, with one panel for each of the four successive waves. For all four waves, the main findings are consistent with those already seen in Table 1 — workers with retiree health benefits are more likely than those without to be retired in subsequent years. The size of the effects, however, varies with the time over which the transition is observed. It is relatively small for the transitions to 1998 and 2000 (about a 6 percentage point increase in retirement probability for those with retiree benefits) and larger for the transitions to 2002 and 2004 (a 10 or 11 percentage point increase, similar to the estimate for 1996 in Table 1).

Why would we expect to see such variation in the relationship between retirement and retiree health benefits? An obvious possibility is the state of the labor market: During 1998 and through 2000, labor demand was high and unemployment low. But the labor market turned dramatically with 2001 recession, and the labor market was unusually slow to recover following the recession. Workers laid off or dislocated in the 2001 recession who could take advantage of retiree health benefits would be likely to do so, which would account for the larger estimated impact of retiree health benefits in the 2002 and 2004 waves. (Responses to questions in the HRS about the reason for retirement could shed further light in this issue.)

The findings in Table 2 suggest two further points. First, for the transitions to 1998, 2000, and 2002, workers eligible for “free” retiree health benefits (that is, benefits paid fully by the employer) are significantly more likely than others to retire. (The point estimate for the transition to 2002, although large, is statistically significant at only the 7-percent level.) This

⁴ An alternative approach would be to examine changes in retirement status over successive two-year intervals, with eligibility for retiree health benefits, a pension or pensions, and health status varying with each interval. In effect, this would be a survival analysis with time-varying covariates. The approach presented here gives cumulative transition probabilities over increasingly lengthy time periods.

differs from the transition to 1996 (Table 1), but is consistent with Blau and Gilleskie's (2001) findings, which used the 1992 and 1994 waves of the HRS. Indeed, the findings for the transition from 1992 to 1996 (Table 1 again) would seem to be the anomaly.

Second, the findings in Table 2 also suggest that, compared with workers who are ineligible for a pension, those eligible for a pension — whether defined contribution, defined benefit, or both — tend to be more likely to retire as the time over which we observe them lengthens. In particular, the pension effects tend to grow with the transitions to 1998 and 2000, then level off.

An additional issue worth exploring is whether the likelihood of accepting retiree health benefits and leaving the labor force changes as a worker approaches age 65. Retiree health benefits are more valuable to a worker at age 55 than at age 65 because the younger worker receives them over more years. To a worker eligible for retiree health benefits, each year of delayed retirement represents a year of lost benefits. As a result, we would expect the impact of retiree health benefits on retirement to fall as workers approach age 65. This is an empirical question that we can address by interacting age with eligibility for retiree health benefits and adding this interaction to equation 1.

The results are displayed in Table 3, which shows only the marginal effects and P-values of three variables — age, eligibility for retiree health benefits (“EHI and RHB”), and the interaction between the two (“Age-RHB interaction”). The interaction term is negative and statistically significant at the 10-percent level in Wave 3 (1996) and at the 2-percent level in Waves 6 and 7 (2002 and 2004); however, the interaction term is statistically insignificant in Waves 4 and 5 (1998 and 2000), so the evidence of interaction between age and retiree health benefits is not overwhelming. Nevertheless, the findings do suggest that the older a worker is, the less likely he is to be induced to retire by retiree health benefits. The finding makes sense

because, presumably, retiree health benefits are more valuable when they can be received over a longer period of time. This suggests that making retiree health benefits available to a 55-year-old is more likely to induce retirement than making them available to a 60-year-old — specifically (using the point estimates from Waves 3, 6, and 7), a 55-year-old with retiree health benefits is roughly 3 percentage points more likely to retire than is a 60-year-old with retiree health benefits. On two counts, then, the cost of retiree health benefits is likely to be higher the younger are the workers to whom they are offered — the benefits are received over a longer period of time and they are more likely to be accepted.

An important caveat applies to all the above estimates — they should not be interpreted causally. Although the findings do suggest that retiree health benefits cause earlier retirement, as we would expect, it is likely that workers who would like to retire before age 65 choose (or self-select into) jobs that offer retiree health benefits. If so, this self selection would lead to upward-biased estimates of the causal effect of retiree health benefits on retirement — workers who are covered by retiree health benefits would have retired somewhat earlier even if they were not eligible for those benefits. Without further efforts to identify the true relationship between retiree health benefits and retirement, we cannot say anything about the size of this bias, but it is an issue ripe for future research.

4. Summary

The findings presented here accord with previous research in suggesting that workers eligible for retiree health benefit are substantially more likely to retire than are other workers. Our estimates vary with the time period over which we observe the transition to retirement, but over the four-year interval 1992 to 1996, workers eligible for retiree health benefit offers were 10 percentage points (or 55 percent) more likely to retire than workers who were ineligible.

A potentially important difference between Rogowski and Karoly's findings and ours is that, whereas Rogowski and Karoly found workers covered by pension plans to be 5 to 7 percentage points more likely to be retired in 1996, our replication suggests these workers were 14 to 15 percentage points more likely to be retired, even after controlling for the availability of retiree health benefits. We intend to explore this point further in future work because it suggests that pensions and retiree health benefits have strong independent impacts on retirement behavior, rather than merely being collinear and hence picking up each others' effects when only one is observed.

Previous work with the HRS (Rogowski and Karoly 2000; Blau and Gilleskie 2001) has obtained mixed results on whether the extent of cost sharing of retiree health benefits is a factor in retirement behavior. Our results are less mixed. For the transitions from 1992 to 1998, 2000, and 2002, workers eligible for fully paid retiree health benefits were significantly more likely than others to retire. Only for the transition to 1996 (the transition examined by Rogowski and Karoly) was cost sharing insignificant, suggesting that the transition from 1992 to 1996 may be anomalous. Further work on the point would be useful.

Finally, the findings suggest two behaviors that seem not to have been explored in previous work. First, the take-up of retiree health benefits appears to be higher in recession years than in years of economic expansion. This makes sense because workers dislocated during a recession are less likely to have good reemployment prospects, and hence are more likely to accept retirement benefits and leave the labor force. Second, findings also suggest that younger workers are more likely than older workers to take up retiree health benefits. This makes retiree health benefits offered to younger workers more costly in two ways — they are received over a longer period of years and they are more likely to be accepted.

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Table 1

Probit estimates of probability of transition to retirement, 1992 to 1996, full-time older male workers in the HRS (probit betas, with P-values and marginal effects)

Independent Variable	Rogowski and Karoly			Our estimates		
	Probit β	P-value	Marginal Effect (%)	Probit β	P-value	Marginal Effect (%)
Retiree health benefits (RHB)						
[ref: has employer-provided health insurance (EHI) but no RHB]						
has EHI and RHB	0.65	0.00	11	0.47	0.00	10
has EHI, RHB unknown	0.14	0.37	2	0.19	0.19	4
no EHI but has other coverage	0.47	0.01	7	0.44	0.00	11
no health insurance	-0.05	0.77	-1	-0.10	0.59	-2
RHB cost sharing						
(ref: retirees and workers pay same)						
retirees and workers don't pay	0.01	0.92	0	0.00	0.98	0
retirees pay less than workers	-0.06	0.74	-1	-0.01	0.95	0
retirees pay more than workers	-0.05	0.62	-1	0.13	0.29	3
don't know what retirees pay	-0.13	0.33	-2	-0.25	0.02	-5
Social Security						
(ref: does not have or expect)						
has or expects	-0.09	0.54	-2	0.02	0.83	1
Pension						
(ref: none or unknown)						
has defined contribution	0.19	0.11	3	0.09	0.38	2
has defined benefit	0.40	0.00	7	0.57	0.00	14
has both	0.31	0.01	5	0.60	0.00	15
has but type unknown	0.08	0.77	1	0.58	0.11	16
Health status indicators						
body mass index	0.01	0.17	0	0.00	0.85	0
multiple chronic conditions	0.11	0.15	2	0.04	0.55	1
Age in 1992		not reported		0.19	0.00	4
Nonwhite		not reported		-0.12	0.16	-3
Married		not reported		-0.10	0.30	-2
Years of schooling		not reported		-0.02	0.04	0
Months between interviews		not reported		0.00	0.93	0
Intercept	-2.74	0.00	na	-11.78	0.00	na
Log likelihood		-932			-1,038	
Sample size		2,638			2,688	
Number retired		422			493	
Percent retired		16			18	
Predicted percent retired		not reported			13	
Died		not reported			47	
Left survey (all reasons)		553			494	

Sources: Left panel from Rogowski and Karoly (2000, Table 1, Model II). Right panel gives authors' computations from the Health and Retirement Study (see section 3.2).

Table 2

Probit estimates of transition to retirement, 1992 to later years, full-time older male workers in the HRS
(probit betas, with P-values and marginal effects)

Independent Variable	1998 (Wave 4)			2000 (Wave 5)			2002 (Wave 6)			2004 (Wave 7)		
	Probit β	P-value	Marginal Effect (%)	Probit β	P-value	Marginal Effect (%)	Probit β	P-value	Marginal Effect (%)	Probit β	P-value	Marginal Effect (%)
Retiree health benefits (RHB)												
[ref: has employer-provided health insurance (EHI) but no RHB]												
has EHI and RHB	0.20	0.06	6	0.15	0.16	6	0.25	0.01	10	0.27	0.01	11
has EHI, RHB unknown	-0.20	0.13	-6	0.07	0.59	3	-0.01	0.92	0	-0.08	0.48	-3
no EHI but has other coverage	0.08	0.56	3	0.06	0.65	2	0.14	0.29	5	-0.04	0.77	-1
no health insurance	-0.27	0.07	-8	-0.11	0.41	-4	0.03	0.79	1	-0.02	0.87	-1
RHB cost sharing												
(ref: retirees and workers pay same)												
retirees and workers don't pay	0.22	0.02	7	0.21	0.03	8	0.18	0.07	7	0.07	0.52	3
retirees pay less than workers	0.05	0.81	2	0.21	0.36	8	0.36	0.11	14	-0.13	0.59	-5
retirees pay more than workers	0.08	0.49	3	0.17	0.12	7	0.12	0.29	5	-0.04	0.73	-2
don't know what retirees pay	-0.11	0.31	-3	0.04	0.73	1	0.11	0.26	5	0.01	0.93	0
Social Security												
(ref: does not have or expect)												
has or expects	-0.11	0.30	-4	-0.05	0.59	-2	-0.23	0.03	-9	-0.14	0.17	-6
Pension (re: none or unknown)												
has defined contribution	0.27	0.00	9	0.34	0.00	13	0.39	0.00	15	0.39	0.00	14
has defined benefit	0.57	0.00	19	0.70	0.00	27	0.66	0.00	25	0.67	0.00	24
has both	0.68	0.00	24	0.89	0.00	34	0.77	0.00	29	0.87	0.00	30
has but type unknown	1.01	0.01	38	0.54	0.17	21	1.16	0.01	37	1.18	0.00	34

Health status indicators												
body mass index	0.00	0.87	0	0.00	0.93	0.00	0.00	0.77	0	0.00	0.75	0
multiple chronic conditions	0.01	0.87	0	0.00	0.94	0.00	-0.03	0.66	-1	-0.08	0.15	-3
Age in 1992	0.19	0.00	6	0.19	0.00	7	0.14	0.00	6	0.12	0.00	5
Nonwhite	-0.08	0.28	-3	-0.16	0.04	-6	-0.15	0.04	-6	-0.09	0.22	-4
Married	0.00	1.00	0	-0.04	0.62	-2	-0.11	0.16	-4	-0.08	0.34	-3
Years of schooling	-0.03	0.01	-1	-0.04	0.00	-1	-0.03	0.00	-1	-0.04	0.00	-1
Months between interviews	0.01	0.09	0	0.00	0.56	0	-0.01	0.16	0	0.02	0.01	1
Intercept	-11.73	0.00		11.02	0.00		-6.22	0.00		-8.97	0.00	
Log likelihood		-1,249			-1,326			-1,411			-1,343	
Sample size		2,560			2,423			2,359			2,238	
Number retired		745			948			1,197			1,282	
Percent retired		29			39			51			57	
Predicted percent retired		25			37			51			58	
Died		56			58			80			77	
Left survey (all reasons)		575			712			776			897	

Source: Authors' computations from the Health and Retirement Study (see section 3.3).

Table 3

Probit estimates of the interaction between age and retiree health benefits in the retirement probability equation
(marginal effects and P-values)

Independent variable	1996 (Wave 3)		1998 (Wave 4)		2000 (Wave 5)		2002 (Wave 6)		2004 (Wave 7)	
	M.E. (%)	P-value								
Age in 1992	7	0.00	6	0.00	6	6	5	0.00	4	0.00
RHB and EHI	86	0.05	19	0.60	45	45	71	0.02	77	0.02
Age-RHB interaction	-1	0.10	-0	0.72	-1	-1	-1	0.04	-1	0.03

Source: Authors' computations from the Health and Retirement Study (see section 3.3).

Figure 1

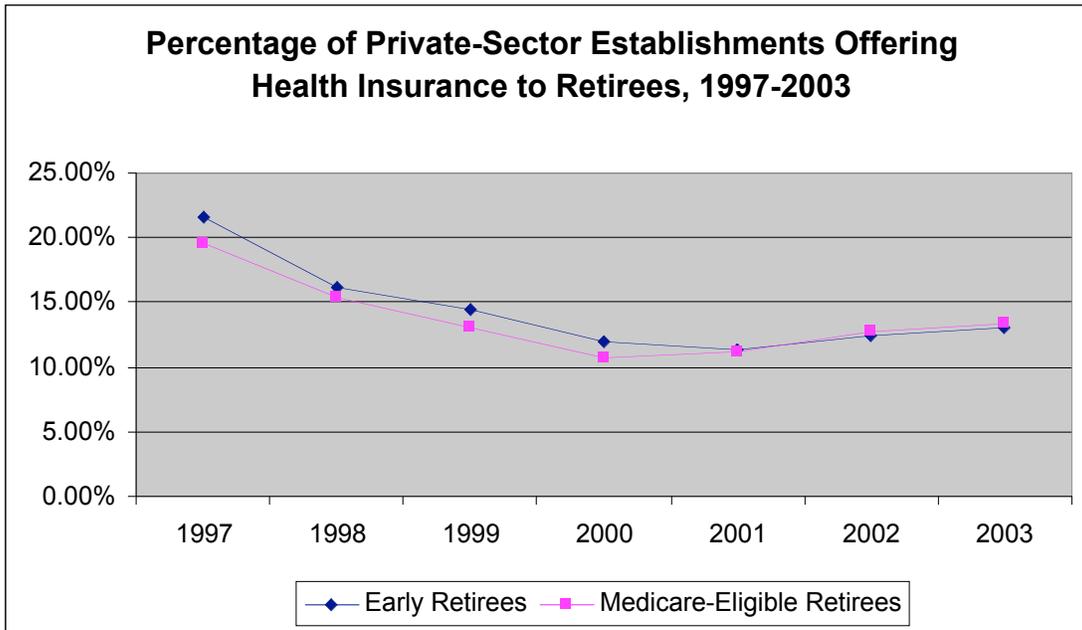


Figure 2

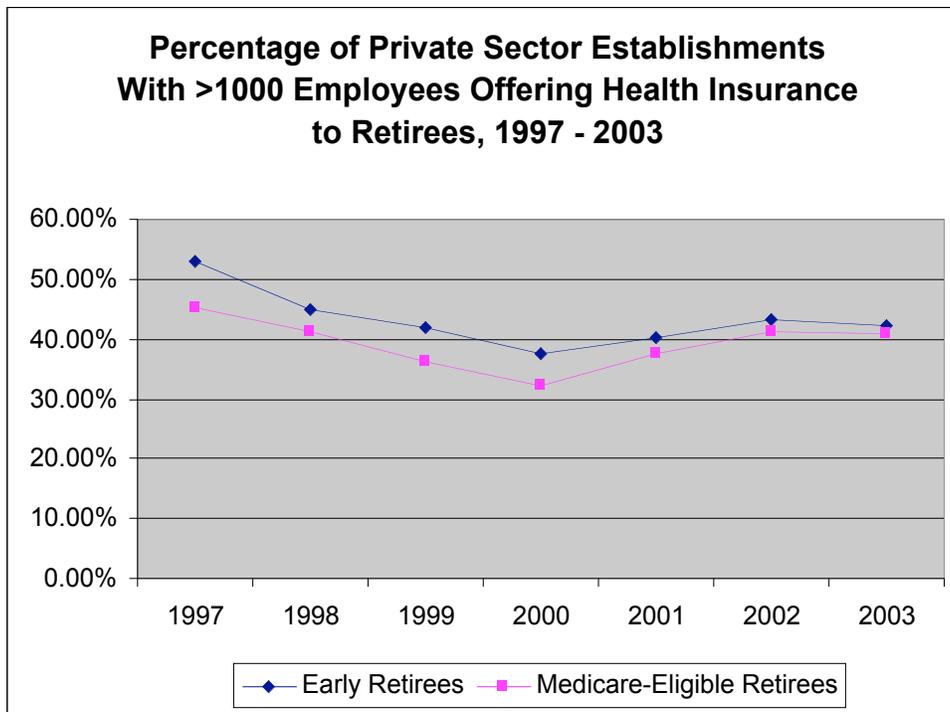


Figure 3

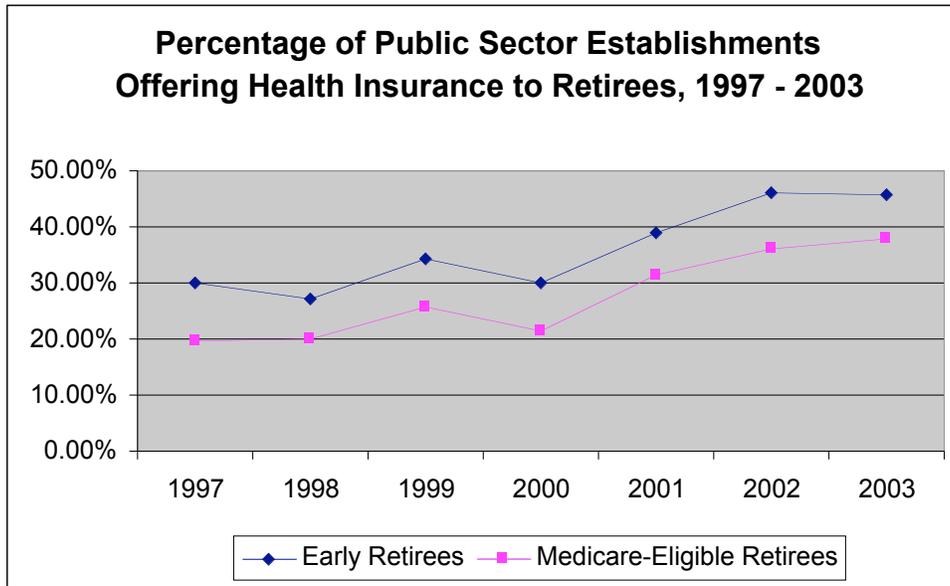


Figure 4

