# *Evaluating the Initial Impact of Eliminating the Retirement Earnings Test*

*by Jae G. Song**

*How did workers aged 65–69 respond to the removal of the retirement earnings test in 2000? Using Social Security administrative data matched with data from the Survey of Income and Program Participation, the author finds that the higher earners in this group increased their earnings, while the lower earners did not. The author reports an acceleration of benefit applications by workers aged 65–69 but no clear evidence of increased employment in this age group.*

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## *Summary*

Under the retirement earnings test, Social Security benefits are reduced if earnings exceed specified amounts, although the benefit reduction is partly offset by future benefit increases. By imposing a tax on the earnings of beneficiaries, the earnings test provided a disincentive for them to supplement retirement income by working. The Senior Citizens Freedom to Work Act of 2000 eliminated the earnings test for Social Security beneficiaries who have reached the full retirement age.

This article presents the first study of labor force activity (earnings and employment) among individuals aged 65–69 before and immediately after this sudden rule change. Drawing on Social Security administrative data, the author examines three widely expected reactions: increased return to work, increased hours worked, and accelerated applications for old-age benefits.

The analysis finds that removing the retirement earnings test:

- *Encouraged some workers to increase their earnings*. The increases in earnings are large and significant among higher earners but are not statistically significant among lower earners.
- *Had little effect on employment.* Removing the earnings test appears to have had no immediate, significant effect on the employment rate of older workers. Employment of older people may be affected in the longer run, however.
- *Slightly increased the pace of applications for benefits*. Applications rose about 2 percent in the 65–69 age group in 2000. The overall acceleration will probably be small, however, because most individuals in this age group apply for benefits before reaching the full retirement age.

Although the current analysis captures the effects of retaining older workers in the labor force, these initial results may not capture all the effects of eliminating the retirement earnings test, however, for two reasons. First, the analysis covers only a single year—the year the earnings test was eliminated. Since eliminating the earnings test may have had little effect on people who had already retired, its full effect may not be apparent for several years. Second, the analysis applies only to workers aged 65–69. Eliminating the earnings test for people above the full retirement age may also encourage younger workers to delay

retirement and therefore increase their labor supply. Further analysis will therefore be required to determine the longer-run impact of eliminating the retirement earnings test.

## *Introduction*

The Senior Citizens Freedom to Work Act of 2000 eliminated the retirement earnings test (RET) for Social Security beneficiaries who have reached the full retirement age (FRA).[1] The removal of the RET allows older workers to remain in the labor force beyond their FRA without having their retirement benefits withheld.[2] Although not signed into law until April 7, 2000, the act applied to all of 2000 and affected everyone aged 65–69 in that year. This change provides an exceptional opportunity for gauging the labor supply disincentive effect of Social Security programs using an experimental framework (Krueger and Meyer 2002).

The RET has drawn considerable attention from economists investigating the labor supply disincentive effect of Social Security benefits. Although results from past studies indicated that the earnings test affects the incentive for working, the estimated magnitude of this effect varies among studies.[3] Early studies relied primarily on cross-sectional variations in benefit amounts. In two recent studies, Friedberg (2000) and Gruber and Orszag (2000), using an experimental approach, noticed that modifications of the RET affected some groups but not others.[4] Yet the two studies reached different conclusions. Friedberg's results indicated a small but significant RET effect on the labor supply of older workers. Gruber and Orszag's indicated that the RET had no robust influence on the labor supply and appeared to accelerate benefit receipt among eligible individuals.

This article presents the first study of reactions in the labor force activity (earnings and employment) of individuals aged 65–69 in response to the RET removal in 2000. It examines three widely expected reactions from that age group: an increased employment rate, increased hours worked, and accelerated applications for old-age benefits.[5] The availability of Social Security administrative data matched with Survey of Income and Program Participation (SIPP) data covering the time both before and after the 2000 RET removal allowed the use of a simple experimental evaluation method rather than a more complicated structural evaluation.[6] Although the RET removal may increase the earnings of those affected, the effects are likely to be uneven across the earnings distribution (see, for example, Packard 1990). Unlike other evaluation studies that focus on mean effects, this study evaluates effects across the distribution of an outcome variable using quantile (percentile) regression.[7]

This study finds that:

- The effect of the RET removal on earnings (work effort) is uneven over the earnings distribution—large and significant in the higher percentiles but not statistically significant in the lower percentiles. Thus, the removal appears to increase earnings (labor hours) for individuals with higher earnings.
- There is no clear evidence of the effect of the RET removal on the labor force participation (employment) rate.
- Applications for benefits accelerated after the removal of the RET. A higher ratio of individuals aged 65–69 appeared in the 2000 applicant pool than in previous years (about 2 percent of the applicant population aged 65–69 appears to be attributable to the RET removal in 2000).

## *Retirement Earnings Test and Data Sets Used*

The RET operates in a relatively simple manner: current Social Security benefits are reduced if earnings exceed the threshold amounts, and the reduction in those benefits is partly offset by future benefit increases. For workers who do not receive benefits because of the RET (or for any other reason), future benefits are increased for each month that benefits are not paid. This increase, called a delayed retirement credit, is being gradually increased and will reach an actuarially fair rate for people who turn age 65 in 2008. During the period analyzed in this study, however, the credit was below the actuarially fair rate. Thus, the RET reduces the work effort of beneficiaries and delays benefit applications by working nonbeneficiaries.

Before 2000, the RET had been altered several times. Effective in 1990, the benefit withholding rate was lowered from $1 for each $2 of earnings above the RET threshold to $1 for each $3 for individuals aged 65–69. The RET thresholds for individuals aged 65–69 as of 1995, 1996, 1997, 1998, and 1999 were $11,280, $12,500, $13,500, $14,500, and $15,500, respectively. Although the RET no longer applies to most individuals who attain the full retirement age, beneficiaries who have not reached the FRA by the end of the prior year are still subject to the RET in the year they reach the FRA (Social Security Administration 2001a, 123).

Samples used in this study are drawn from the 1996 SIPP panel. The SIPP records are matched with Social Security Administration (SSA) administrative data. The SSA Summary Earnings Record (SER) provides historical information on earnings, and the Master Beneficiary Record (MBR) files supply information about application for and entitlement to retirement benefits. In addition, the

SSA Supplemental Security Record (SSR) is used to identify the benefit entitlement status of Supplemental Security Income (SSI) applicants, and the Numident file is used to identify and remove the records of those who died during the study period.[8]

The SIPP is a national survey by the U.S. Census Bureau designed as a continuous series of national panels, since 1984, with sample sizes ranging from 14,000 to 36,700 interviewed households. The 1996 SIPP panel consists of 12 waves covering 48 months from October, November, or December 1995, or January 1996, depending on the rotation group. Each wave consists of a core file and a topical module. Core files provide individual and family demographic characteristics and income and earnings information for 1996 to 1999. The 1996 SIPP topical module files provide data on health care and medical expenditures (as well as wealth and assets) in 1-year intervals in waves 3, 6, 9, and 12.

The SER file contains annual summaries of individuals' Social Security taxable earnings from 1951 to the present and the total amount they earned in the 14-year period between 1937 and 1950. The extract of the SER used in this study includes both annual earnings through calendar year 2000 and annual quarters of coverage earned.[9] To be eligible for Social Security benefits, a worker must have acquired the minimum number of quarters of coverage.[10] Benefit amounts are based on the size of covered earnings over that period (Myers 1993).

The MBR file contains the data needed to calculate Social Security benefit amounts under the Old-Age Survivors, and Disability Insurance (OASDI) programs—including data on both age-related and disability-related retirees. An MBR record is established whenever an individual applies for benefits and the application is approved. The MBR can be used to identify whether a person has applied for retirement benefits, whether he or she is being paid benefits, and what the benefit amount is.[11] The MBR extract used in this study contains OASDI application data through 2001.

Although the SIPP covers only January 1996 through March 2000 (depending on rotation group), the MBR and SER both cover the full year 2000. Thus, the data sets can be used to investigate changes in labor force activities of individuals aged 65–69 before (1996–1999) and after (2000) the removal of the RET. This study uses two labor force performance variables to measure the effect of the RET removal: the SER annual earnings to indicate whether the RET removal caused older workers to work more than they did before the removal, and annual Social Security taxable earnings (including zero earnings) to determine whether older workers participated in the labor force.[12, 13] This information about annual participation reflects whether the RET removal induced older workers to reenter the labor force.

## *Labor Force Behavior of Individuals Aged 65–69*

The likely labor force effect of removing the RET depends on the size of the age group being considered and the number of individuals who modify their work behavior in response to its removal. Authors of previous studies have argued that the RET removal would have no significant effect on the aggregated work level because personal and economic characteristics of most individuals aged 65–69 make them unlikely to be affected (Packard 1990; Gruber and Orszag 2000). This analysis therefore begins with a description of the labor force status and characteristics of individuals aged 65–69.

Out of a total U.S. population of 284.3 million in 1999, 9.6 million individuals were aged 65–69. Eighty-three percent of them were fully insured. OASDI beneficiaries in the three major categories (retired workers, spouses, and widow(er)s) totaled 8.35 million (87 percent of the 9.6 million).[14] Table 1 reports the labor force status of SIPP respondents aged 65–69. It shows the (earliest) OASDI benefit entitlement age for OASDI benefits for individuals who reached ages 65–69 in each year from 1996 through 2000. As expected, nearly 90 percent of those aged 65–69 are OASDI beneficiaries, and 5.4 percent to 6.2 percent are SSI beneficiaries.[15] About 80 percent of individuals aged 65–69 are fully insured.[16] Slightly more than 25 percent appear to have been employed (or have Social Security taxable earnings) during the year they reached ages 65–69; more than 6 percent earned more than the earnings-test threshold.[17] These workers with recent earnings are the ones most likely to be affected by removing the retirement earnings test.

Another expected effect of removing the RET is accelerated applications for OASDI benefits. Table 1 shows that most OASDI beneficiaries began to receive benefits before full retirement age during the period before the 2000 removal of the RET. The number of individuals who are neither OASDI nor SSI beneficiaries in each of the 5 years is less than 7 percent of the age group, and most of them are uninsured. These numbers suggest that OASDI applications may increase because of the removal of the RET. The magnitude of the total increase probably will be small, however, because most of the individuals in this age group have already applied for benefits before they reach the FRA.

Older workers' labor force activities depend on factors such as their health, personal preferences, and other income (for example, private pensions, means-tested benefits, and spouse's income). Table 2 reports selected characteristics of beneficiaries aged 65–69 by their earnings amounts during the 1996 SIPP panel period (1996–1999).[18] Results indicate significant variations in education levels across different earnings groups. Only

13 percent to 16 percent of those who have nonzero earnings below the earnings-test thresholds have college degrees or higher, compared with 28 percent to 33 percent of those who earned more than the thresholds. Both health conditions and occupation types also vary significantly across different earnings groups. Healthy workers in professional occupations earn more than the threshold amounts. While median values of net worth of these higher earners are almost two times higher than those of other groups, per capita family incomes (net of personal earnings) are similar across the different groups. Those who are better educated, workers in professional occupations and industries, and those who are healthy are more likely to be employed between the ages of 65 and 69 and to earn more than the yearly RET thresholds (Table 2).

### *Effects of the RET Removal on Earnings and Labor Force Participation*

The effects of the RET removal may be different for individuals who were OASDI beneficiaries at the time of the removal and for those who were not. Although the RET removal may affect the work efforts of beneficiaries directly through income and substitution effects, its effect on nonbeneficiaries appears to be more complicated, particularly for those with earnings above the RET threshold.[19] If removing the RET increases benefit applications, it affects the work efforts of individuals who are induced to apply for benefits. An income effect may reduce the work efforts of these "induced beneficiaries." The work efforts of the rest of the nonbeneficiaries may not be affected by the removal of the RET.

Measuring the effect (mostly through the income effect) of the RET removal on the work effort of beneficiaries who were induced to apply is empirically difficult. The reason is that although the data provide exact dates of OASDI benefit eligibility and application, there are only annual summary earnings data. For the year of benefit entitlement (2000), earnings generated before an entitlement (application) cannot be distinguished from earnings generated afterward. Further, the number of induced beneficiaries appears to be small in these data.[20] Hence, this analysis is limited to the work efforts of

**Table 1.**
**Labor force status of SIPP respondents aged 65–69, 1996–2000**

| Universe | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| All aged 65–69 | 3,101 | . . . | 3,071 | . . . | 3,027 | . . . | 2,945 | . . . | 2,970 | . . . |
| OASDI beneficiaries[a] | 2,732 | 88.1 | 2,700 | 87.9 | 2,675 | 88.4 | 2,619 | 88.9 | 2,648 | 89.2 |
| OASDI beneficiaries, by age at entitlement | | | | | | | | | | |
| 61 or younger | 388 | 14.2 | 402 | 14.9 | 398 | 14.9 | 396 | 15.1 | 420 | 15.9 |
| 62 | 1,426 | 52.2 | 1,372 | 50.8 | 1,385 | 51.8 | 1,342 | 51.2 | 1,353 | 51.1 |
| 63–64 | 557 | 20.4 | 569 | 21.1 | 531 | 19.9 | 523 | 20.0 | 481 | 18.2 |
| 65 | 306 | 11.2 | 305 | 11.3 | 301 | 11.3 | 290 | 11.1 | 330 | 12.5 |
| 66 or older | 55 | 2.0 | 52 | 1.9 | 60 | 2.2 | 68 | 2.6 | 64 | 2.4 |
| SSI beneficiaries | 193 | 6.2 | 184 | 6.0 | 163 | 5.4 | 159 | 5.4 | 174 | 5.9 |
| Fully insured | 2,453 | 79.1 | 2,437 | 79.4 | 2,421 | 80.0 | 2,370 | 80.5 | 2,403 | 80.9 |
| Employed, earnings above zero | 801 | 25.8 | 835 | 27.2 | 823 | 27.2 | 827 | 28.1 | 851 | 28.7 |
| Earnings above RET threshold[b] | 207 | 6.7 | 201 | 6.6 | 203 | 6.7 | 181 | 6.2 | 222 | 7.5 |
| Earnings below RET threshold | 594 | 19.2 | 634 | 20.6 | 620 | 20.5 | 646 | 21.9 | 629 | 21.2 |
| Non-OASDI or SSI beneficiaries | | | | | | | | | | |
| Insured | 103 | . . . | 92 | . . . | 74 | . . . | 59 | . . . | 46 | . . . |
| Not insured | 185 | . . . | 203 | . . . | 211 | . . . | 206 | . . . | 211 | . . . |

SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation (SIPP) matched with the Social Security Administration's Master Beneficiary Record and Supplemental Earnings Record files.

NOTE: . . . = not applicable; RET = retirement earnings test.

a. Includes both primary and auxiliary beneficiaries whose benefit entitlements were met as of December 31 of the previous year. The numbers of primary beneficiaries in 1996 through 2000 are 2,385, 2,395, 2,417, 2,437, and 2,470, respectively.

b. For illustrative purposes, this article uses $16,500 for the RET threshold for 2000.

**Table 2.**
**Mean characteristics of beneficiaries aged 65–69, by employment status and earnings, 1996–1999**

| Characteristic | Employed | | Not employed |
|---|---|---|---|
| | Earnings above RET threshold | Earnings below RET threshold | |
| | ***1996 (N = 2,732)*** | | |
| Age (years) | 67.9 | 67.8 | 68.1 |
| Male | 0.6 | 0.6 | 0.4 |
| White, non-Hispanic | 0.8 | 0.7 | 0.7 |
| Education (16 years or more) | 0.30 | 0.16 | 0.11 |
| Work-limiting health | 0.13 | 0.25 | 0.39 |
| Medical expenditures (thousands of dollars)[a] | | | |
| Mean | 1.1 | 1.1 | 1.3 |
| Median | 0.5 | 0.6 | 0.6 |
| Net worth (tens of thousands of dollars)[b] | | | |
| Mean | 43.6 | 22.0 | 21.1 |
| Median | 20.8 | 10.9 | 10.9 |
| Family income (thousands of dollars)[a] | | | |
| Mean | 67.0 | 34.3 | 30.7 |
| Median | 45.8 | 29.5 | 25.3 |
| Per capita | 16.0 | 14.8 | 15.1 |
| Median net earnings (thousands of dollars)[a] | 11.5 | 12.5 | 12.7 |
| Occupation | | | |
| Self-employed | 0.54 | 0.53 | 0.30 |
| Professional occupation[a] | 0.41 | 0.17 | 0.03 |
| Professional services industry | 0.37 | 0.25 | 0.03 |
| | ***1997 (N = 2,700)*** | | |
| Age (years) | 66.6 | 66.8 | 67.1 |
| Male | 0.6 | 0.6 | 0.4 |
| White, non-Hispanic | 0.7 | 0.7 | 0.7 |
| Education (16 years or more) | 0.30 | 0.13 | 0.11 |
| Work-limiting health | 0.08 | 0.23 | 0.31 |
| Medical expenditures (thousands of dollars)[a] | | | |
| Mean | 1.4 | 1.1 | 1.2 |
| Median | 0.7 | 0.6 | 0.6 |
| Net worth (tens of thousands of dollars)[b] | | | |
| Mean | 62.4 | 25.1 | 23.8 |
| Median | 21.1 | 11.6 | 10.6 |
| Family income (thousands of dollars)[a] | | | |
| Mean | 65.7 | 34.9 | 30.4 |
| Median | 52.2 | 28.4 | 22.5 |
| Per capita | 16.1 | 15.5 | 15.0 |
| Median net earnings (thousands of dollars)[a] | 13.2 | 13.0 | 12.8 |
| Occupation | | | |
| Self-employed | 0.45 | 0.54 | 0.31 |
| Professional occupation[a] | 0.34 | 0.17 | 0.04 |
| Professional services industry | 0.35 | 0.24 | 0.05 |

(Continued)

**Table 2.**
**Continued**

| Characteristic | Employed: Earnings above RET threshold | Employed: Earnings below RET threshold | Not employed |
|---|---|---|---|
| | | ***1998 (N = 2,675)*** | |
| Age (years) | 66.0 | 65.8 | 66.0 |
| Male | 0.6 | 0.5 | 0.4 |
| White, non-Hispanic | 0.8 | 0.7 | 0.7 |
| Education (16 years or more) | 0.33 | 0.13 | 0.13 |
| Work-limiting health | 0.09 | 0.16 | 0.27 |
| Medical expenditures (thousands of dollars)[a] | | | |
| Mean | 1.2 | 1.3 | 1.2 |
| Median | 0.6 | 0.7 | 0.6 |
| Net worth (tens of thousands of dollars)[b] | | | |
| Mean | 111.7 | 43.4 | 24.9 |
| Median | 22.6 | 12.2 | 11.5 |
| Family income (thousands of dollars)[a] | | | |
| Mean | 73.4 | 34.5 | 32.3 |
| Median | 54.9 | 29.7 | 26.7 |
| Per capita | 18.3 | 15.0 | 15.9 |
| Median net earnings (thousands of dollars)[a] | 14.6 | 12.8 | 13.6 |
| Occupation | | | |
| Self-employed | 0.48 | 0.52 | 0.31 |
| Professional occupation[a] | 0.38 | 0.16 | 0.06 |
| Professional services industry | 0.37 | 0.24 | 0.07 |
| | | ***1999 (N = 2,619)*** | |
| Age (years) | 64.9 | 64.9 | 65.1 |
| Male | 0.6 | 0.5 | 0.4 |
| White, non-Hispanic | 0.7 | 0.7 | 0.7 |
| Education (16 years or more) | 0.28 | 0.16 | 0.13 |
| Work-limiting health | 0.06 | 0.13 | 0.25 |
| Medical expenditures (thousands of dollars)[a] | | | |
| Mean | 1.3 | 1.3 | 1.4 |
| Median | 0.7 | 0.7 | 0.7 |
| Net worth (tens of thousands of dollars)[b] | | | |
| Mean | 121.6 | 48.2 | 32.8 |
| Median | 24.1 | 13.6 | 11.6 |
| Family income (thousands of dollars)[a] | | | |
| Mean | 77.3 | 40.3 | 32.7 |
| Median | 55.7 | 31.9 | 27.0 |
| Per capita | 17.9 | 17.1 | 15.8 |
| Median net earnings (thousands of dollars)[a] | 13.4 | 13.7 | 13.5 |
| Occupation | | | |
| Self-employed | 0.56 | 0.49 | 0.31 |
| Professional occupation[a] | 0.38 | 0.16 | 0.06 |
| Professional services industry | 0.36 | 0.21 | 0.08 |

SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation core files 1 through 12, topical modules 3, 6, 9, and 12, matched with the Social Security Administration's Master Beneficiary Record and Supplemental Earnings Record files.

NOTES: Includes both primary and auxiliary beneficiaries whose benefit entitlements were met as of December 31 of the previous year.

RET = retirement earnings test.

a. 1980 Census of Population Occupation Classification System codes 001–199.

b. 1980 Census of Population Industry Classification System codes 810–932.

individuals aged 65–69 who were OASDI beneficiaries before the RET removal; it excludes induced beneficiaries.

### *Constructing Comparison Groups*

The most frequently used empirical design in nonexperimental studies that use an experimental approach is difference-in-differences (see, for example, Card and Krueger 1994). Outcomes in these kinds of studies depend on the choice of comparison groups and on model specifications (LaLonde 1986). The difference-in-differences estimator requires that the mean (or other measure) change in outcome in the absence of the treatment is the same for both the treated and the nontreated groups. Comparison groups can be constructed on the basis of individuals' ages, but age-specific time trends also must be checked. In other words, earnings and labor force participation are functions of the passage of time (aging), and different age groups have their own time trends due to possible interactions between group- and time-specific effects on outcome. These age-specific time trends can cause differences across groups in the mean (or other measure) change in outcome in the absence of the treatment, which violates the assumption in this kind of model.

Thus, the present study uses comparison groups consisting of individuals who are the same age as the affected group—beneficiaries aged 65–69 in each year 1996-1999. But the effects may not be appropriately measured by a simple difference estimate that can be obtained from the difference between labor force outcomes of those aged 65–69 in 2000 and outcomes of those comparison groups. To control the time-specific effects of macroeconomic variations in the period before and after the RET change, this study includes additional comparison groups aged 62–64 and 70–72 in each of those periods (1996–1999 and 2000) and measures the relative effects after neutralizing time-specific factors other than the change in the earnings test.

### *Descriptive Analysis*

According to economic theory, the kink in the budget constraint created by the earnings test affects an individual's labor supply behavior. Thus, observed clustering just below the kink amount provides simple evidence of labor supply reactions to the RET removal. Although this clustering may not be useful in describing effects on aggregate labor supply, it shows the labor supply reactions of individuals with earnings around the earnings test threshold.

Chart 1 shows the percentage distribution of earnings in $1,000 intervals relative to the threshold for individuals aged 62–64, 65–69, and 70–72 in 1998, 1999, and 2000. Since the RET was in effect through 1999 for those aged 65–69, we expect to see clustering just below the annual RET thresholds in those groups only. Clustering exists just below annual thresholds in 1998 and 1999 but not in 2000, when the earnings distribution is more evenly spread. This supports the hypothesis that individuals react to the RET by holding down their labor supply (or earnings) during the RET's existence. These clustering results are consistent with those in Friedberg (2000).

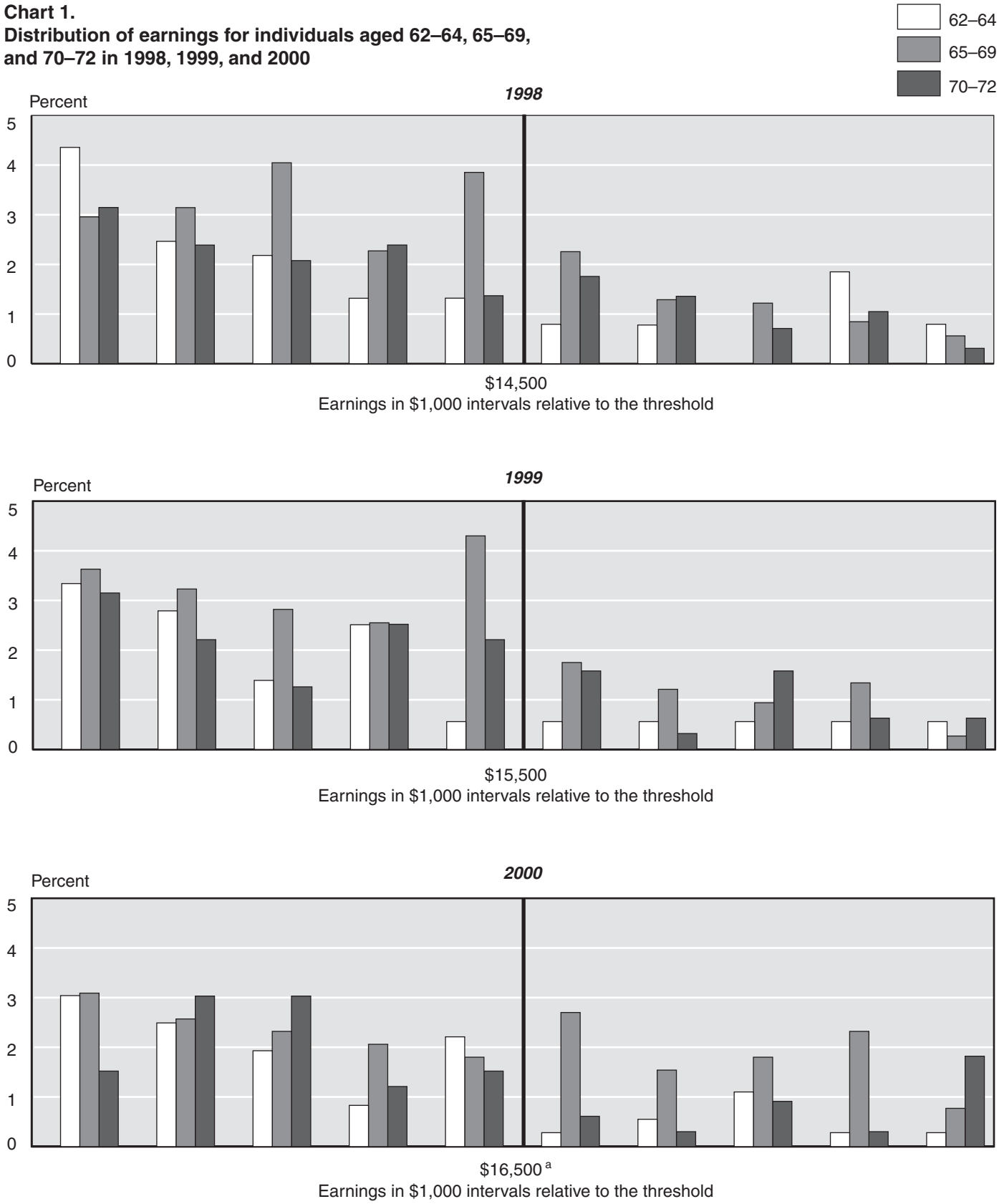
The effects of the RET removal on both the employment rate and the earnings distribution are shown in Table 3 using comparison groups. While the effects on the employment rate are barely observable, the effects on earnings can be detected in the median earnings. For example, between 1999 and 2000 the median earnings for workers aged 65–69 increased by $995. During the same period, the median (50th percentile) earnings increased by only $442 for those aged 62–64 and declined by $280 for workers aged 70–72. The 75th percentile 2000 earnings, compared with 1999 earnings, for those aged 65–69 increased by $2,613; but for those aged 62–64, it increased by only $967, and it decreased by $807 for the 70–72 age group. The significant relative gain in 2000 by those aged 65–69 is obvious.

Removing the RET shifts the upper middle portion of the earnings distribution of working OASDI beneficiaries aged 65–69. This shift suggests that some who earned less than the threshold amounts before the RET removal earned more than the threshold afterward. Table 4 shows the percentages of workers with earnings below and above the threshold. These percentages were tabulated in four different sample universes for individuals aged 65–69 in the reference years: all individuals in the age range, those employed in at least 1 year in the most recent 5 years, those employed in at least 1 year in the most recent 2 years, and OASDI beneficiaries. If the removal of the RET affected the labor supply of that age group, we would expect to see an increase in the percentage of workers earning above the threshold relative to the percentage earning below it.

For all workers in 1996 through 1999, about 6.2 percent to 6.7 percent earned above the threshold, and 19.2 percent to 21.9 percent earned below the threshold. The percentages of workers who earned above the threshold are higher in those years for the male-only sample (8.2 percent to 9.0 percent) as well as for workers who had recent (5-year) work histories (11.6 percent to 12.7 percent).

After the RET removal in 2000, the percentages of workers earning above the illustrative threshold ($16,500) increase noticeably.[21] This increase is higher among both the male-only sample and those who had recent work experience. The same tabulations using only working

**Chart 1.**
**Distribution of earnings for individuals aged 62–64, 65–69, and 70–72 in 1998, 1999, and 2000**




SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation matched with the Social Security Administration's Master Beneficiary Record and Supplemental Earnings Record files.

a. For illustrative purposes, this analysis uses $16,500 for the retirement earnings test threshold in 2000.

**Table 3.**
**Earnings distributions of working OASDI beneficiaries, by age, 1996–2000**

| Characteristic | Level | | | | | Change | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | 1996–2000 | 1997–2000 | 1998–2000 | 1999–2000 |
| ***Aged 62–64 in each year*** | | | | | | | | | |
| Total in sample | 1,135 | 1,134 | 1,145 | 1,142 | 1,166 | . . . | . . . | . . . | . . . |
| All employed | | | | | | | | | |
| Number | 314 | 337 | 371 | 359 | 362 | . . . | . . . | . . . | . . . |
| Percentage of total | 27.7 | 29.7 | 32.4 | 31.4 | 31.1 | 3.4 | 1.3 | -1.4 | -0.4 |
| Earnings (dollars) | | | | | | | | | |
| Mean | 6,193 | 6,635 | 6,974 | 7,189 | 7,813 | 1,620 | 1,178 | 839 | 624 |
| Standard deviation | 7,604 | 7,799 | 8,412 | 8,392 | 9,309 | . . . | . . . | . . . | . . . |
| 100th percentile | 62,700 | 64,007 | 68,400 | 70,603 | 76,200 | . . . | . . . | . . . | . . . |
| 90th percentile | 11,863 | 13,694 | 13,720 | 14,264 | 16,154 | 4,291 | 2,460 | 2,434 | 1,890 |
| 75th percentile | 8,141 | 8,454 | 9,012 | 9,571 | 10,538 | 2,397 | 2,084 | 1,526 | 967 |
| 50th percentile (median) | 4,772 | 4,979 | 5,141 | 5,572 | 6,014 | 1,242 | 1,035 | 873 | 442 |
| 25th percentile | 1,294 | 1,499 | 1,492 | 1,374 | 1,564 | 270 | 65 | 72 | 190 |
| Number employed | 739 | 750 | 812 | 826 | 813 | . . . | . . . | . . . | . . . |
| Mean earnings (dollars) | 16,590 | 16,930 | 19,311 | 20,344 | 22,236 | . . . | . . . | . . . | . . . |
| ***Aged 65–69 in each year*** | | | | | | | | | |
| Total in sample | 2,704 | 2,666 | 2,640 | 2,582 | 2,616 | . . . | . . . | . . . | . . . |
| All employed | | | | | | | | | |
| Number | 708 | 735 | 735 | 744 | 777 | . . . | . . . | . . . | . . . |
| Percentage of total | 26.2 | 27.6 | 27.8 | 28.8 | 29.7 | 3.5 | 2.1 | 1.9 | 0.9 |
| Earnings (dollars) | | | | | | | | | |
| Mean | 10,782 | 10,753 | 11,491 | 11,434 | 12,522 | 1,740 | 1,769 | 1,031 | 1,088 |
| Standard deviation | 14,111 | 14,454 | 15,052 | 15,026 | 15,119 | . . . | . . . | . . . | . . . |
| 100th percentile | 62,700 | 65,400 | 68,400 | 72,600 | 76,200 | . . . | . . . | . . . | . . . |
| 90th percentile | 27,375 | 23,539 | 28,225 | 26,064 | 30,532 | 3,157 | 6,993 | 2,307 | 4,468 |
| 75th percentile | 11,765 | 12,128 | 13,385 | 13,764 | 16,377 | 4,612 | 4,249 | 2,992 | 2,613 |
| 50th percentile (median) | 6,344 | 6,207 | 6,940 | 6,904 | 7,899 | 1,555 | 1,692 | 959 | 995 |
| 25th percentile | 2,480 | 2,203 | 2,310 | 2,252 | 2,554 | 74 | 351 | 244 | 302 |
| Number employed | 801 | 835 | 823 | 827 | 851 | . . . | . . . | . . . | . . . |
| Mean earnings (dollars) | 12,393 | 12,439 | 13,209 | 12,785 | 12,973 | . . . | . . . | . . . | . . . |

(Continued)

**Table 3.**
**Continued**

| | Level | | | | | Change | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | 1996–2000 | 1997–2000 | 1998–2000 | 1999–2000 |
| ***Aged 70–72 in each year*** | | | | | | | | | |
| Total in sample | 1,471 | 1,558 | 1,528 | 1,543 | 1,538 | . . . | . . . | . . . | . . . |
| All employed | | | | | | | | | |
| Number | 251 | 290 | 288 | 317 | 330 | . . . | . . . | . . . | . . . |
| Percentage of total | 17.1 | 18.6 | 18.9 | 20.5 | 21.5 | 4.4 | 2.9 | 2.6 | 0.9 |
| Earnings (dollars) | | | | | | | | | |
| Mean | 10,788 | 10,917 | 11,185 | 11,944 | 11,385 | 597 | 468 | 200 | -559 |
| Standard deviation | 15,047 | 16,098 | 16,520 | 16,801 | 16,681 | . . . | . . . | . . . | . . . |
| 100th percentile | 62,700 | 65,400 | 68,400 | 72,600 | 76,200 | . . . | . . . | . . . | . . . |
| 90th percentile | 26,618 | 29,335 | 30,381 | 30,519 | 26,779 | 161 | –2556 | –3602 | –3740 |
| 75th percentile | 11,761 | 11,324 | 12,110 | 13,539 | 12,732 | 971 | 1,408 | 622 | –807 |
| 50th percentile (median) | 5,328 | 4,800 | 4,526 | 6,240 | 5,960 | 632 | 1,160 | 1,434 | –280 |
| 25th percentile | 1,692 | 1,606 | 1,475 | 2,260 | 1,635 | 57 | 29 | 160 | –625 |
| Number employed | 267 | 304 | 303 | 333 | 342 | . . . | . . . | . . . | . . . |
| Mean earnings (dollars) | 10,827 | 10,923 | 11,410 | 11,708 | 11,219 | . . . | . . . | . . . | . . . |

SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation (SIPP) matched with the Social Security Administration's Supplemental Earnings Record file.

NOTES: All earnings values are in current dollars. Includes both primary and auxiliary beneficiaries whose benefit entitlements were met as of December 31 of the previous year.
. . . = not applicable.

beneficiaries indicate that the percentages of beneficiaries who earned above the threshold, especially males and those who had recent work experience, were higher in 2000 than before the removal.

### *Regression Analysis*

The descriptive analysis presented above suggests that the removal of the RET changed the shape of the earnings distribution of those affected, conditional on working, but did not significantly change employment rates. This section presents reduced-form regression estimates of both the effect on employment rates using a probit specification and the effect on the earnings distribution using percentile regressions. A percentile regression is used, rather than a mean-based regression technique, to capture the uneven effects of the RET removal across the earnings distribution (see Packard 1990 for theoretical predictions of these uneven effects). And since the distribution of annual earnings among aged persons is notoriously nonnormal, the mean change is probably not the best measure of the effect of the RET removal on earnings.

The regression estimates are based on the following difference-in-differences model:

$$y_{it}^{j} = a + g\Delta_{t} + h\Delta^{j} + \beta\Delta_{t}^{j} + cX_{i} + e_{it}^{j},$$

where $y$ is annual Social Security taxable earnings or employment status, $X$ is a vector of the individual's characteristics, $\Delta$s are dummy variables, index $j = 1$ for the affected group (those aged 65–69) and 0 otherwise (comparison groups), and time index $t = 1$ after the RET removal (2000) and 0 otherwise (preremoval period). Hence $\Delta_{t} = 1$ if $t = 1$ and 0 otherwise; $\Delta^{j} = 1$ if $j = 1$ and 0 otherwise; and $\Delta_{t}^{j} = 1$ if $t = 1$ and $j = 1$ and 0 otherwise. Thus the estimate of $\beta$ represents the effects of the RET removal on earnings amounts or on employment rates after controlling for time and group effects. The estimate of $\beta$ would be zero in the absence of the effects.

This study first estimates the effects of the RET removal on the employment rate using the above reduced form, difference-in-differences probit model. Estimated coefficients of $\beta$ are small and statistically insignificant in the model using the controls: 0.0188 (standard error of

**Table 4.**
**Percentage of workers aged 65–69 in 1996–2000 who earned below or above the annual retirement earnings test maximum, 1996–2000**

| Universe | 1996 | | 1997 | | 1998 | | 1999 | | 2000[a] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | $1–$12,500 | Above $12,500 | $1–$13,500 | Above $13,500 | $1–$14,500 | Above $14,500 | $1–$15,500 | Above $15,500 | $1–$16,500 | Above $16,500 |
| All workers aged 65–69 | | | | | | | | | | |
| All | 19.2 | 6.7 | 20.6 | 6.6 | 20.5 | 6.7 | 21.9 | 6.2 | 21.2 | 7.5 |
| Male | 24.3 | 8.4 | 26.3 | 8.2 | 25.4 | 9.0 | 26.7 | 8.7 | 25.3 | 10.9 |
| Worked in at least 1 year in recent 5 years | | | | | | | | | | |
| All | 34.3 | 12.5 | 37.4 | 12.4 | 37.1 | 12.7 | 39.2 | 11.6 | 38.9 | 14.2 |
| Male | 36.8 | 13.2 | 39.8 | 13.0 | 38.2 | 14.0 | 39.9 | 13.6 | 39.7 | 17.5 |
| Worked in at least 1 year in recent 2 years | | | | | | | | | | |
| All | 49.4 | 18.4 | 53.3 | 18.1 | 52.2 | 18.5 | 54.7 | 17.0 | 52.5 | 19.7 |
| Male | 52.1 | 19.4 | 56.3 | 18.5 | 51.2 | 19.4 | 54.2 | 19.1 | 52.3 | 24.0 |
| OASDI beneficiaries[b] | | | | | | | | | | |
| All | 20.6 | 5.6 | 22.2 | 5.4 | 22.1 | 5.7 | 23.4 | 5.4 | 22.3 | 7.4 |
| Male | 25.6 | 7.0 | 27.7 | 6.5 | 26.8 | 7.3 | 28.0 | 7.2 | 26.2 | 10.3 |

SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation matched with the Social Security Administration's Master Beneficiary Record and Supplemental Earnings Record files.

a. The threshold of $16,500 for 2000 is chosen for illustrative purposes.

b. Includes both primary and auxiliary beneficiaries whose benefit entitlements were met as of December 31 of the previous year.

0.0497), indicating that the RET removal had no immediate, significant effect on the employment rate of older workers.[22]

Estimates of the effect of removing the RET on earnings are shown in Table 5; comparison groups include age groups 62–64 and 70–72 from 1996 to 2000. The top panel shows estimates of the regression on the 25th, 50th, 65th, 75th, and 85th percentiles, including only time and group dummies as covariates. The bottom panel shows regression results from a specification including additional covariates: sex, self-employment status, education level, health status (lagged), and amounts of alternative per capita family income (lagged). Estimates of standard errors using standard methods tend to underestimate the standard error when errors are heteroscedastic (that is, when errors do not have a common variance). Hence this study reports estimates of standard errors using bootstrap resampling with 100 repetitions (Stata 1999, release 7, pp. 18–20). Results in the top panel of Table 5 show that removing the RET increases earnings at the 65th, 75th, and 85th percentiles by $1,443, $2,257, and $3,472, respectively. Results in the bottom panel, where the regression controls for additional individual and family characteristics, indicate that the removal increases earnings of those percentiles by $1,153, $2,366, and $2,852, respectively. According to results of the percentile regression analysis, the RET removal has a statistically significant effect on the higher percentiles of earnings.

Whether these estimates can be interpreted as a causal effect of the RET removal on earnings relies on the assumption that the estimate of $\beta$ is zero in the absence of the removal. There are two simple ways to test this assumption. One is to test whether the estimate of $\beta$ is equal to zero, using samples of nonbeneficiaries who were working in 1996, 1997, 1998, 1999, and 2000. Since working nonbeneficiaries did not react to the removal of the RET, the estimate would be zero if $\beta$ does identify the causal effect. The other way is to test whether the estimate of $\beta$ is equal to zero, using only data from the 1996–1999 period (Angrist and Krueger 1999). Since earnings test rules did not change for individuals aged 65–69 during that period, the estimate of $\beta$ would be zero here as well. The former approach is less attractive in this study because the sample includes only a small number of working nonbeneficiaries.[23]

Hence this study uses the latter test. Table 6 presents the results of estimates where the estimates for the beta ($\beta$) term are small and statistically insignificant in all percentiles. The results thus support the validity of the causal interpretation $\beta$ of these estimates.[24]

**Table 5.**
**Difference-in-differences estimates of the effect of removing the retirement earnings test on alternative comparison groups (ages 62–64 and 70–72), by percentiles of annual Social Security taxable earnings, 1996–2000**

| | 25th percentile | | 50th percentile | | 65th percentile | | 75th percentile | | 85th percentile | | OLS standard | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error |
| ***Estimates including time and group dummies as covariates (N = 6,918)*** | | | | | | | | | | | | |
| Constant | 2.3830 | 0.1958 | 7.4215 | 0.4870 | 10.6274 | 0.4623 | 14.0800 | 0.5576 | 18.8217 | 1.0263 | 11.7551 | 0.6453 |
| Time dummy | | | | | | | | | | | | |
| 1996 | 0.0448 | 0.1994 | -1.1205 | 0.5092 | -1.0794 | 0.4820 | -2.1300 | 0.5397 | -1.7067 | 0.9780 | -1.0483 | 0.6849 |
| 1997 | -0.0780 | 0.2093 | -1.1785 | 0.4959 | -1.0515 | 0.5071 | -1.7499 | 0.5642 | -2.0642 | 1.0909 | -0.9270 | 0.6757 |
| 1998 | -0.0770 | 0.2028 | -0.7882 | 0.5290 | -0.4684 | 0.4495 | -1.0800 | 0.6261 | -1.0449 | 1.2221 | -0.3904 | 0.6721 |
| 1999 | -0.0678 | 0.2445 | -0.3426 | 0.5314 | -0.1184 | 0.4599 | -0.4563 | 0.6200 | -0.6017 | 1.0078 | -0.1985 | 0.6697 |
| Group dummy | | | | | | | | | | | | |
| Ages 62–64 | -0.8763 | 0.1694 | -1.4360 | 0.2841 | -2.3070 | 0.3155 | -3.8800 | 0.2906 | -6.2642 | 0.7150 | -4.2766 | 0.4358 |
| Ages 70–72 | -0.7360 | 0.1646 | -1.4215 | 0.3468 | -1.0979 | 0.3727 | -0.9010 | 0.5480 | 2.9942 | 1.5117 | -0.0031 | 0.4606 |
| Beta ($\beta$) | 0.1715 | 0.3845 | 0.4772 | 0.6194 | 1.4433 | 0.7481 | 2.2565 | 0.9483 | 3.4724 | 1.7498 | 0.7967 | 0.8136 |
| ***Estimates including additional covariates (N = 5,273)*** | | | | | | | | | | | | |
| Constant | 2.8342 | 0.2458 | 7.4846 | 0.6504 | 10.6660 | 0.5094 | 13.5403 | 0.7126 | 16.8483 | 1.0483 | 9.8793 | 0.8068 |
| Male | -0.1803 | 0.1424 | 0.4153 | 0.2912 | 0.3503 | 0.3160 | 0.6048 | 0.3231 | 1.9082 | 0.6439 | 1.8802 | 0.3883 |
| Self-employed | 0.5181 | 0.1460 | -0.0383 | 0.2446 | -0.0297 | 0.3007 | -0.0430 | 0.2990 | -0.5222 | 0.5409 | 0.2583 | 0.3852 |
| Education (16 years or more) | 0.4395 | 0.2022 | 1.5789 | 0.5480 | 3.2208 | 0.8251 | 7.9646 | 1.8029 | 23.0807 | 2.7320 | 6.7148 | 0.4962 |
| Health problem | -0.7961 | 0.1489 | -1.7903 | 0.3224 | -2.5046 | 0.3587 | -2.6701 | 0.4777 | -4.0770 | 0.6523 | -3.3150 | 0.4900 |
| Per capita family income[a] | -0.0315 | 0.0067 | -0.0320 | 0.0139 | -0.0417 | 0.0188 | -0.0438 | 0.0262 | 0.0002 | 0.0449 | 0.0190 | 0.0149 |
| Time dummy | | | | | | | | | | | | |
| 1996 | -0.1327 | 0.2655 | -0.8386 | 0.6311 | -0.8872 | 0.4349 | -1.3314 | 0.6142 | -1.6256 | 1.0207 | -1.3010 | 0.7651 |
| 1997 | -0.1609 | 0.2517 | -0.9054 | 0.5534 | -0.8870 | 0.4379 | -1.1145 | 0.5975 | -1.0945 | 0.9798 | -1.0915 | 0.7555 |
| 1998 | -0.3147 | 0.2500 | -0.5087 | 0.5623 | -0.4496 | 0.4435 | -0.7323 | 0.5747 | -1.2175 | 0.9790 | -0.6702 | 0.7659 |
| 1999 | -0.2058 | 0.2966 | -0.0559 | 0.5747 | 0.1825 | 0.4192 | -0.1535 | 0.6965 | -0.2450 | 1.1366 | -0.4380 | 0.7715 |
| Group dummy | | | | | | | | | | | | |
| Ages 62–64 | -0.6107 | 0.2039 | -1.2691 | 0.3149 | -1.9061 | 0.4030 | -3.3553 | 0.3556 | -4.9072 | 0.6676 | -3.7791 | 0.4862 |
| Ages 70–72 | -0.8882 | 0.1843 | -1.9166 | 0.3952 | -1.5537 | 0.4871 | -2.1284 | 0.5133 | -2.5880 | 1.0722 | -1.5431 | 0.5082 |
| Beta ($\beta$) | -0.1247 | 0.4195 | 0.2294 | 0.7357 | 1.1532 | 0.8175 | 2.3658 | 1.1255 | 2.8517 | 1.4311 | 0.0256 | 0.9275 |

SOURCE: Author's estimates.

NOTES: The sample size of the bottom panel is smaller because individuals' characteristics (variables from the Survey of Income and Program Participation) are missing for some individuals. This study uses Stata to obtain these regression estimates. The dependent variable is annual Social Security taxable earnings (in thousands of dollars). Standard errors are obtained by bootstrap resampling (100 replications).

OLS = ordinary least squares.

a. Net of personal earnings (in thousands of dollars).

**Table 6.**
**Difference-in-differences estimates for individuals aged 65–69 for the preremoval period, 1996–1999, by percentiles of annual Social Security taxable earnings**

| | 25th percentile | | 50th percentile | | 65th percentile | | 75th percentile | | 85th percentile | |
|---|---|---|---|---|---|---|---|---|---|---|
| Variable | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error | Estimate | Standard error |
| Constant | 2.5487 | 0.2831 | 7.4453 | 0.5963 | 10.7819 | 0.8609 | 13.3443 | 0.6891 | 16.5542 | 1.3547 |
| Male | -0.0744 | 0.1753 | 0.5038 | 0.2966 | 0.2663 | 0.3151 | 0.5809 | 0.3516 | 1.2908 | 0.7020 |
| Self-employed | 0.5238 | 0.1422 | -0.0901 | 0.3031 | -0.1527 | 0.3239 | -0.1809 | 0.3575 | -0.5225 | 0.7704 |
| Education (16 years or more) | 0.4721 | 0.2407 | 1.5278 | 0.5206 | 3.2682 | 0.8986 | 8.3038 | 2.5879 | 26.0808 | 3.7117 |
| Health problem | -0.7629 | 0.1534 | -1.5905 | 0.2939 | -2.3230 | 0.4413 | -2.3941 | 0.4481 | -3.4588 | 0.6852 |
| Per capita family income[a] | -0.0325 | 0.0096 | -0.0293 | 0.0150 | -0.0360 | 0.0207 | -0.0433 | 0.0264 | 0.0002 | 0.0551 |
| Time dummy | | | | | | | | | | |
| 1997 | 0.0600 | 0.2354 | -0.9024 | 0.5630 | -1.0714 | 0.6140 | -1.1163 | 0.5231 | -1.2768 | 1.0147 |
| 1998 | 0.0364 | 0.2338 | -0.9534 | 0.5240 | -1.0714 | 0.6142 | -0.9638 | 0.5454 | -1.0728 | 0.9877 |
| 1999 | -0.0893 | 0.2694 | -0.4970 | 0.5118 | -0.6491 | 0.6492 | -0.5332 | 0.5086 | -1.1941 | 0.9851 |
| Group dummy | | | | | | | | | | |
| Ages 62–64 | -0.5117 | 0.2148 | -1.2817 | 0.3130 | -1.9003 | 0.4749 | -3.3711 | 0.4172 | -4.6347 | 0.8247 |
| Ages 70–72 | -0.8744 | 0.1966 | -1.9959 | 0.4058 | -1.4375 | 0.6443 | -2.0922 | 0.4917 | -2.5570 | 1.2394 |
| Beta ($\beta$) | -0.0218 | 0.4371 | -0.3702 | 0.6680 | 0.1308 | 0.9360 | 0.1479 | 0.8815 | 0.2541 | 1.4635 |

SOURCE: Author's estimates using Stata.

NOTE: Sample size is 4,237. The dependent variable is annual Social Security taxable earnings (in thousands of dollars). Standard errors are obtained by bootstrap resampling (100 replications).

a. Net of personal earnings (in thousands of dollars).

## *Effects on Retirement Benefit Applications*

In addition to effects on earnings and employment rates, the removal of the RET has been expected to accelerate applications for old-age benefits among individuals who have reached the full retirement age. The magnitude of the effects on that acceleration is bounded by the number of individuals who have not already applied for benefits. As in Table 1, almost 90 percent of those aged 65–69 before 2000 were OASDI beneficiaries, and the percentage in 2000 did not increase noticeably. Given the small sample size of that age group, this tabulation may have limited value because annual variations of percentage values depend partly on the differences in benefit receipts between the newly entering cohort (aged 65 in those years) and the exiting cohort (aged 70 in those years).

To reflect the change in the old-age benefit application rate between the preremoval period and 2000, the analysis included an alternative tabulation. Table 7 shows counts of OASDI beneficiaries by their first entitlement age among the yearly applicant pool. This count indicates that the removal of the earnings test accelerated applications for old-age benefits. In each year from 1996 to 2000, between 397 and 482 OASDI applicants of all ages were in the study's sample. Until 1999, between 16 percent and 21 percent of the applicants were eligible at ages 65–69. The percentage of eligibles rises to 25.3 percent in 2000. The sharp increase in new awards appears to be consistent with tabulations using comparable data from the *Annual Statistical Supplement* to the *Social Security Bulletin* for 1997–2001. The tabulations of beneficiaries aged 65–69, shown in the bottom panel of Table 7, indicate that more than 220,000 new awards (about 2 percent of all individuals aged 65–69 in 2000) may be attributable to the RET removal in 2000.

## *Notes*

[1] The FRA, which was age 65 before 2000, gradually increases to 67 for beneficiaries reaching age 62 in 2022 or later. The law was enacted April 7, 2000, but the earnings test for beneficiaries was eliminated for taxable years ending after December 31, 1999. The earnings test for individuals aged 70–71 had been eliminated in 1983.

[2] Before this change, $1 of retirement benefits was withheld for every $3 of earnings above the exemption amount ($15,500 in 1999). See Social Security Administration (2001a, 123) for annual maximum exemption amounts and the history of the earnings test.

**Table 7.**
**Applications for OASDI benefits by individuals aged 65–69 in 1996–2000**

| | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|
| All eligible applicants | 415 | 482 | 397 | 441 | 478 |
| | | | ***OASDI applicants*** | | |
| Applicants eligible at ages 65–69 | | | | | |
| Number | 66 | 94 | 61 | 93 | 121 |
| Percentage of all eligible applicants | 15.9 | 19.5 | 15.4 | 21.1 | 25.3 |
| | | | ***OASDI beneficiaries aged 65–69 (in thousands)*** | | |
| Population aged 65–69 | 9,994 | 9,846 | 9,688 | 9,602 | 9,575 |
| Beneficiaries at the end of each year | 8,594 | 8,489 | 8,350 | 8,343 | 8,746 |
| Worker | 6,917 | 6,889 | 6,819 | 6,860 | 7,285 |
| Spouse | 878 | 846 | 806 | 778 | 768 |
| Widow(er) | 799 | 754 | 725 | 705 | 693 |
| New awards in each year | 465 | 479 | 481 | 496 | 720 |
| Men | 287 | 286 | 290 | 302 | 463 |
| Women | 178 | 193 | 191 | 195 | 257 |

SOURCE: Author's tabulations using the 1996 Survey of Income and Program Participation matched with the Social Security Administration's Master Beneficiary Record files (for OASDI applicants); *Annual Statistical Supplement* to the *Social Security Bulletin* , 1997–2000 (for OASDI beneficiaries aged 65–69).

[3] See Leonesio (1990) for reviews and references for early studies.

[4] Friedberg (2000) investigated three changes in the RET—those made in 1978, 1983, and 1990. In their analysis, Gruber and Orszag (2000) included all changes in 1973–1998.

[5] At the time of this study, data on earnings were available only through 2000. Hence the interest of this study is in short-run responses.

[6] These administrative records provide exact dates of birth and benefit entitlement, which are crucial in investigating reactions to RET changes. For example, earnings test rules are different for beneficiaries reaching the FRA by December 31, 1999, during 2000, or after 2000. The exact dates of birth and benefit entitlement are not available in the Current Population Survey (CPS) data used in Friedberg (2000) and Gruber and Orszag (2000).

[7] See Buchinsky (1994) and Heckman, Smith, and Clements (1997) for examples of a quantile (quartile, percentile) regression approach.

[8] The SSA Numident file is a master file of all assigned Social Security numbers; it contains both birth and death dates. The SSR file contains information on every individual who ever applied for SSI benefits and every individual who received state benefits before 1974.

[9] Although the SER reports annual summary earnings only for employment covered by Social Security, all wages (including those not covered by Social Security) are counted under the RET (Social Security Administration 2001b, 417–418).

[10] That is, the worker must have been in covered employment for at least as many quarters as the number of full calendar years elapsing after age 21 and before age 62, disability, or death, whichever comes first. Dependents and widow(er)s of covered workers can be eligible for benefits.

[11] For further discussions about the SER and MBR files, see Panis and others (2000).

[12] The annual Social Security taxable earnings level may lead to underestimates of the labor supply because of the exclusion of earnings not covered by Social Security. All pay for work either covered or not covered by Social Security counts under the earnings test.

[13] The SER reports earnings from Social Security-covered employment only. Thus, workers who are not covered can be considered here as "not employed."

[14] There were 6.86 million retired-worker beneficiaries, 0.78 million spouse beneficiaries, and 0.71 million widow(er) beneficiaries in this age group (Social Security Administration 2000, 157, 159, 163, and 168).

[15] The number of OASDI beneficiaries includes both primary and auxiliary beneficiaries. Their benefit status is determined by the date of initial entitlement (DOEI)—the point at which all requirements for eligibility have been met and a claim has been filed. Although 6 months of retroactive entitlement is possible, this study uses the DOEI definition, instead of a definition based on application filing date, because most beneficiaries file their applications before their retirement date.

[16] Although workers must be fully insured to enroll in OASDI programs, OASDI beneficiaries outnumber fully insured beneficiaries. The reason is that the OASDI beneficiary group also includes auxiliary beneficiaries and Disability Insurance (DI) beneficiaries who have been enrolled in the program since their youth (and who do not have 40 quarters of coverage).

[17] Throughout this discussion, individuals who have nonzero Social Security taxable earnings are considered employed.

[18] These individuals include both primary and auxiliary beneficiaries whose benefit entitlements (requirements for eligibility) were met by December 31 of the preceding year.

[19] The RET removal can modify beneficiaries' work effort through two different effects: substitution and income. The removal causes an increase in a beneficiary's current disposable income and a subsequent decrease in work effort, or it may cause the price of working to rise and a subsequent increase in work effort.

[20] The number of new applicants in 2000 was 121 (23, 52, 18, and 28 applicants in each quarter).

[21] The illustrative threshold ($16,500) may seem arbitrary, but adjusting the 1999 threshold by the national average wage level yields even less than $16,500. Since the RET removal, the RET threshold for beneficiaries who reached the FRA during 2000 has been $17,000.

[22] In addition to time and group dummies, these regressions include additional covariates—age, sex, race and ethnicity (white, black, and Hispanic), alternative income amounts, a set of dummies for number of school years, a dummy indicating work-limiting health problems, and a dummy indicating a resident of a major metropolitan area. Detailed results are available from the author (jae.song@ssa.gov).

[23] The numbers of working nonbeneficiaries at the end of each year are shown in the following table, by age:

| Age | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|
| 62–64 | 268 | 268 | 305 | 296 | 276 |
| 65–69 | 74 | 76 | 65 | 52 | 48 |
| 70–72 | 14 | 13 | 14 | 15 | 12 |

[24] Similarly, this study tested the validity of the causal assumption using data covering different pre-2000 periods. These results also indicate that the interaction terms are small and statistically insignificant. Space limitations preclude reporting those results here, but they are available from the author upon request (jae.song@ssa.gov).

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