

The Effects of the Social Security Earnings Test on the Labor-Market Activity of Older Americans: A Review of the Evidence

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Numerous scholarly studies have examined the effect of the Social Security retirement test on the labor supply of older workers. Virtually all of this research indicates that the effect is probably small and that eliminating the test would have a minor impact on the work activity of older Americans. There are several reasons for this conclusion. First, retirement decisions are known to be influenced by many other factors including private pensions, Social Security benefit levels, health, job opportunities, family circumstances, and personal preferences for work. These other determinants appear to be dominant. Second, other Social Security features, particularly the actuarial adjustment for early retirement, the delayed retirement credit, and the automatic benefit recomputation provision, significantly offset much of the retirement test's apparent penalty. Third, the test has been substantially liberalized over the years, permitting beneficiaries to earn more money without loss of benefits. Although earlier, more stringent, forms of the test may have posed significant work disincentives, the current rules are far less restrictive. Fourth, some beneficiaries are undoubtedly sensitive to the retirement test and respond by making important adjustments in their labor-supply plans. Nonetheless, the relatively small size of this group limits any impact that their response can have when the aggregate behavior of millions of people is measured.

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Over the past decade, considerable attention has been directed toward identifying the causes of the large decline in labor-market activity by older Americans. The evidence indicates that the trend to earlier retirement for the most part represents voluntary behavior in which older workers have been increasingly able to afford a planned departure from the workforce. Viewed from this perspective, longer periods of retirement represent a desirable change in American lifestyles. Nevertheless, the decline in labor-force participation by older persons in the face of the projected growth in the absolute and relative size of the aged population can have negative implications for the financial status of the Social Security system, the economic well-being of the aged, and the economic burden to be placed on the nonaged population. In this vein, it has been suggested that the Social Security program may have evolved in ways that encourage productive workers to withdraw from the labor force earlier than might be desirable from a societal viewpoint. The retirement test (also referred to as the earnings test) provision, which limits the amount of earnings if full retirement benefits are to be collected, is often singled out as particularly troublesome in this regard.

To date, much of the public debate over the retirement test has overlooked the accumulated evidence about its impact on work and retirement decisions. In fact, many scholarly studies have examined the effects of the Social Security Old-Age and Survivors Insurance (OASI) program on work effort, and a number of these contain estimates of the effect on aggregate labor supply attributable to the retirement test. Most of these studies have appeared in scholarly books and journals with readership limited to a technical audience; others are unpublished and circulate among specialist researchers. The message contained in virtually all of this research is that the impact of the retirement test on the labor supplied by older workers is fairly small and that eliminating the test would have a minor impact on work activity by older Americans. This article provides a nontechnical explanation for this conclusion.

Effect of Retirement Test Elimination On Work Incentives

The retirement test currently allows beneficiaries aged 62-69 to earn income up to a specified annual limit—the annual exempt

amount—without loss of benefits.¹ As of January 1, 1990, when earnings exceed this level, benefits are reduced \$1 for every \$3 earned over the limit for beneficiaries aged 65-69, and at a rate of \$1 for every \$2 for beneficiaries aged 62-64.² Thus, for the older group annual earnings in excess of the exempt amount are currently subject to a benefit reduction rate of 33½ percent.³ The dollar amount of the limit depends on the worker's age: for persons aged 62-64, the 1990 figure is \$6,840; for those aged 65 or older, this limit is \$9,360. These amounts are increased yearly at the same rate as the increase in average wages.⁴

At first glance, the effect of the

¹ See the appendix, page 21, for definitions of Social Security program terms used in this article.

² Special treatment is accorded in the first calendar year of retirement. Benefits are paid in full in any month in which the individual does not perform "substantial services" in self-employment or if earnings in that month are less than approximately 1/12th of the annual earnings limit (*Social Security Handbook 1988*, Tenth Edition, Washington, DC: U.S. Government Printing Office, 1988, page 279).

³ The benefit reduction rate for beneficiaries aged 65 or older was 50 percent from 1973 to 1989. The 1983 Social Security amendments lowered it to 33½ percent in 1990.

⁴ *Social Security Handbook 1988*, op. cit., page 275.

retirement test on work effort might appear to be straightforward. It is often argued that because the test lowers the financial reward for work when earnings exceed the exempt amount, it is tantamount to a substantial tax on work and would seem, therefore, to discourage employment. The apparently logical conclusion that follows is: Repeal the test and the labor-force activity of older workers will increase. This reasoning is sometimes used to support several of the legislative proposals to eliminate or liberalize the retirement test provision currently under consideration for Social Security beneficiaries aged 65-69.

The argument that this type of policy change will significantly increase the work effort of older Americans is flawed on several counts. First, it fails to recognize the way in which the retirement test provision interacts with other features of the Social Security system that tend to blunt, or offset, its impact. Specifically, as described below, the delayed retirement credit and automatic benefit recomputation rules are also important contributors to the overall effect that OASI has on work incentives. Second, the argument ignores the fact that the elderly are a diverse group faced with varying job opportunities. The retirement test can affect work incentives in very different ways depending on individual circumstances. In some situations, the test probably encourages work. Third, and perhaps most important of all, the reasoning blurs the distinction between work incentives and the degree of responsiveness to those incentives. Although the retirement test might provide a disincentive to work in some situations, that factor alone is not sufficient to conclude that the test causes an appreciable reduction in overall work effort by older persons.

It is necessary to know the extent to which behavior actually changes. The first two of these points are discussed in this section; evidence concerning the responsiveness of older workers to the retirement test provision is examined later.

Interaction With Other Social Security Provisions

Understanding how the retirement test influences work decisions requires knowledge of how it interacts with related features of the Social Security system. While it might appear that a beneficiary subject to the retirement test faces an extra 33½ percent or 50 percent tax on earnings over the limit, two other provisions reduce the apparent penalty by increasing the value of future monthly benefits when current benefits are withheld. From age 62 to age 64, the actuarial adjustment restores lost benefits at an annual rate of 6.67 percent of the primary insurance amount (PIA),⁵ a rate that is considered to be actuarially fair on average.⁶ Insured persons aged 65-69 who lose benefits receive a delayed retirement credit, a provision that works in approximately the same way as the actuarial adjustment. At its current rate of 3.5 percent of the PIA per year, the delayed retirement credit falls considerably short of the

⁵ The PIA is the monthly amount payable to a retired worker who begins receiving benefits at age 65. For a fuller explanation of the PIA, see Appendix: Glossary of Program Terms, page 21, and *Social Security Handbook 1988*, page 100.

⁶ The compensating increase in future monthly benefit amounts when current benefits are foregone is considered to be "actuarially fair" when the present value of expected lifetime benefits is unchanged.

8-percent value that is thought to be roughly actuarially fair.⁷

A numerical example can clarify how the delayed retirement credit lowers the retirement test's effective benefit reduction rate. If a retired worker currently aged 65 or older loses some, but not all, retirement benefits under the test, an additional \$300 of earnings results in a further reduction in benefits of \$100. If the delayed retirement credit causes future annual benefits to rise by an actuarially fair amount (say, 8 percent), the present value of the additional \$8 per year (8 percent of \$100) is equal to the \$100 in current benefits lost to the test. The actuarially fair delayed retirement credit fully restores lost benefits, and the overall penalty rate is zero. In contrast, with the present delayed retirement credit at only 3.5 percent, future annual benefits rise by only \$350, with a present value of \$43.75 (that is, $(3.5/8.0) \times \$100$). Because this amount of the retirement test tax is restored by the delayed retirement credit, the effective tax rate is only 18.75 percent $(\$100 - \$43.75)/\$300$, rather than the apparent 33½ percent. Most of the current proposals to modify the retirement test focus on the rules that apply to persons aged 65 or older, so further discussion of the test in this article will generally assume that it operates conjointly with a less than actuarially fair delayed retirement credit.

In addition to the delayed retirement credit, automatic benefit recomputation can lead to increased future benefit payments when current benefits are lost as a result

⁷ The 8-percent figure represents a broad population average that would not hold for persons with life expectancies either below or above average. From 1982 to 1989, the delayed retirement credit was 3 percent. The 1983 amendments call for the delayed credit to be increased by 0.5 percent per year beginning in 1990, until it reaches 8 percent in 2008.

of the retirement test. As long as annual earnings are greater than the smallest indexed value included in the computation years for determining average indexed monthly earnings (AIME), the recomputation provision dictates that continued work will increase future values of the PIA.⁸ Thus, the apparent deterrent effect of the retirement test provision can be further offset for workers aged 65 or older by the automatic benefit recomputation, as well as by the delayed retirement credit.⁹

Work Incentive Changes

Retirement planning involves deciding how to arrange work, leisure, and consumption over the anticipated remaining lifetime. It encompasses choosing a retirement date, deciding whether to work during retirement years, and selecting how many hours to work during periods of labor-force participation.¹⁰ Long-range plans reflect personal tastes for work versus leisure and should be expected to yield sufficient income to support a desired standard of living. A number of income-conditioned government tax and transfer programs can alter the net monetary reward for working in any period, making work during that

⁸The AIME is an arithmetic average of annual earnings used to compute the PIA. For a fuller explanation, see Appendix: Glossary of Program Terms, page 21, and *Social Security Handbook 1988*, page 101.

⁹These points are cogently made in Blinder, Gordon, and Wise (1980).

¹⁰In this article, retirement denotes a pronounced decline in earnings and annual hours worked, which often coincides with departure from a career job, the beginning of private pension receipt, and the onset of Social Security retired-worker benefits—all of which are operational definitions used by other investigators. The terms partial and complete retirement indicate whether retirees engage in any paid labor-market activity.

time interval either more or less attractive. Any factor that does so is said to affect work incentives.

Because work activity at any point in time is presumably part of a long-term plan, a limitation on the earnings of retired-worker beneficiaries—which applies only to individuals within a specific age group (those aged 62-69)—can lead to various adjustments in lifetime work activity including reallocations of planned work to periods in which the retirement test is not ostensibly applicable. Thus, elimination of the test could, in principle, result in a variety of adjustments in individual lifetime labor-supply decisions that would alter the aggregate supply of work effort. These induced changes can be conveniently categorized as changes in: (1) the number of individuals who work at any point in time, (2) the types of jobs performed by workers, and (3) the number of hours worked by those workers who are not induced to change jobs.¹¹ Each of these dimensions is examined in turn below. This expositional convenience should not be taken to imply that an adjustment in one aspect of lifetime labor supply is made on its own; decisions about all dimensions are generally interdependent.

In cataloging the possibilities, it is useful to distinguish behavior that might be observed in the short run—say, in the first year or two after repeal—from responses that can only occur in the longer term when younger cohorts begin to reach their retirement years. That is, eliminating the retirement test might prompt some behavioral changes

¹¹Individuals who change jobs may also be changing the number of hours they work. As defined, these three categories of adjustments are mutually exclusive.

that would occur almost immediately. For example, a beneficiary who ordinarily stops working each year when annual earnings reach the exempt amount might decide to work more hours if retirement benefits are no longer lost as a result of the test. In contrast, a worker not yet retired might appear to be unresponsive in the short term, but might alter a planned retirement date or revise the number of hours he or she intends to work after retirement.

First, consider the effect of eliminating the test on the number of persons who work at some time during the course of a year. Because more than \$9,000 can be earned by workers aged 65-69 without loss of benefits, it might appear that the retirement test has little influence on the decision by many persons to remain outside the labor force. After all, a substantial sum of money can be earned each year without jeopardizing retirement benefits. However, this line of reasoning assumes that the costs associated with working are minimal and that workers can freely choose the number of hours they work on their jobs. These conditions are usually not the case. Often nontrivial costs—such as commuting expenses or outlays for special clothing—are associated with work. Furthermore, potential employers often require a minimum number of hours of work that is higher than the retiree desires.¹² A person weighing a job offer that involves either substantial costs of working or a nonpreferred work schedule has to evaluate whether he or she is better off taking the job. If employment will yield earnings that are sufficiently high that some (or all) Social Security benefits will be

¹²The importance of hours restrictions in retirement decisions is documented and discussed in Gustman and Steinmeier (1983).

lost under the retirement test, the test might contribute to a conclusion that the net reward for work is insufficient to justify working. For retirees who seriously entertain the possibility of taking a job, but believe that the retirement test, among other factors, makes complete retirement preferable to work, eliminating the test might, in some cases, tip the balance in favor of working. This source of increased labor-force participation in response to elimination of the retirement test could occur soon after repeal, largely through labor-force reentry by retirees. In the longer run, participation could increase through delayed transitions to complete retirement. It is possible, however, that repeal of the retirement test would enable retirees to attain lifetime savings goals at earlier ages, rendering retirement leisure affordable at younger ages, prompting earlier exit from the labor force to complete retirement. Therefore, although in the short run labor-force participation by older persons would probably increase, the overall effect in the long run is uncertain.

A second type of labor-supply adjustment can occur through job changes. As in the logic of the basic participation decision, the retirement test might lead some retirees to choose a job that pays less than the annual exempt amount over a job with earnings that exceed the limit. In the short run, eliminating the test increases the relative attractiveness of the higher paying job and might induce a beneficiary to change jobs. In the longer term, some persons would be prompted to delay the transition from full-time, career jobs to retirement and part-time work. Both adjustments would tend to increase

the labor supplied by older workers.¹³ In other cases, individuals who plan to work during retirement years might retire earlier because retirement jobs can now generate more income without loss of benefits. In most cases, this change is likely to involve moving from a full-time job to part-time employment and thus represents a reduction in labor supply. As in the case of the decision to participate, the long-run effect of elimination of the test on labor supply through job changes is theoretically ambiguous.

The third type of adjustment would involve changes in the number of hours supplied by working beneficiaries who do not change jobs. Assuming that a worker can vary the number of hours worked on a job, the predicted change in hours of work depends on the preelimination level of earnings. Four distinct cases merit attention. First, for beneficiaries with some earnings below the exempt amount, removing the retirement test should have little effect on labor supply. These workers receive full benefits and could increase their earnings without penalty under current rules. Second, for beneficiaries whose earnings roughly equal the exempt amount, eliminating the test will increase the reward for additional work without increasing benefit income. This group would have a clear incentive to work more hours. Third, for beneficiaries whose earnings exceed the limit, but who receive partial benefits, removing the test will have an uncertain effect on work. Their incomes will rise when lost benefits are restored, enhancing their ability to afford retirement leisure, which will tend to deter work effort. However, the

¹³ Switching to a higher paying job need not involve increasing hours of work.

reward for additional work increases with the elimination of the benefit reduction rate, providing an incentive to increase hours of work. The net effect on labor supply for this group depends on the relative importance of these opposing tendencies. Fourth, for those workers with sufficiently high earnings that all Social Security benefits have been (or would have been) lost, removing the retirement test should induce less work; their nonlabor incomes will rise by the full benefit amount, but the net hourly compensation for additional work is unchanged.¹⁴ The overall effect on hours worked by beneficiaries who do not change jobs depends on the initial distribution of older workers among these four earnings categories and on the size of the average response within each group. The qualitative results of the analysis for this type of labor-supply adjustment are the same for both short-and long-run behavior, although the magnitude of hours changes might well be larger in the long run when future retirees have longer periods to plan modified retirement work schedules.

Although this discussion has focused primarily on changes in the behavior of persons nearing the end of their working lives, given the lifetime nature of work and retirement choices, it is possible that eliminating the retirement test will also induce changes in hours of work by younger workers. If the retirement test causes a shift in the hours of work into preretirement periods to avoid the retirement test

¹⁴ Some insured persons apparently do not apply for retired-worker benefits because their earnings are sufficiently high that most or all benefits would be lost as a result of the test. These individuals would have a clear incentive to apply for benefits if the test were eliminated.

penalty, its elimination would be expected to reduce the work effort of younger cohorts.

In summary, because the retirement test applies a penalty on earnings above the annual limit, it is not surprising that many observers conclude that it must discourage work. Nonetheless, careful consideration of the full range of possible responses to eliminating the test reveals that this conclusion may be incorrect. In the short run, some individuals—such as those with earnings at or near the annual exempt amount—might be expected to work more, either by increasing hours on the current job or by switching to a job with higher earnings. Other persons—such as those with substantial earnings who have not yet applied for retirement benefits—might very well become entitled to benefits and reduce work effort. In the long run, when younger cohorts have had the opportunity to revise larger portions of their lifetime work plans by changing retirement dates and rethinking the nature of their transitions from career jobs to complete retirement, the impact on overall work effort is uncertain in theory. For convenience, the results of this section's discussion are summarized in table 1.

Whether aggregate work effort would increase or decrease in response to this change in Social Security policy cannot be determined by theoretical arguments alone. The question is primarily empirical; it requires knowledge of how many persons are likely to make each type of labor-supply adjustment and, particularly, how large their responses are likely to be. A review and assessment of the relevant research findings follows.

Table 1.—Theoretically predicted work response to eliminating the retirement test

Change	Short run	Long run
Impact on—		
Labor-force participation.....	Increase	Ambiguous
Job changes.....	Increase ¹	Ambiguous
Hours worked per year, with no job change.....	Ambiguous	Ambiguous

¹Increase signifies switch to job with higher earnings, taken to imply increased work effort.

The Evidence

Work and retirement decisions are complex, and they are made by individuals with widely varying personal circumstances (such as age, gender, race, family size, health status, education, and occupation) in an environment in which many financial factors (such as taxes, private pensions, wealth, Social Security and other income transfer programs, and wage offers) coexist. With so many causal factors operating simultaneously, determining the specific labor-supply behavior that is uniquely attributable to the retirement test poses a formidable statistical problem. It is necessary to disentangle the test's effects from all other cooperant factors, most of which vary among individuals and over time, using data on actual work and retirement decisions.

It is beyond the scope of this article to review the large number of studies that have attempted to identify and measure the determinants of the retirement decision.¹⁵ By and large, the economic research has found that the influence of the retirement test provision is likely to be small relative to other factors such as Social Security benefit amounts,

¹⁵An excellent survey of the existing literature is provided by Parnes (1988).

private pensions, job characteristics, and health status. The remainder of this article reviews and assesses the evidence concerning the number of persons aged 65-69 who are currently affected by the retirement test, the nature and magnitude of changes in labor-market activity that would be likely to occur if the test were modified or eliminated for these beneficiaries, and the implications for the probable cost to the Government of adopting these policies.

Labor-Force Activity of Older Insured Persons

Most discussions of the likely consequences of eliminating the retirement test tend to restrict attention to specific population groups who, it is argued, are likely to respond to the change, particularly workers with earnings near the annual exempt amount or those who currently lose benefits as a result of the test. The discussion to this point suggests that the labor-supply effects of the test are not limited to these most obvious groups, although many of these workers may be the most likely individuals to respond in the short run to any relaxation of the earnings limitation. In principle, all prospective OASI beneficiaries can be influenced by the retirement test provision, and any comprehensive

analysis must recognize that lifetime work plans may be formulated with this in mind.

Liberalizing or eliminating the retirement test is likely to have both short- and long-run effects on work effort with very different types of outcomes. For instance, it is quite possible that labor supply would be stimulated in the short run due to labor-market reentry by some retirees and expanded hours by current workers, and yet decline in the longer term due to earlier exits from the labor force as retirement plans are revised. In general, the older the individual, the fewer the options for altering lifetime labor-supply behavior because more decisions have been made and cannot be undone after the fact. That is, most of the insured population currently aged 65-69 have left the labor force and are collecting full retired-worker benefits. If the retirement test were to be eliminated tomorrow, it is unlikely that many of these individuals would have either the desire or opportunity to "unretire" and return to career jobs. Thus, the short-run work response might consist of changes in the hours of work by those beneficiaries who continue to work and labor-market reentry to part-time work by some of those who are fully retired. Only workers aged 65-69 who have not yet retired would have the opportunity to alter their retirement dates. In the long run, however, younger cohorts would be able to effect a fuller range of lifetime labor-supply adjustments including the reallocation of work effort from earlier to later years, which would translate into changed labor-force participation and hours patterns in the future.

To understand the likely effect on aggregate labor supply of

eliminating the retirement test for beneficiaries aged 65-69, it is helpful to examine the current pattern of earnings by persons whose work effort is most likely to be affected by the test. Any noticeable short-run change in work effort is likely to be from individuals in this age group who want to work. Table 2 shows the estimated number of insured persons aged 65-69 in 1989 categorized by entitlement status and earnings level.

Perhaps most noteworthy is the fact that 5,954,100 insured persons in this age range (73 percent) report no earnings. In the short run, since current members of this group have already retired, their only possible labor-supply response is to return to some form of employment. Any significant response from this group would require that substantial numbers of fully retired persons want to work at available jobs, and that the retirement test constitutes an important obstacle to their

Table 2.—Estimated work patterns of insured persons aged 65-69, 1989

Entitlement status and earnings level	Number of insured persons ¹
Total	8,127,700
With established entitlement and—	
No work during year	5,253,500
Earnings less than 90 percent of annual exempt amount	985,300
Earnings 90-110 percent of annual exempt amount	173,700
Earnings exceed 110 percent of annual exempt amount:	
Benefits partially withheld	194,700
Benefits fully withheld	237,900
With no established entitlement and—	
Some labor-market earnings	582,000
No work during year	700,600

¹Numbers will vary depending on the data source, the earnings categories specified, and the year considered. Three data sources have been used to estimate the number of persons in each earnings category: from the Social Security Administration, the Master Beneficiary Record (MBR) and Continuous Work History Sample (CWHS), and from the Census Bureau, the annual March Current Population Survey (CPS). Each source imposes its own limitations on the population subgroups of interest that can be accurately identified. The CPS, for example, has the advantage of providing the most up-to-date measures of earned income among the older population; the CWHS has more accurate measures of taxable earnings.

The estimates were generated in 1988 and should be treated as only approximate indicators of the current distribution of insured workers among earnings categories. For the most recent available year, the CWHS is likely to designate a newly retired, insured worker who has not established entitlement near the beginning of the year as having no established entitlement, even though entitlement is established later in the year. Thus, many of the insured persons reflected in the numbers in the last two lines probably belong in one of the appropriate beneficiary groups.

Source: Office of the Actuary, Social Security Administration. Estimates based on data extrapolated from the 1984 Continuous Work History Sample.

current participation.¹⁶ Most evidence suggests otherwise: A large majority of this group appears to have stopped working because they can afford to do so; others are physically unable to work.

If the retirement test were eliminated, the group most likely to increase its work effort in the short run comprises the 173,700 entitled workers with earnings at or near the annual limit. Because many workers cannot precisely control their hours of work, the data in table 2 designate persons with earnings levels of 90-110 percent of the annual exempt amount as roughly corresponding to this group. These individuals have demonstrated a desire to work, their earnings levels suggest that they may be sensitive to the annual limit, and they may be avoiding the retirement test penalty by reducing their work hours. However, this group represents only 2 percent of insured persons aged 65-69, a figure that necessarily limits the impact their behavior could have on aggregate labor supply. Furthermore, it is not obvious that all individuals in this earnings range limit their work activity because of the test. Finally, any increase in work effort forthcoming from this group would be contingent on their ability to adjust work hours freely, an option that may not be available to all employees,¹⁷ or their willingness to change jobs.

Adjustments in the number of hours worked could be expected

¹⁶ Some nonparticipants may use the retirement test as a convenient rationalization for not working, in the same way that others cite health problems as a limitation. These stated reasons are not always accurate indicators of the true reasons for complete retirement, but they are socially acceptable.

¹⁷ The inflexibility of work schedules on many jobs is well documented. See Altonji and Paxson (1986), as well as many of the references cited therein.

from other currently employed workers with reported earnings either below or above the annual limit. As indicated earlier, another potential source of additional work effort would be the 985,300 current beneficiaries with earnings below the annual limit. Although many of these workers have modest earnings aspirations and are not affected by the retirement test, others might respond to elimination or liberalization of the test by switching to higher-paying jobs. The 194,700 workers whose benefits are only partially reduced by the retirement test could, in theory, either increase or decrease their hours of work, depending on whether they react primarily to the work stimulus of a higher rate of pay or to their greater ability to afford retirement leisure when retirement test-reduced benefits are restored. Hanoch and Honig (1983) conclude that the dominant effect for this group is likely to be increased work effort in response to the higher take-home wage.

The short-run effects of eliminating the retirement test are not limited to beneficiaries who are likely to increase work effort through reentering the labor force, changing jobs, or increasing the number of hours worked. Two groups in table 2 are likely to reduce their labor supply. The 237,900 beneficiaries with earnings so high that benefits are fully withheld would have a clear incentive to work less. Eliminating the test would increase their incomes, enhancing their ability to afford retirement leisure, but would leave their net wage unchanged at the margin.¹⁸ In

¹⁸ The term "at the margin" refers to the rate of compensation for an additional hour of work and is a key concept in understanding work incentives. A higher wage at the margin improves work incentives, but a lower wage impairs incentives.

addition, individuals currently eligible for retirement benefits, but who do not claim them because their earnings are sufficiently high that most or all of their benefits would be lost as a result of the test, would be likely to apply for benefits. Apart from their decision to apply for benefits, they would be expected to behave in much the same way as current beneficiaries whose benefits are wholly offset. Table 2 shows that 582,000 insured workers with some earnings are not expected to claim benefits and, although the reasons for not applying are unspecified, for some insured persons their reluctance may result from the retirement test.

The distribution of insured persons among the various earnings categories depicted in table 2 provides some sense of the number of persons who might respond in the short run to elimination of the retirement test. However, this information gives no indication of the likely size of the individual work responses, nor does it shed much light on the impact on labor supply in the long run. That is, what will the labor force look like a decade or more from now if the test is eliminated, compared with how it will look if the retirement test remains unchanged? These questions require more detailed studies that specifically examine current and past behavior in response to the test.

Older Workers' Sensitivity to the Test

Statistical procedures of varying complexity have been used to determine if lifetime labor-supply plans are influenced by the retirement test. A straightforward approach is to examine earnings patterns among beneficiaries to determine if unusually large numbers of workers report earnings

at or near the annual earnings limit. Such a finding would be consistent with the view that retirees restrain earnings to avoid the retirement test penalty. This "bunching" or "clustering" phenomenon, as it has been termed, has been examined by Gallaway (1965), Sander (1968), Burtless and Moffitt (1984), Vroman (1985), Lingg (1986), and Packard (1988), all of whom find evidence for its existence.

The first empirical inquiries along these lines were conducted by Gallaway and Sander who found that earlier, more restrictive versions of the retirement test appeared to deter work effort. Gallaway examined the 1957 earnings of persons aged 62-74. At that time, the annual exempt amount was \$1,200, and a full month's benefits were lost for every \$80 (or fraction thereof) earned in excess of the annual limit. The distribution of earnings for fully insured male workers aged 65-71—the age group then subject to the retirement test—was compared with the earnings distributions for the adjacent groups, aged 62-64 and 72-74, who were not subject to the test. Only those aged 65-71 appeared to be avoiding the range of earnings (\$1,200 to \$2,400) in which retirement benefits were most likely to be lost as a result of the retirement test. Although the basic decision whether to work at all appeared to be unaffected, it was concluded that median annual earnings of these workers were reduced by about \$366. Based on the average hourly wage of \$1.89 at the time, working beneficiaries appear to have reduced their work time by about 4 hours per week on average.

In a similar analysis, Sander tabulated 1963 earnings information for retirees who attained ages 63-72 sometime during the calendar year, all of whom were subject to a less stringent form of the retirement test

than the one examined in Gallaway's study. By 1963, the retirement test had two benefit reduction rates. The first \$1,200 of annual earnings was exempt from penalty. Benefits were reduced by \$1 for every \$2 of earnings in excess of \$1,200, but less than \$1,700. The reduction rate was \$1 for every \$1 of earnings above the \$1,700 level. The introduction of the 50-percent rate for an intermediate earnings range was designed to improve work incentives; however, Sander found that workers made no appreciable distinction between the two rates. Earnings tended to cluster just below the \$1,200 limit, with no such pattern at the \$1,700 limit where the higher reduction rate became operative.¹⁹ Additional evidence of this type is reported by Burtless and Moffitt, who examined the earnings by men in their first year after retirement as reported in the 1969-77 interview years of the Social Security Administration's (SSA's) Retirement History Study (RHS). They, too, noted a pattern in which an unusually large number of workers have earnings at or near the annual limit.

These studies support the view that earlier, and substantially stricter, versions of the test depressed the earnings of older workers but their relevance in explaining behavior under the current rules is questionable. Over the past three decades, the test has been liberalized, particularly through numerous increases in the annual earnings limit and a decrease in the benefit reduction rate to 33½ percent in 1990 for workers aged 65-69. A higher annual exempt amount effectively allows

¹⁹ The higher benefit reduction rate was eliminated in 1973. Sander also reported no clustering of earnings near the limit for workers aged 73 or older, a group not subject to the retirement test at that time.

beneficiaries to work substantially more hours before retirement benefits are lost. Table 3 compares the annual limit with the average hourly wage for private-sector workers for various years. The last column, designated "Maximum hours" (calculated by dividing the annual limit by the average wage), gives a rough indication of how many hours could be worked each year without loss of Social Security benefits. From 1961 to 1990, the number of hours that could be worked at average wage rates without losing retirement benefits increased 65 percent. If full-time employment is roughly equivalent to 2,000 hours per year, this increase translates into permitting approximately half-time work in contrast to the quarter-time work previously allowed.

Vroman (1985) used data for the period 1970-80 to determine how earnings patterns among beneficiaries changed as the amount of allowable earnings increased.²⁰ The data show that as the annual limit was increased from year to year, the noticeable cluster of workers with earnings just below the limit appeared to move upward accordingly, consistent with the view that workers were aware of the current exempt amount and continued to restrain earnings to avoid exceeding the limit. However, the clustering became less pronounced over the period. Vroman also notes that labor-force reentry rates for retirees aged 65-71 appeared unresponsive to changes in the earnings limit, even after the unusually large increases in 1973 and 1978. Lingg points out that the proportion of retired-worker beneficiaries with benefits reduced

²⁰ The data source—known as the 1978 CPS-SER-MBR Exact Match file—merges records from the Census Bureau's Current Population Survey with SSA's Summary Earnings Record and Master Beneficiary Record.

as a result of the retirement test has declined over time and speculates that the primary causes are the long-term trend to less labor-force participation for both sexes after age 65, as well as sizable increases in the earnings limit during the past three decades.

Periodic changes in retirement test rules and coverage have afforded some of the best opportunities for studying the impact of the test on labor supply. When key provisions of the test are changed, postchange behavior can be compared with that recorded during the prechange period. Vroman (1971) takes this tack in analyzing 1962-67 data from SSA's earnings records to measure the effect of the 1965 Social Security amendments. Among other changes, the annual exempt amount was increased from \$1,200 to \$1,500, and the earnings level where the 100 percent marginal rate applied was increased from \$1,700 to \$2,700. Thus, while not eliminated, the retirement test was somewhat liberalized. The most striking conclusion is that 10 percent of working retirees increased their earnings from the old limit to the new higher exempt amount—a response consistent with the view that some workers are acutely aware of the limit and that they also have the ability to control their work hours. Other findings labeled “much more tentative” included a slight tendency for increased retirement rates and an increased proportion of men with earnings above the old annual limit. Because the 1965 amendments changed a number of Social Security rules, it was not possible to attribute observed labor-market adjustments to the specific changes in the retirement test rules.

Viscusi (1979) estimated the extent to which monthly labor-force participation rates of persons aged

Table 3.—Annual earnings limits under the retirement test for persons aged 65 or older, 1961-90

Year	Amount	Average hourly wage	Maximum hours
1961	\$1,200	\$2.14	561
1966	1,500	2.56	586
1968	1,680	2.85	589
1973	2,100	3.94	533
1974	2,400	4.24	566
1975	2,520	4.53	556
1976	2,760	4.86	568
1977	3,000	5.25	571
1978	4,000	5.69	703
1979	4,500	6.16	731
1980	5,000	6.66	751
1981	5,500	7.25	759
1982	6,000	7.68	781
1983	6,600	8.02	823
1984	6,960	8.32	837
1985	7,320	8.57	854
1986	7,800	8.76	890
1987	8,160	8.98	909
1988	8,400	9.32	901
1989	8,880	9.58	927
1990	9,360	10.10	927

Source: Annual Statistical Supplement to the Social Security Bulletin, 1988; average hourly wage for private nonagricultural workers as reported in the Economic Report of the President, 1989, table B-44. The 1988 wage rate is the July 1988 value reported in B-44. The 1989 wage rate is the preliminary figure in Employment and Earnings, August 1989, table C-4; the 1990 wage figure assumes money wages will increase by 5.4 percent (Short Range Actuarial Projections of the Old-Age, Survivors, and Disability Insurance Program, 1988, table 1). Column 4 is calculated by dividing column 2 by column 3.

65 or older varied as the annual exempt amount was increased each year in 1966-74. It was hypothesized that participation rates would increase in the short run as the amount of allowable earnings increased. In general, the effect was small and statistically insignificant for men, whose decisions to work were more sensitive to Social Security benefit levels, inflation, and elderly unemployment rates; for women, some evidence indicated that participation rates responded to changes in the limit. The participation rates for white women aged 65 or older increased by 0.1 percentage point for each \$100 increase in the annual exempt amount; however, participation rates for black women in this age group fell by 0.7 percentage point when

the exempt amount was increased by \$100.²¹ In further analysis of 1960 Census data, Viscusi noted that while labor-force participation rates declined with age for both men and women the downward trend noticeably abated at age 72, when individuals were no longer subject to the retirement test at the time. Given the low participation rates for this age group, the 3- and 4-percentage-point increases attributed to attaining age 72 represent relatively large effects.

The age at which retired-worker beneficiaries are exempt from the retirement test was lowered from 72 to 70 in 1983, providing retirement researchers with a set of circumstances that resemble those

²¹ The annual exempt amounts for 1966-74 ranged from \$1,500 to \$2,400 (see table 3, above).

that would exist if the test were repealed for younger beneficiaries. Packard (1988) compares the labor-force participation rates of those aged 70-71 before and after 1983, looks for evidence of increased earnings among those who work, and checks for increased labor-force reentry rates. If the test were a strong deterrent to work for persons aged 65-71 before 1983, its elimination might cause a number of fully retired workers to return to work. He finds little change in the labor-force participation rate of 70- and 71-year-olds no longer subject to the retirement test.²² Some evidence indicates that the number of men and women returning to the labor force increased slightly in 1983 and 1984, but declined to the former rates in 1985, suggesting that eliminating the retirement test might have had some short-term effect on fully retired beneficiaries.²³ A number of older workers increased their earnings from below to above the earnings limit when they were no longer subject to the test. This change was especially true for men: The proportion of men whose earnings increased in this manner more than doubled,

²² Observed changes in participation rates for men and women were generally found to be statistically insignificant. Nonetheless, in one regression analysis there was some evidence of a 2-percentage-point increase in the participation rate by men. This result was sensitive to the model's particular specification and points to the usefulness of further, more detailed, analysis of the data.

²³ Because data from the CWSHS available at the time research was conducted ended in 1985, there was no opportunity to determine whether the effect has a longer duration. Furthermore, because the paper makes no attempt to control for other explanatory factors that might be associated with increased earnings by some retired workers (such as the onset of a long economic expansion), it is not clear that this behavior can be attributed to the change in the retirement test provision.

compared with the 5-year average before 1983.

Packard reports one curiosity: Most reentrants reported earnings below the annual exempt amount and would not have lost benefits in any case, indicating possible misperception of retirement test rules by retirees who want to work. Many older Americans apparently are not well-informed about the details of the retirement test provision, let alone the way it interacts with the delayed retirement credit and automatic benefit recomputation.²⁴ If work and retirement decisions are made on the basis of incorrect perceptions, a number of interesting questions can be raised about the accuracy of predicting the behavioral consequences of changing a provision that is poorly understood.²⁵ Although Packard's investigation finds a small short-run effect on the labor supply of cohorts aged 70-71, their behavior may give a misleading picture of the response of younger cohorts to the same change. Persons aged 65-69 are more likely to work than those aged

²⁴ In a recent study of 36 older workers from the New York City metropolitan area, for example, many individuals reported part-time and self-employed jobs that are off the books (Christensen 1989). In most instances, they claimed that earnings were not reported for fear of losing Social Security benefits, despite the fact that typical earnings were less than \$5,000 per year—well below the annual exempt amount in 1987 (\$8,160). Packard (1985) examined 1982 New Beneficiary Survey (NBS) data in which recent retirees were asked several questions about their awareness of the retirement test rules. Although 73 percent of retirees under age 72 knew of a retirement test, less than half of working retirees could identify the annual exempt amount accurately (within 5 percent of the true figure). Nonworking beneficiaries were substantially less knowledgeable than their working counterparts.

²⁵ Blinder, Gordon, and Wise (1980) suggest

70 or 71, and cohort participation rates decline steadily with increased age after age 55. Thus, the younger age group, closer as they are to their peak work years, may be more responsive to this type of policy change, although this hypothesis is certainly not confirmed by Vroman's 1985 study.

Generally, studies that use aggregate labor-supply measures—such as participation rates or numbers of older workers—indicate that the retirement test has little impact on the overall retirement picture. It is, nonetheless, possible that a minority of the elderly population is quite sensitive to the retirement test and that these individuals modify their desired work schedules in significant ways. These earnings-test-induced, labor-supply adjustments might be hard to detect, given the relatively small number of individuals involved and the coexistence of other factors that are likely to influence their work decisions. To accomplish this task requires more refined statistical analysis of detailed information on

that work effort might be stimulated if Social Security provisions—such as the retirement earnings test, delayed retirement credit, and automatic benefit recomputation—were better understood. Some individuals might be reducing their labor supply while thinking that the restrictions on working are more severe than they are. Gustman and Steinmeier (1989) point out that the response to major modifications in the earnings test and related provisions will depend on how quickly and accurately people learn about the nature and implications of the changes.

individuals' work histories, income sources, and personal characteristics. Thus, some researchers have developed econometric models that use technically sophisticated methods to measure the effect of the retirement test. In this approach, the analyst develops a mathematical formulation of the decision rules that presumably underlie the work and retirement patterns reported by a sample of individuals selected from the general population. The statistical methods generally involve discovering the specific rules that were most likely to have generated the observed behavior. Once the decision rules have been estimated, it is possible to predict the adjustments in various lifetime labor-supply dimensions that would result from changes in specific causal factors.

One of the earliest attempts to estimate the effect of the retirement test on work was done by Pellechio (1978) and, as such, its primary contribution is methodological. The study estimates a labor-supply model for older men based on information on the work activity of a sample of insured men, aged 65-70 in 1972-73. Pellechio cautions against generalizing on the basis of his results due to the somewhat unrepresentative nature of the sample used to construct his model (married, working men, whose wage rates are sufficiently low that full-time employment does not generate annual earnings that would result in loss of all Social Security benefits under the retirement test).²⁶ With this caveat in mind, Pellechio reports that repealing the test in 1972 would have resulted in an

²⁶ The annual exempt amount changed from \$1,680 to \$2,100 in 1973. Pellechio's efforts were aimed at measuring an upward adjustment in hours of work in response to the higher limit.

additional 3 hours of work per week by those beneficiaries who worked.²⁷ It is important to note that this result is derived from a period in which the test was substantially more restrictive and when the delayed retirement credit was only 1 percent and restored a smaller portion of benefits lost as a result of the retirement test.

Most of the empirical studies reviewed thus far are concerned with short-run adjustments in work effort precipitated by the retirement test. In contrast, several researchers have developed models that explicitly address the problem from a life-cycle planning perspective. That is, people are assumed to make decisions about all aspects of their lifetime work schedules as part of an integrated planning problem. Once these more complex decision rules have been estimated, it is possible to determine how various components of lifetime labor supply would adjust to changes in key determinants. Burtless and Moffitt (1984, 1985) use this approach to estimate the effect of outright elimination of the test for all age groups, including those aged 62-64. Their analysis uses RHS data on the work and retirement behavior of 4,600 men (aged 58-63 in 1969) during the 1969-77 interval. Elimination of the test is predicted to raise retirees' average weekly work by 1.2 hours in the long run. Only 10 percent of 62-year-old retirees would respond at all, but the average increase for this group is a substantial 10.6 hours per week. The size of the increase would

²⁷ Increasing the annual exempt amount from \$1,680 to \$10,000 would raise annual hours by 57; lowering the benefit reduction rate from 50 percent to 25 percent would result in a decline in annual hours of 98 to 140, depending on the assumed exempt amount.

decline with age. The estimated change in the timing of retirement is small; for the average retiree with earnings above the limit, the retirement date would occur about 3 weeks earlier. Noting that only about 10 percent of 62-year-old retirees are affected by the test, and that the test's effects probably decline with age, Burtless and Moffitt (1984, page 163) conclude that the effect of eliminating the entire retirement test provision on the overall retirement picture would be "virtually undetectable."

Gustman and Steinmeier (1985) predict the effects of several of the 1983 Social Security reforms using a somewhat different life-cycle model of work and retirement, also based on the behavior of a sample of men selected from the RHS.²⁸ They estimate the effect of lowering the benefit reduction rate to \$1 for each \$3 earned in excess of the earnings limit, a change that occurred in January 1990. This would increase the percentage of full-time workers aged 65 or older by 1-2 percentage points in the long run and decrease the percentage working part time by 1-2 percentage points, relative to the labor-force activity predicted under pre-1983 rules. That is, moderating the rate at which earnings in excess of the limit are taxed causes some individuals to postpone the transition from full-time to part-time jobs. Gustman and Steinmeier (1985, page 251) note that "the magnitude of the effects from this change alone would be less than half the effect of the 1983 changes;" raising the delayed retirement credit from 3 percent to 8 percent produces the largest work increase of all the enacted reforms.

²⁸ Their model features preferences for leisure that increase with age and permits transitions from full-time work to partial retirement, as well as to complete retirement.

Reinsdorf (1987) estimates a retirement model very similar in structure to Gustman and Steinmeier's, however, and concludes that their model significantly overstates the responsiveness of older workers to financial incentives.²⁹

All of these studies focus on the effect of the retirement test on the labor supply of older workers. If people are the astute planners posited in the economics literature, the test is likely to cause some workers to shift earnings into preretirement periods that are not subject to the test, thereby raising the labor supply of younger workers. Burkhauser and Turner (1978) estimate that the Social Security retirement test has increased work by prime-age men by 2-3 hours per week. Policies that eliminate or liberalize the retirement test in an effort to encourage work by older persons may have the unintended consequence of lowering work effort during earlier stages of the life cycle.

Retirement test provisions are a fairly common feature of social security systems around the world. Kirkpatrick (1974) reported that in a survey of more than 100 countries, more than 80 percent had some type of retirement test.³⁰ The very different cultural and economic circumstances that exist in other countries pose significant problems for using their experiences to make inferences about how U.S. workers would react to modifications in the test. Because of the cultural similarities and close relationship between the United States and Canada, the Canadian experience

²⁹ Enough differences exist between the two studies to obscure the precise sources of the discrepant conclusions reached.

³⁰ In a recent survey of the social security systems of 28 industrial countries, Gordon (1988) writes that all but seven had some type of retirement test.

provides an almost unique opportunity to study this issue. Canada's social security system, the Canada Pension Plan, abolished its fairly restrictive retirement test in 1975. At that time, the annual exempt amount was CAN\$1,900 and the benefit reduction rate was \$1 for every \$2 earned over the limit.³¹ Tracy (1982) examines Canadian data for the years immediately following the test's elimination and concludes that labor-force participation among men aged 65-69 declined in 4 of the 5 years from 1976 to 1980. During the entire 1962-80 period examined, the single largest fall in the labor-force participation rate (4.5 percentage points) occurred in the year immediately following the elimination of the test. Apart from the fact that the data are drawn from the experiences of another country, it would be a mistake to infer too much from Tracy's study because it does not adequately control for the numerous other factors that influence the participation rate of older men. However, it provides some evidence that the expectation of a noticeable increase in work activity in response to elimination of the test might be unfulfilled.

Simulating the Response to Elimination of the Test

The literature reviewed above utilizes data on individuals subject to the test to measure the test's influence on labor supply. In some cases, it involves simply tabulating

³¹ At the time, the Canadian retirement test was somewhat more strict than its American counterpart. Under the U.S. program, the annual exempt amount was US\$2,520. At the exchange rate in 1975, the Canadian limit was US\$1,868. Benefit reduction rates were 50 percent in both countries.

measures of labor-force participation, hours worked, or earnings both before and after changes in test features in an effort to discern induced responses. In other instances, more elaborate statistical models are estimated to isolate the test's impact on labor supply. With varying degrees of success, all of these studies make some attempt to measure how work effort has responded to the retirement test provision in the past.

In contrast, the simulation studies reviewed here do not contain new estimated response parameters; rather, they incorporate the findings of previous investigations to explain and predict work patterns within the older population. Four simulation studies have estimated the labor-supply consequences and probable net cost to the Government of modifying or eliminating the retirement test. Because researchers by and large have found modest effects of the test on aggregate labor supply, it is not surprising that most simulation studies have predicted that the additional tax revenues resulting from increased earnings would offset only a small portion of the cost of eliminating the test.

Gordon and Schoeplein (1979) report the results of a fairly detailed study of the likely overall budget impact in the initial year of eliminating the retirement test for beneficiaries aged 65-69. Calculations are performed using 1978 income data, but 1982 tax and Social Security rules. In their main set of computations, they assume that 10 percent of those who would have been fully retired would either delay retirement or reenter the labor force, an unsupported assumption ultimately responsible for 80 percent of the estimated overall increase in earnings that results from the test's

elimination. The 10-percent figure was taken from an earlier paper by Cagan (1974), who indicated that this magnitude was something of an upper bound on the range of plausible responses to repealing the retirement test. This estimate had no apparent empirical basis. For predicting the behavior of beneficiaries who are already working, Gordon and Schoeplein use estimated responses to wage and income changes based on empirical labor-supply studies available at the time. They conclude that 32 percent of the cost of eliminating the test would be offset by increased payroll taxes. When additional income tax revenue derived from higher earnings is added in, the total offset rises to 79 percent of the cost.³²

More recent research indicates that their assumption about the magnitude of increased labor-force participation rates within the cohorts aged 65-69 is far too high. Vroman (1985) and Packard (1988) find that the first-year impact on participation rates is likely to be negligible; Burtless and Moffitt (1984) and Gustman and Steinmeier (1985) also report that the long-run effect on the timing of retirement and the decision to participate are of a much smaller magnitude than assumed by Gordon and Schoeplein.³³ In addition, the Gordon-Schoeplein responses reported for hours worked by female beneficiaries are at least twice as large as more recent studies

³² At the time, Social Security benefits were not subject to Federal income tax.

³³ It is generally thought that the longer the time period considered in an analysis, the greater the possibilities for modifying behavior and, therefore, the larger the response. Thus, the small long-run effects reported in these studies imply even smaller short-run impacts.

indicate.³⁴ Thus, later studies that use more recent behavioral estimates find that the estimated short-run increase in earnings is at most a small fraction of the figure reported in this study.

Pattison et al. (1989) use SSA's Simulated Tax and Transfer System (STATS) model to predict the first-year net cost of eliminating the retirement test for persons aged 65-69 in 1990.³⁵ Adjustments of hours by working beneficiaries are based on estimated response parameters reported in Hanoch and Honig (1983).³⁶ It was assumed that no short-run change in labor-force participation would occur. The results indicate that aggregate earnings by persons aged 65-69 would rise by \$422 million. The revenue recouped by the Federal Government through increased payroll taxes and income taxes on both new earnings and benefits paid would defray 14.8 percent of the cost of the additional \$4.3 billion in benefits to be paid.³⁷ Nearly 75 percent of the new tax revenue derives from income taxation of

³⁴ See Hanoch and Honig (1983, page 144) for estimates specific to older women and Burtless (1986) for an overview of the literature on female labor supply.

³⁵ A description of the STATS model is provided in Wixon et al. (1987).

³⁶ The authors provide separate estimates of the response of work effort to changes in wage rates and income for both men and women aged 58 or older and is one of the best empirical studies that focuses on the labor supply of older persons.

³⁷ Additional simulations were performed assuming that male labor-force participation would rise by approximately 3 percentage points and by about 0.7 percentage point for women, figures that were judged to be "upper-bound" estimates for participation changes. Under this scenario, recouped revenues reached 35.3 percent of new benefit expenditures.

additional benefits paid, not from taxes on new earnings.³⁸

Honig and Reimers (1989) estimate both the short- and long-run labor supply effects of eliminating the retirement test for persons aged 62-69, also incorporating estimated labor-supply response parameters from Hanoch and Honig (1983) in their calculations. They conclude that the net increase in labor supply would be negligible. It is estimated that 22 percent of individuals in this age range would be directly affected by the change. The 4 percent with earnings at the annual limit, or with benefits partially offset by the test, would increase hours worked by 13-20 percent. The remaining 18 percent, whose earnings are sufficiently high that no benefits are paid, would decrease their hours of work by 1 percent. Elimination of the test would result in a first-year increase of \$23.5 billion in annual benefits paid. The concomitant increase in payroll tax revenue amounts to \$65 million. In the long run, the predicted earlier acceptance of benefits leads to actuarial reductions in future amounts paid out, lowering the added annual benefit cost to \$3.2 billion. No estimates are made for induced changes in income tax revenues.³⁹

Gustman and Steinmeier (1989) estimate both short- and long-run

³⁸ About 10 percent results from payroll taxes on new earnings.

³⁹ Care should be taken in comparing the figures in this article with those found in other sources. In calculating their estimates, Honig and Reimers assume that (1) the test is eliminated for all persons aged 62-69, (2) the effective date of elimination is 1986 (short-run estimates are for that year), (3) people are myopic in their retirement planning (that is, in deciding how much to work, individuals consider only the current year's income and wage offer), and (4) Social Security rules that were in effect in 1986 remain unchanged over time.

effects of adopting several modifications in existing Social Security rules using a simulation model based on results of their 1986 retirement research.⁴⁰ Consistent with their 1985 analysis of the likely long-run impact of the 1983 Social Security amendments, changes in the delayed retirement credit are shown to dominate the effect of eliminating the test. Simply increasing the credit to 8 percent in 1990 expands the number of full-time male workers aged 65-69 by 45,000 per year on average over the next 25 years, whereas eliminating the test in the face of the gradual rise in the delayed credit scheduled under current law produces an increase of 17,000 full-time male workers per year. A combined policy of eliminating the retirement test and immediately increasing the delayed retirement credit to 8 percent increases the annual supply of full-time male workers by 47,000, only marginally larger than the response forthcoming from solely increasing the delayed credit. With a delayed retirement credit that is well below its actuarially fair level, insured persons would continue to have an incentive to apply for retirement benefits as soon as they reach age 65. In light of the relatively small predicted increase in aggregate male labor supply, eliminating the retirement test while permitting the delayed retirement credit to increase gradually, as scheduled under current law, has a high predicted net cost in the early years.⁴¹ However, when the present

⁴⁰ Their analysis is restricted to private sector wage and salary workers.

⁴¹ Increasing the delayed retirement credit to 8 percent in 1990 tends to save on short-run costs while increasing long-run costs because the increased delayed credit provides an incentive to postpone application for benefits. However, the delays in benefit acceptance result in higher monthly payments in future periods.

value of additional benefits to be paid out in the long run (1990-2014) is compared with the present value of additional Federal payroll and income tax revenues—including the taxation of new benefits paid to higher-income beneficiaries—the retirement test repeal recoups 45 percent of new benefit costs.⁴²

Discussion and Conclusions

Economic research indicates that the Social Security retirement test plays a relatively small role in determining the aggregate labor supply of older workers. As a result, outright elimination of the test for beneficiaries aged 65 or older would probably result in little change in overall work patterns. The evidence on which these conclusions are based is varied: A large number of studies that investigate the determinants of the retirement decision, tabulations of earnings data for older workers over time as the retirement test provision has been modified, direct statistical measurement of the test's impact on work, and simulation studies of likely responses to changes in the retirement test provision.

⁴² The decision to apply for benefits is not explicitly modeled in any of these studies. Consequently, it is necessary to make some assumption about the timing of application for retired-worker benefits. Gustman and Steinmeier experiment with several alternatives. Their preferred approach is to assume that full-time workers apply when it is actuarially optimal to do so; persons who are completely or partially retired apply for benefits as soon as they are eligible. Their main alternative assumption is that all insured workers apply for benefits when first eligible. The simulation results are sensitive to this assumption.

It is possible, of course, that investigators have failed to document an appreciable effect of the retirement test on work and retirement decisions because of insufficiently precise research methods and, particularly, lack of appropriate data. On methodological grounds, some studies are clearly more credible than others but all are limited in one way or another. Consequently, in reviewing each study it is an easy matter to form a list of criticisms and weaknesses that cast doubt on the validity of an author's conclusions. It is the accumulated weight of a number of studies that replicate previous findings with new data sources as well as repeated attempts to gauge the robustness of results in the face of plausible changes in model specification that eventually lead to a consensus view of likely empirical magnitudes. Therefore, although no expert in this field claims that the effects of the retirement test provision have been measured precisely, there is a sufficiently large and varied body of evidence to support a provisional judgment about the small order of magnitude involved.⁴³

As indicated at the beginning of this article, there are valid reasons—at least in theory—to suspect that the retirement test might depress the labor supply of older workers. The empirical studies suggest a number of mitigating factors.

⁴³ At this time, a new study that claimed otherwise would be subject to intense professional scrutiny by retirement experts, in that it would contradict the conclusions of a number of highly regarded studies.

- Research suggests that retirement decisions are influenced by the availability and generosity of Social Security and private pensions, health status, job characteristics, wage offers, family circumstances, and personal preferences for work versus leisure time. These other contributing factors that encourage or enable retirement appear to be dominant.⁴⁴
- Other Social Security provisions, particularly the actuarial adjustment for early retirement, the delayed retirement credit, and the automatic benefit recomputation feature, significantly offset the test's apparent penalty.⁴⁵
- The retirement test has been substantially liberalized over the years, permitting beneficiaries to earn more money without benefit loss. Although earlier, more stringent forms of the test may have posed significant work disincentives in the past, the current rules are far less restrictive.
- Some beneficiaries are undoubtedly sensitive to the test and respond by making important adjustments in their lifetime labor-supply plans. Nonetheless, the relatively small size of this group limits any impact that their response can have

when the aggregate behavior of many millions of people is measured.

- Many workers have limited control over the number of hours worked on their jobs and, therefore, may show little reaction to changes in the test in the short run.

The evidence presented in this article contradicts the arguments offered by a number of journalists and op-ed page contributors, as well as by some policy analysis organizations, who argue that the labor-supply response to eliminating the retirement test would be large. Indeed, it is sometimes claimed that the stimulus to work would be sufficiently large that the additional revenues accruing to the Federal Government from payroll and income taxes on induced new earnings would fully offset the cost of new benefit amounts to be paid. There are several types of "high-response" arguments, and although they may have some intuitive appeal, each fails to stand up under closer investigation.

One line of reasoning focuses on the high marginal tax rates that can result from combining Federal payroll and income tax schedules, State and local taxes, and the retirement test. Because the calculated marginal rates are high—over 80 cents on the dollar—it is concluded that they must dramatically deter work. This information, in itself, is insufficient to validate the high-response position for at least three reasons. First, the calculations usually fail to include the delayed retirement credit and automatic benefit reduction

provisions, thereby overstating the true marginal tax. Second, predicting the behavior that will be induced by changes in tax and transfer policies requires more than calculating how individuals' work and consumption possibilities (incentives) are altered. It is also necessary to know the degree to which behavior actually responds to changed incentives. Tax rate arithmetic, in itself, tells nothing about how responsive work behavior is to changed opportunities. Third, the computation of implicit tax rates alone provides no information about how many individuals actually face these steep marginal rates. The highest marginal rates are operative for a range of earned income that varies with personal financial circumstances. A large majority of workers aged 65 or older do not face the highest marginal rates, mainly because their earnings are well below the annual exempt amount or their earnings are so high that all retirement benefits are, or would be, lost. Although this does not rule out the possibility that individual work plans are adjusted so that high marginal tax rates are avoided, establishing a causal relationship requires technically sophisticated research methods. Those studies that have employed such procedures have not validated the high-response position.

Some reports that claim a large work response to eliminating the retirement test are based on statistical analyses that are technically deficient. Some of these efforts fail to use appropriate statistical methods to control for the influence of other work and retirement factors; others simply assume the nature and size of labor-supply responses. Given their technical shortcomings, these

⁴⁴ See Parnes (1988), Hurd (1989), and Ruhm (1989) for recent assessments of the economic literature on retirement.

⁴⁵ See Blinder, Gordon, and Wise (1980, 1981). Their arguments have been disputed by Burkhauser and Turner (1981).

studies are usually dismissed out of hand by retirement experts.⁴⁶

Finally, anecdotal evidence that recounts the specifics of cases in which individuals have purportedly made some type of reduction in labor supply to avoid the retirement test is often cited. Sometimes reference is made to the number of complaints, angry letters, and the like received through the mail or at some public forum. Undoubtedly these expressions reflect real frustration felt by some Social Security beneficiaries, and some of these individuals probably do reduce their work effort to avoid losing benefits. Social scientists are, however, skeptical about this type of information for several reasons. First of all, it is not clear that the reported behavior is generally representative of the population at large. Persons with particularly strong feelings about a situation are more likely to take the effort to express an opinion. It is also unclear to what extent an outpouring of letters, telegrams, petitions, and the like is a

⁴⁶ Colberg (1978), for example, provides a good discussion of many of the important issues surrounding the retirement test provision but his attempt to measure the effect of its elimination on labor-force participation is not adequate. A good deal of mischief may result from well-publicized studies whose technical deficiencies may not be apparent to the general public. For instance, Robbins and Robbins (1989) claim that eliminating the test would bring 700,000 additional older workers into the workforce, a figure that is far beyond the largest estimates provided in the studies reviewed here. They further conclude that eliminating the test would generate sufficiently large new Federal revenues that the policy change would more than pay for itself. These labor-supply and revenue estimates are the result of a statistical error. Despite the serious theoretical and methodological shortcomings of their work, the Robbins and Robbins conclusions have been frequently cited in the press. See Pattison (1990) for a convincing critique of their report.

spontaneous expression of public concern, or if it simply represents an engineered response to further the agenda of some interest group (Smith 1988, chapter 9). Second, anecdotal evidence is usually not helpful in forming estimates of the magnitude or importance of some phenomenon. It is not clear how to convert a collection of angry letters condemning the retirement test into an estimate of the aggregate labor-supply response to its elimination. Although anecdotes sometimes signal the existence of an important phenomenon worthy of serious investigation, they do not substitute for scientific evidence.

In sum, arguments that the retirement test substantially deters work by older persons are unsupported by credible evidence. Although few of the relevant behavioral responses have been measured with a degree of precision that would permit accurate prediction of the consequences of eliminating the retirement test, a sufficient body of research supports a provisional judgment about the probable order of magnitude, if not the exact size, of the test's influence on work and retirement decisions. The evidence strongly suggests that the impact of the retirement test on the aggregate labor supply of older workers is fairly small.

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Appendix: Glossary of Program Terms

Average indexed monthly earnings (AIME)

The amount of earnings used as the basis for determining the primary insurance amount (PIA) for most workers who attain age 62, become disabled, or die after 1978. Indexing creates an earnings record that reflects the value of the individual's previous earnings relative to national average earnings in the indexing year. The indexing year is the second year before the year in which the worker attains age 62, becomes disabled, or dies. Taxable earnings after the indexing year are counted at their nominal value.

Earnings are indexed by multiplying the worker's taxable earnings for each year after 1950 through the indexing year by the average wages of all workers for the indexing year, and dividing by the average wages of all workers for the year being indexed. Once the earnings record has been indexed, the AIME is computed by—

- determining the number of computation years—the number of years after 1950 (or the year of attainment of age 21, if later) and up to the year in which the worker attains age 62, becomes disabled, or dies, minus dropout years, generally 5 (minimum number of computation years is 2);
- selecting the actual computation years, based on highest earnings after indexing, from any years after 1950; and
- dividing the sum of earnings in the computation years by the total number of months in the computation years.

Beneficiary (OASI)

A person who has been awarded benefits on the basis of his or her own or another's earnings record. The benefits may be either in current-payment status or withheld.

Delayed retirement credit

A credit due a worker for delaying retirement after attaining age 65 provided the worker (1) was fully insured, (2) had attained age 65 but was not yet age 70 (age 72 before January 1984), and (3) did not receive benefits because he or she had not filed an application or was working. Each monthly credit serves as a basis for increasing the monthly benefit (unless the benefit is based on a special minimum PIA) by specified percentages that depend on the year the worker attains age 62.

Earnings (or retirement) test

The provision requiring the withholding of benefits if beneficiaries under age 70 have earnings in excess of certain exempt amounts.

Entitlement

The state or condition of meeting the applicable requirements for receipt of benefits, including the filing of an application.

Insured status (OASI)

The state or condition of having sufficient quarters of coverage to meet the eligibility requirements for retired-worker benefits or to permit the worker's spouse and children or survivors to establish eligibility for spouse's and children's or survivor's benefits in the event of his or her retirement or death.

Primary insurance amount (PIA)

The monthly amount payable to a retired worker who begins to receive benefits at age 65. It is calculated based on the individual's earnings record.

Retired-worker (old-age) benefit (OASI)

Monthly benefit payable to a fully insured retired worker aged 62 or older or to a person entitled under the transitionally insured status provision in the law.

Retirement test

See "earnings test."