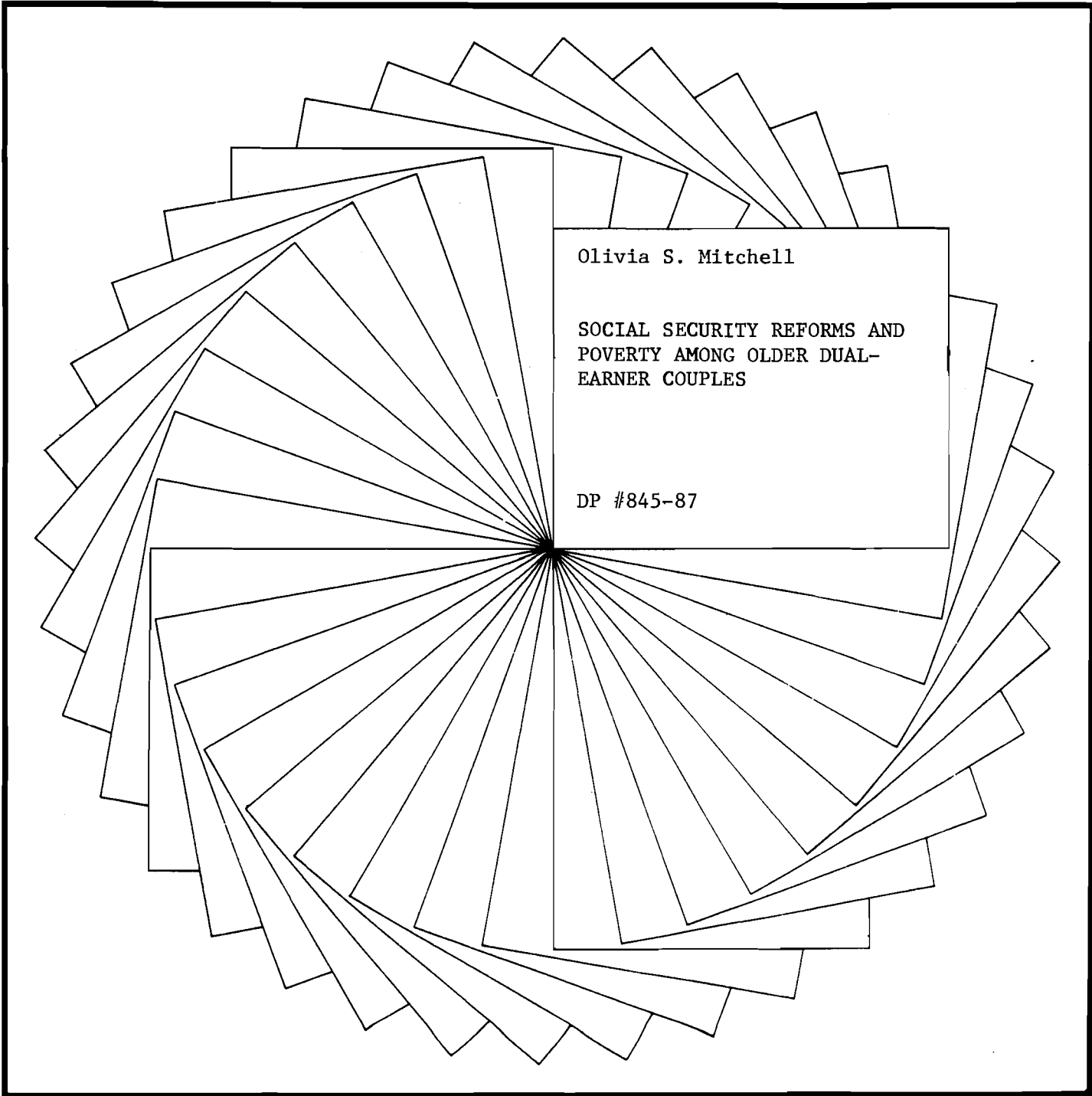




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POVERTY AMONG OLDER DUAL-
EARNER COUPLES

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Social Security Reforms And Poverty
among Older Dual-Earner Couples

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Abstract

Most retirement studies examine older married couples in which the husband is the sole earner. This paper extends the focus of analysis to examine older dual-earner couples. It further evaluates the impact of Social Security reforms on older working couples' retirement ages and retirement incomes.

Specifically, I examine two questions: (1) What are the likely effects of changes in Social Security rules on the retirement decisions of older working women and their husbands? and (2) How are these changes likely to alter the incidence of poverty among retired dual-earner couples? The evidence suggests that benefit reforms intended to bolster the Social Security System's financial position are also likely to worsen the economic status of an important minority of dual-earner couples.

Social Security Reforms and Poverty
among Older Dual-Earner Couples

In the United States, Social Security benefits constitute a significant source of retirement income: more than 90% of the aged are paid benefits under the program, and almost two-thirds of elderly households receive half or more of their income from Social Security (Upp, 1983; Andrews, 1985). It is therefore important to ascertain how Social Security benefit reforms such as those recently enacted will affect older people's income. The impact of benefit reductions on the living standards of older persons depends on two factors: the size of the Social Security benefit cuts; and whether older workers counteract lower retirement benefits by working longer. This paper extends past research by evaluating the signs and magnitudes of working couples' responses to Social Security reforms.¹ Two central questions guided the analysis: (1) What is the anticipated impact of recent changes in Social Security rules on the retirement decisions of older working couples? and (2) How are these new rules likely to alter the incidence of poverty among retired dual-earner couples, taking into account induced changes in retirement behavior?

Sections I and II sketch the retirement incentives facing older couples prior to and after Social Security reforms similar to those actually legislated in 1983, as well as several others under current discussion. Section III describes a model of the dual-earner couples' retirement decision and indicates the weight older couples appear to accord to income and leisure time. Sections IV and V report estimated retirement responses and changes in income and poverty status under the simulated reforms. Throughout, a partial equilibrium approach is used;

behavioral estimates assume that earnings and private pension income remain unaffected by these reforms. A final section presents conclusions.

I. RETIREMENT INCENTIVES PRIOR TO THE REFORMS

Recent data do not exist with which to assess directly how Social Security reforms actually enacted are affecting current retirement behavior and retiree income. It is thus necessary to update an older but a nationally representative data set known as the Longitudinal Retirement History Survey (LRHS) covering workers retiring during the 1970s. For the purpose of this study, dual-earner couples in the LRHS are identified as those in which both the husband and wife are employed in the paid labor market in 1969.² Our sample is limited to private-sector wage and salary workers, since no pension data are available for government or military employees. The study is also restricted to couples in which the husbands were age 59-61 in 1969, and the wives were age 54-62 in that same year.³ The resulting data set consists of 139 dual-earner couples, followed over a ten-year period.⁴

The LRHS and the earnings records which supplement it provide extensive information on income opportunities available to working couples. These are used to generate predicted earnings, pension, and Social Security income measures for the original 1970s data file. Earnings histories for both men and women are employed to predict what each worker could have earned if he or she remained employed from 1969 onward. Private pension data are difficult to obtain for both sexes. Since the LRHS only indicates when a pension is received, industry-level benefits for retirees age 65 reported by Kotlikoff and Smith (1983) are employed

as proxies for benefit amounts. Actuarial reductions for other retirement dates are available from Schulz and Leavitt (reported in Burkhauser and Quinn, 1980). Women's benefit levels are further reduced by a factor of 22%, based on evidence from Lazear and Rosen (1987) on sex differentials in pension benefit amounts.

Social Security benefits for the 1970s data file are computed based on rules in effect when the workers make their retirement decisions. This is assumed to be when the husband attains age 60, in accordance with previous research (Fields and Mitchell, 1984b). Computations for women are complicated by the fact that a wife's retirement benefits can be based either on her own earnings record or her husband's, whichever is larger. To carry out this computation, it is necessary to determine whether the husband is retired at each possible retirement date open to the wife. Consequently wives are posited to make their retirement decisions contingent on their husbands' retirement decisions. This "wife as follower" formulation is justified by the empirical impossibility of specifying a fully simultaneous budget constraint where husbands react to wives' retirement behavior, and vice versa. In addition, it seems plausible to formulate wives' retirement decisions as conditional on their husbands', at least for the cohort of women retiring during the 1970s. Whether this model will be as fitting for women retiring in the 1980s and beyond is, as yet, unknown.

To assess the likely impact of the several Social Security reforms considered here, the 1970s LRHS data file is updated to represent the retirement opportunities facing dual-earner couples reaching retirement age in 1982 and beyond. Three data modification steps are required, following the procedure sketched by Fields and Mitchell (1984a):

1. Earnings: Pre-tax earnings for both members of the dual-earner couple are updated by applying an economy-wide wage growth factor, on the assumption that older workers share proportionately in productivity increases over time. Federal income tax and Social Security contribution formulas in effect in 1982 are applied to create net earnings of the husband and/or wife, if employed.

2. Pensions: Company-provided pension amounts are updated to 1982 dollars, on the assumption that pre-retirement pension profiles during the 1970s did not grow in real terms. After retirement, benefits are assumed to be constant in nominal terms as was true for many plans during the 1970s (Clark and McDermed, 1982). Federal income tax is subtracted from gross pension amounts to arrive at net real pension benefits for alternative retirement dates.

3. Social Security: Real Social Security benefits for both members of the dual-earner couple are computed according to the rules in effect in 1982, taking into account that payments rise in proportion to increases in the Consumer Price Index.

Components of the baseline income opportunity set for married men and their wives contemplating retirement in 1982 are displayed in the Appendix Table. These income amounts are computed as of the point when the husbands reach age 60, that is, when both members of the couple are expected to be making their retirement decisions. Present values of annual payments are adjusted by a real discount rate of 2%, as well as standard mortality figures, which differ by age and sex, provided by the U.S. Department of Health and Human Services (1975 and updates).⁵

II. REFORM SCENARIOS

Four Social Security reforms are examined in this paper: an increase in the normal retirement age, an increase in the late retirement credit, a rise in the early retirement penalty, and a delay in the cost-of-living adjustment. Before describing their particulars, it is useful to remind the reader how Social Security benefits are computed.⁶

The first step in deriving retirement benefits is to determine a worker's Average Indexed Monthly Earnings (AIME). This is derived by indexing earnings up to the Social Security taxable ceiling between 1951 and the year in which he/she reaches age 60. Low years are dropped, and the remaining ones averaged.

The second step is to find the worker's Primary Insurance Amount (PIA). This is determined using the following formula, with "Bend Point 1" set to \$230 and "Bend Point 2" set to \$1,388 in 1982 (both Bend Point rise over time with the Consumer Price Index):

90% of AIME to "Bend Point 1"
 plus
 32% of AIME between "Bend Point 1" and "Bend Point 2"
 plus
 15% of AIME above "Bend Point 2."

The third step is to compute the Social Security benefit a retired worker could receive as a multiple of his/her own PIA, which depends on his/her retirement age: $\text{Benefit} = \text{Multiple} \times \text{PIA}$. The multiple is equal to 1.0 for a worker retiring at age 65, with smaller multiples applied to early retirees, and larger ones to those delaying retirement.

Specifically, the early retirement reduction factor in 1982 was 6.66% per year, and the delayed retirement credit 3% per year (figured to the month, in practice).

The final step in computing benefits is to determine the spouse's benefit, if any. A wife may receive benefits based on her own earnings history or on her husband's if he is retired, whichever is greater.⁷ If the wife is 65 and her husband is retired, she receives 50% of his PIA; if she retires before age 65, this amount is reduced. If the husband is not yet retired at the wife's retirement date, she may file for benefits on the basis of her own record and these may be increased where appropriate when her husband retires.

The four Social Security experiments examined here operate by altering the multiples associated with benefit computations. Experiment A increases the normal retirement age by changing the formula so that the multiple equals 1 for retirement at age 67, instead of at age 65 (as in 1982). Congress has actually implemented this change, phasing in age 67 as the new normal age by the year 2027 (the simulations below abstract from the phase-in period). Experiment B delays by six months the cost-of-living adjustment applied to benefits. This policy is identical to that enacted in 1983, and has the effect of decreasing real benefits by just over 2% (half the prevailing inflation rate at the time). Experiment C increases the late retirement credit by raising benefits $6 \frac{2}{3}\%$ for each year worked beyond age 65. This contrasts with the 3% increment for delayed retirement in effect prior to 1983. Experiment D increases the penalty for retiring early. Specifically, early benefits

are reduced by 15% for each year prior to 65, instead of the current 6 2/3%. This proposal was advocated by the Reagan administration in the early 1980s but has not yet been implemented.

Tables 1 and 2 report how each of the policy reforms alters annual and present values of Social Security benefits at different retirement ages, from the vantage point of 1982. Results for husbands of dual-earner couples in the LRHS sample are provided for their 60th, 62nd, 65th, and 67th birthdays; data for married women are given on the wives' 60th, 62nd, 65th, and 67th birthdays. Both tables hold constant retirement behavior; the next section explores possible behavioral changes in retirement resulting from these policy changes.

Increasing the normal retirement age as in Experiment A reduces both men's and women's Social Security benefits substantially, regardless of when the workers retire. Annual payments for husbands fall by a larger amount (\$400-1,400) than do wives' (\$300-900), though percentage reductions are about the same. The dollar difference in benefit reductions across men and women is attributable to the fact that wives may receive their own benefits or roughly half of their husbands', whichever is greater. This somewhat softens the impact of reductions in their own PIA. Present discounted values (PDV's) of Social Security benefits decline sharply for men, falling by over \$17,000 for early retirement dates, and by more than \$11,000 for those retiring at 65. Hence the experiment "tilts" the structure of Social Security benefits in such a way as to reward deferred retirement more powerfully than in the baseline scenario. Wives' benefits under Experiment A are also reduced, but by roughly constant amounts for retirement ages 60-65. Hence the experiment

Table 1

Effects of the Experiments on Husbands' Annual and Present
Discounted Value of Social Security Benefits
(\$ 1982)

	Husband's Retirement Age			
	60	62	65	67
I. Annual Social Security Benefits:				
Baseline	\$5,309	\$5,424	\$6,980	\$7,531
Experiment				
A. Raise the normal retirement age	3,982	4,068	5,863	7,105
B. Delay the cost-of-living adjustment	5,186	5,298	6,819	7,358
C. Raise the late retirement credit	5,309	5,424	6,980	8,052
D. Raise the penalty for early retirement	3,650	3,729	6,980	7,531
II. Present Value of Social Security Benefits:				
Baseline	\$66,450	\$67,870	\$68,807	\$62,385
Experiment				
A. Raise the normal retirement age	49,841	50,916	57,798	58,854
B. Delay the cost-of-living adjustment	64,912	66,308	67,224	60,950
C. Raise the late retirement credit	66,450	67,870	68,807	66,699
D. Raise the penalty for early retirement	45,688	46,673	68,807	62,385

Table 2

Effects of the Experiments on Wives' Annual and Present
Discounted Value of Social Security Benefits
(\$ 1982)

	Wife's Retirement Age			
	60	62	65	67
I. Annual Social Security Benefits:				
Baseline	\$3,180	\$3,344	\$4,458	\$4,926
Experiment				
A. Raise the normal retirement age	2,385	2,508	3,744	4,648
B. Delay the cost-of-living adjustment	3,106	3,266	4,355	4,814
C. Raise the late retirement credit	3,180	3,344	4,458	5,267
D. Raise the penalty for early retirement	2,186	2,299	4,458	4,926
II. Present Value of Social Security Benefits:				
Baseline	\$54,050	\$55,565	\$60,661	\$57,047
Experiment				
A. Raise the normal retirement age	45,002	45,677	53,301	54,334
B. Delay the cost-of-living adjustment	52,807	54,287	59,266	55,734
C. Raise the late retirement credit	54,050	55,565	60,661	60,397
D. Raise the penalty for early retirement	43,230	43,703	60,661	57,047

does not sharply alter the tilt of discounted Social Security benefits, in contrast to the men's case. For both groups the experimental budget structure is roughly neutral for retirement after age 65, in contrast with the baseline figures.

Experiment B defers the Social Security cost-of-living adjustment, reducing real annual and discounted benefits only slightly for both sexes. Annual benefits fall by about \$100 and PDV's decline by about \$1,500, for both men and women. Evidently this experiment does not substantially alter Social Security benefit levels or incentives for deferring retirement.

Raising the late retirement credit, as in Experiment C, leaves annual and discounted benefits unchanged for those who retire at age 65 or younger. For men deferring retirement to age 67, annual benefits are increased by about \$500, producing a discounted stream which is higher by \$4,000. Women's annual payments rise by only \$300 for retirement at 67, which translates into a PDV increase of just over \$3,000. Because the reform alters only benefits after age 65, and because the magnitudes are small, it does not have a strong impact on retirement incentives for either member of the dual-earner couple.

Experiment D has the largest impact on post-reform incomes, as it imposes a severe penalty on early retirement; benefits for retirement at and beyond age 65 are not affected. A married man retiring at age 62 under this scenario would experience a \$1,700 fall in annual benefits, yielding a discounted income stream lower by \$21,000. Experiment D thus implies strong new incentives to defer retirement; the benefit tilt is such that discounted benefits would rise almost 50% if the husband were

to retire at 65 instead of 62. For wives, the effects are similar in character though smaller. For retirement at 62, annual benefits fall by \$1,000, and PDV falls by about \$12,000. The gain to deferring retirement to age 65 is now about 40%, or about \$17,000. Because of the magnitudes of the benefit cuts involved, and because of the dramatic changes in gains to deferring retirement, this reform would be expected to have the largest effect on retirement behavior, compared to the other three described above.

On balance, then, raising the normal retirement age and reducing early retirement benefits produce the largest drop in annual retiree income, for both husbands and wives. Intermediate effects are discerned for delaying the cost-of-living adjustment, and increasing the late retirement credit.

III. BEHAVIORAL RESPONSE PARAMETERS

To predict whether dual-earner couples will retire later or earlier under the four Social Security reforms just described, it is necessary to predict behavioral responses to the new budget sets. Earlier research suggests that a discrete choice framework is empirically useful in modeling both married men's retirement behavior (Fields and Mitchell, 1984a) and that of their wives (Pozzebon and Mitchell, 1986). In this framework, the utility of retirement at age j is associated with the discounted income stream (PDVY) and the remaining leisure time (RET) associated with that retirement choice:

$$U_{ij} = [\beta \ln PDVY_{ij} + \Delta \ln RET_{ij}] + e_{ij}.$$

Table 3

Effects of Experiments on Retirement Ages

	Predicted Changes in Retirement Age of	
	Husbands	Wives
Experiment A:		
Raise the normal retirement age	+1.9 months	+0.4 months
Experiment B:		
Delay the cost-of-living adjustment	+0.1	-0.5
Experiment C:		
Raise the late retirement credit	+0.2	+0.1
Experiment D:		
Raise the early retirement penalty	+3.1	+0.7

Parameter estimates of β and Δ , obtained using a logit maximization approach, indicate the relative weight older workers associate with income and leisure opportunities.

Using this model, Pozzebon and Mitchell (1986) find that older women who work appear to value leisure relative to income more strongly than do their husbands. On the basis of this finding, it is anticipated that wives' responses to Social Security reforms described here would be smaller than those of their husbands. This surmise may be evaluated empirically by using behavioral parameter estimates to predict changes in retirement patterns resulting from the four experimental scenarios. To this task I turn next.

IV. EFFECTS OF THE REFORMS ON RETIREMENT AGES

Consistent with the approach throughout, analysis of the effects of the four reforms on retirement ages assumes that wives make their retirement decisions subsequent to those of their husbands. Several computational steps are required to obtain the desired results. First, men's retirement responses to each of the experiments are predicted, by combining retirement coefficients⁸ for the LRHS husbands with income streams under each of the reform scenarios. Next, it is determined whether changes in men's retirement ages are substantial enough to alter the retirement income opportunities available to their wives, insofar as wives' benefits depend on their husbands'. Having done this, wives' responses to these new budget sets are computed using behavioral estimates derived by Pozzebon and Mitchell (1986).

It would be anticipated that the retirement responses of men to Social Security reforms would be the largest under Experiment D. Compared with the other three cases considered, this reform reduces Social Security benefits by a greater amount and tilts the PDV structure more steeply. Indeed this expectation is borne out by the results in Table 3, though augmenting the early retirement penalty produces very small changes in men's retirement ages overall--on the order of three months. The other experiments have even smaller impacts on men's retirement, delaying it by 0.1 to 2 months on average. In general, married men do not appear to extend their work lives by very much when confronted with the changes in retirement opportunities described here.⁹

Table 3 also shows how women's retirement behavior changes under each of the reforms. As noted earlier, in principle it is necessary to take husbands' changes in retirement ages into account when computing wives' post-reform budget constraints. However, this proves to be unnecessary under the present experiments, because men's retirement responses are so small.¹⁰ Consequently wives' responses to their new budget sets are computed directly using behavioral parameters described above, assuming that their husbands' retirement ages are given.

Results for wives in Table 3 are, in most cases, reminiscent of the findings for married men in terms of the direction and the ranking of responses. As was true for men, the largest estimated response among women occurs under Experiment D, which lowers early retirement benefits and increases the reward to deferring retirement. The women's response is, however, much smaller; wives are predicted to delay retirement under this scenario by only 0.7 months, whereas the figure for men is 3.1

months. Also smaller are the women's responses to the other three experiments, as compared to men's. Experiments A and C have tiny positive effects: increasing the normal retirement age is predicted to push back wives' retirement by 0.4 months, and raising the late retirement credit would induce only a 0.1 month delay. A small negative response of -0.5 months is predicted for Experiment B. The fact that women's retirement responses are smaller than men's is attributable to two factors: (1) parameter estimates indicate women weigh income relatively less, and leisure more strongly, than do men; and (2) the Social Security experiments themselves have a somewhat smaller impact on women's incomes than on men's.

V. EFFECTS OF THE REFORMS ON RETIREMENT INCOMES AND POVERTY

Whether and how these changes in retirement income policy affect poverty among dual-earner couples is addressed using Table 4. This table compares family income to the official poverty line¹¹ for two-member households at various dates. For example, family income on the husband's 60th birthday is computed as the sum of his and/or her earnings (if either is employed at the time), plus Social Security and pension benefits (if either or both members of the couple are eligible). Similar computations are performed for the couple when the husband reaches age 62, 65, and 67, to determine the dynamics of income patterns as the dual-earner couples age.

Two cautions regarding the findings are in order. First, poverty computations are only carried out between the husband's 60th and 67th birthdays. This is felt to be the relevant range for the purposes of

retirement policy research, since it seems unlikely that most older individuals could be induced to defer retirement beyond age 67 (the average retirement age for men is now about age 63; Fields and Mitchell, 1984b). As such, the present analysis does not speak to questions of poverty among retirees in their 70s and beyond. A second caveat is that only earnings and retirement benefits are considered in the computations, while other forms of income are ignored. This is necessitated by the poor quality of asset data in the LRHS. Since many older couples hold few assets other than their homes, money income figures are probably not very skewed by this omission.

The first line of Table 4 indicates that family income for the average dual-earner couple is quite substantial at the husband's 60th birthday. This is true irrespective of whether one examines the baseline or the four experimental scenarios. Because husbands and wives are working at that date, and earnings are relatively high, income exceeds at least twice the poverty line for all families. Essentially the same pattern prevails at the husbands' 62nd birthday; at that age most husbands, and almost 80% of their wives are still employed.

However by the time the husbands attain age 65, a different picture begins to emerge. By now, most of the husbands and two-thirds of the wives have retired. The baseline scenario shows that 11% of families are now below the poverty line, and another 26% are quite close (twice the poverty line). This picture is essentially reproduced under Experiments B and C. In contrast, Experiments A and D have more severe effects. Raising the normal retirement age (as implemented in 1983) and lowering

Table 4

Family Income and Poverty over Time: Baseline and Four Experiments

	Percentage of Families with Income of			
	< Poverty Line (1)	Between 1 and 2 x Poverty Line (2)	Between 2 and 3 x Poverty Line (3)	> 3 x Poverty Line (4)
<u>I. Husband's Age = 60</u>				
Baseline and All Experiments	0%	0%	2%	98%
<u>II. Husband's Age = 62</u>				
Baseline and All Experiments	1	1	1	97
<u>III. Husband's Age = 65</u>				
Baseline	11	26	12	51
A: Raise the normal retirement age	16	33	17	34
B: Delay the cost-of-living adjustment	11	26	12	51
C: Raise the late retirement credit	11	26	12	51
D: Raise the early retirement penalty	16	31	15	38
<u>IV. Husband's Age = 67</u>				
Baseline	14	30	22	34
A: Raise the normal retirement age	22	46	17	15
B: Delay the cost-of-living adjustment	14	32	22	32
C: Raise the late retirement credit	14	29	21	36
D: Raise the early retirement penalty	21	45	18	17

early retirement benefits raise the incidence of poverty by 45% (relative to the husband's 65th baseline income). Near-poverty--a family income of between 1 and 2 times poverty--rises by more than 25%.

When the husband is age 67, poverty rates using the baseline model as well as Experiments B and C increase somewhat, to 14% (from 11% at age 65). This is mainly explained by the earnings decline for both members of the couple, exacerbated by falling real pension benefits as they are eroded by inflation. Results for Experiments A and D are even more striking than before, with a 57% increase in the incidence of poverty and roughly a 50% increase in near-poverty.

It should be recognized that most dual-earner retired families in the age range examined are actually rather well-off. All of the sample couples are above the poverty line when the husband reaches age 60. Between the husbands' 60th and 67th birthdays, 83% of all families receive income greater than the poverty line in every year, using the baseline projections. The proportion non-poor in every year between the husband's 60th and 67th birthday is still as high as 73% even under the most stringent reform, Experiment D. Nevertheless, it is evident that poverty grows more prevalent as couples age, even for this relatively well-off group.

In sum, the evidence suggests that altering Social Security benefits has virtually no impact on retirement ages for most dual-earner couples. Indeed, the responses of older working wives prove to be even smaller than those of their husbands. All four experiments predict a negative effect on retirement income. Raising the normal retirement age and/or augmenting the early retirement penalty are two reforms which greatly

increase the incidence of poverty and near-poverty among dual-earner retired couples.

VI. CONCLUSION AND DISCUSSION

Retirement decisions of older dual-earner couples are the focus of analysis in the present paper. Specifically, two questions are addressed:

- (1) What are the likely effects of changes in Social Security rules on the retirement decisions of older working women and their husbands? and
- (2) How are these changes likely to alter the incidence of poverty among retired dual-earner couples?

The evidence indicates that raising the normal retirement age and reducing early retirement benefits produce the largest drop in annual retiree income, for both husbands and wives. Intermediate effects are discerned for delaying the cost-of-living adjustment and increasing the late retirement credit. In all four cases, retirement responses are extremely small for both members of the dual-earner couples. At the same time, at least two of the reforms greatly increase the incidence of poverty and near-poverty among such couples: raising the normal retirement age and augmenting the early retirement penalty.

These findings imply a rather pessimistic assessment of the Social Security reforms enacted in 1983, as well as those which were discussed but not yet enacted. All of the reforms diminish the living standards of many couples who reached retirement age in relatively good standing economically, though they have virtually no impact on retirement patterns. It appears that reducing benefits in a manner which improves the Social Security System's financial position is also likely to worsen the economic status of an important minority of dual-earner couples.

Appendix Table

Components of the Baseline (pre-reform) Budget Set^a
(\$ 1982)

I. Husbands	At Husband's Retirement Age			
	60	62	65	67
Present Discounted Values of				
1. Earnings	\$0	\$29,812	\$68,122	\$88,992
2. Pensions	7,061	9,986	16,818	20,095
3. Social Security ^b				
Husband	66,450	67,870	68,807	62,385
Wife	24,208	24,907	25,575	25,204
4. Total income	97,709	132,573	179,321	196,675
II. Wives	At Wife's Retirement Age			
	60	62	65	67
Present Discounted Values of				
1. Earnings	\$0	\$15,341	\$36,941	\$50,136
2. Pensions	14,593	21,631	29,817	30,574
3. Social Security ^c				
Husband	54,050	55,565	60,661	57,047
Wife				
4. Total income	68,643	92,538	127,419	137,756

^aThese figures differ slightly from those in T10.1, p. 113 of Fields and Mitchell (1984b) because only a subset of husbands in that study had working wives. In addition the present value of pension benefits is higher here owing to an adjustment in the discounting procedure.

^bComputations assume that the wife files for Social Security on her husband's record at his retirement date.

^cComputations assume that the wife receives Social Security based on her own record or that of her husband, whichever is higher.

Notes

¹Aaron (1982) and Mitchell and Fields (1982) review previous retirement research. Recent life-cycle models of men's retirement patterns include Fields and Mitchell (1984a), Gustman and Steinmeier (1986), Burtless and Moffitt (1984). Older women's employment is examined by Clark et al. (1980), Hanoch and Honig (1983), Henretta and O'Rand (1980, 1983), and Honig (1985). None of these studies estimates a life-cycle model for dual-earner couples.

²Singles of both sexes are also included in the LRHS but are not the focus here; see Honig (1985).

³The women and their husbands are present in all waves of the LRHS between 1969 and 1979.

⁴This group is smaller than the group of 1,024 white married men examined in our previous analysis (Fields and Mitchell, 1984a). However, most of those men were married to women who were not employed for pay at the time the husband was making his retirement decision. Pozzebon and Mitchell (1986) describe how the subsample of dual-earner couples is extracted from the larger group and emphasize important similarities between the larger sample and that used here insofar as education, age, husband's income, and husband's retirement age.

⁵Stochastic events other than death are assumed to have no influence on income opportunities. While the certainty assumption has been relaxed in a few recent retirement models, they cannot readily incorporate the complexities of the sequentially determined budget constraint in the dual-earner case (Diamond and Hausman, 1984).

⁶See Myers (1985) for a discussion of current and past Social Security rules.

⁷In principle, a husband might receive more on his wife's record than on his own, but the chances are sufficiently remote for this to occur that the possibility is ignored in computations below.

⁸Logit estimates for men are derived as described in Fields and Mitchell (1984b). The coefficients used here differ in the second decimal place from those used in the earlier paper, since reanalysis of the original data set indicated that men's pension values had been computed using too high a discount rate in the previous study. Applying a corrected discount rate raised the figures for the present value of total income for men by 1 to 2%, hence the negligible change in behavioral parameters.

⁹Responses of this magnitude are similar to those reported by Burtless and Moffitt (1984), Gustman and Steinmeier (1986), Hausman and Wise (1985), and Zabalza and Piachaud (1981).

¹⁰Budget set figures for husbands are defined at each birthday; consequently, changes in retirement ages of less than a full year are too small to change computed figures for husbands' retirement incomes. Inspection of the dispersion of individual men's retirement age responses confirms that in no case does the estimated change in a husband's retirement age equal or exceed six months as a result of the four experiments.

¹¹Poverty lines for two-person households are taken from the Social Security Bulletin (U.S. Department of Health and Human Services, various years). For future years, the nominal poverty line is projected using the 4.8% inflation rate used throughout the study. I do not use the poverty line for elderly households (age 65+) because husbands in the

LRHS sample are age 60 initially, and their wives tend to be even younger. The poverty line for the elderly is about 10% lower than for nonelderly households, so using the overall poverty line produces upper-bound estimates of the actual incidence of low income in the LRHS sample of dual-earner retired couples.

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