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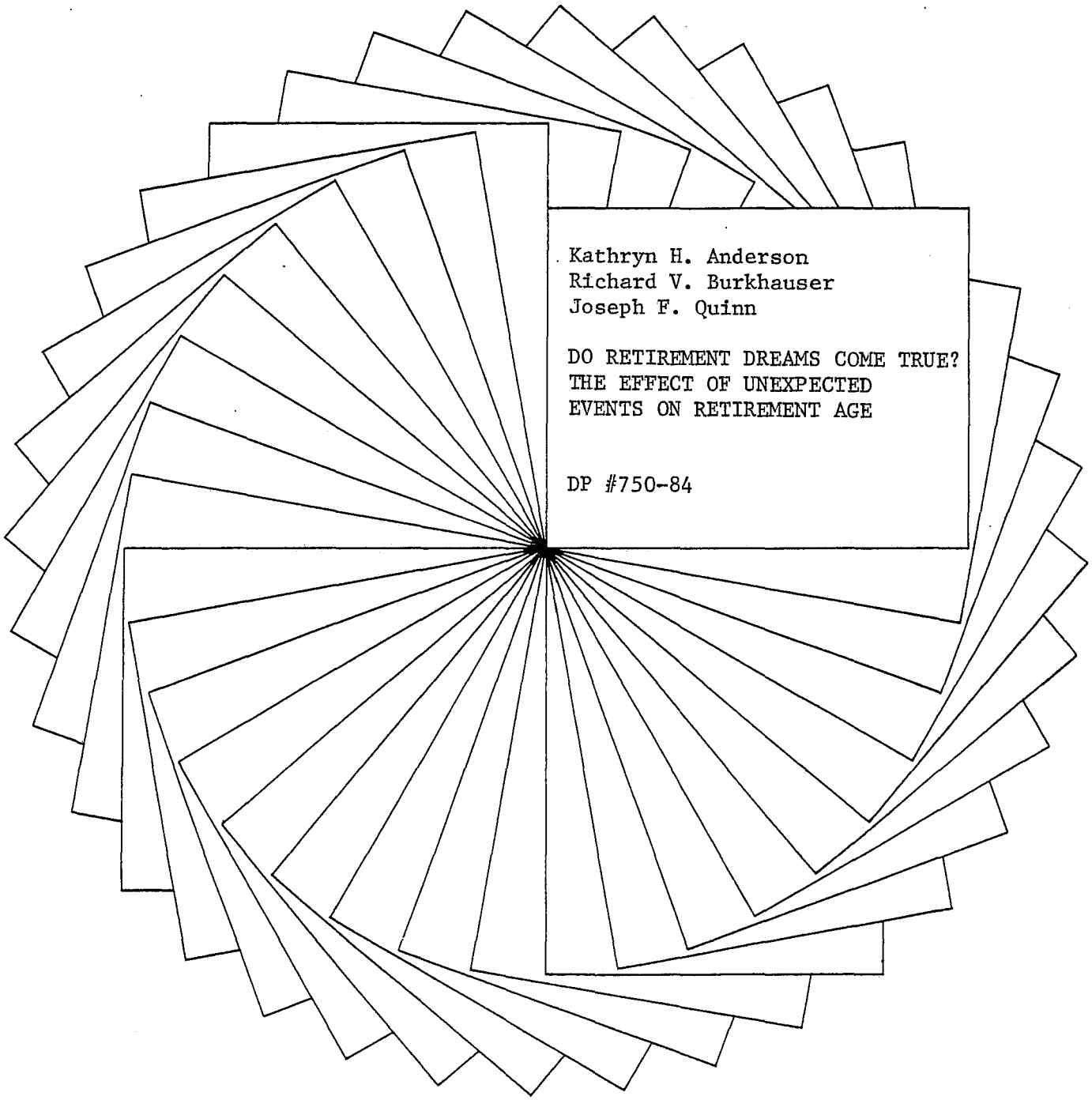

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Abstract

The 1983 amendments to the Social Security Act profoundly change the rules for accepting benefits in an attempt to solve the long-run fiscal problems of the system. However, important portions of the law will not come into effect until the turn of the century. It has been argued that this will allow workers to adjust to such changes more efficiently--a position sympathetic to the life-cycle view of labor supply decisions. In this paper, we look at the relationship between planned and actual retirement behavior and explicitly consider the effect of unexpected changes on retirement. We find that the retirement plans of workers ages 58-63 in 1969 were significantly affected over the next decade by unexpected changes in government policy (social security), in their health, and in local labor market conditions. We show that when unexpected events occur, retirement dreams do not always come true, but that behavioral responses to these events are systematic. Hence, clear signals of future social security policy are important to workers.

Do Retirement Dreams Come True?

The Effect of Unexpected Events on Retirement Age

The Social Security amendments of 1983 that followed the Greenspan Commission report (National Commission on Social Security Reform, 1983) contained two types of provisions. Some, such as the 6-month delay in the cost-of-living adjustment and the taxation of part of the benefits of high-income recipients, took effect almost immediately. Others, such as the delay of normal retirement age from 65 to 67, do not begin until the turn of the century, and then change very gradually over the next three decades.[1] One of the key arguments behind the long delay in the enactment of these provisions is that workers have made plans on the basis of one set of rules, and that it would be unfair to those contemplating retirement to change the rules abruptly. The early notification of impending changes gives workers time to adjust their life-cycle plans. With time for adjustment, the costs associated with any adverse provisions are diminished.

This practical view of the world is consistent with recent advances in the theoretical approach to labor supply decisions. Over the last decade, a major development has been the integration of life-cycle theories of human behavior into public policy analysis. The life-cycle view stresses that individuals make work, saving, and consumption decisions over many periods, and that the choices made in any one time period are a function of incentives past, present, and future. With respect to social security, for example, policy changes concerning tax or benefit structures after retirement will affect the immediate behavior of old and young alike.[2]

Behind this legislation and this theory is a view that people make plans, and that these plans depend, in part, on expectations about the future. If the expectations prove accurate, the plans are likely to be realized. If subsequent events prove expectations wrong, eventual behavior is less likely to mirror the plans.

Empirical researchers have analyzed two aspects of the retirement process--plans for the future and eventual, actual behavior.[3] The contribution of this paper is to provide the link between the two. Its goal is to analyze the relationship between planned and actual retirement, to see how accurate plans are, and to assess the impact of unanticipated events. Data problems usually prevent the introduction of unexpected changes in most empirical life-cycle studies. We overcome this problem to some degree by using data from the Retirement History Study (RHS), a 10-year longitudinal survey of work effort. We are able to look at the retirement plans of workers aged 58 to 63 in 1969 and test the degree to which unexpected changes in social security, health, and local economic market conditions cause actual retirement age to vary from planned retirement over the next decade.

In section 1, we present a simple two-period life-cycle model of work and retirement behavior in which expectations of future assets and wages are included. Section 2 uses data from the RHS to evaluate the accuracy of plans and to test the importance of unexpected changes in explaining the difference between actual and expected retirement.

I. THEORETICAL MODEL OF PLANNED AND ACTUAL RETIREMENT

In this standard two-period model, utility is a function of the leisure and goods consumed during the initial period (L_1 and G_1) and expected (*) to be consumed during the retirement period (L_2^* and G_2^*). Leisure time is measured in years so that L^* can be examined in the context of the age of retirement.[4] The utility function is separable and temporally independent in its arguments. The individual maximizes utility subject to a lifetime budget constraint. Expected lifetime wealth (A) is based on earnings in the first period ($W_1(T_1 - L_1)$), expected real earnings in the second period $W_2^*(T_2^* - L_2^*)$), and initial wealth (A_1), and is spent on purchases of goods valued at market and expected prices (P_1G_1, $P_2^*G_2^*$). The model is presented below:

$$\text{maximize } U(L_1, G_1, L_2^*, G_2^*) \tag{1}$$

$$\text{subject to } A = W_1(T_1 - L_1) + \frac{W^*}{1+r}(T_2^* - L_2^*) + A_1 \tag{2}$$

$$= P_1G_1 + \frac{P_2^*}{1+r} G_2^*$$

where T_1 and T_2^* are total time in periods 1 and 2, W_1 is the wage in period 1, W_2^* is the expected wage in period 2, P_1 is the price level in period 1, P_2^* is the expected price level in period 2, and r is the discount rate.

Labor supply is the difference between total time and leisure in both periods: $N_1 = T_1 - L_1$ and $N_2^* = T_2^* - L_2^*$. If labor supply equations are linear in their arguments, the following equations can be estimated:

$$N_1 = \beta_0 + \beta_1(W_1/P_1) + \beta_2(W_2^*/(1+r)P_1) + \beta_3(P_2^*/(1+r)P_1) + \beta_4 A_1 + \beta_5 Z + \mu \tag{3}$$

$$N_2^* = \gamma_0 + \gamma_1(W_1/P_1) + \gamma_2(W_2^*/(1+r)P_1) + \gamma_3(P_2^*/(1+r)P_1) + \gamma_4 A_1 + \gamma_5 Z + \varepsilon \tag{4}$$

where β_1, $\gamma_2 > 0$ and β_2, β_3, γ_1, γ_3, < 0 and Z represents any other relevant labor supply determinants.

The model sketched above, like most other life-cycle labor supply models, depends critically on the assumption that the individual has perfect foresight and is able to predict with certainty any changes in exogenous variables which may affect his labor supply decision--government policy, personal characteristics (health), labor market conditions. If this assumption is correct, then the eventual labor supply decision should be identical to the planned. Any anticipated changes in government policy, for example, will be considered in the initial allocation decision and will not change labor supply from the level expected. If government policy changes are not expected, however, then the supply of labor in the second period may deviate systematically from what was planned.

To explain this effect, we assume that the difference between actual individual labor supplied in the second period (N_2^s) and what the individual initially expected to supply in the second period (N_2^*) is a linear function of the difference between actual and expected wealth in period 2 ($A_2 - A_2^*$), the difference between actual and expected health status in period 2 ($H_2 - H_2^*$), and the difference between actual and expected wage in period 2 ($W_2 - W_2^*$).

$$N_2 - N_2^* = a(A_2 - A_2^*) + b(H_2 - H_2^*) + c(W_2 - W_2^*) + U_1 \tag{5}$$

If wealth, health, and wages are perfectly forecast, then any differences between actual and anticipated labor supply are entirely random.

The actual situation in period 2 may deviate from that anticipated because of unexpected changes in government or employer policies. For instance, in the absence of policy changes, wealth is determined by a vector X_i of individual characteristics, pension and social security rules, and local economic conditions. Wealth in the first period is explained by the following equation:

$$A_1 = \beta X_1 + e_1 \tag{6}$$

where e_1 is a random error term. Equation (6) can be used to estimate the expected value of wealth in period 2 in the absence of policy shifts:

$$E(A_2) = A_1 + \hat{\beta}(X_2^* - X_1) + \pi_2, \tag{7}$$

where $\hat{\beta}$ is the vector of estimated coefficients in (6) and π_2 is an expected inflation adjustment.[5]

Each individual's expected wealth in period 2 is derived from (7). Expected wealth is then compared to actual wealth in period 2 derived under new policy rules. The difference between the two variables (CHANGE) is presented below:

$$\text{CHANGE} = A_2 - [A_1 + \beta(X_2^* - X_1) + \pi_2] \tag{8}$$

CHANGE is then included as an explanatory variable in a labor supply function. As CHANGE increases, indicating the existence of unexpected

wealth changes over times, the differences between actual and anticipated labor supply increases.

The effects of differences in actual and anticipated health status and wage rates on labor supply in period 2 can be similarly analyzed.

II. AN EMPIRICAL ANALYSIS OF PLANNED AND ACTUAL RETIREMENT

Data and Variables

This model implies that the expected retirement age will deviate from the actual retirement age if unexpected changes occur in the individual's wealth, health, wage profile, or other characteristics. In this section, we use a multinomial logit estimation procedure to determine the degree to which such characteristics affected the accuracy of planned retirement ages in the 1970s.

Our sample consists of male, non-self-employed workers who were aged 58 to 63 and in the labor force in 1969. These workers reported their planned retirement age in the initial (1969) RHS Survey.[6] Using data from subsequent RHS surveys (1971, 1973, 1975, 1977, and 1979), we trace the workers to ages 68 to 73 and separate them into three groups. Those who retired within a year of their planned retirement age we categorize as On Time. Of the 1580 men in our sample, 57 percent were in this category. Those who retired more than a year before their planned retirement age (24%) are designated Early, and those who retired more than a year past their planned retirement age (the remaining 19 percent) are Late.

The dependent variable in our model is a trichotomous choice variable--Early, Late, or On Time. The independent variables measure the effect of unexpected changes in wealth, health, and earnings.

It is very likely that eventual social security wealth was substantially underestimated by those making retirement plans in 1969. The reason is seen in Table 1, which shows initial social security benefits between 1959 and 1979 for the median worker aged 65 with a 65-year-old dependent spouse.[7] The 1959 median worker had a Primary Insurance Amount (PIA) of $104.77 and a yearly total benefit of $1886, or $2160 in 1967 dollars.

Benefits increased over the period for two reasons. First, lifetime nominal wages increased, which increased the Average Monthly Wage (AMW). Second, and more important, Congress, at various times over the period, significantly altered the formula relating benefits to AMW. A worker in 1969, basing his expected benefits on the level of benefits provided by the system between 1959 and 1968, had good reason to think that, while nominal benefits would rise, real benefits would not change much. In fact, between 1959 and 1968, initial real social security benefits for our hypothetical retirees remained virtually constant. Such expectations with regard to the level of benefits over the next decade would have substantially underestimated what was to come. Between 1968 and 1979, initial real social security benefits (in Table 1) rose by 51.2 percent, with the great bulk of the increase coming by 1973.

To measure the unexpected change in wealth caused by this change in social security benefits, we compare the present discounted value of social security benefits at the point of expected retirement age using two different sets of benefit rules. Our first social security wealth estimate uses the rules actually in place in the year of planned retirement. This measurement is possible since the RHS data are merged with actual social security earnings records from which the PIA is calculated.

Table 1

Yearly Social Security Benefits for a Worker with Median Earnings Aged 65 with a 65-Year-Old Dependent Spouse

Year[a]	AMW (dollars)	PIA (dollars)	Yearly Benefit (current dollars)	Yearly Benefit (1967 dollars)	% Change in Real Terms from Previous Year
1959	$297.08	$104.77	$1,886	$2,160	--
1960	301.56	105.73	1,903	2,145	-0.7%
1961	305.83	106.64	1,920	2,143	-0.1
1962	309.29	107.38	1,933	2,134	-0.4
1963	314.06	108.40	1,951	2,128	-0.3
1964	318.96	109.45	1,970	2,121	-0.3
1965	324.71	118.44	2,132	2,256	6.4
1966	330.83	119.84	2,157	2,219	-1.6
1967	337.89	121.45	2,186	2,186	-1.5
1968	345.69	123.24	2,218	2,129	-2.6
1969	354.03	141.43	2,546	2,319	8.9
1970	364.68	165.81	2,985	2,567	10.7
1971	377.66	185.66	3,342	2,755	7.3
1972	384.63	188.92	3,401	2,714	-1.4
1973	395.38	230.94	4,157	3,123	15.1
1974	407.35	235.45	4,238	2,869	-8.1
1975	420.29	266.62	4,799	2,977	3.8
1976	440.50	296.84	5,343	3,134	5.3
1977	463.47	326.55	5,878	3,239	3.4
1978	488.48	358.23	6,448	3,302	1.9
1979	503.37	389.39	7,009	3,220	-2.5
1959-1968					-1.4
1968-1973					46.7
1968-1979					51.2

[a]Assumes worker and wife are aged 65 on January 1. Benefits are based on social security rules as of January 1 of each year.

Using this PIA value we estimate the present discounted value of social security over the expected lifetime of the worker and his wife.[8] Our second social security wealth value again estimates benefits if taken at the expected retirement age; but now we use an estimation procedure which keeps social security benefits at the same real level that prevailed in 1969. Hence, we calculate benefits at expected retirement age but use the 1969 PIA rules and increase this value by the change in the cost of living between 1969 and expected retirement age.[9] A social security wealth change variable is computed as the difference between these two wealth measures. Since social security wealth varies in importance in the wealth portfolio of workers, we capture the change in total expected wealth by multiplying it by social security's share in total wealth. It is this variable, called TWCHANGE, which we use in our empirical test. We expect that the larger this change, the greater the likelihood of early retirement age and the less likely is later retirement.

Another important and unexpected change in social security rules must also be considered. During the 1960s, the social security benefits of those who continued to work were reduced by 50 cents for each dollar earned past a certain earnings disregard and then dollar for dollar at a higher earnings level. Beginning in 1973, the 100 percent tax segment was eliminated, and replaced by a 50 percent tax applied to all wage and salary earnings above $2100. This substantially reduced the penalty for those who continued to work and collect social security benefits.[10] In an attempt to measure the effect of this change in marginal tax rates we include a dummy variable CTEST which equals one if the worker's actual or expected retirement, whichever occurred first, occurred in 1973 or later.

We expect the reduction in the marginal tax to reduce the likelihood of early retirement and increase the likelihood of late retirement.

To measure the effect of unexpected health changes on retirement, we include a pair of dummy variables. HBETTER and HWORSE measure the change in self-reported health over the two-year period prior to expected or actual retirement, whichever occurred first.[11] HBETTER is equal to one if health improved over the two-year period, and HWORSE is equal to one if it deteriorated. If health did not change, both HBETTER and HWORSE are equal to zero. We expect a deterioration in health to increase the probability of early retirement and to reduce the probability of late retirement. We expect an improvement in health to have opposite effects.

The decade under study was one of economic stagnation. The aggregate unemployment rate rose from a postwar low in 1969 to the highest values since the Depression. After the boom years of the 1960s, it is highly unlikely that older Americans making retirement plans in 1969 would have anticipated the severe recession ahead. We measure the impact of these unanticipated macroeconomic changes by UDIFF--the difference between the local unemployment rate in the earlier of the actual or planned retirement year and the unemployment rate in 1969.

The expected effect of worsening economic conditions is ambiguous. On the one hand, it reduces the demand for older workers' services. Firms facing layoffs may pressure senior employees to take early retirement. On the other hand, older workers protected by seniority provisions and age discrimination laws may be able to withstand these pressures and be reluctant to leave. Diminished economic opportunities can be viewed

as a loss in wealth, which would encourage later retirement. We see below that this latter effect dominates.

Finally, we included certain control variables in the model. These are largely attempts to see how important institutional arrangements affected the accuracy of retirement plans. We included dummy variables for pension coverage on the job and the presence of a mandatory retirement provision, and a continuous variable for tenure with the firm. These might have no effect on the likelihood of retiring early, late, or on time, if they were anticipated when the plans were reported in 1969. On the other hand, longevity on the job or the presence of publicized pension provisions might decrease uncertainty about future work attitudes or income streams. Mandatory retirement makes staying beyond a certain age (often the planned retirement age) more difficult. Both Lazear (1981) and Burkhauser and Quinn (1983b) have argued that actuarially unfair pension schemes have the same effect.

The final control variable is YRSAWAY, which measures the number of years from 1969 to the planned retirement year. We expect that the further away the target, the more likely an early retirement and the less likely a late. This is in part because there are simply more opportunities to retire early the further away the expected date.

In summary, the empirical model estimates the probability of retiring Early, On-Time, or Late as a function of changes in social security wealth, health, wages, and control variables. This probability function is estimated using a multinomial logit procedure.

Empirical Results

The results of the trichotomous logit estimation are presented in Table 2 and the summary statistics are presented in Table 3.

Unexpected changes in the social security system in the 1970s do appear to have affected behavior. In specification one, as predicted, unexpected increases in weighted social security wealth significantly increased the probability of early retirement and decreased the probability of late retirement.[12] In specification two, we add CTEST in an attempt to capture the effect of the 1973 change in the social security earnings test on retirement. We find that those people who had originally planned to retire after 1972 were less likely to retire early and more likely to retire late than those whose planned retirement year was before 1973. In this specification, TWCHANGE continues to significantly reduce the probability of being Late but it is no longer significant for Early.

Health changes produce mixed responses to retirement plans. A fall in health has an important effect on retirement. If health deteriorates during the two years prior to actual or expected retirement, early retirement is more likely and late retirement is less likely. But improvements in health over the same period appear less important.

Changes in local labor markets significantly affect retirement plans. The greater the increase in the unemployment rate, the less likely a worker is to retire early and the more likely he is to work longer than he planned. These findings contradict the common view that older workers are particularly vulnerable to economic downturns and are likely to be forced into earlier than planned retirement. These preliminary results

Table 2

Multinomial Logit Results (N = 1,580)[a]

Variables	Retirement Status			
	Early (1)	Early (2)	Late (1)	Late (2)
Constant	-4.16**	-3.00**	-0.54**	-0.11
	(11.45)	(7.33)	(2.34)	(0.44)
Change in total wealth (TWCHANGE) ($10,000)	0.45*	0.31	-0.88**	-0.77**
	(1.91)	(1.12)	(3.53)	(2.85)
CTEST		-2.85**		2.00**
		(14.08)		(11.26)
HBETTER	0.21	0.29*	-0.04	-0.07
	(1.39)	(1.74)	(0.27)	(0.49)
HWORSE	0.48**	0.53**	-0.37**	-0.40**
	(4.11)	(3.92)	(3.10)	(3.16)
Unemployment difference (UDIFF)	-0.35**	-0.45**	0.25**	0.33**
	(10.2)	(10.53)	(8.11)	(9.40)
Years away from retirement (YRSAWAY)	0.54**	0.95**	-0.31**	-0.61**
	(15.2)	(17.25)	(9.04)	(12.35)
Mandatory retirement	0.36**	0.30**	-0.42**	-0.39**
	(3.10)	(2.30)	(3.64)	(3.22)
Tenure with the firm (divided by 10)	0.85**	0.40	-1.44**	-1.13**
	(1.98)	(0.80)	(3.64)	(3.22)
Pension with the firm	0.24*	0.31*	-0.65**	-0.67**
	(1.70)	(1.94)	(5.34)	(5.15)

[a]t-statistics in parentheses.

*Significant at the 10 percent level.

**Significant at the 5 percent level.

Table 3

Summary Statistics (N = 1,580)

Variable	Mean (percentage)	Variance	Minimum	Maximum
Early (yes = 1)	24			
Late (yes = 1)	19			
TWCHANGE	3.9[a]	5.8[a]	0.00[a]	14.45[a]
CTEST (yes = 1)	75			
HBETTER	14.5		0	1
HWORSE	25.8		0	1
UDIFF	2.8	3.3	-1.0	10.0
Tenure	19.7[b]	168.4[b]	0.0[b]	48.0[b]
Mandatory Retirement (yes = 1)	51.8		0	1
Pension on the job (yes = 1)	75.8		0	1
YRSAWAY	4.2[b]	5.0[b]	0.0[b]	19.0[b]

[a]Thousands of dollars.

[b]Years.

suggest that, on average, macroeconomic distress makes older workers want to remain employed longer, and that many are able to do so.

Finally, all control variables--pensions, mandatory retirement, tenure in firm, and years away from planned retirement--are significant explanators of early and late retirement behavior. Long-tenure workers, those with pension plans or mandatory retirement rules, and those predicting retirement far in the future are more likely to retire early and less likely to retire late.

CONCLUSION

Retirement plans made in 1969 were wrong approximately 40 percent of the time. Part of this difference in actual and expected retirement age was due to unexpected changes over the period. Major changes in the social security system occurred during the 1970s which resulted in substantial increases in the value of social security benefits and substantial decreases in the effective marginal tax rates of those eligible for social security benefits. In addition, economic conditions deteriorated dramatically from those that existed when these retirement plans were being made. We show that such exogenous changes significantly altered the retirement behavior of workers from the plans they initially made.

We argued that workers do make retirement plans across time which are affected by government policy. Our empirical results demonstrate that unexpected changes in that policy significantly affected retirement age. Those who complained that the sudden change in social security policy proposed by the Reagan administration in 1981 would have

substantially affected the plans of older workers were probably correct. So are those who argue that the long-run changes in social security rules made in 1983 will allow for a smoother transition in work and leisure choices for younger workers.

The trend toward early retirement which our social security and pension systems encouraged over the last three decades cannot be sustained. Calls for repeal of the long-term changes made in the 1983 amendments to the Social Security Act merely increase uncertainty and will make the ultimate change in labor supply prescribed by the graying of the baby-boom generation that much more difficult.

Notes

[1]After the turn of the century normal retirement age will begin to rise, increasing by two months in each of six years until it reaches age 66 in the year 2009. Another set of increases over a subsequent six-year period will bring the full-benefit age to 67 in the year 2027. The earliest age at which benefits are permitted will remain 62, but the new law will increase the maximum reduction at age 62 from its current level of 20 percent to 25 percent in 2009 and to 30 percent in 2027. In addition, the delayed retirement credit is scheduled to increase slowly from 3 to 8 percent per year of postponement between 1990 and 2007. For a discussion of all legislated changes see Svahn and Ross (1983).

[2]An increased tax on older employees will affect not only current older workers but also future older workers who shift lifetime labor supply toward younger ages to avoid the age-specific tax. For empirical evidence of this see Burkhauser and Turner (1978).

[3]Hall and Johnson (1980) is an example of work which has attempted to look at how retirement plans are formulated. Feldstein (1974) was among the first to look at the effect of social security on work and savings from a life-cycle perspective. Clark and Johnson (1980), Fields and Mitchell (1982), and Burtless and Moffitt (1983) are recent examples of authors who stress the importance of pension and social security wealth within a life-cycle framework. Lazear (1979) takes a similar life-cycle view in arguing that mandatory retirement rules may be necessary to enforce implicit long-term labor contracts between employers and employees.

[4]This follows the work of Feldstein (1974) and Crawford and Lilien (1981).

[5]Linneman (1982) uses this approach in evaluating the effect of minimum wage legislation.

[6]Employed individuals in the 1969 RHS who were excluded from our analysis are females, self-employed workers, those not giving a specific age in responding to questions concerning retirement plans, and those who died between 1969 and 1979.

[7]Social security benefits are based on an AMW (average monthly wage) which is calculated from lifetime earnings. This value is then adjusted by a formula which yields a PIA (primary insurance amount) for each worker. The PIA is what a worker who retires at age 65 would receive each month. If such a worker is married, the total monthly payment increases by 50 percent.

[8]For a detailed discussion of our methodology for estimating these values and of their sensitivity to discount rates used, see Burkhauser and Quinn (1983a). Here we used a 5 percent discount rate.

[9]The social security covered earnings records are used to build our PIA estimate up to 1968. We estimated earnings for the years between 1968 and expected retirement year by assuming that a worker's covered earnings increased by the average increase in median earnings for those years. In no case was a worker permitted to earn more than the actual covered earnings permitted in those years.

[10]The earnings test is an effective tax on work only if social security penalizes those who postpone benefits. The degree to which those who postpone benefits are in fact penalized by the system is a matter of some dispute.

[11]Because we are interested in how unexpected changes affect the outcome of retirement plans, we must be careful about the timing of these changes. Hence with regard to health, we are interested in whether health changes prior to the age of planned retirement affect the decision to retire. For those who actually retire before they planned, we look at their health up to the year before actual retirement. For those who retire after they planned, we look at their health before the year they planned to retire. In this way we avoid changes in health that occur after actual retirement, and which are not the focus of this study. The same is true for CTEST and UDIFF.

[12]These results provide parallel evidence consistent with what Hurd and Boskin (1981) find using a different methodology. Substantial increases in social security were in part responsible for the fall in labor force participation of older workers during this period.

REFERENCES

Burkhauser, Richard V., and Joseph F. Quinn, "The Effect of Pension Plans on the Pattern of Life-Cycle Compensation," in The Measure of Labor Cost, Jack E. Triplett, ed. Chicago: University of Chicago Press; NBER Conference Series on Research in Income and Wealth, 1983a.

_____, "Is Mandatory Retirement Overrated? Evidence from the 1970s," Journal of Human Resources, 18, No. 3 (Summer 1983b): 335-358.

Burkhauser, Richard V., and John A. Turner, "A Time Series Analysis on Social Security and Its Effects on the Market Work of Men at Younger Ages," Journal of Political Economy, 86, No. 4 (August 1978): 701-716.

Burtless, Gary, and Robert A. Moffitt, "The Effect of Social Security on Labor Supply of the Aged: The Joint Choice of Retirement Date and Post-Retirement Hours of Work." Mimeograph, Brookings Institution, Washington, D.C., 1983.

Clark, Robert, and Thomas Johnson, "Retirement in the Dual Career Family," Final Report for the Social Security Administration Grant No. 10, P-90543-4-02, 1980.

Crawford, V., and D. Lilien, "Social Security and the Retirement Decision," Quarterly Journal of Economics, 96 (August 1981): 505-529.

Feldstein, Martin S., "Social Security, Induced Retirement, and Aggregate Capital Accumulation," Journal of Political Economy, 82, No. 5 (September/October 1974): 905-926.

Fields, Gary, and Olivia Mitchell, "Economic Determinants of the Optional Retirement Age: An Empirical Investigation." Cambridge, Mass.: NBER Working Paper No. 876, April 1982.

Hall, Arden, and Terry Johnson, "The Determinants of Planned Retirement Age," Industrial and Labor Relations Review, 33, No. 2 (January 1980): 241-255.

Hurd, Michael, and Michael Boskin, "The Effect of Social Security on Retirement in the Early 1970s." Cambridge, Mass.: NBER Working Paper No. 659, April 1981.

Lazear, Edward P., "Why Is There Mandatory Retirement?" Journal of Political Economy, 87, No. 6 (December 1979): 1261-1284.

_____, "Severance Pay, Pensions, Mobility and the Efficiency of Work Incentives." University of Chicago mimeograph, 1981.

Linneman, Peter, "The Economic Impacts of Minimum Wage Laws: A New Look at an Old Question," Journal of Political Economy, 90, No. 3 (June 1982): 443-469.

National Commission on Social Security Reform. Report. Washington, D.C.: U.S. Government Printing Office, 1983.

Svahn, John A., and Mary Ross, "Social Security Amendments of 1983: Legislative History and Summary of Provisions," Social Security Bulletin, 46, No. 3 (July 1983): 3-48.