AGE 70 RETIREMENT FOR FACULTY: An Institutional Approach

Geoffrey C. Hughes

Postponed faculty retirements, combined with declining student enrollments and persistent inflation, are causing increasing concern in higher education. The 1978 Amendments to the Age Discrimination in Employment Act establish the mandatory retirement age at 70, but exempt tenured faculty from this provision until 1982. The legislation focuses attention on the retirement aspect of the problem, and researchers are busy analyzing the issue to help the industry plan for the impact of the new law.

Most analysts approach the task from the aggregate perspective, and apply industry norms to individual institutions. The variations among institutions undermines the validity of this approach. This article demonstrates the problems of the aggregate analysis, and offers an alternative for individual institutions.

The federal government is visiting the workplace . . . again. This time the issue is mandatory retirement—specifically, the question of whom the government ought to protect from age discrimination on the job. The tentative answer is those workers between ages 40 and 70, the range covered by the 1978 Amendments to the Age Discrimination in Employment Act (AADEA). The answer is not firm because Congress may soon eliminate mandatory retirement, thus uncapping the range in which employers may not discriminate.

The AADEA treat higher education differently from other industries by exempting tenured faculty from the age 70 retirement provision until July 1, 1982—a concession that presumably allows colleges and universities time enough to prepare for the future. Several analysts are filling this preparation period with research investigating the implications of the AADEA for higher education. Patton (1979), Corwin and Knepper (1979), and Fernan-

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dez (1978) are among the authors already published on the subject. These writers base their work on aggregate data and reach industry-wide conclusions.

Such studies can identify industry trends and alert individual firms to potential problems, but they inevitably disguise important differences among institutions. While industry analyses may contribute to our understanding of the issue, policy makers at colleges and universities want to know how the AADEA affect their particular institutions. Hopkins (1974) develops a model to predict the effects of new operating policies at the institutional level. Spinney and McLaughlin (1979) adapt a Markov model to examine faculty flow in the steady-state, and identify the results of six policy alternatives, including age 70 retirement. The goal of this work is to demonstrate how to approach the issue from the institutional perspective, without reliance on the steady-state assumptions. What follows is a critique of a recent aggregate study, and an alternative treatment of the same topic.

The critique examines a steady-state model developed by William Simpson (1979). The model, which is designed to represent a typical faculty system, predicts the outcome of different retirement policies. Both the model itself and Simpson's conclusions are subject to dispute.

The alternative treatment is a restatement of part of *Another Challenge,* A TIAA-CREF monograph written by Hans H. Jenny, Peggy Heim, and Geoffrey C. Hughes (1979). Much of the research for this article was done as part of the preparation for *Another Challenge,* and some of the data gathered but not used for that publication are included here. Jenny and Heim deserve the credit for developing the approach that incorporates an institution's own faculty age distribution and attrition rate into the analysis. This article highlights the value of that approach and contrasts it with the aggregate studies.

A CRITIQUE

In "Steady State Effects of a Later Mandatory Retirement Law for Tenured Faculty," William A. Simpson (1979) examines the long-term impact of the 1978 Amendments to the Age Discrimination in Employment Act (AADEA) on the steady state tenure ratio, the flow of new faculty into the system, and the operating costs of the university. He builds a model specifically designed to analyze the long run because "the extended retirement issue creates the greatest doubt in connection with long-range effects." The model, he claims, "adequately represents the faculty tenure system." Simpson dispatches the issue quickly and concludes, "It does not seem that the new mandatory retirement law will pose any dire consequences for higher education."

What is distressing about Simpson's work is that his model fails to represent any specific faculty system that exists (or is likely to exist), that his dismissal of the short-run effects is misleading, and that his conclusions ignore the varied impact of the AADEA on particular institutions. Long-run, industry-wide conclusions that overlook short-term, individual firm consequences are not very useful, especially for the firms that may be most adversely affected. The long-run industry market adjusts, but as Keynes said, "In the long run we're all dead."

The Simpson Steady State Model

The Simpson model has four phases of faculty appointments with a waiting period and a number of faculty in each, as well as a flow of faculty into and out of each phase. He assigns relationships among the variables to maintain a steady state: applying waiting periods and rates of faculty flow into and throughout the system yields the same number of faculty in each phase in year 2 as in year 1. Figure 1 (from Simpson, 1979) describes the general system; Figure 2 (Simpson, 1979) assigns symbols to the variables.

The symbols in Figure 2 are defined as follows:

f_i (i = 1-4)	the number of faculty flowing through the tenure system (faculty/year)
g_i (i = 1-4)	the number of faculty leaving the tenure system at various phases (faculty/year)
r_i (i = 1-3)	the fraction of faculty moving out of phase i to phase $i + 1$
W_i (i = 1-4)	waiting time: the average number of years a faculty member remains in the N_i phase (years)
N_i (i = 1-4)	the number of faculty members in the i^{th} phase

Simpson stipulates the following relationships among the variables for the condition of a fixed total faculty size:

$$f_1 = g_1 + g_2 + g_3 + g_4$$
$$N_i = f_i W_i \ (i = 1 - 4)$$
$$f_{i+1} = r_i f_i \ (i = 1 - 3)$$
$$g_i = (1 - r_i) f_i \ (i = 1 - 3)$$
$$g_4 = f_4$$

He then applies values which are typical of the tenure system of a large institution: $W_1 = 2.7$ years, $W_2 = 2.2$ years, $W_3 = 25$ years, $W_4 = 5$ years, $r_1 = .75$, and $r_2 = .85$. He varies the value of r_3 (the rate of faculty members

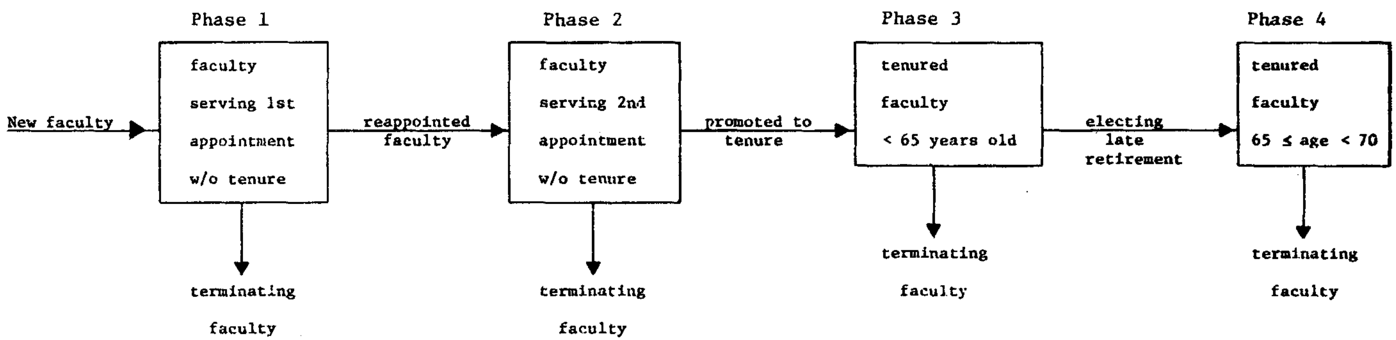

FIGURE 1. General Tenure System Model (From Simpson, 1979).

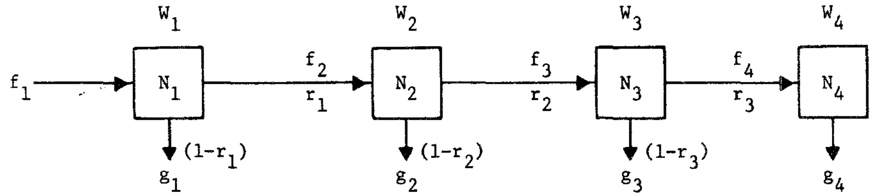

FIGURE 2. Detailed Tenure System Model (From Simpson, 1979).

remaining on staff beyond age 65) between 0 and 1 to show the effects of different retirement policies. When $r_3 = 0$ everyone retires at age 65; when $r_3 = 1$ everyone age 65 stays until age 70. The latter assumption allows the comparison between age 65 mandatory retirement and the worst that could happen under age 70 mandatory retirement.

Simpson calculates the effects of changing $r_3 = 0$ to $r_3 = 1$ on the flow of new faculty into the system (f_1), on the tenure ratio, and on operating costs, and finds that f_1 decreases by 13.6 percent, the tenure ratio increases by 3 percent and the salary budget increases by less than 1 percent. Small changes in retirement age policies, Simpson concludes, ". . . will not cause any changes in cost, tenure ratio, or flow of new faculty that could be termed disastrous by anyone but an alarmist."

We disagree. A 13.6 percent decrease in the flow of new faculty is a significant change for the industry. One recent study suggests that 10,000 new doctorates were to be hired before the change in the mandatory retirement age. Simpson's conclusions reduce that number by 1,360. Applied to a particular institution, the 13.6 percent decrease may represent a small number as in Simpson's illustration of a university where the reduction in new hires would be 15. At colleges the numbers would be even smaller and more convincing of their insignificance. But to consider a 13.6 percent industry-wide decline in demand for new faculty an insignificant finding would defy common sense.

Whether or not 13.6 percent is an alarming number, another question remains: does it represent anything useful for analysts to ponder? If the analysts want to know something about how particular institutions may be affected, or about short-run results, the answer is that outside a specific context 13.6 percent is meaningless. An application of Simpson's model reveals why.

Application of the Model

Applying the W and r values assigned above, and assuming a faculty size (N) of 2,500, we can calculate values for the other variables in the model. The equation for f_1 is as follows:

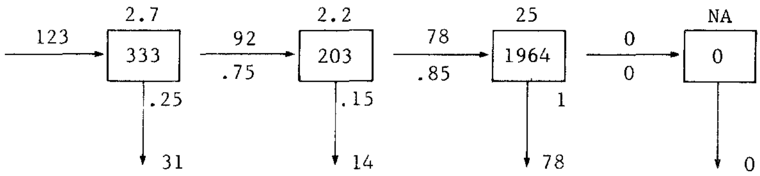

FIGURE 3. Tenure System Model: Values Applied (r_3 = 0).

$$f_1 = \frac{N}{W_1 + r_1W_2 + r_1r_2W_3 + r_1r_2r_3W_4}$$

When $r_3 = 0, f_1 = 123.229$. The f, g, and N values represent individuals, and should be rounded to whole numbers. This rounding causes small errors throughout the model.

Figure 3 shows the steady state achieved when the mandatory retirement age is 65 ($r_3 = 0$).

The tenure ratio (R) for this application is

$$R = .786 \ (R = \frac{N_3+N_4}{N_1+N_2+N_3+N_4}).$$

Figure 4 displays the worst that could happen under an age 70 mandatory retirement policy: no one retires until age 70 ($r_3 = 1$). Here the tenure ratio is $R = .814$. An examination of the differences between Figures 3 and 4 reveals that the flow of new faculty into the system (f_1) drops from 123 to 106, a 13.8 percent decline. The tenure ratio increases from 78.6 percent to 81.4 percent, a difference of 2.8 percent. These figures approximate the findings upon which Simpson bases his conclusions.

Simpson's conclusions rely upon the model's ability to reflect what might actually happen, and the model relies upon the assumption of a perfect age distribution among the faculty ($f_4 = g_4$). That assumption is so heroic as to render the model impotent. Faculty age distributions reflect

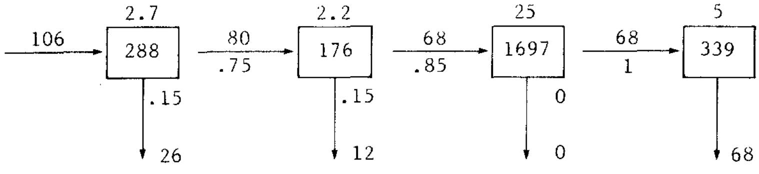

FIGURE 4. Tenure System Model: Values Applied (r_3 = 1).

enrollment patterns, and many colleges and universities have bi-modal distributions caused by the post-World-War-II G.I. Bill expansion and by the 1960s enrollment boom. Future distributions depend to some extent upon current ones. To reach Simpson's steady state even 20 to 25 years hence requires a breathtaking leap of faith.

The tenure ratios and age distributions *by department* add another complication. Departments with a low percentage of tenured faculty are more flexible than those with high tenure ratios. Unless Simpson's model includes an implicit assumption that the tenure ratio and age distribution are themselves perfectly distributed across departments, the model disguises an important consideration: some departments may stagnate even in the steady state.

Simpson answers the wrong question in the wrong way. He examines the issue of the long-range effects of a change in retirement policy by comparing two highly unlikely future events. An approach that incorporates present data into the analysis makes much more sense.

Carl Patton (1979) takes such an approach in his important work *Academia in Transition*. Patton builds a faculty flow model based on current faculty age distributions and some assumptions about retirement policy, tenure denial rates, outmigration, and replacement. He compares the number of new appointments (Simpson's f_1) under age 65 and age 70 retirement policies, and shows his results in five-year intervals.

Patton's long-range findings are more comforting than Simpson's: ". . . by the thirty-fifth year new appointment rates are identical." But in previous five-year periods, new appointments under the age 70 retirement policy decline by 10 to 22 percent. Patton concludes that, "Although the long-term impact of an increase in the average age of retirement might be negligible, some institutions may not be able to weather the transition, even if the reduction were only 10%. Indeed, there may be serious near-term problems for specific institutions."

Simpson overlooks this possibility altogether, yet what happens during the transition from one policy to another may be the most important question not only for individual institutions but for higher education in general, especially when the transition occurs during an enrollment decline. The impact of the AADEA is not uniform across the industry. Enrollment trends and faculty age distributions vary from school to school, and for some even a 10 percent reduction in new appointments may be distressing if not disastrous. Economic and demographic forces may conspire with postponed retirements to close some institutions, and anyone concerned about the industry ought to be concerned about this possibility.

Thomas Corwin and Paula Knepper (1978) examine the impact of the AADEA in a manner similar to Patton's. They make the "worst case" assumptions and project the number of junior faculty openings through 1990, comparing the results under age 65 and age 70 retirement policies. They identify three stages in their findings.

The period prior to 1982—when the tenured faculty exemption expires—shows no great difference between the two retirement policies. "After that," Corwin and Knepper say, "the retirement-at-age-70 projections show a precipitous decline in the number of new faculty members hired." The recovery from this decline begins in 1989.

Corwin and Knepper's conclusions stand in stark contrast to Simpson's: "Over the entire 1983-1990 period, the number of openings is 65.3 percent less under retirement at age 70 than under current policies. Thus, the predicted impact of retirement at age 70 on faculty openings is substantial . . ." Finally, ". . . institutional policy revisions designed to blunt the impact of the ADEA amendments may be required."

The results of Spinney and McLaughlin's (1979) steady-state analysis come closest to Simpson's findings. Their adapted Markov model compares a university's present policy (age 65 retirement, some extensions) with several policy options. They conclude that an age 70 mandatory retirement policy ". . . will slightly aggravate the percent of faculty with tenure and the average salary situation . . . and will also have the expected impact of lowering the number of new faculty entering the system, but not substantially less than the present personnel policy."

The Model in a Period of Transition

Simpson's model is not designed to examine the short run, but it can nevertheless illustrate what happens during the transition period. The mathematical relationships among the variables work only in the steady state condition, and as a result some of these relationships no longer hold in a transition analysis. This is not a criticism of the model. Simpson suggests that he would develop a different model for short-run analysis.

Figure 3 shows the faculty distribution and flow in steady state when an age 65 mandatory retirement policy is enforced. The number of faculty age 65 to 70 (N_4) is zero. What happens to the flow and distribution when the retirement policy changes, and no one retires until age 70? The f_i and g_i values (faculty flow) are the same as those shown in Figure 4 ($r_3 = 1$). The steady state is disrupted as the transition to new policy begins.

Figure 5 applies the faculty flow under the age 70 retirement policy to the prevailing steady state distribution under the age 65 policy. The problem does not appear until the fourth phase. The model shows 68 faculty members who flow from phase three to phase four and right out of the system. But no one leaves phase four under the new retirement policy until they

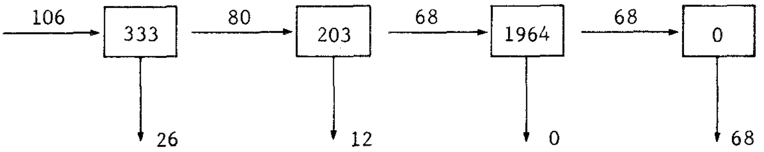

FIGURE 5. Tenure System Model in Transition Period.

have been there for five years. To compensate for the 68 who do not leave, the university must reduce the flow into the system ($f_1 = 106$) by 68. Instead of the anticipated 106 new faculty members, the university hires only 38. And the university must make this same adjustment for the five years necessary for the first 68 members to reach age 70 and retire. The difference in new appointments over the five year period is 340, a 64 percent reduction.

Conclusions

What Simpson says is less troubling than what he doesn't say. He says that the AADEA ". . . will not pose any dire consequences for higher education." That conclusion is similar to our finding in *Another Challenge:* "Standing alone, the AADEA do not seem to impose a particularly onerous burden on higher education." What Simpson doesn't say, however, is that the AADEA do not stand alone, that their impact will vary among institutions, and that the transition may be a difficult time, seriously jeopardizing some schools.

Simpson's dismissal of the short run is puzzling; his oversight of the varied impact of the AADEA, an extension of the same thinking. Simpson tells us in a report intended to be comforting that everything works out in the long run. We already knew that. And his own findings (a 13.6% reduction in new appointments) contradict him.

AN ALTERNATIVE

The purpose of this alternative analysis is to illustrate how an institution might assess for itself the impact of the AADEA. The studies previously reviewed are concerned with substantive industry-wide conclusions. This work concentrates on the process appropriate from the firm's perspective. Rather than build an elaborate model to predict demand for new junior faculty, we ask how many openings are created at an institution under different retirement assumptions.

We begin with the age distributions of faculty at particular institutions.

TABLE 1. Current (1979) Faculty Age Distributions, Sample Schools 1, 2, and 3.

	No. of Faculty		
Age	School 1	School 2	School 3
65	13	8	0
64	22	8	7
63	22	10	4
62	19	10	8
61	30	7	7
60	31	7	11
59	32	11	6
58	49	8	7
57	45	13	3
56	48	18	13
55	49	13	3
54	41	9	3
53	40	9	10
52	52	17	4
51	51	8	3
50	55	14	4
	Summary		
64-65	35	16	7
59-65	169	61	43
50-65	599	170	93
all ages	2,246	580	215
% 65+	0.6%	1.4%	0.0%
% 60+	6.1%	8.6%	17.2%

To these distributions we apply a set of attrition rates which we vary to reflect different retirement policies. We then trace the flow of faculty from the present to 1995, and compare the retirement patterns under the different policies.

Table 1 shows the 1979 faculty age distributions for each of three sample schools. The figures come from the personnel records of the schools themselves. The summary points out the differences among the schools. The number of faculty at school 1 is over 10 times greater than at school 3 (2,246 to 215). But school 3 has a much greater percentage of its faculty in the age 60 and older group: 17.2 percent compared to only 6.1 percent for school 1. School 2 falls in the middle.

To compare what would happen to these faculty age distributions under different retirement policies we must make projections into the future. The simplest way to project the distributions over time is to assume that all faculty members stay until they reach the mandatory retirement age. Our experience tells us, however, that attrition occurs throughout the age structure and that not all faculty members stay until mandatory retirement. How many do? The accuracy of our projections depends to some extent upon how well we answer that question.

Unique conditions at each institution determine the rate of attrition among employees. Those rates may vary over time as well as between distinct employee classes at the same institution. Working conditions, benefits, and retirement plans may be different for faculty, staff, and others; and as economic conditions change so does retirement behavior. Determining an institution's attrition rate for faculty is at best a difficult task involving an assessment of historical trends and future conditions.

We use two sets of attrition rates in this analysis. The first (Set A) is based on the recent separation rates for faculty at four small colleges. The second (Set B) comes from a draft article on age 70 retirement written by Stephen Dresch (1979). This set is based on national data compiled over several years, and is calculated from faculty age distributions and retirement patterns.

The Set A rates serve illustrative purposes only. Set B, on the other hand—because it is based on a sufficiently large sample—probably represents an accurate historical rate for the industry. A particular institution, however, cannot rely on this set any more than on Set A. The variations among institutions preclude the use of a uniform rate, and even a college's own historical record may not be very helpful because a small number of persons may represent a large percentage of a cohort.

Set A reflects the worst case assumptions about the change from age 65 to age 70 retirement policies: no one works past age 65 under the former policy, and under the new policy everyone who reaches 65 stays until 70. Set B represents a more modest change. Tables 2 and 3 display the Set A and Set B rates in terms of *retention,* i.e., the proportion of a cohort who remain after attrition. The Set A rates appear in one-year intervals: .990 of the 50-year-olds remain one more year to age 51. The Set B rates are two-year groupings: .9906 of the 51- and 52-year-olds stay two years to ages 53 and 54.

Several assumptions underlie the application of the retention rates to the faculty age distributions. We assume that all faculty members in the 50 and older group are tenured and are therefore exempt from the age 70 retirement provision until 1982, that the sample schools will not adjust their retirement policies before them, and that no new faculty members who are age 50 or older will be hired. We apply the retention rates under the

TABLE 2. Retention Rates—Age 65 Retirement Policy.

Set A*		Set B**	
Age Interval	Retention Rate	Age Interval	Retention Rate
50-51	.990	(51, 52) - (53, 54)	.9906
51-52	.990	(53, 54) - (55, 56)	.9887
52-53	.990	(55, 56) - (57, 58)	.9844
53-54	.990	(57, 58) - (59, 60)	.9819
54-55	.990	(59, 60) - (61, 62)	.9634
55-56	.975	(61, 62) - (63, 64)	.9604
56-57	.975	(63, 64) - (65, 66)	.9396
57-58	.975	(65, 66) - (67, 68)	.2146
58-59	.975	(67, 68) - (69, 70)	.6494
59-60	.975	(69, 70) - (71, 72)	.8473
60-61	.947	(71, 72) - (73, 74)	.2727
61-62	.947	(73, 74) -	.0000
62-63	.947		
63-64	.947		
64-65	.947		
65-	.000		

*This is the set of retention rates we developed as a hypothetical illustration for our analysis in *Another Challenge*. The recent separation rates for faculty at four small colleges provided the foundation for the retention rates displayed here.

**This set of rates comes from an unpublished manuscript by Stephen Dresch, who graciously consented to our using his material. The rates are based on national data regarding faculty age distributions and retirement patterns.

TABLE 3. Changes in Retention Rates—Age 70 Retirement Policy.

Set A		Set B	
Age Interval	Retention Rate	Age Interval	Retention Rate
65-70	1.00	(63, 64) - (65, 66)	.9570
70-	.00	(65, 66) - (67, 68)	.5920
		(67, 68) - (69, 70)	.8080
		(69, 70) - (71, 72)	.2410
		(71, 72) - (73, 74)	.2727
		(73, 74) -	.0000

Note: The retention rates for the age intervals not shown here are the same as those for the age 65 retirement policy. The Set A rates reflect the worst case assumption that all those who reach age 65 will remain on staff until age 70. The Set B rates represent a judgment about how retirement behavior may change when the mandatory retirement policy changes.

TABLE 4. Projected Retirement Patterns for Sample Schools, Age 65 and Age 70 Retirement Policies—Number of Faculty Members Retiring (Retention Rate A).

	School 1		School 2		School 3	
Year	65	70	65	70	65	70
1980	13	13	8	8	0	0
1981	21	21	8	8	7	7
1982	20	0	9	0	4	0
1983	16	0	8	0	7	0
1984	24	0	6	0	6	0
1985	24	0	5	0	8	0
1986	24	0	8	0	4	0
1987	35	20	6	9	5	4
1988	32	16	9	8	2	7
1989	33	24	12	6	9	6
1990	33	24	9	5	2	8
1991	27	24	6	8	2	4
1992	26	35	6	6	7	5
1993	34	32	11	9	3	2
1994	33	33	5	12	2	9
1995	35	33	9	9	3	2
			Totals			
1980-81	34	34	16	16	7	7
1982-86	108	0	36	0	29	0
1987-95	288	241	73	72	35	47
1980-95	430	275	125	88	71	54

different retirement policy assumptions (Tables 2 and 3, respectively), and compare the retirement patterns. We count as retirements only those who leave after age 65. These assumptions permit us to trace over time only the original group of faculty age 50 and older.

Table 4 shows the projected retirement patterns for the sample institutions under age 65 and age 70 retirement policies when the Set A retention rates are applied. The strings of zeros under the age 70 columns for the years 1982-1986 demonstrate the worst case assumptions: the transition period lasts five years before the first 65-year-olds reach age 70 and retire. The attrition rate is based on the full range of separations including deaths and disabilities, and we could realistically expect during the transition period some separations for those causes. That prospect—combined with the inability to disaggregate retirements from the full attrition rate—forces us to make another, somewhat ironic, worst case assumption: no one dies or leaves the system because of a disability.

TABLE 5. Projected Retirement Patterns for Sample Schools, Age 65 and Age 70 Retirement Policies—Number of Faculty Members Retiring (Retention Rate B).

	School 1		School 2		School 3	
Year	65	70	65	70	65	70
1981	10	10	6	6	0	0
1983	33	18	14	8	8	4
1985	38	23	14	10	12	7
1987	49	44	15	15	13	11
1989	72	61	16	14	9	13
1991	78	69	25	22	13	14
1993	66	72	15	17	12	10
1995	81	81	21	25	6	11
			Totals			
1981-85	81	51	34	24	20	11
1987-95	346	327	92	93	53	59
1981-95	427	378	126	117	73	70

Table 5 displays the same information as Table 4, but uses the Set B retention rates. The projected retirement patterns appear only in alternate years because the Set B rates are available only in two-year cohorts. Applying the Set B rates to the 1979 age distribution results in a new age distribution in 1981.

The shift from age 65 to age 70 mandatory retirement causes significant changes in the retirement patterns of the three sample schools. Table 6 summarizes those changes. School 1, for example, has 108 fewer retirements (a 76.1% decline) under the age 70 policy than it has under the age 65 policy for the years 1980-1986 when we apply the Set A retention rates. The Set A changes are more dramatic than those under Set B because Set A shows the worst that could happen. The Set B results represent much more plausible outcomes for the industry.

An examination of Table 6 reveals the varied impact of the policy change on the sample schools. Reading across the Set B 1981-85 row we can see the percentage decline in the number of retirements at the three schools: 37.0, 29.4, and 45.0 respectively. The 1981-95 row, however, shows a different pattern for the schools: 11.5, 7.1, and 4.1 School 3, which has the lowest decline (4.1) over the entire period, has the highest percentage decline (45.0) in the 1981-85 transition.

The transition period—when the changes in the number of retirements are greatest—may be the most difficult time for all the schools. How

TABLE 6. Changes in Number of Retirements, Age 65 to Age 70 Policy.

		School 1		School 2		School 3	
	Years	Δ	%Δ	Δ	%Δ	Δ	%Δ
	1980-86	−108	−76.1	−36	−69.2	−29	−80.6
Set A	1987-95	− 47	−16.3	− 1	− 1.4	12	34.3
retention	1980-95	−155	−36.0	−37	−29.6	−17	−23.9
rates	1991-95	2	1.3	7	18.9	5	29.4
	1981-85	− 30	−37.0	−10	−29.4	− 9	−45.0
Set B	1987-95	− 19	− 5.5	1	1.1	6	11.3
retention	1981-95	− 49	−11.5	− 9	− 7.1	− 3	− 4.1
rates	1991-95	− 3	− 1.3	3	4.9	4	12.9

difficult that time will be depends on the situation at each college and university. Making a judgment based solely on the Table 6 figures, even if we knew that the retention rates were highly accurate, is premature. School 3 in our sample can illustrate the point.

Suppose School 3 is an urban college with a strong academic reputation. Undergraduate enrollment is holding steady, and a recently developed "senior college" program is growing. Several term contracts with faculty members are due to expire in the next two years, and some departments are adding staff in response to increasing demand.

The nine professors (Set B rates) who would have retired under the age 65 policy are evenly distributed among academic departments. Three of the nine are highly regarded senior faculty members who have accomplished more to enhance their school's reputation than any of their colleagues. Their presence even for a short period may help attract top quality junior faculty. Does the decline in the number of retirements during the transition hurt School 3?

Suppose, on the other hand, that School 3 is an average liberal arts college located in a picturesque rural setting. The admissions office is losing the battle of declining enrollments. Various attempts to attract part-time students—most notably a continuing education program—have failed. Departmental staffing is out of sync with demand, and those departments that should be pruned are full of tenured professors.

Only a handful of term contracts are scheduled to expire in the coming years—a reflection of how long the problem has been developing. Seven of the nine professors who would have retired under the age 65 policy teach in the crowded English and History departments. Only one of the nine—an economist—is particularly outstanding, and she may opt for early retirement to pursue her consulting work. Under these circumstances "alarming" does not begin to describe the impact of postponed retirements on School 3.

We can see how a combination of circumstances creates such difficulty, but another question remains. How much of a problem can the retirement policy alone create? An assessment of the worst case can provide some insight.

The Set A retention rates rely on two worst case assumptions: no one works past age 65 under the previous policy; and everyone who reaches 65 stays until 70 under the new policy. Both assumptions tax one's credulity. Extensions beyond the mandatory retirement age are common practice, and many institutions maintain a higher-than-age 65 retirement policy at present. Mortality, health, and long-standing retirement plans are among the reasons that a 100 percent retention rate between ages 65 and 70 is unlikely.

The chances of the Set A assumptions holding up are better at small colleges where the numbers of individuals involved are small enough to escape aggregate norms. Let us assume, therefore, that the Set A scenario occurs at School 3, but that School 3 is otherwise "healthy." The change in retirement policy causes an 80.6 percent decline in the number of retirements in the 1980-1986 period—i.e., 29 fewer new appointments. The 1987-1995 period shows an increase of 12 (34.3%) retirements over the number expected under the age 65 policy. (See Table 6.)

The 29 postponed retirements may mean that School 3 hires very few new professors between 1982 and 1986. (See Table 4.) This diminished flow of new blood into the system may imply some organizational stagnation. But the assumption that School 3 is otherwise healthy also influences the analysis. This assumption implies a satisfactory tenure ratio and distribution among departments.

During the transition period the so-called "revolving door" syndrome—faculty moving from school to school under term contracts—should provide School 3 with some new appointments. When a term contract expires, the school either promotes the professor, or the professor leaves. Several promotions sould cause some temporary over-tenuring, a condition which the postponed retirements will allay eventually. Those not promoted create vacancies which—combined with replacements for professors on sabbatical leave—insure new appointments even in the face of five years of no retirements.

One final employment policy deserves our attention. Many institutions grant tenure to senior faculty at the time of hiring. This practice would be an external source into Phase 3 of Simpson's model. Spinney and McLaughlin examine the effect of this policy on tenure ratio, average faculty salary, and turnover, but they do not test the effect of a retirement policy change on the hiring-with-tenure practice.

At many institutions, that practice may be the first casualty of the retirement policy change. The prestige colleges and universities and those which escape the demographic and economic crunch will probably continue their current practices of granting tenure as thier needs dictate. The rest of the industry, however, may have to abandon the practice (at least temporarily) as the morale of the untenured professors becomes a more important institutional concern than the addition of senior faculty.

CONCLUSIONS

Much of how the age 70 retirement policy affects colleges and universities depends upon other issues—departmental tenure ratios, faculty age distributions, enrollment prospects, and inflation's influence both on retirement behavior and on the college budget. The evidence and analysis indicate that if a school has a problem associated with age 70 retirement, it probably already had a problem. Each institution must evaluate its own situation and judge for itself.

The changes in retirement behavior during the policy transition may cause the gravest hardships for some schools. An adverse change in retirement pattern that coincides with other demographic or economic troubles could be disastrous. The new retirement policy alone, however, is not likely to create any great turmoil even under the improbable worst case assumptions.

REFERENCES

Corwin, T. M., and Knepper, P. R. *Finance and employment implications of raising the mandatory retirement age for faculty*. Washington, D.C.: American Council on Education, December 1978.

Dresch, S. P. Consequences of raising the mandatory retirement age to 70. New Haven, CT: 1979. (Unpublished manuscript.)

Fernandez, L. *U.S. faculty after the boom and demographic projections to 2000*. A Report for the Carnegie Council on Policy Studies in Higher Education. Project on Quantitative Policy Analysis Models of Demand and Supply in Higher Education. Technical Report No. 4. April 1978.

Hopkins, D. S. P. Analysis of faculty appointment, promotion, and retirement policies. *Higher Education*, 1974, *3* (4), 397-418.

Jenny, H. H., Heim, P., and Hughes G. C. *Another challenge: age 70 retirement in higher education*. New York: Teachers Insurance And Annuity Association—College Retirement Equities Fund, 1979.

Patton, C. V. *Academia in transition: mid-career change or early retirement*. Cambridge, Mass.: Abt Books, 1979.

Simpson, W. A. Steady state effects of a later mandatory retirement law for tenured faculty. *Research in Higher Education* 1979, *11* (1), 37-44.

Spinney, D. L., and McLaughlin, G. W. The use of a markov model in assessment of alternate faculty personnel policies. *Research in Higher Education*, 1979, *11* (3), 249-262.

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