Faculty Retirement in a Period of Economic Expansion vs. Economic Contraction

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The sustained economic expansion in the mid 1990s and the subsequent economic downturn in the early 2000s had the potential to significantly change retirement decisions of older workers. This paper examines the expected retirement age of 50 and older Kansas Regents faculty from survey data collected in 1996 and 2003. Our results suggest a significant difference in expected retirement age between the two time periods, in particular, about 6 months earlier in a period of expansion relative to contraction. We also find evidence that non-monetary job-related factors delay retirement age and is more evident in an expansion.

INTRODUCTION

Retirement decisions are influenced by overall economic conditions. Such decisions may involve when to retire, allocation of retirement portfolio, and potential adjustments related to expected living standards during retirement. The period of near nirvana economy and above average financial market returns in the 1990s followed by a subsequent period of economic downturn in the early 2000s characterized by declines in key economic variables and a tumble in the stock market provide a natural backdrop to examine retirement behavior in periods of economic boom and bust. Workers who are nearing retirement age had most likely been affected by these two polar economic events. This paper investigates and compares the expected retirement age of university faculty in periods of sustained economic expansion versus contraction. After controlling for individual specific variations in selected demographic, economic and job related characteristics, is there a significant difference in retirement behavior in a period of expansion versus contraction? We utilize a cross-section of Kansas Regents faculty age 50 and over surveyed in 1996 and in 2003 to answer this question. Data from near retirees indicates realism as they adjust their retirement decisions in response to a boom and bust economic conditions. Faculty most likely saw their retirement portfolio grow beyond their expectations in the 1990s while the bust in the early 2000s had the opposite effect.

Various studies have examined the factors affecting retirement decisions of workers in general (Hassan and Lawrence, 2007; Vickerstaff, 2006; Hakola and Uusitalo, 2005; Schacklock and Brunetto, 2005; Bulmash, et. al., 2002; Joo and Pauwels, 2002; Lumsdaine, 1995) and faculty in particular (Parker, et. al., 2005; and Bahrami, 2001). These studies examine social, demographic and economic factors that

affect retirement decisions. Declining savings, rising health care costs, and uncertainty about Social Security in recent years have also put an emphasis on the financial preparedness of retiring workers.

Another branch of literature which more closely relates to the question we pose is those that examine the impact of wealth shocks and stock market fluctuations on retirement decisions. Evidence from studies on wealth effects is mixed, often compounded by endogeneity issues with respect to retirement timing. For instance, Sevak (2002) find evidence consistent with the normality of leisure with respect to wealth. Using the 1992 and 1998 waves of the Health and Retirement Study (HRS), Sevak estimates that a $50k wealth shock increases retirement probability among individuals age 55-60 by 1.9 percentage point and elasticity of retirement with respect to wealth between 1996 and 1998 to about 0.39 and 0.50 for men. On the other hand, Joulfaian and Wilhelm (1994) using inheritance as a measure of wealth shock from the Michigan Panel Study of Income Dynamics (PSID) find no large reductions in labor supply of men and married women. The strand of literature that explores the relationship between retirement and the stock market also provide a good perspective on this study. The most recent is Gustman, Steinmeier, and Tabatabai's (2010) paper on the effect of stock market decline for the financial security and retirement choices of the "early boomer" cohort in the 2006 wave of the HRS. They estimate an increase of about 3 months on the average length of retirement during the stock market boom in the late 1990s, which translates to a reduction in the average age of retirement by the same amount. The subsequent decline in the stock market however, would have delayed retirement by 1.5 months. Coronado and Perozek (2003) likewise utilized data from the HRS and found that respondents with corporate stocks prior to the bull market of the 1990s retired 7 months earlier. They also found evidence that the wealth effect during this time period were in the 3-5 cents range of long run additional consumption spending for every additional dollar of wealth. In contrast, Coile and Levine (2006, p.409) arguing that "evidence of the impact of the stock market on retirement behavior would require that those who are more likely to own stock are also more likely to retire in booms and less likely to retire in busts" find no evidence that changes in the stock market affect aggregate labor supply. In the UK, Gardner and Orszag (2004) examined how older workers, aged 50 to 64, responded to the bear market from the end of 1999 to the end of 2002. Their results indicated that 25% of the older workers were planning to retire later than they had planned 2 years beforehand. This highlights the need to examine the issue of retirement and stock market decline given that in the UK, defined contribution plans are not even the main form of private pension plan.

This paper makes several contributions to the literature. First, along with Coile and Levine's (2006) study, this paper is among the first few that examine retirement behavior at both the expansionary period of the late 1990s and the contractionary period of the early 2000s. We focus on a more homogenous segment of the labor force – university faculty – which may have unique characteristics as a group that separates them from the overall workforce. For instance, Coile and Levine (2006) assert that the ability of the stock market to drive aggregate labor force patterns may be limited by the number of workers exposed to the stock market through their retirement funds and the size of these balances. Our sample participates in a defined contribution (DC) retirement plan and is close to retirement age and would have accumulated larger balances in their retirement funds. As such, their overall exposure and consequently response to stock market fluctuations are likely larger and more significant. We are also able to capture job-related factors into the retirement decision which have not been extensively investigated previously. Our emphasis is not on the relationship between wealth shocks and retirement per se bur rather on the potential differences in retirement behavior in an overall period of positive economic condition and period of declining economic condition. We also provide some insights from the most recent economic turmoil from preliminary data.

DATA

Data from two surveys on all tenure-track faculty age 50 and over at all Kansas Regents institutions were utilized. The first survey was conducted in 1996, a period of near nirvana economy and above average financial returns while the second survey was conducted in 2003 towards the end of an economic downturn. Demographic, financial, and job related information were collected from the surveys. Faculty

who are 50 years old and over nearing retirement age is an ideal sample to use to examine the effect of overall economic conditions to retirement behavior since these individuals are more likely reaching their peak in terms of their net worth.

Although the use of faculty from a particular state may not be representative of overall US workers, our data provides us a greater degree of homogeneity which can help control for factors in the retirement decision that may otherwise be difficult to capture. First, all Regents system faculty face the same pension plans – a defined contribution plan (DC) with identical required faculty contribution levels and percentage of retirement funds matched by the state. Kansas Regents faculty chooses from authorized companies that offer similar options and services. The investment options reflect a typical menu that includes money market funds, real estate funds, bond funds, income funds, and international funds. Each company includes a social choice/awareness fund in which investments may represent, partially, a non-financial objective. Overall, the pension plan "rules" faced by Kansas Regents faculty do not significantly limit choices of faculty with respect to individual investment allocation strategies. The fact that all Kansas faculty participate in a DC plan likewise increases the susceptibility of retirement funds to overall economic conditions, ultimately affecting retirement decisions. The homogeneity of occupation and investment in human capital control for the possibility that retirement behavior is influenced by access to more information and greater ability to process information related to financial preparation for retirement.

Faculty in the 1996 data set have participated in the Kansas Regents pension plan for an average of 25 years, 18% are female and have an average age of 57 years. In the 2003 survey, faculty have participated an average of 19 years in the pension plan, 25% are female, and have an average age of 58 years[1].

EMPIRICAL MODEL

The empirical measure of retirement behavior that we examine is expected retirement age (RETAGE). The theoretical basis for the empirical model deals mainly with retirement timing. There is empirical evidence to support the notion that planned retirement correlates reasonably well with actual retirement decisions. The appropriate theoretical framework for the choice of retirement age is a life-cycle model. A life-cycle model assumes workers plan their consumption, savings, and retirement to maximize expected utility for the remainder of their life. In general, the optimal retirement age is when the marginal benefits from working an additional year is equal to the marginal costs of lost utility from less leisure time and disutility from work, if any. For a university faculty, the absence of a mandatory retirement age makes the retirement decision more of a personal preference and deliberative, influenced by a set of personal financial, job related, and demographic factors, in addition to overall economic climate at the time the decision is being made which is the main empirical question of the paper.

The specific variables that are expected to influence the benefits and costs of working and/or leisure are discussed below:

(1) Financial Factors. Financial factors affect an individual's financial ability to afford retirement. Two measures are utilized, current salary and expected retirement wealth. Current salary (captured by dummy variables INC_low and INC_mid) may have two opposing effects on retirement age and its net effect is therefore an empirical question. The substitution effect increases the opportunity cost of leisure (retirement) as income increases while the income effect increases the consumption of leisure (a normal good). A backward bending labor supply curve implies a stronger income effect relative to substitution effect for high levels of income, which is probably an appropriate depiction for our sample. Adequate retirement wealth (represented by dummy variables RW_low and RW_mid) to sustain a desired post-retirement flow of income is most likely a necessary condition for retirement. Our measure of retirement wealth is the faculty's self-reported value of all personal savings, investments, and retirement funds. We previously noted that empirical results of the impact of wealth on labor supply in general are mixed and maybe endogenous in the retirement timing model (i.e., in the life-cycle model, one of the major reasons for saving is retirement). The challenge is to use exogenous variation in wealth across faculty otherwise the wealth effect will be biased. We are able to partially address this issue in the

sense that our data was collected in the bull market of the mid 1990s (1996 in particular) when faculty likely had large capital gains that were unexpected; and the subsequent bear market in the early 2000s (2003 in particular) when unexpected losses likely occurred. Assuming the theoretical prediction of the normality of leisure, a higher expected retirement wealth is likely to lead into a younger retirement age.

(2) Job-Related Factors. Job-related factors (other than financial compensation) likewise affect the marginal benefits and marginal costs of working. Overall satisfaction with the progress of the academic career (DACAD) maybe an indicator of job match and raises the utility from working and may increase the expected retirement age. The type of academic institution (TEACH) be it predominantly teaching or research may also influence retirement behavior. Despite homogeneity in occupation in the sample, there may still be a certain degree of variability in terms of overall utility. A predominantly teaching institution may provide the relatively "routine" or "stable" aspect of an academic institution that may be very important to some individuals while a predominantly research institution may provide a greater variety of intellectual activities and stimulation which may be more important to some individuals. Again, this affects the overall utility from working and will therefore affect retirement behavior.

(3) Demographic Factors. The last group of factors is demographic. Marital status (MAR) and gender (MALE) are mainly control variables. Marital status may capture joint decision making when it comes to retirement. Health status (HS) may affect expected retirement age under the assumption that poor health will result in earlier retirement. There might be some degree of ambiguity in the sense that poor health decreases the utility from working but might likewise require increased consumption of health care goods which necessitates work (from financial benefits of working). Evidence from empirical studies tends to confirm the initial hypothesis. Dwyer and Mitchell (1999) find about one to two years reduction in retirement age relative to the average retirement age for individuals who report poor health. An earlier study by Sammartino (1987) finds similar results in that workers in "poor health" retire one to three years earlier than healthy workers in similar circumstances. An individual's expectation of how long they expect to live should also influence expected retirement age. This is captured by the variable LONG, calculated as the difference between the respondent's estimate of the average life expectancy for someone of their age and gender, and their age. The prediction from the basic utility maximization model for work and leisure is that a decrease in life expectancy results in the consumption of more leisure, and thus, other things equal, an earlier retirement age.

Estimation

The study's main objective is to examine if expected retirement age (RETAGE) is significantly different in a period of sustained economic expansion relative to a period of economic downturn. When regression analysis is used to model such economic relationships, the question of whether these relationships remain stable for two periods of time, or if the same relationship holds for two groups of observations, arises. This involves testing whether these two sets of observations can be combined into a single regression model utilizing the Chow test for structural change (Chow, 1960).

To perform the Chow test, we first estimate two separate regression models for RETAGE which correspond to the two time periods, followed by a pooled regression for the combined time period. The first period (SAMPLE_96) reflects the period of sustained economic expansion while the second period (SAMPLE_03) corresponds to a period of economic downturn. The model for RETAGE[2] is specified as:

FIGURE 1
EXPECTED RETIREMENT AGE EQUATION

$$RETAGE = \beta_0 + \beta_1 INC\_low + \beta_2 INC\_mid + \beta_3 RW\_low + \beta_4 RW\_mid + \beta_5 DACAD + \beta_6 TEACH + \beta_7 MAR + \beta_8 MALE + \beta_9 HS + \beta_{10} LONG + \varepsilon$$

Definitions of variables from Figure 1 with summary statistics are in Table 1 below.

TABLE 1
VARIABLE DEFINITION AND MEANS

Variable	Definition	Mean*		
RETAGE MODEL (FIGURE 1)				
		SAMPLE_96	**SAMPLE_03**	**N****
RETAGE	Expected retirement age	65.53	66.11	65.72
INC_low	=1 if current university salary for the academic year is $55,000 or less , =0 otherwise	0.53	0.22	0.43
INC_mid	= 1 if current university salary for the academic year is $55,001 to $85,000 , =0 otherwise	0.38	0.51	0.42
INC_high	=1 if current university salary for the academic year is > $85,000, =0 otherwise (dropped category)	0.09	0.27	0.15
RW_low	=1 if retirement wealth from faculty's estimate of total value of all personal savings, investments, and retirement funds is $600,000 or less, =0 otherwise	0.44	0.34	0.41
RW_mid	=1 if retirement wealth from faculty's estimate of total value of all personal savings, investments, and retirement funds is $600,001 - $1,000,000, =0 otherwise	0.35	0.35	0.35
RW_high	=1 if retirement wealth from faculty's estimate of total value of all personal savings, investments, and retirement funds is > $1,000,000 (dropped category), =0 otherwise	0.21	0.31	0.24
DACAD	=1 if faculty is satisfied with progress of overall academic career, =0 otherwise	0.86	0.87	0.86
TEACH	=1 if mainly teaching institution, = 0 if research	0.23	0.21	0.23
MAR	= 1 if married, =0 otherwise	0.83	0.83	0.83
MALE	=1 if male, =0 otherwise	0.78	0.80	0.79
HS	=1 if reported health status as good, =0 if poor/very poor	0.98	0.97	0.98
LONG	estimate of the average life expectancy for someone their age and gender – age	23.34	22.39	23.02

*means of dummy variables are interpreted as the percentage of the "1s" in the sample
**N = SAMPLE_96+SAMPLE_03

RESULTS

The empirical results are presented in Table 2. The Chow test for structural change between the periods of economic expansion vs. economic downturn indicates that the expected retirement age models between the two time periods are significantly different. Thus, (1) was estimated separately for the two time periods. To allow for an estimate of the difference between the RETAGE in SAMPLE_96 vs. SAMPLE_03 after controlling for financial, job-related, and demographic factors, a pooled model was estimated with the inclusion of a dummy variable SAMPLE (=1 if period of expansion and = if period of contraction). The descriptive statistics reported from Table 1 indicate that the average expected retirement age for SAMPLE_96 is slightly lower than for SAMPLE_03 (65.53 yrs vs. 66.11 years). The parameter estimate for the variable SAMPLE on the fourth column of Table 2 further confirms the difference. Ceteris paribus, the expected retirement age in the period of economic expansion in 1996 was on average, about half a year (6 months) lower relative to the economic contraction of 2003. This estimate tracks closely with Coronado and Perozek's (2003) finding using a broader sample from the HRS where those with stocks prior to the recovery of the 1990s retired 7 months earlier.

TABLE 2
OLS PARAMETER ESTIMATES FOR RETAGE (STANDARD ERRORS IN PARENTHESES)

Variable	Expansion (SAMPLE_96)	Contraction (SAMPLE_03)	Pooled with dummy (N)
SAMPLE			-0.482**
			(0.249)
MAR	-0.490	-0.638	-0.591***
	(0.382)	(0.537)	(0.312)
MALE	1.192*	0.303	0.999*
	(0.365)	(0.543)	(0.303)
HS	2.265*	2.040	2.220*
	(0.857)	(1.420)	(0.735)
LONG	-0.037***	-0.153*	-0.079*
	(0.019)	(0.029)	(0.016)
DACAD	0.663***	0.795	0.732**
	(0.394)	(0.586)	(0.327)
TEACH	-1.186*	-0.977**	-1.117*
	(0.326)	(0.488)	(0.272)
INC_low	-0.538	0452	-0.094
	(0.536)	(0.609)	(0.385)
INC_mid	-0.534	-0.233	-0.355
	(0.519)	(0.472)	(0.348)
RW_low	1.057*	-0.740	0.305
	(0.391)	(0.530)	(0.311)
RW_mid	0.862**	-0.457	0.272
	(0.381)	(0.486)	(0.299)
F stat (p-value)	4.99 (0.00)	4.85 (0.00)	7.58 (0.00)
N	941	473	1414

***Significant at 1%; **Significant at 5%; and *Significant at 10%

Out of the two general measures of financial factors, only expected retirement wealth had a significant effect on expected retirement age, and only during the period of economic expansion (results from 2nd column). Those with retirement wealth valued equal to or less than $600k (RW_low) will retire on average 1.057 years later than those with more than $1 million in retirement wealth (RW_high). Faculty with a slightly higher retirement wealth as captured by RW_mid will retire 0.862 years later relative to faculty with more than a million in retirement wealth. These results provide evidence for the normality of leisure for university faculty. An important finding however is that expected retirement wealth is a significant predictor of RETAGE in a period of economic expansion but not in a period of a downturn.

In terms of job-related factors other than financial benefits, overall satisfaction with the academic career increases the retirement age by about 8 months in a period of economic expansion. This implies DACAD has a significant effect on the marginal benefit of working. Faculty in a predominantly teaching institution retires about 1.2 years and 0.98 year earlier, relative to faculty in a research institution, in an economic expansion and contraction, respectively. Thus, the overall utility of working is lower for faculty in predominantly teaching institutions as opposed to primarily research schools. Moreover, the earlier retirement that occurs for teaching schools is more pronounced in an economic expansion which is to be expected as more opportunities may be available.

The longer the estimated life longevity (LONG) for a faculty, the earlier is the expected retirement age. This holds for both the periods of expansion and contraction, although the inverse relationship is larger in an economic contraction. In an atmosphere of economic downturn, all things equal, each additional year of added life expectancy influences the faculty to retire about 1.8 months earlier (0.153 years), as opposed to almost half a month (0.037 years) in good economic conditions. This demonstrates a general preference for leisure and may be a reflection of certainty on planned post retirement standard of living, either reflecting adequate post retirement wealth or the expectation of a lower standard of living to support a longer period of consumption post retirement. A good health status increases retirement age by 2.27 years in an economic expansion but has no significant effect in a period of contraction.

A closer look at how expected retirement age has changed as brought about by the overall economic conditions at the time of the surveys is shown in Table 3. About 35.9% of faculty expected to retire later than they had planned in the 2003 survey (contraction) compared to only 9.7% of faculty in the 1996 survey (expansion). The percentage of faculty retiring later than their previous expectation in response to a declining stock market and overall economic condition (35.9%) is slightly higher than the estimate from the UK examining a similar age group of workers in the same time period. Gardner and Orszag's finding (2004) from the UK was 25% of workers planned to retire later than they had planned two years prior. The greater percentage for our sample (Kansas Regents faculty) is to be expected given that retirement funds in our data are in a defined contribution plan whereas in the UK, defined benefits plan was more predominant.

In symmetry to the discussion above, a larger proportion of faculty expected to retire earlier in good economic conditions as opposed to adverse economic conditions. Faculty tended to be more certain of their expected retirement age during a period of expansion, with 73.6% responding not changing the age they expect to retire vs. 55.6% during a downturn in the economy.

TABLE 3
DISTRIBUTION OF FACULTY RESPONDING TO "*HAVE YOU CHANGED YOUR MIND RECENTLY (LAST 2 OR 3 YRS) ABOUT THE AGE AT WHICH YOU EXPECT TO RETIRE*?"

Category	Expansion (SAMPLE_96)	Contraction (SAMPLE_03)	Pooled
Yes, now expect to retire at an older age	9.7%	35.9%	20.6%
Yes, now expect to retire at a younger age	16.7%	8.5%	13.3%
No	73.6%	55.6%	66.1%
n	879	626	1505

DISCUSSION AND CONCLUDING COMMENTS

The economic expansion of the 1990s and the subsequent downturn in the early 2000s provided an excellent opportunity to examine retirement behavior in periods of actual economic expansion and contraction. Rather than dealing with hypothetical circumstances, these events allowed us to study university faculty responses from an actual and experienced event. Faculty who were nearing retirement around the aforementioned economic times have most likely altered their retirement plans to adjust to the existing economic conditions. This paper explored faculty expected retirement age in the context of these two distinct economic times.

The results indicate an overall structural difference in faculty expected retirement age in an economic expansion versus in an economic downturn. Even after controlling for cross-section variation in financial, job-related and demographic factors, we find evidence that faculty retire on average 6 months earlier in positive economic times relative to unfavorable economic conditions. There is likewise evidence of delayed retirement for faculty who were satisfied with the overall progress of their academic career. On the other hand, faculty in predominantly teaching institutions expects to retire earlier relative to their counterpart in primarily research institutions. Also, the growing number of dual-income households places the retirement decisions in a family or in a joint decision-making context in which the couple must coordinate retirements with consideration of joint retirement dates and retirement incomes. We find evidence of earlier expected retirement age for married faculty. Lastly, all else equal, males retire about a year later relative to females.

These results are valuable for possibly predicting the likely response of faculty who are near retirement in future periods of economic shocks, be it an expansion or contraction. Granted that these future potential events may have distinct characteristics from the economic events in this study, our empirical model does provide some perspective on the likely behavioral response of faculty in comparable economic times. For instance, the results of this research with respect to the 2003 economic downturn data can also provide insights as to the likely effect of the more recent adverse financial market performance on faculty retirement. The most recent downturn has significantly diminished family wealth, plunging about 18 percent or about $11 trillion in 2008. Along with about 50 million other Americans who have 401(K) plans, university faculty as a group has likewise experienced substantial losses in their retirement portfolios. These losses will likely affect many individual university faculty retirement decisions now and in the near future. Even the selection of a date to retire may involve reconsideration and may no longer be an "all or nothing" decision. Phased retirement, which is available to all Kansas Regents faculty, may become a more popular option.

The events within the past ten years have exposed the faculty and their retirement funds to two significant adverse financial markets conditions. The first market downturn as captured by our 2003 survey was from about August 2000 until February 2003, when the S & P fell from 1517.68 to 841.15, a reduction in the index amounting to 44.6 percent. The second downturn in financial markets was from about October 2007 to February 2009 when the S & P fell from 1549.38 to 735.09 which was a 52.6 percent drop. Certainly both events affected faculty retirement portfolios and likely their retirement

decisions. Since all faculties in Kansas Board of Regents schools face the same mandatory defined contribution plan, changes in portfolio allocations across fund options are individual faculty decisions. The following table shows the distribution of funds across available fund categories prior to the recent down turn (Sept. 30, 2007) and close to the bottom of the financial downturn (Feb. 2, 2009).

TABLE 4
RETIREMENT FUNDS DISTRIBUTION FROM 2007-2009*

ING and TIAA-CREF	9/30/07	% Distribution	2/16/09	% Distribution	Change in %
Balanced	$94,539,030	4.2%	$80,903,305	4.4%	-14.42%
Equity	$1,195,899,477	53.1%	$656,315,539	36.0%	-45.12%
Fixed Income	$72,670,877	3.2%	$98,983,170	5.4%	36.21%
Money Market/Stable Value	$785,364,373	34.9%	$924,727,026	50.7%	17.74%
Real Estate	$102,220,189	4.5%	$62,591,033	3.4%	-38.77%
Totals	**$2,250,693,946**	**100.0%**	**$1,823,520,073**	**100.0%**	**-18.98%**

* Data provided by the Kansas Board of Regents. Includes all participants in the state regardless of age. Dollars for each category are combined for similar categories and for the two companies, ING and TIAA-CREF.

The reduction in the total amount of funds between these two dates does not reflect only the market effect since State and individual contributions continued to be made during this period. Also over this period, individuals made reallocation decisions among the different investment categories. Nevertheless, total dollars in State retirement funds decreased by 18.98 percent, with the largest percentage change among individual funds occurring in the equity funds and in the real estate funds.

The economic downturn data utilized in this study was collected in October 2003 when the financial markets were close to the bottom of a three-year decline. Five categories of investment options were identified for the sample -- stocks, fixed (bonds), money market, real estate, and other. Each faculty member in the sample was asked, "How are your university pension or retirement funds currently invested or distributed?" The survey also asked: "How were your university retirement funds invested or distributed in 2000? The average distribution of faculty retirement funds across the investment categories is shown in Table 5.

TABLE 5
RETIREMENT FUNDS DISTRIBUTION FROM 2000 – 2003

	2000	2003
Stock	53.60%	46.50%
Fixed (Bonds)	40.00%	44.30%
Money Market	3.20%	4.30%
Real Estate	1.90%	3.60%
Other	1.30%	1.30%
Total	**100%**	**100%**

As in the case of the more recent financial market downturn, there was some movement away from the more risky investment options (stocks) during this period. Since there are fairly large standard deviations associated with these mean values, a frequency distribution provides a better profile of the adjustment in faculty stock holdings as shown in Table 6 below.

TABLE 6
FREQUENCY DISTRIBUTION OF STOCKS ALLOCATION FROM 2000-2003

2003 Percent of Faculty Holding Different Percentage of Stock in Retirement Portfolio				
		2000		**2003**
% of Portfolio in Stocks	% of Faculty	Cumulative %	% of Faculty	Cumulative %
0	13.8	13.8	14.9	14.9
25	3.5	21.9	5.0	29.5
50	20	51.4	18.6	62.8
75	9.5	76.7	6.1	83.8
100	11.8	100	8.5	100

Table 6 shows that in 2000, 13.8 percent of faculty held no stock in their retirement portfolio, while 3.5 percent held exactly 25 percent in stock giving 21.9 percent of faculty holding from 0 to 25 percent in stock. The cumulative percent includes faculty holding varying percentages between 0 and 25 percent. It is interesting to note that 20 percent of faculty held exactly 50 percent of assets in stock with 51.4 percent of faculty holding this percentage or less. The comparison with 2003 reflects a decision of many faculties to adjust their retirement portfolio to hold a smaller percentage in stock.

Given that the recent market downturn is more severe than the 2003 scenario, its effects on retirement decisions may likely be larger in magnitude as well. Additional data collection relative to the more recent events is therefore warranted.

ENDNOTES

[1]The response rate for the 1996 survey was 58% which yielded 1208 returned surveys while the 2003 survey response rate was lower at 35% or 648 returned surveys. This may raise the issue of non-random selection in terms of fewer people opting to respond to the survey in 2003. However basic demographic characteristics of the sample between the two periods are relatively comparable. The final samples for the empirical model are lower upon consideration of complete responses to variables utilized.

[2]If the result of the Chow test leads to the rejection of "pooling" the 2 periods, this implies that the relationships between RETAGE and the explanatory variables included in (1) are structurally different between a period of economic expansion and a period of economic downturn. This implies 2 separate models for the two periods for equation (1) are appropriate. Alternatively, the two periods can be pooled into one regression model but with the inclusion of a dummy variable to differentiate the observations from SAMPLE_96 (economic expansion) to those from SAMPLE_03 (economic downturn).

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