IVORY TOWER VERSUS THE REAL WORLD: DO WE PRACTICE WHAT WE TEACH?

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Abstract

This paper presents a descriptive analysis of the results of a survey of investing practices of finance, accounting and economic academicians. Members of the Financial Management Association, the American Accounting Association and the American Economic Association were sent a questionnaire asking questions concerning their asset allocation, their expected sources of retirement income, expected retirement asset allocation, and types of financial instruments they have used. Overall, academicians in finance, accounting and economics tend to be risk averse, hold diversified portfolios and tend not to use exotic financial instruments that they may teach their students. The paper also examines some of the psychological attributes that contributed to business academician's financial decisions-making processes.

I. Introduction

Finance academicians have taught the principles of portfolio management, security analysis, asset allocation, and investment selection in the first course in investment analysis for many years. Students of business are exposed to the nature of investor risk aversion, trading strategies, security selection and the principles of fixed income and equity portfolio management. Additionally, the students are taught not only portfolio theory and the market model, but also the principle of diversification of investments. The popular press, over the years, has picked up many of these ideas and has published numerous articles extolling the virtues of portfolio diversification, asset allocation, betas, and investing. The *Wall Street Journal* has published numerous articles on the popularity, especially among baby boomers, of stocks and investment management.

The financial planning industry has experienced a boom with record numbers of individuals becoming more involved in the management of their own assets. This trend is expected to gather momentum as the baby boom generation ages and continues to invest for retirement later in this century. Further stimulating individual interest in investing has been the shift in the nature of corporate pension funds away from defined benefit plans to defined contribution plans forcing people to make their own investment selection and giving employees the freedom to manage their retirement funds. The Internet has contributed to making individual investment choices more attainable via electronic trading and information. As stated in the *Wall Street Journal*, "investing in stocks has become a national hobby and a national obsession."[1]

In the 1980s and the 1990s, we witnessed the flourishing of institutional investing; in the near future we can foresee a movement toward greater individual investing choices as more people manage their retirement funds. The current stock market conditions, financial scandals, and

[1] Madrian and Shea (1996).

accounting disputes in corporate governance may lead individual investors either to exert greater decision-making control over their investment portfolios or lead investors to shun the market completely after suffering substantial losses. Time will tell what investors will do; in any case, at least 49% of people today are invested in stocks directly or indirectly through 401k and other retirement programs according to Hong, Kubik and Stein, 2000.

With all the interest in equity investing and the principles of portfolio management, the practices and psychological attributes of those who teach the subject have not been examined. The investment philosophy, asset allocation beliefs and practices, the types of securities owned by academics responsible for teaching and for research in investments is not well known. The finance literature is filled with articles that empirically evaluate theoretical models in investments, evaluate the performance of mutual funds, stocks and bonds, and examine the success of trading and asset management techniques of professionals in the investment profession. What is missing is an examination of the methods that business and financial academics actually use to manage their own portfolios. This article will also examine some of the psychological attributes, which contribute to business academician's financial decisions-making processes. Our research fills the void in the knowledge about academicians' personal investment decision-making process by investigating the structure of their portfolios and their retirement expectations.

II. Previous Research

Most of the literature in investment management has focused on the empirical analysis of the Capital Asset Pricing Model (Fama and French, 1992) and the performance of professional money managers [Henriksson (1984), Grinblatt and Titman (1989)]. Studies have also been conducted on asset allocation [Brinson, Hood and Beebower (1986)] and on diversification in portfolios [Brinson, Diermeier and Schlarbaum (1986)]. The management techniques of professionals have also been examined [Change and Lewellen (1984)].

What have been neglected are the techniques and preferences of financial and economic academicians who are responsible for teaching the art and science of portfolio management and security selection. We hypothesize that business academicians are more risk averse than professional and individual investors. We also believe that academicians practice the buy and hold investment strategy due to their belief in the Efficient Markets Hypothesis [Fama (1998)].

Investment strategies may also be affected by certain psychological attributes as suggested by more current behavioral finance research. Baker and Nofsinger (2002) in their comprehensive article on behavioral aspects of investing examined the psychological influences on investing and common errors in investors' decision-making processes. Hong, Kubik and Stein (2001) showed that stock market participation is influenced by the social interaction of investors. In two recent studies, Duflo and Saez (2002), and Madrian and Shea (2000) demonstrated that an individual's decision to participate in a particular employer-sponsored retirement plan is affected by the choices of his or her co-workers. Ellison and Fudenberg (1993 and 1995) found evidence that investors may learn from each other about the high returns the stock market has offered or about the details of executing trades.

III. Objectives and Methodology of the Study

The objectives of this study are (1) to empirically examine the asset allocation, retirement expectations and investing techniques used by academicians in finance, accounting and economics, and (2) to relate the survey results to the hypotheses about the financial decision-making processes in behavioral finance. To accomplish these objectives, a survey questionnaire was sent to 3,000 randomly selected academic members of the Financial Management Association, the American Accounting Association and the American Economic Association. A total of 571 usable questionnaires were returned, a response rate of 19%. The sample was divided into 291 economists, 201 finance academicians, 52 accounting faculty, 9 management faculty, and 20 unspecified faculty. The survey instrument included questions on (1) investment practices, (2) investment vehicles used, (3) current asset allocation for personal portfolios, (4) anticipated retirement income sources, and (5) expected retirement portfolio. This article presents an evaluation of the responses to questions of investing practices, portfolio allocation practices and financial aspects of retirement. The study also examines the investment practices by academic specialty and tenure status to discern variations in assets allocation and retirement expectations in financial terms.

IV. Results

A. Portfolio Allocations and Retirement Income

Tables 1 through 3 present the portfolio allocations and expected sources of retirement income for the full sample. The faculty were asked to specify the percentages of their funds they currently hold in cash (or the equivalent), bonds (Treasury, corporate or other), common stock, income producing real estate and other investments. Table 1 contains the mean portfolio allocation with standard deviations, minimum and maximum percentages devoted to each asset.

Most of the respondents specified common stocks as the primary asset in their portfolios, with funds divided evenly among bonds and cash. Stocks have the highest standard deviation indicating a fairly wide distribution in allocations to stocks within the sample. Income producing real estate is a minor asset in most portfolios; however, the standard deviation is large relative to the mean allocation of about 8%. Although, overall, real estate is a minor component in the average academic portfolio, there are substantial variations in funds invested in real estate. Nevertheless, it is interesting to note that the maximum allocation specified by some respondents is 100% for some assets. That is, for some of the faculty their portfolio is composed of one asset, be it cash, bonds, common stock or some other investment. On average, those surveyed hold a diversified portfolio centered on common stocks which reflects application of one of the primary ideas in investing imparted to students – diversifying one's portfolio to reduce risk exposure. In this sense, our finance and economic colleagues practice at least one aspect of investment principles and may be viewed as risk averse given the diversification they practice which is contrary to representativeness bias, that of confusing a good company with a good investment, as reported by Shefrin (2002).

Table 2 contains the mean distribution of expected retirement income along with the standard deviation of the responses and the minimum and maximum allocations among sources. The

largest anticipated source of income is from academic pensions composing 44% of expected retirement income. Income from their portfolios is the second largest source of anticipated retirement income (25%), and social security is a distant third at 13%. Interestingly, post-retirement jobs are expected to compose 5% of retirement income. Perhaps, on average, only a few expect to continue teaching or generate income through some other employment source after retirement, while most anticipate living off assets accumulated during their careers**.** Given the low proportion of social security in retirement income there seems to be a limited expectation about the future survivability of social security. The low proportion of social security and the greater reliance on private sources of income may reflect the common fear about the future viability of social security.

On average, the respondents seem to expect to rely on their own resources for retirement, perhaps with social security as a supplement rather than as the primary source. Also, only two income sources had maximum allocations of 100%, which are pensions and the academics' own portfolios. A few may be expecting to live entirely on pensions and/or assets accumulated over a career and no expectation of social security income (or social security payments may be felt to be so low as to be unimportant to that faculty). As an additional indicator about social security, the largest standard deviations are for pension and portfolios income (24.6% and 21.8%, respectively). These findings support the studies by Baker and Nofsinger (2002), Duflo and Saez (2002) and, Mandrian and Shea (2000), that individual decisions about retirement plan investing are influenced by social interactions among co-workers. There is some variation in expectations about social security income given its standard deviations of 10.7%; but with a relatively low standard deviation there is more coincidence of expectations concerning social security than about other sources. Looking at the maximum allocation, at least one respondent expects 88% of his or her retirement income to come from social security, with the rest coming from some other source. Other respondents expect most of their income to come from the sale of their houses. At least one faculty member expects 80% of his or her income to come from a good marriage – to a wealthy spouse. That person may already have used that wealthy spouse as a source of funds.

Table 3 contains the mean retirement portfolio allocation along with the standard deviations, minimum and maximum allocations. The faculty surveyed were asked to specify how their portfolios will be divided among cash, common stocks (U.S. and foreign), bonds (Treasury and corporate), mutual funds and real estate. Like their current portfolios, the retirement portfolios are expected to be diversified with about 33% devoted to U.S. stocks and about 25% to mutual funds. Bonds and foreign stocks combined represent 20% of the average retirement portfolios and cash is a small proportion of the allocation. Common stocks and mutual funds have the largest standard deviations indicating wide variation in expectations about how much each of these assets will compose the retirement portfolio. This variation may be due to different backgrounds and education of business faculty. On average, there is almost as much of their assets devoted to real estate (income producing) as there is to cash, indicating the importance of illiquid real estate to the future financial condition of the faculty. At least one faculty expects real estate to compose 60% of his/her portfolio, while at least one other anticipates foreign stocks to make up 70% of the portfolio.

In general, the expected retirement portfolios of faculty contain a diversified set of (liquid) assets. Contrary to what has traditionally been recommended, the expectation is to have the

largest proportion of the retirement portfolio in common stocks, rather than bonds. This may be related to the increasing life span and years of retirement where asset value growth continues to be a primary concern. Mutual funds compose the second largest asset, though that could well be divided among stock and bond funds, in effect leaving a larger allocation of assets in bonds. Our faculty sample also expects to diversify into foreign stocks as well. The retirement portfolio tends to the conservative with the wide diversification indicated in Table 3 and with the fairly large devotion of assets to mutual funds. The retirement portfolio tends to mimic that which is usually recommended for individuals in their careers: the largest allocation to common stocks, with some assets in bonds and foreign stocks for the benefit of risk reduction and capture of gains in global markets.

B. Asset Allocation and Retirement Income by Tenure Status

Tables 4 through 6 contain the portfolio and retirement income allocations based on tenure status of the respondents. Table 4 shows a comparison of the current portfolio allocations between tenured and untenured faculty, with 65% of the sample composed of tenured faculty. The allocations are similar, with most funds invested in common stocks and an equal distribution into cash and bonds. However, the untenured faculty seems to be slightly more aggressive with 61% of their portfolios in stocks as compared to 52% for tenured faculty. For the tenured group, the standard deviations for cash, bonds and stocks are greater than that of the untenured faculty; there may be a little less variation in portfolios among untenured than tenured academics. These findings support the conclusions made by Ellison and Fudenberg (1993 and 1995) concerning the mutual education that occurs among investors in regard to market performance and trading.

Table 5 contains the distribution of expected retirement income by tenure status. The distributions are similar, in general, to the overall sample. Most faculty expect the preponderance of their retirement money to come from pensions and their investment portfolios. The untenured group expects a slightly greater proportion of their income to come from their portfolios, which might be construed as a bullish view of the future of stocks and bonds. However, fewer untenured faculty expect to rely on social security as a source of funds. Eleven percent of the untenured faculties expect their income to come from social security versus 14% for the tenured group. The untenured faculty may be expecting to rely on their investments because of less faith in social security system, a reflection of, perhaps, a common attitude among Americans. Also, tenured faculty has a slightly greater expectation of income from jobs after retirement than untenured faculty. The standard deviations for the diverse sources of income are about the same for each group reflecting a general uniformity of opinion of where faculty retirement income will come from.

Finally, Table 6 shows the allocations of expected retirement portfolios by tenure status. Again, the overall distributions for each group are similar with most of their expected retirement funds in domestic common stocks and mutual funds. Both groups of faculty expect a diversified portfolio with the untenured faculty having more allocated to domestic stocks than the tenured group. The proportion of bonds in each portfolio is similar at 10% with more going into mutual funds for the tenured faculty and more untenured faculty expecting to be invested in foreign stocks. This may be a reflection of the familiarity bias (Baker and Nofsinger, 2002) where investors tend to construct portfolios composed of assets that they are most familiar with. The

untenured faculty seem to have slightly more liberal expectations given the greater proportion of stocks, both U.S. and foreign, in their portfolios. There is a little more variation in allocations among the untenured faculty indicating a slightly less uniformity of expectation. However, the key conclusion is that both groups expect to have a diversified portfolio after retirement.

C. Allocations and Retirement Income by Academic Specialty

Tables 7 through 9 contain the results distributed by specialty. The faculty was asked to specify their areas of concentration between two areas of economics (general economics and business economics), four areas of finance (general finance, investments, corporate finance, and options and futures), business policy (a management area), accounting and other. Several respondents specified management as their specialty, while 12 noted other and 8 did not check a specialty.

Looking at Table 7, the current portfolio allocations are similar to the previous discussion. By specialty, faculty hold diversified portfolios centered on common stocks. Real estate tends to be a minor component outweighed by cash and bonds. There are several interesting divergences from this picture. Within the finance specialties, those in options have a large allocation to stocks (80% of their funds) with most of the rest in bonds. Those in investments have 57% in stocks and 21% in bonds, while in general finance, 59% of their funds are in stocks and almost 13% in bonds. Finance faculty who teach options seem to be a bit more optimistic and perhaps aggressive by concentrating a larger proportion of their funds into common stocks while holding very little cash (4%). These results are consistent with the findings of Baker and Nofsinger (2002) and Huberman (2001) on familiarity bias.

Economists, whether in business economics or general economics, tend toward the conservative, more risk-averse approach with a 16% allocation to cash and almost 16% in bonds with the rest of their portfolios in stocks. Accountants seem to follow the economists' pattern with a slightly greater proportion of funds in cash and slightly less in bonds relative to the economists. The management faculty seems to be even more risk averse with 30% in cash and 50% in common stocks. The more unusual allocation belongs to those in business policy where the lowest proportion is in stocks (43%) and the second largest allocation is in real estate (income producing). If one views real estate as a conservative investment with relatively higher current yield given its ability to generate cash flow, the business policy faculty holds the most conservative portfolio and the least liquid. The business policy group may be trading liquidity for current income which may be a function not only of risk averseness but also perhaps income level. The business policy faculty may be using real estate to supplement their salaries. For the standard deviations, the finance (options) faculty has the lowest deviation for stocks and the greater agreement towards stocks than other faculty, with greater deviation among the business policy faculty. That is particularly so for real estate, where the standard deviation is 39%, about double that for the other specialties.

Table 8 contains similar distributions for retirement portfolios. Faculty, regardless of specialty, expect to hold diversified portfolios centered around stocks, both foreign and domestic. Finance faculty who teach options expect to allocate 53% of their investable funds in U.S. stocks and 17% in foreign stocks. These faculty seem to be the more aggressive investors concentrating more of their funds into foreign stocks. The economics and finance faculty expect to hold around

33% of their portfolios in U.S. stocks and 10% to 17% in foreign stocks. The business policy faculty tends to be more conservative, more risk averse, by holding only 18% of retirement assets in U.S. stocks (20% including foreign stocks) and more (37%) in mutual funds and real estate. The business policy group, comparing current and retirement portfolios, expect to increase their asset liquidity by shifting funds into shares (mutual funds and stocks) and away from real estate. Most other faculty expect to hold as much real estate after retirement as they hold currently. Interestingly, the business policy faculty expects to hold no cash, less money in bonds, and more in other types of assets. As previously mentioned, these results reaffirm the conclusions of Baker and Nofsinger, (2002) and Huberman (2001) in regard to investors' familiarity biases. That is, different business faculty constructed their portfolios according to their academic specialty. For example, finance faculty tended to buy stocks and bonds, and those who specialize in options tended to favor those kinds of financial instruments. Whereas, general business faculty tend to favor more conservative (that is, more risk averse) investments.

Table 9 contains the distributions of retirement income accordingly to specialty. Similar to the previous discussion, most faculty expect a low proportion of their retirement income to come from social security, with the proportions ranging from 9% to 15%. The exception is business policy faculty who expect almost 33% of their income to be derived from social security. Most expect 43% to 59% of their retirement income to come from their academic pensions, with the lowest proportion expected by those in management (33%) and in business policy (27%). Portfolio income comprises 10% to 31% of retirement income, with the lowest proportion among the business policy and management faculties. Apparently, few faculty expect to use employment income as a source of income with that form comprising from 2% to 5% of income, again management and business policy academicians being the exception with 10% to 11% of their income derived from post-retirement jobs. For those in the management area, there seems to be a less optimistic view of their retirement future – more income from social security and employment and less from a build-up of assets over a career. The distribution of income supports, for most faculty, a low expectation of social security and perhaps a greater need for reliance on one's own wealth to provide for retirement life style. The distributions might also be pointing toward a more optimistic view of personal investing – we have the education and can therefore better provide for ourselves by investing our funds in a diversified portfolio of assets. This reflects the concept of illusion of control [Barber and Odean (2002)]. This may also be reflected in the retirement portfolios of investment and options specialists who expect a somewhat greater proportion of their retirement income to come from their portfolios than those in the other specialties.

D. Financial Instruments Used

Table 10 contains the responses of the faculty concerning which types of financial assets they use as part of their investment program. The respondents were given a selection of instruments to choose from, including option trading, futures trading, margin buying, short selling, mutual fund investments, closed end fund investments, index funds and tax exempt securities. The choices were ranked on a five-point scale with 5.0 being those instruments they never use to 1.0 for those instruments being the only ones they use. The responses were evaluated on the basis of tenure status and academic specialty; however, the results are not different from the overall sample and are not reported. The respondents generally use the more conservative investment mechanisms of

mutual funds, with some moderate use of index funds and to a lesser extent tax exempt securities. It is interesting that regardless of specialty, option and futures trading is not used much even by those who teach in that area. The faculties seem willing to teach the exotic assets, but may be sufficiently risk averse to not practice what they teach. Also, interestingly, faculty gravitates toward mutual funds which can be considered managed portfolios and shy away from index funds. This may reflect greater confidence in earning higher returns through active funds rather than on index funds and perhaps less confidence in market efficiency. These findings corroborate the concept of illusion of control as discussed by Barber and Odean (2002); that investors believe that they have control over the outcome of their financial decisions. If faculty truly believes financial markets are efficient, one could expect them to invest in index funds, especially given the historical record of mutual funds underperforming the overall market.

V. Summary

This paper presents a descriptive analysis of the results of a survey of members of the Financial Management Association, the American Accounting Association and the American Economic Association concerning their current portfolio allocations and expected retirement income and portfolios. Overall, faculty practices the time honored approach of diversification by holding portfolios of common stocks, bonds, and cash with some investment in real estate and other types of assets. The center of their portfolios is common stocks. There is an equal division of funds into cash and fixed income securities among the remaining proportion of their assets. Their anticipated retirement portfolios are also diversified with most funds to be devoted to common stocks, both U.S. and foreign. As part of their retirement portfolios faculty includes mutual funds and a small proportion in cash instruments.

Retirement income is expected to be derived from pensions and portfolio investments with a small portion coming from social security. The dependence on personal investments in the form of pensions and portfolios may indicate a negative expectation about social security viability and a need, therefore, to rely on one's own resources for retirement. Post-retirement employment is generally expected to provide a small portion of retirement income. This outcome is consistent with the illusion of control hypothesis advanced by Barber and Odean (2002). Relying on pension income rather than social security may give faculty the illusion of having control over their future retirement cash flows.

Analysis by tenure status reveals a slightly more aggressive approach to investing by untenured faculty, who would be young, and aggressive risk takers, but who still hold a diversified selection of assets. Untenured faculty may expect a lower proportion of their income to come from social security, and more from their portfolios, than tenured faculty. This indicates that the longer the time until retirement, the less confidence untenured faculty have in the survivability of the social security system. Retirement portfolios for faculty are similar for both tenured and untenured professors. Evaluating the responses by academic specialty shows those faculties who teach options and futures have more aggressive, less risk-averse portfolios centered primarily on common stocks with some invested in bonds and cash. Faculty in business policy seems to be more risk averse by investing less in common stocks, more in investment real estate and other assets. This may be partly related to greater income producing ability of property compared to stocks and the desire of business policy faculty to augment their salaries. Accounting faculty

holds about 50% of their assets in common stocks with the rest divided into cash (17%) and bonds (15%).

Expected retirement portfolios by specialty reveal similar distributions as for current portfolios. Options faculty tends to be more aggressive by investing in U.S. and foreign stocks, while business policy faculty tends to expect to concentrate in mutual funds, stocks and investment real estate. Expected retirement income follows the same pattern. Most faculty expect a small proportion of their retirement income to be from social security indicating a lack of confidence in social security, with management and business policy faculty expecting about 13% and 32% of their retirement income to come from social security respectively. Options and investments faculty expect a greater proportion of their income to be generated from their portfolios, which may attest to their confidence in their investment skills.

The use of financial instruments such as options and futures trading, short selling and margin buying indicates a limited use of such exotic vehicles. Business faculty tends toward the risk averse in the form of mutual funds. Even though the respondents prefer to practice diversification as a risk reduction methodology, they also take the risk-averse route by not using the exotic instruments they may teach their students. This seems also to apply to the specialists in options and futures. In general, business faculty appear to be risk averse like the rest of the population of investors with the business knowledge and background of faculty appearing not to affect their investment decision-making process. The findings of this study corroborate those of Baker and Nofsinger (2002) recent research in behavioral finance that investing habits are influenced by social interaction and mutual education that occurs among colleagues in addition to any financial analysis that might be applied in making investment and portfolio decisions. Our study has concentrated on the investing behavior of business academicians and has shown that the heuristic approaches taken by non-academicians do not completely apply to our respondents. It would be worthwhile for future research to examine professional investors and their decision-making behavior in light of the psychological biases of investors as postulated in behavioral finance.

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Table 1: Current Asset Allocation - Complete Sample

This table presents that summary statistics for the portfolio allocation of the faculty surveyed. The total sample was 571 members of the Financial Management Association, American Accounting Association, and American Economics Association.

Type of Asset	Mean Allocation*	Allocation Standard Deviation	Minimum Allocation	Maximum Allocation
Cash or cash equivalent	14.8%	19.1%	0	100%
Bonds	14.8	16.3	0	100
Common Stocks	55.5	28.8	0	100
Real Estate (investment)	7.7	16.7	0	95
Other	3.1	12.3	0	100
	95.9%			

*percentages do not sum to 100% due to missing responses.

Table 2: Expected Sources of Retirement Income

The table describes the income that the respondents expect to earn after retirement. Presented are the mean responses for each type of retirement income along with summary statistics.

Source of Retirement Income	Mean Percentage of Total Income*	Standard Deviation	Minimum Allocation	Maximum Allocation
Social Security	13.1%	10.7%	0	88.0%
Pension	44.0	24.6	0	100.0
Sale of Residence	3.9	8.8	0	85.0
Personal Portfolio	25.2	21.8	0	100.0
Inheritance	2.9	7.5	0	50.0
Wealthy Spouse	1.6	7.8	0	80.0
Post-Retirement Employment	5.0	8.6	0	50.0
Other	1.3	7.0	0	80.0
	97.0%			

*percentages do not sum to 100% due to missing responses.

Table 3: Retirement Portfolio

This table presents the distribution of assets that the survey respondents expect to comprise their investment portfolios on retirement. The allocations listed in the table are the mean responses for each type of asset.

Type of Asset	Mean Allocation *	Standard Deviation	Minimum Allocation	Maximum Allocation
U.S. Common Stocks	33.5%	27.2%	0%	100.0%
Non-U.S. Common Stocks	10.6	11.8	0	70.0
Government/ Corporate Bonds	10.2	11.6	0	100.0
Cash or Cash Equivalents	6.1	9.9	0	100.0
Mutual Funds	25.5	30.0	0	100.0
Real Estate	6.5	10.5	0	60.0
Other	6.7	6.7	0	100.0
	99.1%			

* does not sum to 100% because of missing responses.

Table 4: Current Portfolio Allocation by Tenure Status

This table provides the asset allocation of the portfolios of the 571 respondents by tenure status. Panel A relates to the responses of tenured faculty by average allocation to different asset categories. Panel includes the responses by untenured faculty by asset class.

Type of Asset	Mean Allocation*	Standard Deviation	Minimum Allocation	Maximum Allocation
A. Tenured				
Cash or Cash Equivalent	15.6%	20.3%	0%	100.0
Bonds	15.3	16.4	0	92.0
Common Stocks	52.4	29.2	0	100.0
Real Estate (investment)	8.4	17.4	0	95.0
Other	3.4	13.3	0	100.0
	95.1%			
B. Untenured				
Cash or Cash Equivalent	13.2%	13.2%	0%	100.0%
Bonds	13.9	13.9	0	100.0
Common Stocks	61.0	27.3	0	100.0
Real Estate (investment)	6.9	15.3	0	90.0
Other	2.4	10.3	0	85.0
	97.4%			

* percentages do not sum to 100% due to missing responses.

Table 5: Expected Sources of Retirement Income by Tenure Status

This table provides the income sources expected during retirement by the survey respondents according to tenure status. Panel A contains the mean responses for the tenured faculty in the survey. Panel B contains the mean responses for untenured faculty by type of income.

Source of Income	Mean Percentage of Income*	Standard Deviation	Minimum Allocation	Maximum Allocation
A. Tenured				
Social Security	14.3%	10.8%	0%	88.0%
Pension	44.0	24.8	0	100.0
Sale of Residence	3.9	8.9	0	85.0
Personal Portfolio	23.4	21.1	0	100.0
Inheritance	2.9	7.2	0	50.0
Wealthy Spouse	1.9	8.7	0	80.0
Post-Retirement Employment	5.3	8.8	0	50.0
Other	1.2	7.0	0	80.0
	96.9%			
B. Untenured				
Social Security	10.9	10.2%	0%	50.0%
Pension	43.9	24.4	0	100.0
Sale of Residence	3.9	8.6	0	55.0
Personal Portfolio	28.8	22.7	0	100.0
Inheritance	3.0	8.0	0	50.0
Wealthy Spouse	1.0	5.7	0	50.0
Post-Retirement Employment	4.5	8.3	0	50.0
Other	4.5	7.0	0	60.0
	97.5%			

* percentages do not sum to 100% due to missing responses.

Table 6: Retirement Portfolio by Tenure Status

This table presents the mean asset allocation for portfolios of the survey respondents that they expect during retirement. Panel A contains the allocation expected by respondents with tenure. Panel B contains expected portfolio allocations by untenured faculty.

Type of Asset	Mean Allocation*	Standard Deviation	Minimum Allocation	Maximum Allocation
A. Tenured				
U.S. Stocks	31.4%	26.8%	0%	100.0%
Non-U.S. Stocks	9.4	10.9	0	70.0
Bonds	10.3	11.9	0	100.0
Cash Equivalents	5.9	9.4	0	100.0
Mutual Funds	26.3	29.3	0	100.0
Real Estate	7.3	11.1	0	50.0
Other	1.0	8.2	0	100.0
	91.6%			
B. Untenured				
U.S. Stocks	37.4%	27.7%	0%	100.0%
Non-U.S. Stocks	13.1	13.0	0	60.0
Bonds	10.1	11.2	0	50.0
Cash Equivalents	6.3	10.7	0	100.0
Mutual Funds	24.1	31.2	0	100.0
Real Estate	5.2	9.1	0	60.0
Other	0.3	2.1	0	25.0
	96.5%			

* percentages do not sum to 100% due to missing responses.

Table 7: Portfolio Allocation by Academic Specialty

This table presents the asset allocation of the survey respondents for their current investment portfolios classified by academic specialty within business and economics. Also reported is the number (n) of respondents in each specialty. Numbers in parentheses are the standard deviations of the responses in percent.

Academic Specialty	n	Cash	Bonds	Stocks	Real Estate	Other
Economics	275	16.2% (20.9)	15.6% (16.0)	54.3% (28.7)	7.6% (16.1)	3.2% (12.3)
Business Economics	14	16.5 (18.1)	13.9 (13.9)	53.1 (25.1)	8.6 (15.5)	0.7 (2.7)
General Finance	141	12.8 (14.9)	12.8 (16.3)	58.3 (28.9)	9.6 (19.0)	2.3 (9.7)
Investments	24	15.6 (23.2)	21.0 (22.8)	56.5 (29.7)	2.0 (4.2)	0.8 (3.2)
Corporate Finance	31	10.0 (9.8)	13.9 (15.2)	66.6 (25.4)	5.6 (13.5)	3.9 (15.8)
Options and Futures	5	4.0 (4.20)	12.0 (13.00)	80.0 (10.60)	0.0 (0.0)	4.0 (8.90)
Business Policy	4	4.0 (4.9)	2.5 (5.0)	42.5 (44.3)	21.0 (39.4)	30.0 (46.9)
Accounting	52	17.4 (21.5)	14.9 (16.3)	50.9 (28.0)	5.5 (12.8)	3.6 (14.1)
Management	5	30.0 (33.90)	16.0 (26.10)	50.0 (34.60)	0.0 (0.0)	4.0 (5.50)
Other	12	13.5 (18.7)	16.3 (13.8)	56.7 (22.5)	11.9 (18.5)	1.7 (3.9)
No Specification	8	2.5 (2.7)	13.8 (15.3)	26.9 (37.1)	11.9 (33.6)	7.5 (21)

Table 8: Retirement Portfolio Allocation by Academic Specialty

This table presents the expected asset allocation (as a percentage of their portfolios) for retirement portfolios of the respondents by academic specialty within business and economics. Numbers in parentheses are the standard deviations of the responses in percent. Numbers under each specialty are the number of respondents specifying each specialty.

Academic Specialty	U.S. Stocks	Non-U.S. Stocks	Bonds	Cash	Mutual Funds	Real Estate	Other
Economics	32.5%	9.5%	10.9%	5.7%	26.9%	7.1%	0.0
275	(26.6)	(10.5)	(12.2)	(9.8)	(29.7)	(11.0)	(3.7)
Business Economics	37.1	11.1	9.3	5.0	30.0	7.5	0.0
14	(25.9)	(9.8)	(9.2)	(4.8)	(27.7)	(7.8)	(0.0)
General Finance	37.0	12.3	10.1	6.4	22.4	6.6	0.4
141	(28.2)	(12.7)	(11.8)	(9.3)	(30.7)	(10.9)	(2.4)
Investments	35.0	14.6	10.0	8.8	27.9	3.8	0.0
24	(26.5)	(15.3)	(12.2)	(20.3)	(35.8)	(7.7)	(0.0)
Corporate Finance	38.1	15.8	8.4	5.6	28.9	3.1	0.2
31	(28.9)	(15.2)	(10.1)	(7.8)	(3.6)	(5.7)	(0.9)
Options & Futures	53.0	17.0	9.0	3.0	14.0	4.0	0.0
5	(21.7)	(14.8)	(13.4)	(6.7)	(31.3)	(8.9)	(0.0)
Business Policy	17.5	2.5	2.5	0.0	37.5	10.0	5.0
4	(23.6)	(5.0)	(5.0)	(0.0)	(35.0)	(11.5)	(10.0)
Accounting	27.4	8.7	8.8	7.9	22.0	5.3	2.7
52	(27.6)	(12.4)	(9.6)	(9.3)	(26.5)	(9.2)	(14.3)
Management	30.0	7.0	16.0	7.0	18.0	2.0	0.0
5	(22.4)	(6.7)	(15.2)	(4.5)	(16.4)	(4.5)	(0.0)
Other	24.2	6.7	11.3	5.0	35.0	9.6	0.0
12	(23.6)	(9.1)	(10.3)	(3.7)	(26.7)	(9.6)	(0.0)
No Specification	28.1	5.0	7.5	4.4	18.1	11.9	12.5
8	(32.9)	(7.6)	(8.9)	(4.2)	(32.9)	(17.7)	(35.4)

Table 9: Expected Sources of Retirement Income by Specialty

This table contains the responses of the surveyed faculty concerning expected retirement income. The responses were classified by academic specialty within business and economics. Numbers in parentheses are the standard deviations of the responses in percent.

Academic Specialty	n	Social Security	Pension	Sale of Residence	Portfolio	Personal Inheritance	Wealthy Spouse	Post Retirement Employment	Other
Economics	275	13.9% (10.0)	43.7% (24.9)	3.8% (8.6)	24.0% (21.4)	2.6% (6.6)	2.2% (9.5)	5.2% (8.9)	1.2% (6.8)
Business Economics	14	12.3 (8.3)	52.9 (19.0)	4.6 (10.1)	24.3 (18.9)	3.6 (7.2)	0.0 (0.0)	2.4 (5.4)	0.0 (0.0)
General Finance	141	10.7 (9.7)	43.4 (24.6)	4.3 (9.3)	28.7 (23.4)	2.8 (8.0)	0.4 (3.5)	4.9 (8.7)	1.4 (6.9)
Investments	24	13.5 (13.7)	42.9 (27.5)	3.1 (6.9)	30.5 (22.6)	3.8 (11.3)	2.5 (8.5)	3.8 (8.1)	0.0 (0.0)
Corporate Finance	31	9.3 (9.0)	43.3 (23.6)	3.5 (10.7)	28.4 (24.5)	5.2 (10.5)	1.9 (9.1)	4.5 (9.0)	0.6 (3.6)
Options & Futures	5	11.0 (7.4)	48.0 (26.8)	0.0 (0.0)	30.0 (6.1)	8.0 (17.9)	0.0 (0.0)	3.0 (4.5)	0.0 (0.0)
Business Policy	4	32.0 (37.9)	26.8 (24.3)	12.5 (9.6)	10.0 (8.2)	5.0 (10.0)	2.5 (5.0)	10.0 (10.8)	1.3 (2.5)
Accounting	52	15.1 (11.9)	50.0 (23.9)	2.6 (5.3)	22.2 (20.9)	1.8 (4.2)	1.5 (7.5)	5.8 (7.9)	0.6 (3.1)
Management	5	13.0 (12.0)	33.0 (19.9)	6.0 (8.9)	19.0 (11.4)	6.0 (13.4)	0.0 (0.0)	11.0 (11.4)	12.0 (21.7)
Other	12	15.8 (7.9)	31.7 (21.8)	7.9 (16.7)	24.6 (16.8)	3.3 (7.5)	1.7 (5.8)	5.0 (7.7)	1.7 (3.9)
No Specification	8	15.0 (11.0)	44.4 (28.2)	1.3 (3.5)	11.9 (19.3)	3.8 (5.2)	0.0 (0.0)	1.3 (3.5)	10.0 (24.5)

Table 10: Financial Instruments Used - Full Sample

This table presents the mean responses to the survey question concerning the use of more specialized trading activities or instruments. The respondents were asked whether they had used options, futures, margin purchases, short selling, investment in investment companies, or tax exempt bonds. The questions were based on a 5 point scale, with 5 indicating they never used the instrument and 1 indicating the instrument was used exclusively. The results are based on 571 responses.

Type of Instrument	Mean Response*	Standard Deviation
Option Buying	4.71	0.68
Option Selling	4.81	0.61
Futures	4.82	0.55
Margin Buying	4.57	0.93
Short Selling	4.75	0.63
Mutual Funds	2.39	1.16
Closed End Funds	4.31	1.06
Tax Exempt Securities	3.88	1.28
Index Funds	3.56	1.37

* responses were scaled so that 1= the only one used, 2= often used, 3= sometimes used, 4= rarely used, and 5= never used.