Asset Allocation for Individual Investors

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Institutional investors have long recognized that asset allocation is their most critical investment decision. Building upon the insights of Nobel laureate Harry Markowitz, industry experts have developed sophisticated computer technology to identify and evaluate alternative asset mix strategies. This technology can be adapted to address the asset mix question for individual investors who, along with the financial institutions that service them, have discovered a newfound enthusiasm for asset allocation. What explains this enthusiasm?

The high cost of entertainment has motivated individual investors to focus on asset allocation. Traditionally, these investors have favored stock selection over investment in diversified portfolios because it is more entertaining to follow the fortunes (or lack thereof) of the latest "hot tip" from their broker than it is to monitor an investment as nebulous as the Standard & Poor's 500 or as insipid as a broadly diversified mutual fund. The entertainment value of stock selection, however, does not come without a cost.

It is risky to concentrate savings in a limited number of so-called glamour stocks. Furthermore, it is usually more expensive to trade individual securities than to trade mutual funds. After years of disappointing investment results, many individuals seem to have shifted their preference from costly entertainment to wealth accumulation.

Financial institutions have always been motivated by monetary considerations. Their sudden determination to provide asset allocation services to individual investors is best explained by the Willie Sutton syndrome. Legendary bank robber Willie Sutton, when asked why he robbed banks, replied, "Because that's where the money is." The same reasoning explains why financial institutions are now interested in asset allocation for individual investors.

While individuals have shifted their focus from specific securities to mutual funds, many companies have switched from defined-benefit retirement plans to defined-contribution savings plans. In a defined-benefit plan, retirement income is related to salary and years of service; in a defined-contribution plan, retirement income depends on the performance of the investment vehicles selected by the participants. Financial institutions have correctly perceived that, in many companies, it is now the employee, not the employer, who has responsibility for the asset mix decision.

Institutional versus Individual Asset Allocation

Institutional and individual asset allocation are fundamentally the same. Institutional investors such as pension funds, endowment funds and charitable foundations typically evaluate asset mix strategies according to how likely the strategies are to satisfy future financial commitments while minimizing the ongoing costs of funding those commitments. This intertemporal tradeoff applies to individual investors as well. Individuals wish to accumulate sufficient wealth to support themselves in retirement, but with minimal sacrifice of current consumption. Hence both institutions and individuals are concerned with funding a future liability at the lowest current cost.

There are several practical distinctions, though, between institutional and individual asset allocation. Individuals, for example, pay taxes, which means that they invest in tax-favored asset classes such as municipal bonds and tax-favored portfolios such as IRAs. Some of their investments compound at a pretax rate of return, while others compound at an after-tax rate of return.

Another distinction is that individuals experience lumpier and less predictable cash flows than institutional investors. Pension funds, for example, experience relatively constant cash flows because of actuarial and accounting smoothing procedures. Individuals encounter a wide variety of less predictable cash flows, including tuition payments, major acquisitions and financial emergencies.

These distinctions are important, but they do not alter the essence of asset allocation for individual investors. They merely introduce some procedural complexities, which are easily managed by available computer technology.

Five Words You Can't Say to an Individual Investor

Individual investors are typically not conversant with the mathematical and theoretical underpinnings of asset allocation. The key challenge, therefore, is to present asset allocation in a way that appeals to an individual's intuition without compromising the integrity of the analysis. Asset allocation presentations must be purged of such cryptic jargon as correlation coefficient, covari-

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Table I Required Wealth Analysis*

	Start Year: 1971 Quarter: 1			End Year: 1990 Quarter: 4		
	Safest ←		*Alternatives* →			*Riskiest*
Asset Class	*A*	*B*	*C*	*D*	*E*	*F*
Treasury Bills	98%	86%	76%	56%	14%	0%
Corporate Bonds	0%	2%	4%	6%	12%	0%
Big Stocks	0%	2%	10%	28%	64%	80%
Little Stocks	0%	0%	0%	0%	0%	10%
Foreign Stocks	2%	10%	10%	10%	10%	10%
+ Expected Wealth	$1,172	$1,277	$1,311	$1,386	$1,553	$1,658
− Required Wealth	1,341	1,341	1,341	1,341	1,341	1,341
Surplus (Deficit)	($169)	($64)	($30)	$45	$212	$317

* All dollar amounts in thousands

ance, standard deviation, stochastic process and utility function. Moreover, nebulous notions such as expected return and risk must be replaced by more concrete images.

Table I offers an example of how the notion of expected return might be conveyed more meaningfully. It compares the expected wealth at retirement associated with six alternative asset allocation strategies with the wealth that is required to sustain a particular level of income.

The analysis is based on a hypothetical investor who is currently 50 years old and plans to retire at age 62. The required wealth estimate assumes that she will live 20 years after retirement and requires $70,000 per year in today's dollars, of which $25,000 will come from Social Security and pension income. It is also assumed that her savings in retirement are invested to earn a riskless return of 6 per cent annually, that her post-retirement income is taxed at a 20 per cent annual rate, and that inflation will compound at an annual rate of 4 per cent. Given all these assumptions, this hypothetical individual must accumulate nearly two million dollars by the time she retires in 12 years.

The expected wealth estimates depend on some assumptions about the investor's cash flows between today and retirement and on the performance of the capital markets. Specifically, these estimates assume that she currently has $350,000 in taxable investments and $150,000 in tax-sheltered investments. Moreover, she earns $100,000 per year, which is expected to grow at an annual rate of 5 per cent and is taxed at an annual rate of 30 per cent. Finally, she saves 5 per cent of her after-tax income in taxable investments and another 3 per cent in tax-sheltered investments.

Based on these assumptions, together with the assumption that the historical performance of the capital markets from 1971 through 1990 will prevail going forward, the investor's expected wealth at retirement ranges from $1.2 million if she chooses a conservative asset allocation strategy to $1.7 million if she chooses an aggressive strategy. If she really requires $70,000 per year in retirement, and wishes to retire at age 62, she must therefore select one of the more aggressive asset mixes—D, E or F—or, alternatively, cut back on her current level of consumption.

The next step is to convey the notion of risk more intuitively. For example, one could measure the likelihood each asset allocation strategy has of achieving the required wealth and the extent to which each strategy might fall short of the required wealth. Extending the analysis to address these issues is straightforward.

There are obviously other factors an individual investor might wish to consider when evaluating asset allocation choices, such as ongoing liquidity requirements and perhaps more immediate wealth goals. Nonetheless, whatever the goals or constraints of the individual investor, asset allocation techniques employed by institutional investors, appropriately translated, can readily be adapted to serve the individual investor.

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