



## Consistent Alpha Generation through Structure

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Successful money management over long periods of time rests on a three- to five-year “secular outlook” and the “structural” composition (the genetic makeup) of the portfolio.

My first (and, up until now, only) published article in the *Financial Analysts Journal* (Gross 1979) was one of the proudest achievements of my career, although looking back on it, I realize that the ideas in the article were surpassed many times over by Myron Scholes, Fischer Black, Robert Merton, and a myriad of others associated with option theory (see, for example, Black and Scholes 1973; Scholes 1972; Merton 1973).

My 1979 article came at option pricing from the standpoint of the market. It was a trader's perspective that attempted to apply real-time price levels for “cushion” bonds (callable corporate bonds) in a context of value based on day-to-day experience. Crude as it was, it was nevertheless a forerunner of my efforts to apply theory, psychology, and common sense to the construction of bond portfolios that would outperform indices and competitors over long periods of time with minimal volatility.

After more than 30 years of managing institutional and individual bond monies, I have gradually come to the understanding that successful money management over long periods of time rests on two, somewhat disparate, foundations. The first is “a secular outlook”—that is, a three-year to five-year forecast that forces one to think long term and to avoid the destructive bile arising from the emotional whipsaws of fear and greed. Such emotions can convince any investor or management firm to do exactly the wrong thing during “irrational” periods in the market.

The second foundation is what might be called the “structural” composition of portfolio management, and whether the reader agrees or disagrees with the secular thesis, I would argue that those who fail to recognize the structural elements of the investment equation will leave far more chips on the table for other, more astute investors to scoop up than they could ever imagine. A portfolio's structure is akin to its genetic makeup: It is how it is constructed without regard to short-term strategic decisions. Structure incorporates principles that are longer than secular, principles that are nearly paramount and should be able to deliver alpha during years when the manager's magic touch—to use a basketball metaphor—seems to have disappeared or when there's simply a time-out on the court, with secular investment opportunities few and far between. Duration, curve, credit, volatility, and other less obvious tilts to a portfolio's steady-state status are what I mean when I speak of a portfolio's inherent structure, although some tilts are more volatile than others and, therefore, produce less risk-adjusted alpha.

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Some examples of successful investment structures will give the reader a clearer idea of the concept. Banks have a formidable investment structure: Borrow short near the risk-free rate; lend longer and riskier. If a bank does not overdo the structural model (and they can and have), profits are almost guaranteed on a long-term basis as long as capitalism as we know it survives. Insurance companies, with their "free" reserves and predictable liabilities, have another financial structure almost guaranteed to generate a positive return on capital. Closer to portfolio managers is the structure of Warren Buffett's Berkshire Hathaway, which depends on "float" (about which he frequently writes and talks). This structure, combined with his bottom-up, secular stock picks, has produced one of the world's great fortunes and investment success stories.

In addition to their profit-generating elements, these structures share the common element of longevity, near permanence. They span time periods beyond the secular segments of three to five years, which define typical forecasting periods, and secular stretches of inflation/disinflation that have endured for several decades. An investment's structural magic, then, comes from its "Methuselahian" ability to persist.

The successful structure I am most familiar with is PIMCO's well-known approach labeled the BondsPLUS structure, which has morphed into specific products such as StocksPLUS. These structural models have been more than additive to our clients' bottom lines for many years now. Both the bond and the stock products involve the use of financial futures or future-related investments and the successful placement of the residual cash into higher-yielding, slightly longer-dated investments. As in banking structures, this structural model involves borrowing short via futures priced at nearly the risk-free rate and lending slightly longer. The quality of the debt securities we use, however, tends to be much higher—Aa+ on average—than that which the securities banks use.

By using futures, mortgage rolls, and swaps, we are not actually borrowing money; rather, we are investing in bondlike assets that reflect a borrowing rate slightly less than risk-free/LIBOR-based financing rates. Because these instruments (the "reserves," or "float," as Buffett would call them) absorb little actual cash, the cash is then free

to be invested in 6-month to 12-month, higher-yielding securities with yield pickups of 50 bps or more and of quality near Aaa. This 50 bp spread provides a structural advantage to the bond and S&P 500 Index portfolios in almost all yield-curve scenarios except that of an extended negative yield curve (à la 1979–1981). If we use a 40 percent combination of U.S. Treasury futures, mortgage forwards, and swaps in the portfolios, we can enhance performance by  $(0.40 \times 50)$  or 20 bps a year without even breathing hard.

Our second primary structure involves the selling of unlevered volatility. I use the term "unlevered" from the outset because it was the selling of *levered* volatility that was a major structure, and structural failure, at Long-Term Capital Management. Although structures based on the sale of volatility made sense for LTCM (as they do for PIMCO), LTCM's massive leverage and vulnerability to financing sources added to these strategies made for a potent and deadly mix.

Hedge funds have a particularly short time in which to avoid failure because they are vulnerable to financing sources (this vulnerability was clear when the sources pulled the plug on LTCM). PIMCO is not a hedge fund, so it is not vulnerable in the same way. We are mindful, however, of the "average life" of investment firms. This time frame implies that we have perhaps three to four years before an average client will pull his or her funding if performance is below par. That average life, then, becomes the time frame within which we can "safely" use structural models. It is a time frame far shorter than the one used by banks, insurance companies, or Berkshire Hathaway.

A recent speech by Peter Fisher (2002), former under secretary of the Treasury and potential successor to Alan Greenspan as chairman of the Federal Reserve Board, addressed "the transparency, depth and resilience of the interest rate volatility market"—that is, the part of market structure I have been describing. He suggested what I have been outlining for the past few pages: "Market structure matters," he said; by "market structure," he meant "the overall structure, dynamics and flow of the interest rate volatility market." And the price involved in the buying/selling of volatility is an inherent part of that structure. (We outlined this aspect to clients in early 1988 in an "Investment Outlook" subtitled "Selling the Noise.")





In addition to the "noise" content of volatility, which allows for overpricing, other inherent features of volatility-based option prices lead to structural overvaluation and thus to profitable structural sales. Fisher noted:

Two major players hold positions that require the rest of the market systematically to be short volatility. One is the federal government, and the other is the American homeowner, through the mortgage market.

Turned upside down, with a PIMCO slant tacked on, Fisher's statement says that because the U.S. government and U.S. homeowners are systematic buyers of volatility (with little recognition of the price they are paying), others can profit structurally by taking the other side of the bet.

How does one get in line to do this? First, it can be done by owning a disproportionately large percentage of mortgages relative to an index. Owning a mortgage is nearly the same thing as owning an agency note (e.g., a Freddie Mac, Federal Home Loan Mortgage Corporation, note) and selling the attached prepayment option to the individual homeowner. It results in a higher yield while carrying the risk of prepayment (or, conversely, duration extension) at exactly the wrong times in the interest rate cycle. Although Fisher argued in his speech that the mortgage volatility market is not necessarily "complete" with regard to price discovery, I believe that historical returns and sociological factors involved in the pricing of the mortgage "option" overwhelmingly favor the holder of the mortgage-backed security and, therefore, the explicit seller of prepayment options. Long-term performance numbers for mortgages versus straight agency notes, for instance, favor mortgages over almost any five-year (or longer) period since the origination of the Ginnie Mae (Government National Mortgage Association) pass-through in the mid-1970s.

The mispricing/overpricing of the prepayment option is the fundamental explanation. The U.S. homeowner, it appears, knows little about the worth of his prepayment option but is more than willing to pay for it via higher interest rates. The opportunity to prepay seems to be an inherent component of a U.S. homeowner's cultural ethic. No amount of massive buying by us or by the agencies themselves in the past decade or so seems to have "arbitraged" away the overpricing of this option. Over the years, our overweighting of mortgages has added perhaps 10 bps annually to performance.

Volatility can be sold in other forms also. For example, explicit sales of put and call options on Treasury futures and swaps can add incremental return to clients' portfolios. Typically, 10 percent of the notional value of portfolios that allow the practice are optioned at any time during the year via out-of-the-money "strangles" (option strategies in which the investor holds a position in both a call and put with different strike prices but with the same maturity and underlying asset). The logic in this case, in contrast to the fleecing of the 30-year mortgagee, is based not only on selling the noise that exaggerates volatility but also on the principle of reversion to the mean and the "lottery ticket" mentality long established in psychology, sociology, and history textbooks. (This is not to say that markets always revert to the mean or that buyers of lottery tickets never hit the big one, but the odds favor option sellers as opposed to option buyers.) Option pricing in this market structure follows the random walk theology of academicians rather than the real-world, real-time experience of astute portfolio managers. These option sales add 5–10 bps of performance annually for our clients.

In addition, volatility can be sold via overweighting the front end of the yield curve relative to an index. Historical information ratios are maximized in duration space by purchasing 12-month to 18-month securities and rolling them back up the curve every quarter. (The dynamics of this strategy, although real and historically potent, are perhaps better left for another paper, to be written by my successor celebrating the 120th anniversary of the *FAJ*!)

Before I leave the topic of structural investing, I want to use a poker analogy to sum up what I've written. Buffett is fond of saying that if you sit down at a poker table and you can't look around and find the fish, "you be the fish." The same thing applies in investing—although in this day and age, it would be unwise to assume that any investor, especially any institutional one, is a fish. From a structural standpoint, however, there may be market participants that, because of their inherent character or the role they play, provide profits to structural investors taking the other side of the bet. Those fish are probably most easily identified as (1) the American homeowner and (2) the investor in short-term cash and money markets who requires liquidity nearly overnight and perpetual overnight peace of mind. Our BondsPLUS and volatility sales programs depend on such fish, and they form the schools of structural plankton on which mighty whales feed.



The essence of my structural investment thesis is that applying the appropriate structure to an investment portfolio over long periods of time can add value and alpha before any strategizing—short-term or secular—takes place. How wonderful to start off the New Year knowing that your portfolio is odds-on to generate alpha without the necessity to outsmart the market via short-term strategies!

Recent trends involving hedge funds, the use of leverage, and the fascination with the “carry trade” (borrowing short and investing long) assuredly threaten short-term performance of some structural models. But for the investor with enough staying power, the alpha-generating properties of these strategies over long periods of time should survive what could be a lengthy winter to emerge ultimately into the inevitable spring.

Individuals as well as institutional money managers, by the way, can apply this structural philosophy. Want to emulate a bank, an insurance company, or a PIMCO plan in your own invest-

ment portfolio? You have simple ways to do it these days via the futures and options markets. The trick is to first recognize who you are and what your investment time frame is. Structural investing will not necessarily succeed over short periods of time (as LTCM found out). And it will not generate positive alpha in every year. The probability of success depends on matching the structure with the liquidity of an institution’s liabilities and, in the case of an individual, to your own investment time frame, emergency requirements for funds, and discipline and resolve to follow a consistent plan. With high levels of confidence that you know yourself in each of these areas, however, you can use a structural investing approach to greatly increase your odds of generating alpha relative to the bogey in almost any portfolio. I advise readers contemplating using such a strategy to do it but not overdo it. And pick your structures in concert with your long-term secular view of the economy.

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