



## **Martin Leibowitz' Failed Defense of the Endowment Model**

By Michael Edesess

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Martin Leibowitz, a managing director at Morgan Stanley, is one of the most respected figures in the world of finance, having made significant contributions to our understanding of the fixed income and equity markets. His latest book is *The Endowment Model of Investing*, and is co-authored by his Morgan Stanley colleague Anthony Bova and P. Brett Hammond, the chief investment strategist for TIAA-CREF Asset Management.

My expectations for this book were high, given Leibowitz' stature and the widespread interest in the endowment model among financial advisors.

Those expectations were wholly unfulfilled.

The book is a lengthy and repetitious exposition of a worthless, fraudulent pseudoscience. The book is written in obscurantist jargon, so I'll begin this review by providing a brief summary of the book, using many of the authors' own words but stating it in a little more accessible language. I'll go into what they don't say after this summary, but here is what they do say, in my translation to language approximating normal English:

The usual mean-variance model for optimizing allocations to asset classes must be "tortured" to produce acceptable results. Users often discover this only through an incremental process in which they run the model then find that if allocations are unconstrained, a succession of asset classes exceed acceptable bounds. Hence maximum allocations must be imposed on those asset classes. When such limits are imposed, allocations to those assets tend to go to their limits.

We have obtained inputs to this model – expected returns and covariance matrix – from an independent source, for the following asset categories: U.S. equities; U.S. bonds; cash; International Equity; Emerging Market Equity; Absolute Return; Equity Hedge Funds; Venture Capital; Private Equity; REITs; Real Estate; and Commodities. The model is used to create 179 of the 215 tables and graphs in the book using these inputs.

The return/covariance inputs imply positive alphas for all the alternative assets – that is, all except U.S. stocks, U.S. bonds, and cash, which we call "swing" assets. U.S. stocks by definition have an alpha of zero. Hence, the model, if unconstrained, will force the portfolio allocation to be too high to the highest alpha asset, and if that one is constrained, then too high to the next-highest alpha, and so on. Since such allocations are unacceptable for various reasons, constraints must be placed on all the alternative assets. When the model is run under those constraints, allocations to the alternatives go to their maximums.



These allocations are based on volatility risk. There may be other sources of risk, especially for alternative assets. We call these “dragon risks” because they are risks of the unknown, after the designation “there be dragons” on old maps. The model, however, only addresses volatility risk therefore allocations will be made based only on volatility risk. When only volatility risk is considered, all alternative assets have positive alphas and receive high allocations.

We assume as the base case that investments made in these alternative asset classes are “passive” – that is, only average for the asset class. Hence, these allocations capture only the “allocation alpha” for the asset class. Investing to capture an allocation alpha is not a zero-sum game because all investors in the class can, on average, achieve a positive alpha. We also note, however, that the typical investment in one of these alternative asset classes may not be available to all investors. We call this “channel risk”.

In addition to the positive allocation alpha that can be obtained by investing in the average investment in an alternative asset class, a particular investor could go for an “active alpha” on top of that (a zero-sum game because on average all active alphas for investors in that asset class must average zero), by selecting a better-than-average fund or manager.

All this leads to a process of selecting a portfolio that starts with 1) determination of maximum allocations to individual alternative asset classes, and to the aggregate portfolio of alternative assets (say 60%); then proceeds to 2) a decision how to split the remaining assets, the “swing” assets, between U.S. stocks and U.S. bonds or cash.

As new dollars flow into alternative assets there will be downward pressure on the expectation of positive alphas and these alphas will be reduced. This downward pressure – resulting from the increased prices of alternative assets – will, however, enhance the returns of earlier investors.

In times of stress, such as the recent financial crisis, correlations among asset classes increase dramatically and betas shoot up, becoming “stress betas”. Evidence for this statement is actually weak but we hope it can be improved. This phenomenon explains why performance during a crisis for alternative asset classes can actually be worse than that for standard asset classes like stocks and bonds.

### **What they don’t say**

That’s what they say. Now let’s consider what they don’t say.



They don't say why they use a model that is so bad – or so ill-suited to the application – that it has to be forced to produce outputs that are acceptable, otherwise it will produce outputs that are unacceptable. The model is not only used, the entire book and virtually all its conclusions are based on it. (The model isn't even needed to produce the allocations, of course, since it is forced to produce allocations that the user finds acceptable.)

They don't say why – if volatility risk does not reflect all the risk for alternative assets – they rely on a model that ignores all risks for alternative assets except volatility risk. Furthermore, one of the chief presumed sources of long-term alpha for many alternative assets is their illiquidity; yet they don't mention that volatility tends to be understated for assets that can only be infrequently valued.

In any field sporting even the flimsiest pretense of science, sources of inputs to models are identified and explained. In this book, the source of all the inputs is identified only in footnote 4, Chapter 1, where it simply says that the inputs were “supplied by an independent source.” In one place – in obscurantist quasi-English – the authors say that these inputs should be considered as only for purposes of example, to show how the model can be used; yet virtually all the results and conclusions in the book are based on those inputs.

If positive alphas really are available to “passive” investors in the alternative asset classes – that is, to those who invest in a randomly-chosen hedge fund, for example – then what can the authors mean by “channel risk,” in which some investors might not actually be able to find a vehicle that will get them that alpha? Maybe the authors really mean that only the best hedge funds or private equity funds, for example, which are not available to everyone, can be expected to reap a positive alpha. If that's what they mean, it completely contradicts what they say.

The authors don't mention that various statistical studies cast grave doubt on the ability of the alternative asset classes to produce positive alphas on average – for example, among others, a 2005 study on private equity by Steven Kaplan and Antoinette Schoar in *The Journal of Finance*, and hedge fund studies by Mark Kritzman in *Economics & Portfolio Strategy* in 2009 and by Burton Malkiel and Atanu Saha in the *Financial Analysts Journal* in 2005.

The authors acknowledge that expected alphas of alternative asset classes will be reduced if these asset classes become more popular. They do not, however, explain why alternative alphas have not already been reduced by that phenomenon; but as I have already pointed out, the authors do not say anything at all about how the expected excess returns that are used as inputs to the model were arrived at, or even who created them.

There are not one but three chapters about stress betas – quite a lot for something for which the authors themselves admit there is weak evidence (a glance at their scattergrams purporting to show evidence reveals just how weak it is). It is hard not to suspect that this



is an attempt to explain away, and thus dismiss, the fact that alternative asset classes performed poorly in the meltdown.

In this book, the word “alpha” appears 1076 times and “beta” 1288 times. That’s a lot of mentions for two statistical distillates both of whose pragmatic relationships to anything enduring or prognosticative, or in short, useful, is in some doubt. But you’d never know that from the treatment in this book.

By contrast with all the mentions of alpha and beta, “costs” and “fees” are mentioned twice each, only briefly in passing – “costs” both times in the context of “transaction costs” – even though fees have been found by many researchers to be by far the best predictor of future relative performance. The authors don’t even tell us if the input assumptions – the expected returns – are gross or net of fees. If they are gross of fees, that changes all the end results, even if we accept the risibly weak foundation on which those results are already based. And of course, they don’t mention that fees for the management of “alternative” asset classes, even when “passive,” are in general much higher than for passive management of the so-called “swing” or standard asset classes.

### **How can this happen?**

If I did not know the investment consulting field better, I would suspect that this book is a hoax, like the so-called [Sokal Affair](#) in which a physics professor named Alan Sokal submitted to an academic journal of social science an article titled, “Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity,” to see if it would get published, even though it was deliberate nonsense. (It was published; Leibowitz, Bova, and Hammond do use the word “quantum” in one of their sections – that’s when my suspicions that the book might be a hoax rose to their highest level.)

While it’s probable the authors had a good laugh amongst themselves over beers, from time to time, about the stilted language in the book, I’m sure they actually expect it to be taken seriously by readers, and I’m afraid that readers will take it seriously.

How can this happen? The authors are distinguished in the field, and the book is endorsed in blurbs by 14 other people who are also distinguished in the field.

But we already know, at last, thanks to the financial meltdown, how an entire industry – specifically the financial industry – can thoroughly delude itself, while composed of distinguished experts.

If one of the recommended alternative asset classes with a large positive alpha had been “CDOs,” the whole enterprise would have been exposed for the jargon-and-pseudomathematics-encrusted self-delusion that it is. But the publication date of the book is 2010, so of course no CDOs would appear.



Two alternative explanations present themselves for this book:

1. The authors are making an earnest effort to serve fund administrators who are desperate for an objective way to make decisions, offering them a model that is admittedly flawed but still the best they have.
2. The authors are engaged in a tacit conspiracy with fund administrators and money managers to create a fog of technical language to obscure the fact that they are scraping golden mega-crumbs in large fees off of hundreds of billions of dollars of institutional funds, on the pretense of providing expertise to enhance the funds' returns.

The odd thing is that both of these interpretations can be correct at the same time. It's quite possible for consultants to believe they're doing the best they can – however unscientific and flawed – for their clients, the fund administrators; and yet at the same time what they do has the effect of draining the funds over which the administrators have charge, to provide very handsome compensations for the club of fund administrators, consultants, and managers. If the incremental fees charged for this “expertise” were only a half percent of assets, this would represent an 11% drain on assets over 25 years and 21% over 50 years.

Here we have the classical principal-agent problem in action. Agents who claim expertise and speak in arcane tongues of their own making pull the wool over the eyes of the principals, who don't realize that they're being had, and who are too widely-dispersed and unorganized to do anything about it.

Remember, the publication date of this book is 2010, not a pre-crisis 2006 or even 2007, before it became widely known that the mathematical models of the financial industry were bunk.

This book shows that the bunk continues apace on its own momentum, unabated.

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