July 5, 2011

Clients,

Research on Precedents to Price Changes

When I look at my history and compare returns from all investments versus investments plus cash, the investments-only perform better. So I decided that the time I spend hovering over each days' charts for every investment, trying to judge when to sell and move more to cash, is not only a waste of time but probably detrimental to results. I decided to stay more fully invested while doing research looking for solid empirical and statistical basis for market exits.

Using fifty years of daily S&P500 data, I spent about a month doing data mining and researching this single column of numbers. A description of the methodology, variables used and findings is titled "Moving Average Study" and on my website under Papers. The bottom line is that I now have predictors for major market declines that would exit the market an average of once every five years for 5% of the time and historically improve returns from three to seven times. While I don't expect history to be repeated with a difference that extreme, I do have confidence in being able to greatly improve returns using the formula for when to exit. That is not to say that the correction running through June 27 couldn't have continued on down for another drop like leading up to March of 2009, but if it did so, it would be violating all of the precursors to the major bear markets of the past fifty years.

My next piece of research was to see if I could find screens (criteria) for each of the nine sectors making up the S&P500, enabling an empirically-based sector rotation strategy. I now have color-coded rankings for each sector for each day or week looking forward 21 or 64 trading days as to expected returns. For example, as of the day this is written, the Technology and Materials sectors are ranked one and two, while Financials and Consumer Discretionary are ranked nine and ten. Various newsletter services offer similar projections; the problem is that it is very difficult

to know what is in their black box and how much confidence to place in their proclamations. Before implementing these rules, I want to run it by a few more of my statistically oriented colleagues, and do some further testing. For example, the research looks twenty-one or sixty-four days out (the dependent variable). The results for any one day might be highly variable, and quite different than for days twenty or sixty. Therefore, I want to replicate the research using a simple moving average of say all the next sixty-four days.

The third study was to search for a set of rules or criteria that could be applied generally to all securities. Taking the last twelve years and applying the same set of rules to each of the nine sectors plus the S&P500 as a whole, returns are in the single digits 62% of the time. The 11% of the time having returns less than -10% averaged -40%, and the 26% of the time with returns greater than 10% averaged 38%. When applied as a single cumulative set of trading rules to each sector and the S&P500, the average return of 1.8% was improved **for every sector** by a minimum of 1.1%, with an average improvement of 3.1%, taking the average returns from 1.8% to 4.9%. So I'm encouraged to do more confirmation studies.

Technical analysts will use products such as Metastock to search for tradable patterns unique to each position. Doing that, I find greater but less consistent returns, causing me to suspect what is called curve fitting and less statistical rigor.

To picture what I have been finding, an (exponential) moving average smooths out the jagged fractals of a stock chart. Price movement going forward is not entirely random; it can be predicted in part by a shorter-term moving average relative to a longer-term moving average relative to the current price. Predictiveness is

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enhanced when this is combined with measures of volatility.

I have tried a lot of other variables, but they are rarely useful or reliable across multiple time periods and multiple positions or markets. In testing over 200 Japanese candlestick patterns which use the last few bars to predict the next few bars (i.e. days), I find nothing but noise. From what I have learned, if I want to predict the next day or few days, one would probably have to use minute data to get a large enough base from which to make statistical projections.

Why are price changes predictable? I'm not sure. My theory is that it is explained more by the sociology of mood swings than by economics or business variables. The moods of buyers and sellers have contagion and are subject to measurable rhythms.

Well, enough of the detail, but I wanted to give some indication as to where my head is at. If you are interested, I would welcome perspectives or questions.

The Ivy Portfolio

The other dominant interest has been in the asset class diversification practiced by David Swensen of Yale Endowment management. In my general *Performance Summary* (at www.Wenzel Analytics.com) I refer to it as the Harvard Portfolio, begun 11/30/09. You will see ETFs representing commodities, private equity and limited partnerships creeping into your portfolios. If you are interested in learning more, such as to apply the principles to your overall allocation beyond what I manage, I would recommend The Ivy Portfolio: How to Invest Like the Top Endowments and Avoid Bear Markets, by Mabane T. Faber and Eric W. Richardson. It was my first book read on the Kindle, although I must confess I read part of it on the computer screen. To hear an hour lecture on the subject by David Swensen himself, go to http://academicearth.org/lectures/david-swensen. The delivery is not particularly dramatic, but the substance is significant. He speaks of how seductive it is to make emotionally driven decisions, even when we think we are being rational.

I am increasingly turning to the numbers. I had Beth Lilly, a manager of a small-cap value fund, present to our local AAII chapter. Her approach is to thoroughly study many smaller companies, reading profusely and interviewing their management, suppliers and customers. While I think it would be a fun job, and have great respect for her talents in doing what she does, the results are not statistically better than buying the Russell 2000 ETF (IWM).

My Expertise and Identity

A final set of comments relates to watching "The King's Speech." The movie is exceptional in many ways. Of relevance to us is the contrast between credentialed service providers with institutional sanction that the archbishop wanted to provide, and Lionel Logue, the king's speech therapist who had developed his authority and expertise primarily from his own experience and perseverance. Increasingly I'm aware that with the exception of engineers, most of you do not have a long history of working in large organizations and trusting organizational or institutional credentials. As I have elaborated before, most of you are more like wild animals than domestic animals when it comes to needs for security and feeling comfortable within the routines and constraints of organizational life.

In my field, formal credentials rarely equate to improved performance. In fact it is not real clear what field I'm in. It is not surprising that some of you are confused as to my role relative to other financial professionals. Of necessity, I'm licensed as a Registered Investment Advisor, but I'm not really an "advisor" and don't charge a wrap fee for doing your allocation and selecting funds and money managers. For years I have identified as a money manager, similar to a mutual fund manager. I'm starting to think of myself more as a statistician who happens to apply discretion in the use of numbers to investments.

I enjoy the challenge and appreciate your trust. If you don't want a statistician tinkering with your investments, let me know.

Lee