July 1, 2012

Clients,

In this report three months ago I reviewed the astounding price appreciation of Apple, Inc. and wondered if it was too late to buy. Well, I have yet to buy Apple and for the past two months Apple has been below the $600 it was at the end of the first quarter. I also mentioned Amazon, which I did buy in most of your accounts and it is up about 21%, depending upon which day it was purchased. Amazon is providing amazing computer services and platforms for corporations.

But the big news this quarter is **fractals**, which are providing the most accurate indicator I have found in my ten years of managing other people's money (OPM). I will give a little background on fractals, and then add a paragraph of data on results.

I discovered fractals from a course on chaos by Dr. Steven Strogatz which I watched a half hour a day for 24 days on the treadmill. (From The Teaching Company. I can share it with you if you are interested.) Chaos is the study of small effects having huge consequences, such as the way world markets can react to relatively minor events, or the way black swan events can happen far beyond the normal expected frequency. Fractals are the geometry of chaos and are characterized by self-similarity independent of scale. You have probably seen the classic fractal designs, such as one from Benoit Mandelbrot on the right.   As shown in the course, or on You Tube, (http://www.youtube.com/watch?v=gEw8xpb1aRA), one can continue zooming in and see the same shape replicated an infinite number of times.   Or to take another geometric example, if I were to ask you the length of the coast of Norway, the answer would depend upon how minutely you did the measurements. If you went into every fjord and around every rock and around every molecule of every rock, it could become almost infinitely long. Most of the world is fractals or rough, rather than smooth and comprised of Euclidian shapes such as circles, triangles and squares. Branches of a tree are fractals, as are blood vessels.

There are geometric fractals and there are time series fractals, like stock charts. (You were probably wondering what this had to do with making money.) If I were to show you a stock price chart without a label, you would not be able to tell me if each bar was a year, month, week, day, minute or tick. Charts, and the rules governing price behavior, are independent of scale. And they are rough, like fractals. If we have a linear relationship drawn between points A and B, that is one dimension. If we were charting a price pattern and it filled the whole page black, that would be a plane or two dimensions. Fractal patterns are between one and two dimensions, in that they are never a simple linear line and no matter how long they generate, they never fill the page, i.e. they are not random. Fractals consist of patterns within the noise. Encrypted communications are done with fractals. Pattern or noise can be identified through more math than I will share in this summary by means of a dimension score. A score of 1.5 indicates a stock trading in a random fashion. A score of 1.35 is a trending stock near the end of trend. A score of 1.65 is a stock that has been trading in a range and about to break out of its range.

Why does this work? As I have probably mentioned in reporting earlier research, whether a stock will go up for any particular minute, day, week or month is almost random – I've not found more than 51.7% up over long periods. However, what is not random is volatility or how much it will go up or down. That is where the predictability lies. Volatility has what is called long memory. If you flip a coin ten times and get heads each time, the next flip is still a 50-50 chance of tails. The same is

---

An alternative to mutual funds.

Lee Wenzel
(952) 944-2699
Lee@WenzelAnalytics.com
www.WenzelAnalytics.com

Wenzel Analytics, Inc.
Registered Investment Advisor
8666 Westwind Circle
Eden Prairie, MN 55344

not true for volatility. This is the premise for the Black-Scholes formula that governs how options are priced.

So this very cursory overview of a very complex subject may be pretty theory or entirely boring, but does it work?

I found a little utility (www.trivisonno.com/fractal-stock-grapher) and scored each of the 200 or so Wenzel Analytics' unique positions that have Yahoo pricing on daily, weekly and monthly charts. (To see how the program works, go to www.trivisonno.com/fractal-dimension-index.) The utility chart displays for 100 periods (days, weeks or months). The fractal indicator signals an end-of-trend and an end-of-range. It thus signals when to exit or to watch very carefully. It does not explicitly signal when to buy. It doesn't signal every time a trend is ending, but if it signals, it is likely to be spot on. For the 600 charts, 25% did not produce an end-of-trend signal in the 100 periods**. Forty-seven percent** of the time an accurate signal was given precisely or spot on for an end of trend. **Two-thirds of the time** an accurate signal was given if one includes signals that were very close, or took the signal when it reversed having crossed the signal line. False signals occurred 2% of the time, ambiguous signals were 3% and 4% lacked data or had aberrant data. For the end of a trading range, 32% of the charts did not produce a signal and 59% of the time an accurate signal was given. Ask to see tables with more detail and results by portfolio.

The signals work on any asset with volatility, such as private equity, bonds, REITs, etc. The signals do not work as well where there is low volatility, such as high dividend stocks.

I am just beginning to implement these findings in deciding when and what to sell. I'm selling stocks trending down without an end-of-trend signal anywhere in sight. A stock going up without a reversal in sight will be allowed to run. A stock ending a range will be watched every day to see if it will now trade in a new range, trend up or trend down. It is uncanny how stocks that "fall out of bed" are preceded by end-of-range signals.

Since it is rather tedious to enter 200 symbols a day to check each stock, I'm searching for ways to automate the process with alerts. In the search, I found that 17 of the major trading platforms have all implemented a fractal indicator based on an algorithm in an article by Erik Long in *Stocks and Commodities* a couple years ago. But the results don't match the little program I'm using, and their signals don't seem to work. Personally, I think he sent the whole industry off on a rabbit chase to distract them from his secret!

Markets

The market declined in May and recovered about the same amount in June, forming a range. Not surprisingly, a disproportionate number of positions are at the end-of-range signal. So I'm watching to see which way things break. The signal from this week would say that things are breaking to the upside.

I'm still searching for why our positions did not recover more in June. However, today (July 3) the Russell 3000 benchmark was up .7% and Wenzel Analytics was up double that or 1.4%, which is more the pattern we need if we are to recover from the excess volatility in down markets.

Anyone wanting a free lunch to talk about your reports, perspectives on markets or financial planning decisions, please give me a call. If you are not in the metro, give a call.

Sincerely,

Lee