

October 2013 Issue

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WHERE WE'RE GOING, WE DON'T NEED INDICATORS

At Elliott Wave International we believe that there is at least one thing fundamentally wrong with most common approaches to market forecasting. The markets are not driven by news or politics. And despite what most economists will tell you, they definitely are not driven in a linear fashion. Rather, they are driven by social mood, and mood is robust and dynamic—not static.

Despite the simplicity and elegance of the social mood perspective, traditional economics has yet to embrace it. For instance, in college, I once met a graduate student participating in MIT's newly introduced financial "engineering" degree. The conversation turned to the bursting of financial bubbles and their aftermath. He looked at me with some puzzlement and then dismissed my worries in a typical Keynesian fashion: by stating that bubbles are not a problem because the fallout can be resolved with "more inflation" because inflation is like "stepping on the economic gas pedal" and it "increases net exports." Apparently, there's not much social mood on the curriculum—yet.

A good test of the validity of a particular philosophy is whether or not it can predict. Anyone who has followed Fed commentary knows that there must be something wrong when the track record of one of the world's most highly regarded cache of economists is so poor. Witness this crop of prognostications just prior the collapse of the housing market and the worst economic conditions in a century:

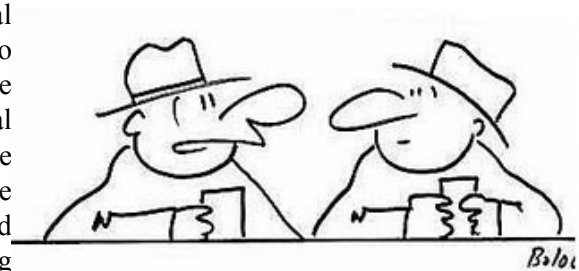
(October 20, 2005) "House prices have risen by nearly 25 percent over the past two years. Although speculative activity has increased in some areas, at a national level these price increases largely reflect strong economic fundamentals."

(February 15, 2006) "Housing markets are cooling a bit. Our expectation is that the decline in activity or the slowing in activity will be moderate, that house prices will probably continue to rise."

(January 10, 2008) "The Federal Reserve is not currently forecasting a recession."

(June 10, 2008) "The risk that the economy has entered a substantial downturn appears to have diminished over the past month or so."¹

But it's not just the current group of Federal Reserve governors. As we have documented over the years, the Fed's history of failed predictions invalidates the idea that they can accurately "steer" or "guide" the economy. One could argue the above quotes were cherry picked, and they were for their simplicity. But the long history of Fed announcements shows pretty much the same pattern of "cautious yet bullish" expression. Fed-speak more or less resembles a moving average type of approach to market commentary: they comment on the recent trend but lack the ability to foresee any junctures where the trend may change. Because the market tends to spend more time in an uptrend than a downtrend, the Fed's economists, like most in the profession, are nearly always optimistic. The only times they become pessimistic are at the ends of bear markets and economic contractions. This is the sad result of using conventional economics for forecasting.

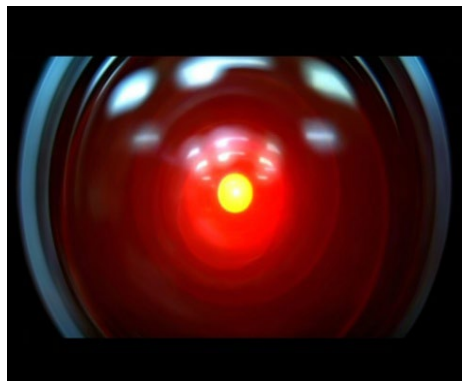


"My wife's a Keynesian — she's always spending herself out of depressions."

Here come the quants...

Given that economics is in such dismal shape, how do so many financial companies stay in business? Besides commissions and services, the primary income source for Wall Street is Fed-catalyzed credit expansion. The massive creation of new money and debt that has inflated our financial system over the past century has provided banks and funds with a steady supply of rising asset prices and interest/dividends from which to skim fees. Monetary expansion is at best a zero-sum game and exists at the expense of producers and savers.

The analytical craze that has ignited Wall Street during the past two decades is that of quantitative finance. The quant explosion has been driven by the pouring of Wall Street's Grand-Supercycle-induced wealth and resources into a search for the "holy grail" explanation of market behavior. When applied to the problem of trading financial markets, the vast majority of quantitative strategies follow the same basic pattern: They use mathematical modeling techniques to identify past market trends and/or to identify variance from an expected fair value. As an example, the simplest possible form of quantitative finance would be a linear regression model, which involves fitting a given data series to a linear formula and then using this to extrapolate future price activity.



Hal, the artificial intelligence from 2001: A Space Odyssey, would have made the perfect trader.

Banks, hedge funds, independent trading shops, and many others have embraced quantitative trading with either semi-discretionary or fully automated systems. In the world of high frequency trading, where trades must be entered and exited within milliseconds, fully automated systems are clearly the only option. The advantages of using a computer for trading instead of a human are huge. Every good trader knows that emotions are the single biggest detriment to successful trading, and computers simply don't have them. Computers don't get sick, don't need a retirement plan, don't let winning trades go to their heads, and never agonize over their losing trades. Furthermore, they follow their programmed trading methodology with perfection.

The amount of hype surrounding quantitative finance and the amount of resources dedicated to it cannot be overstated. It feels like everywhere you look, mathematicians and engineers are leaving their occupations of building safer bridges and cleaner cars to join banks and quant shops to shuffle money around—and getting paid six or seven figures to do it. As mentioned previously, the demand is so high that universities are offering courses and now even degrees in financial "engineering." In fact, the proliferation of quantitative trading is such that there is even a segment of the software industry that sells products specifically designed to auto-generate quantitative trading strategies! So there is certainly no lack of quantitative traders. For some quant systems, the back-tested equity curve looks great—amazing, even—but the question is: *will it work tomorrow?* That's the most important question, and at its core is a dirty secret that many believers in quantitative systems do not want to talk about: *model burnout*.

Model Burnout

Model burnout is perhaps the most dreaded phrase for algorithmic traders the world over. Regarded as *absolutely inevitable*, model burnout is simply defined as the moment when a given trading methodology stops working and must be discarded. Of course, even the idea that a given strategy "stopped working" is a fairly subjective statement, because how do you determine that? Do you quit when you're down 20%, or 30%, or 40%? What if it comes back dramatically after a 50% drawdown? Is it better to wait until you go broke before you throw the towel in?

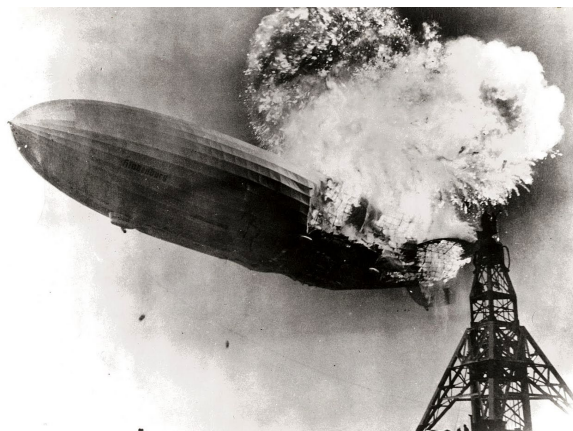
Having too much faith in a quantitative system can have disastrous consequences once the burnout phase sets in. Perhaps the most well known case of this is the Long-Term Capital Management (LTCM) fiasco.

Despite its Nobel-Prize-winning board members, the general form of its rise and fall is not surprising for a financial venture driven by managers overly confident in their models:

Members of LTCM's board of directors included Myron S. Scholes and Robert C. Merton, [who] shared the 1997 Nobel Memorial Prize in Economic Sciences for a "new method to determine the value of derivatives." Initially successful with annualized returns of over 40% (after fees) in its first years, in 1998 it lost \$4.6 billion in less than four months following the Russian financial crisis requiring financial intervention by the Federal Reserve, with the fund liquidating and dissolving in early 2000.²

40% per year sure sounds great—but once the strategy blows up, previous returns no longer matter. You could achieve a similar result of great returns followed by an inevitable blow-up by simply picking all trades *randomly* and then money-managing using the infamous Martingale or Oscar's Grind progressive betting strategies. Investors, ignorant of the shortcomings inherent in quantitative analysis, gave John Meriwether, the founder of LTCM, a second chance with JWM Partners LLC Hedge Fund. The fund closed in late 2009 after devastating losses.³

Most quant shops sidestep the issue of burnout by setting some limit on losses and then retiring the strategy when the loss limit is reached. In this manner, shops are constantly on the lookout for new models, because their models are always at risk of burning out. The very idea of model burnout implies that the underlying methodology being used is fundamentally flawed. LTCM is a complicated case, but consider a much simpler example: Charles Kirkpatrick discussed an interesting event-driven model known as Zweig's Fed Indicator which I came across while reading Kirkpatrick's book "Technical Analysis: The Complete Resource for Financial Market Technicians." The model operator merely purchased or sold the S&P index after a particular sequence of Fed meetings and Fed actions. The model was extremely accurate at timing the market during a nearly 50-year backtest period, and, even more impressive, it performed well in the first few years live. However, after roughly the turn of the century, it essentially stopped working.⁴



"Having too much faith in a quantitative system can have disastrous consequences once the burnout phase sets in."

So what was the problem? Perhaps the model just had too many degrees of freedom, and thus was curve-fit to the data. That may be true, but I think an even better answer is that it did not reflect any underlying truth behind the fluctuations in the market. That is, there was no correct *principle* being captured. The Fed doesn't control stock prices, and socionomics tells us that if there exists any correlation between the Fed's actions and the market it is *reactionary*, not leading. The market is leading, and the Fed is following. Therefore, no model should use the Fed and its actions to predict the market, at least not in the conventional sense. (It can, however, be used as a contrary indicator in certain contexts provided you understand social mood.)

All quantitative strategies are doomed to ultimately burn out, because they capture and reflect market properties that are transient. The degree of transience is unpredictable and may range anywhere from lasting decades to instant burnout of the model. Many of my friends who work for quantitative firms and hedge funds tell me they like this type of analysis because it is "objective." For example, if a particular moving average crosses over another moving average, you get a specific and actionable signal. What people fail to realize is that this methodology is arbitrary: How many samples do you consider for filtering to build your moving average, and why? Is it an everlasting principle of market behavior that specific moving averages trend in a manner that allows you to capture profit? In my experience, the answer is *always* no.

Furthermore, if you data-mine to discover the optimal moving average length, you'll quickly find that there is no ideal number. Every dataset that you test will have a completely different one. Even if during optimization you find that a wide range of parameters produce positive performance, the numbers that worked in the past may no longer work at all. As noted in David Aronson's recent book on machine learning, the market strongly exhibits the property of *non-stationarity*.⁵ Therefore, I believe that quantitative analysis cannot be categorically defined as objective—a much better word would be “definite.” When moving averages cross, it produces a definite signal, but it doesn't imply statistical significance in a universal sense. And if the underlying rationale behind the signal is flawed, the approach is not objective.

The Elliott Wave Principle is not quantitative

In contrast to practitioners of quantitative finance, a typical student of the Elliott Wave Principle (EWP) is likely to employ a much more *qualitative* approach to trading by looking at economic and technical indicators in the context of a particular wave structure. In fact, we here at EWI hope to coin the term “qualitative finance” to distinguish the study of EWP from quantitative finance. Unlike quantitative finance, qualitative finance doesn't tend toward absolute calculations, but rather relies on *relative* values, patterns *irrespective of size*, and psychology, *all with respect to context*.

Everyone who is familiar with EWP understands the importance of context. For example, the term “overbought” is more meaningful in the fifth wave of an ending diagonal than it is in the middle of a third-of-a-third wave. In a third wave, an extremely overbought indicator often means that the market is still accelerating, which is the exact opposite message that one might glean without the context of price patterns. In qualitative finance, context is not just key—it is everything.

Unfortunately, many academics and practitioners are skeptical of qualitative approaches to market forecasting. They claim that EWP lacks objectivity due to the differences in output of its various practitioners.⁶ Since we've already discussed the distinction between “objective” and “definite,” it seems fair to rephrase what these people desire as wanting a *definite* method of using EWP to forecast. They want EWP to be something that can be programmed into a computer so that a given set of input market data will always produce the same analysis. In mathematical terms, they want what is known as a *computable function*, which by its very nature distills EWP into a definite form.

Introducing EWAVES

The EWAVES (Elliott Wave Analysis and Validation Expert System) software is designed to meet these challenges head on by providing the world's first qualitative analysis and trading engine. EWAVES is the product of research at EWI towards the goal of systematizing EWP. Originally developed by contract with Lockheed for EWI, EWAVES applies EWP to each price movement to assess the wave count at multiple degrees of trend.

EWAVES applies the qualitative criteria consistently; it does so without the impediment of prejudice or emotion. EWAVES finds all the patterns described under the EWP and is able to link them into a complex, self-similar structure. The wave count is reevaluated with each new data point. This approach both maintains continuity and keeps the analysis and outlook adaptive to the developing pattern.

We have been using EWAVES version 1.0 internally since May 22, 2013 as the primary driver of EWI's Investors and Traders Flash services. This decision was made after testing revealed it had an edge trading across many markets. Additionally, unlike all other analytical systems, EWAVES is based on what we believe to be the *correct* principles of market behavior, and therefore it should not burn out. Going forward, however, there is still much research to do to improve both the counting engine and the trading logic in future versions of EWAVES. EWAVES 1.0 is *beta software*, and therefore while functional it is still heavily in development. We will be developing incremental improvements to the 1.X line, and eventually we will complete version 2.0 and exit beta. We intend to keep you informed of all changes and updates as they occur.

Signal Review

EWAVES produced the following wave count in gold on July 5, 2013:



Figure 1

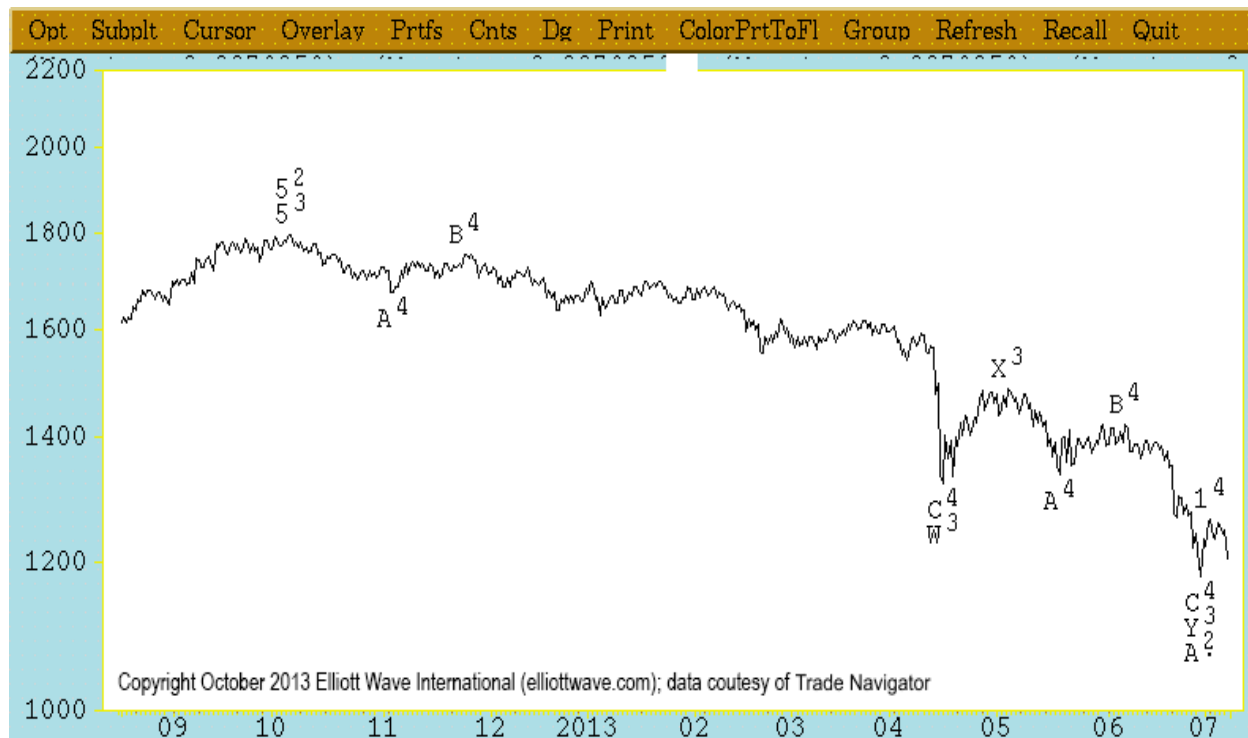


Figure 2

EWAVES notation is likely different from what you are used to, but it is logical when you realize that EWAVES understands the degree of a particular wave only relative to other waves. EWAVES always denotes the largest degree as 0, the next largest as 1, and so on. So in Figure 1, you see that the farthest wave label to the left has a superscript number 2 which is eventually followed by labels with superscript number 3. The degree 3 labels are one degree smaller than degree 2 and therefore mark the components of degree 2 waves. EWAVES is capable of analyzing data to many degrees of depth; the only practical limitation is computing power. The unlimited hierarchy of this notation structure allows for notations at every degree.

Let's look again at the advance in the top chart. Elliott students will notice a familiar $1^2-2^2-3^2-4^2-5^2$ pattern, stretching across almost the entire page. The decline that follows, labeled $W^3-X^3-Y^3$, is a double zigzag, completing wave A^2 . The anticipated rally then, was for wave A^3 within wave B^2 of a flat correction.

The top count in gold marked an important turning point by turning bullish at the trading degree which Investors Flash utilizes. Particulars of the setup included wave A of a zigzag within wave B of a flat, preceded by a double zigzag. This setup has shown to have a statistically reliable positive outcome during past occurrences across many markets. Therefore, EWAVES generated a signal after the market closed on Friday, July 5, and Investors Flash subsequently recommended a long position in gold on the morning of Monday, July 8, at a price of 1234. The stop was placed at 1179.30, the level of an important low which, if taken out, would invalidate the top count.

At the time, there were only 4% bulls on gold⁷, which by itself was a strong contrarian reason to consider purchasing the yellow metal. But the current version of EWAVES *does not take sentiment measures into account* and therefore was unaware of this fact. It acted properly on price patterns alone.

The primary issue with sentiment is that, like everything else in a qualitative system, it must be used contextually and not absolutely. For example, 60%+ bulls regularly appeared in sentiment readings during the persistent bull market in stocks of the 1990s, while just a decade prior the market had important intermediate tops, such as in November 1981, with only around 40% bulls.⁸ There is no universal meaning in sentiment numbers. But there *is* meaning when the numbers are considered contextually. The right way to incorporate sentiment is to have it integrated into the rules and guidelines of EWP in a way that uses sentiment only in the context of wave patterns rather than quantitatively in terms of absolute numbers.

Subsequent price action in gold allowed us to recommend raising the stop several times in a conservative manner. Here again, we repeat the idea of using price levels that would alter the message of the wave structure. As shown in Figure 3, the market hit our stop on Friday, September 13 at a price of 1315, netting a total of 81 points. This recommendation worked well, but nonetheless in future versions of EWAVES we anticipate that the system will be able to signal an earlier exit closer to price extremes.

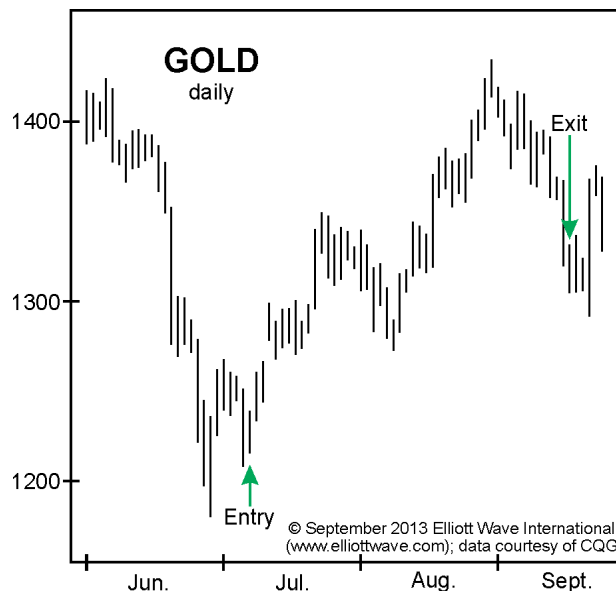


Figure 3

Until next time

Our Flash Services—using EWAVES software—provide definite *and* objective real-time recommendations. Since May 22, our computer has provided all Flash recommendations aside from the ones covering the major stock indices that were established earlier; soon, we will fully automate these markets as well. The computer-generated recommendations applied to Flash Services are net positive for each service through the third quarter on both an absolute dollar basis and on an equal-weighted position basis, so the performance of the system has been gratifying. (Our results are precisely calculated on live data in real time based on published calls, but results will no doubt vary slightly among individual accounts.) Yet we remain aware that the market is ultimately in charge, and no doubt drawdowns will occur in the future. We have been focusing on our mission: to keep the system up and running at all times and continue every day to improve the system's performance.

I will keep you abreast of developments as they transpire. Stay tuned.

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CITATIONS

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