



ATLANTIC CAPITAL MANAGEMENT

## **ANOTHER PERFECT STORM**

**Caught Between Criticality and Depression, Danger Lurks**

SPECIAL INVESTMENT RESEARCH REPORT  
September 2, 2010

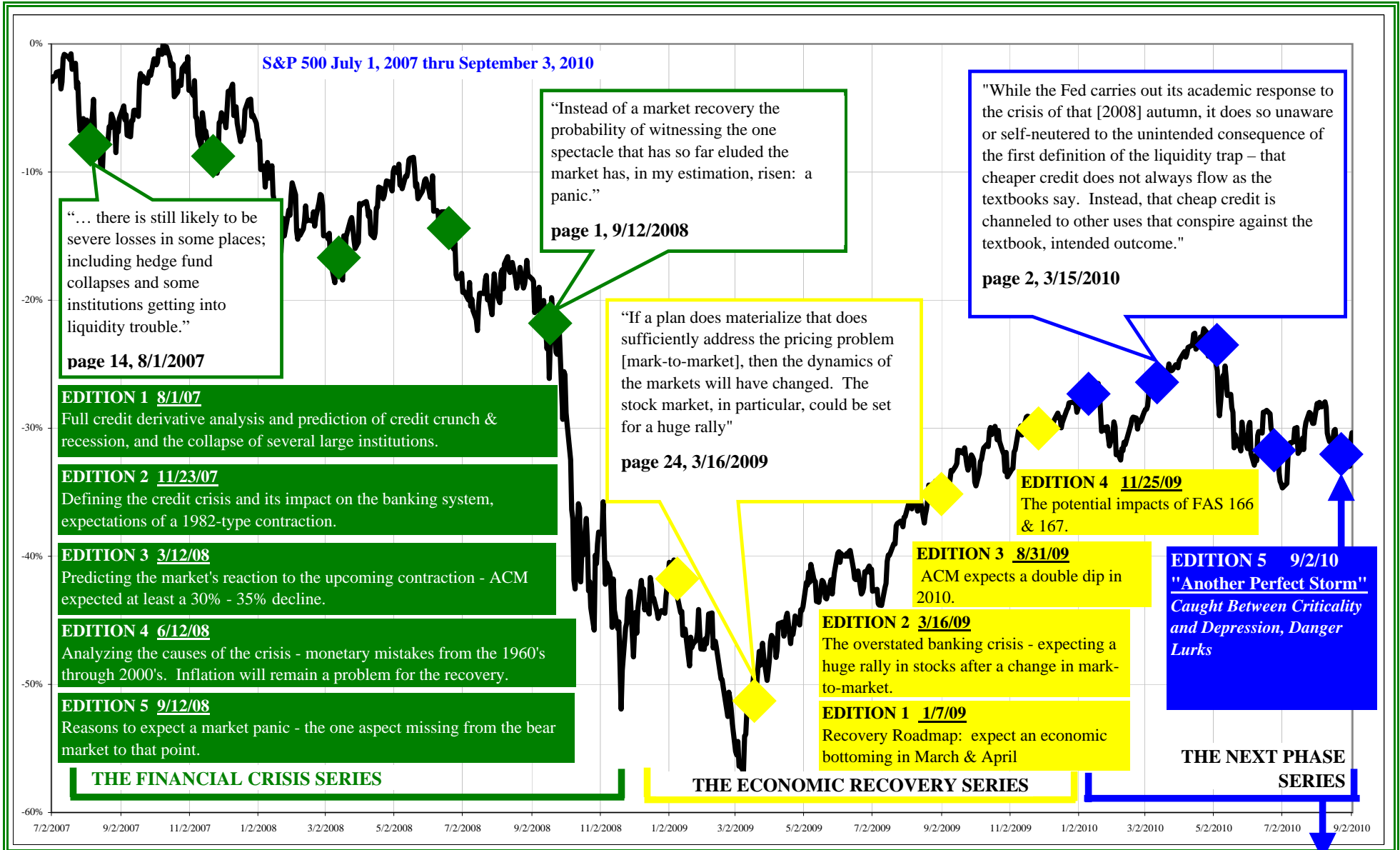
EDITION 5 **THE NEXT PHASE SERIES**

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We are caught in another Summer of Discontent, the second in three years. “Elite” opinion argues for resurgence based on nothing more than the idea that since the economy is still beat up, it cannot get worse. We completely disagree. Worse yet, we fully expect it to get much worse in the not-so-distant future.

The Panic of 2008 was caused by crushed expectations and forced liquidations. Part 1 shows how expectations are set to be crushed again. Part 2 examines why stocks won't need liquidations for 2010 meltdown. Part 3 goes into market fundamentals, particularly PE ratios.

### **Part 1 – The Economy *Can* Go From Bad to Worse**

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The failure to foresee the economic and market cliff in 2008 was a failure of imagination. Due in part to human nature, elite opinion clung too much to mathematical models. In doing so they cut out good old-fashioned analysis. If they had done real analysis, the rotting economic foundation would have been obvious.

Two years on and the same pattern re-emerges. The mathematical constructions and models are overriding not just analysis, but common sense. We use the Conference Board's Leading Economic Indicators as an example of clinging to models. From there we identify some major mistaken assumptions that are underpinning the hopes for recovery.

We also demonstrate that the two main drivers of growth since the bottom (inventories and business investment), though still depressed, can get much worse.

### **Part 2 – Self-Similarity**

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The stock market since the Panic of 2008 has changed fundamentally. Partly due to the rise in high frequency trading (HFT) and partly due retail investor preferences, stocks now exhibit self-similarity. This is a profound and dangerous change in market structure.

Self-similarity is a complex system that is described by multi-fractal geometry. Part 2 endeavors to explain what these are in the context of the stock market. The implications are that portfolio and hedging theory is not truly capturing the risks of investing (due to adherence to randomness), and that blindness is leading to rising correlation, making a market crash more likely without the need for a liquidation event.

### **Part 3 – The Myth of Valuations**

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Wall Street and CNBC continue to tout those magical 2011 earnings estimates. Our analysis of the history of PE ratios shows that the markets may never care if those earnings turn out to be correct. In instances where a generational low is produced, aggregate stock prices fall significantly even though earnings growth is typically massive.

This dichotomy is simply of function of investor preferences. Currently, retail investors are bailing out of stocks and into bond funds and savings accounts. The uncertainty surrounding available sources of funding for households is driving stock avoidance. Lack of credit is also a factor.

*“Not only is there the danger of burstiness, but the high levels of correlation mean that any single episode of burstiness can push the entire market at once. Given the probability (not a random probability either) that the economy is moving against expectations, it may be reasonable to expect much more burstiness on the sell side.”*

The Panic of 2008 was a painful combination of forced liquidations and crushed expectations. Those that followed elite opinion were vastly unprepared for what was to come. The level of complacency in the face of widening parallel crises was astounding, yet it is being duplicated.

Much of what happened in August and September of 2008 was a failure of imagination. We covered this in our April 2010 Special Report, but it is worth repeating. The vast majority of investors could not fathom what was about to happen simply because they did not believe it possible (we used the term pattern bias).

The path to panic in the early autumn of 2008 was paved by schizophrenia in late summer. Credit markets were preparing for disaster while the rest of the public was snookered by the economics “profession”. Such divergent market views started to create interesting dichotomies in financial indications.

Two years after the most massive government interventions in the history of man and we are again discussing economic failure. It is entirely fair to say that nothing has really been accomplished and the structural imbalances have been left in place to cause more economic mischief. And in the face of another disaster, “elite” opinion still exhibits that familiar failure to imagine.

Two summers ago the mantra was “resilience”, as in things won’t get too bad since the US economy and business are extremely resilient. But if any of those “elite” opinion makers had actually taken the time to investigate the credit default swap pricing disaster they could have connected the dots from financial liquidations to reduced business activity, and seen that companies faced with declining revenue prospects and simultaneous credit contraction would react extremely harshly. Disaster *was* possible because it had *already* reached its terminal stage.

In the summer of 2010 the new mantra is “beat up”. As in, “the economy is still so beaten up that it cannot possibly contract again.” In the parlance of formal “economics”, cyclical components of GDP are still in the downward cycle so that it is theoretically not possible to go further into the negative. These cyclical bottom-dwellers are things like residential housing, business investment and auto sales. For some reason economists like to think that there is an established, though unseen, minimum; that equipment *has* to be replaced; inventories *have* to be restocked.

In reality, if a business does not see any prospect for future business



then nothing has to be replaced until it absolutely, positively cannot function anymore. So much of business ingenuity is getting more out of existing inputs. The productivity boom since early 2009 is a testament to that. Now that productivity has turned decidedly negative, business is again at an inflection point – reinvest in the hope of productivity or cut costs for the certainty of productivity.

Setting aside residential real estate for a moment (since its contributions to GDP are now very small it may not directly affect the economy, but there are certainly psychological and monetary effects), there is no good reason to think that business investment cannot decline further. Inventory building and business capital spending have been the only drivers of economic growth since the bottom of the recession in 2009. But having spent that money on shiny new equipment and restocked shelves, what if revenue fails to materialize? How do businesses extract profits in the face of the coming depreciation charges to earnings?

Without topline growth there is only one way back to profit productivity. That will mean more pressure on wages as companies begin another round of cost cutting.

None of this discussion has taken into account small and medium-sized businesses that have not participated in the recovery. A renewed decline in large-business activity should have an extreme impact on smaller businesses that have been dependent on the inventory/equipment cycle to just stay afloat. In the end analysis, there is still a massive amount of excess capacity, meaning much of idle capacity can still be permanently shuttered – another downturn will destroy many businesses that have barely survived the first one.

The stock markets are not prepared for the economic trajectory we are describing. Once this becomes more widely accepted, particularly as “elite” opinion is once again proven disastrously wrong, the crushed expectations part of the equation is in place.

All that is left is forced liquidations. But that was needed in 2008 to trigger the panic. In 2010, we may not even need a liquidation event to set off a market debacle. The stock market’s current configuration is inviting disaster all on its own. As we will examine within this report, it is absolutely amazing the markets are still where they are.

It may seem intellectually lazy to be calling for a market panic again for the second time in three years at approximately the same place on the calendar, but all the ingredients are present. All that is needed is a catalyst. That catalyst may already be in the trigger stage – as we said in June, the Fed’s announcement of more quantitative easing could start the slide. According to our analysis, the only remaining question is how far and how fast.



## Part 1 The Economy *Can* Go From Bad to Worse

After having reviewed, quite extensively, “elite” opinion from 1930 and 1931, you get a sense of how very intelligent people can fail to grasp the full picture. It is very much due to human nature and how humans subject to emotional constraints have difficulty with negatives, especially in the extreme. For most people just a sense of impending disaster is enough for them to stop looking for it. And once you stop looking, it gets easier to ignore.

What really happened in 2008 was simply that. It was not a function of being surprised by the disaster it was an emotional function of not wanting to investigate the possibility. Rather than getting an educated sense to what was clearly forming, the vast majority *wanted* to be reassured that their fears were overblown. Instead of examining for themselves exactly how Bear Stearns failed, most wanted to hear that it was inconsequential.

As for the “elite” opinion that provided all that reassurance, the reason for their incompetence was really just hubris. The world of the 2000’s changed from human analysis to mathematical models. Over-reliance on models was nothing more than a function of believing complexity equals correct. As math and technology converged to create excessively intricate, multifaceted mathematical constructions the models replaced analysis: analysis can be subjective, but models are scientific. Believing this, elite opinion fell into the same trap as the public. If the models are reassuring then disaster *must* be scientifically and mathematically impossible.

In the two years since the last epic failure of models and imagination, nothing has really changed. “Experts” still cling to their complexities, lost in an admiration of elegant calculations that are really

calculations for the sake of calculating. A perfect example is the Conference Board’s Leading Economic Index (LEI). From its August 19, 2010 release<sup>1</sup>:

“The indicators point to a slow expansion through the end of the year,” says Ken Goldstein, economist at The Conference Board. “With inventory rebuilding moderating, the industrial core of the economy has moved to a slower pace. There appears to be no change in the pace of the service sector. Combined, the result is a weak economy with little forward momentum. However, the good news is that the data do not point to a recession.”

The last sentence is exactly what I am talking about. The positive change for the index was the smallest possible, 0.1%, after a 0.3% decline in June. But the largest positive contribution came from the interest rate spread of the 10-year treasury over the Federal Funds rate. The theory behind the inclusion of this factor is that a steep yield curve is indicative of economic growth. And in most cases that may be true, but the Fed has pinned the Fed funds rate at near zero. So we really have no idea exactly what the true shape of the yield curve is.

If we use other interest rate indications, such as LIBOR or commercial paper rates that are allowed to be set by the marketplace, the yield curve is much less steep. And previewing what this indication will be for the September release of the August numbers, the ongoing collapse in treasury rates are not going to contribute nearly as much to a positive result.

Another positive contribution came from the continued drop in initial jobless claims. Since that number has increased noticeably in August (hitting 500,000 again, for at least one week), we will have another reversal. Building permits is another indication that



has gotten much worse, as have stock prices (though they can definitely shoot higher, more on this later). And there are manufacturers' new orders for non-defense capital goods, which we know **dropped 8%** in August.

So what will the Conference Board say in September about August? Probably nothing new since those five components only make up 22% of the index. The M2 calculation of money supply and the average weekly hours worked in manufacturing make up together almost 70% of the index. The workweek component may be flat to weaker in August, but the M2 number will likely be higher since it was down in July (it has shown some modest expansion through mid-August).

Out of all that, how can anyone make the blanket statement that “the data do not point to recession”? Nothing about the LEI is straightforward except the number the calculation spits out. The components are static numbers, not allowing for interpretations about misleading data points (like the yield curve shape). It comes out with a number and people are reassured.

There is little discussion about the divergence between the LEI and the Conference Board's Coincident Economic Index (CEI). While the LEI zoomed well above 2007 pre-crisis levels, the CEI has remained subdued. Peaking at the onset of the recession in December 2007 above 107, it collapsed to a low of just above 99 in June 2009. The LEI has moved from a low of 98 in March 2009 to an April 2010 high of 110, but the CEI has only gone from 99 to 101.5! There is no discussion about this massive divergence anywhere on the Conference Board website, and certainly not in any press releases (the link to the chart showing this divergence is in our endnotes<sup>2</sup>; the chart is copyrighted so you have to go the Conference Board website in order to view it, but it definitely demonstrates this dichotomy visually).

If the LEI has any predictive capacity, the CEI should follow its lead rather closely. The fact that they have diverged so clearly calls this relationship into question for some of the reasons we have raised. It certainly calls into questions the Conference Board's assertion that the data does not show a recession.

This is the failure of imagination. The Conference Board is assuming that all the traits of economic health are exactly the same now as they were before. But does a steep yield curve stimulate anything when banks are reducing loan exposures in favor of repo-ready treasury and agency bonds? With credit still collapsing throughout the economy, a steep yield curve is doing nothing but stimulating bank profitability to combat accounting changes.

The same fallacy is being applied to M2, which is a much larger share of the LEI. M2 is included as a “leading” indicator because it is economic orthodoxy that an increase in the amounts of currency, traveler's checks, demand deposits (checking account balances), NOW balances, savings deposits, small-denomination time deposits, and retail money market balances will lead to an increase in loan growth. The components of M2 make up the most stable source of bank credit funding. So if there is steady growth in bank funding sources there *has* to be growth in credit production and usage. Except this is only theoretical (the world of accounting changes and dual-leverage has changed these relationships, more on this in Part 3).

Do hours worked in manufacturing mean steady economic growth in the context of an inventory cycle predicated on nothing more than hope? If the 2007-09 contraction is more than just a cyclical downturn turning into a cyclical recovery, then the Conference Board will miss it entirely because it will not even entertain that possibility (at least publicly, who knows if they are completely redesigning the index to match a “new normal”).



Starting with GDP, the topline number grew 4% from the second quarter of 2009 to the second quarter of 2010 (before the revisions on August 27), or about \$560 billion. Of that \$560 billion, approximately \$200 billion came from consumer spending on goods, \$150 billion came from consumer spending on services, \$113 billion came from business purchases of computers and equipment, and \$265 billion came from inventory production (balanced by a subtraction of \$180 billion for an increase in imports over an increase in exports, and \$76 billion for less commercial real estate activity).

Sixty-seven percent of GDP growth came from inventories and business investment. Compared to the decrease in business investment from the second quarter of 2008 through the second quarter of 2009, the recovered GDP levels are about half of what was lost. This is likely the basis for the claim that the “cyclical” economic components are still at very low levels, and it may be a fair assessment.

Fair or not, that does not mean that spending levels cannot decline again. First taking inventories, as low as they have become in terms of total goods spending, they are still above the low set in the 2001 recession and the 2003 recovery. Using that level as a guide, inventories could shrink between \$64 billion and \$82 billion, and still be within recent historical norms. And there is no real reason to think that inventory levels have to stay within historical precedent.

Seventy percent of the rise in inventories from the bottom in third quarter of 2009 has been motor vehicles, wholesale inventories of non-durable goods, and manufacturing inventory for durable goods. Retailers’ inventory levels (outside of motor vehicle retailers) have been essential flat. This suggests (along with the Chinese trade deficit numbers and Baltic Dry Index movements we discussed in our July 29 Market Opinion) that inventory building has been confined to the lower levels of the

supply chain in anticipation of growth through the retailer level. But since retailers have not increased their inventory exposure, this implies that retailers are not yet convinced of sustainable growth in final sales.

Further, the inventory built in the bottom levels of the supply chain will have to be cleared before a new inventory cycle is generated – meaning a decline in output is more than just a possibility, it is likely. This is confirmed by the segment data inside the misleading ISM Manufacturing Survey headline number. Within the survey itself, the ratio of new orders to inventory has fallen consistently and dramatically, from 1.44 in May to 1.03 in August (and down from the August 2009 peak of 1.81). This is indicative of both a slowdown in activity and an inability to move inventory fast enough.

In terms of business investment in equipment and computers, the current level of spending is still at 2005 levels. Again, this may seem to bolster the argument that it is at depressed levels, but it is entirely possible that business investment levels from 2005 to the peak in 2008 were due to unsustainable economic activity. If businesses were investing in equipment and computer technology to participate in the credit-inflated economy of that period, then is it reasonable to expect a return to those levels of investment now that the credit-inflation has past? It may be just as likely that those 2005-levels of business investment were too high themselves when analyzing them with a more reasonable expectation of consumer spending levels.

This is demonstrated by the continued stock of excess production capacity. Capacity utilization fell from 82% in mid-2007 to a low of 68% in June 2009 (the reversal in capacity utilization coincides with the turnaround in the Conference Board’s CEI). Capacity utilization has steadily advanced to just under 75% in July. But even that turnaround leaves capacity utilization at a



level only just above the low registered during the 2001 recession. More problematic is that a good part of the increase in capacity utilization during the 2002-2005 period was due to shrinking overall capacity. Total production capacity fell about 0.8% during that three-year period, finally turning around in 2005.

The same process is repeating itself. Total production capacity has fallen about 0.5% since August 2009. If capacity utilization rates are to even approach previous peaks (85% in 1994 & 1997, 81% in 2007) it will require a massive increase in production or a radical reduction in capacity. The more the economy tends toward a slowdown, the more business will have to consider permanently reducing production capacity rather than wait for the “promised” recovery that always stays just around the corner. This will become even more acute if credit availability continues to decline.

A significant reduction in capacity means that all sorts of used equipment floods the markets, competing with new equipment in terms of volume *and* price. So another reduction in business investment is not really out of the question.

This data also tends to validate our interpretation of the artificial economy. The ability to produce greater amounts of goods (or services in the bigger sector of the economy) with lower amounts of capacity is due to productivity. But if productivity has grown so much just since 2008, then much of the growth in capacity since 2005 is now unnecessary (it wasn't all that much to begin with, but it was still positive). So extrapolating this through to continued weak final demand, then the economy only really needs to have a capacity equivalent to that of 1996, or some 41% less than available in 2010 (or 35% if we go with the 2007 high of 81%).

We certainly do not expect to see a reduction in capacity as drastic as these numbers suggest, but even if the total real

need for capacity is a fraction of those depressed levels, it means that business investment can certainly decline significantly.

If we again use the 2002-2004 recovery period as a guide, we see that total business investment in computers and equipment fell 14% peak to trough (Q3 2000 thru Q1 2003). During the period of contracting total capacity business investment fell about 8%. Extrapolating these figures to the 2010 recovery period would mean another decline of around \$80 billion in business investment. But total capacity has only declined by 0.5% since August 2009, meaning it may have much farther to go than just \$80 billion.

Looking at this another way, business investment started the capacity expansion period (2005 – 2009) at an annual rate of about \$950 billion. Since we contend that much of consumer and business spending during this period was artificially created by price action in homes and stocks, as well as massive credit usage, then we can reasonably (and arguably) assume that much of the increase in business investment (and consumer spending, discussed later) was also artificially based, and not to return until the economy has reallocated resources to sustainable growth projects (which has not happened due to the structural nature of the economic dislocations and excessive government interference).

The annual rates of business investment spending were above \$1 trillion for most of the period, and above \$1.1 trillion for all of 2007 and most of 2008. This serves as a standard for demonstrating our level of “artificial”. The \$1 trillion annual rate achieved in the second quarter of 2010 should likewise be viewed as unsustainable, even adjusting for inflation.

The combined effects of low capacity utilization and high rates of business investment could potentially mean another nasty slowdown in business spending. And



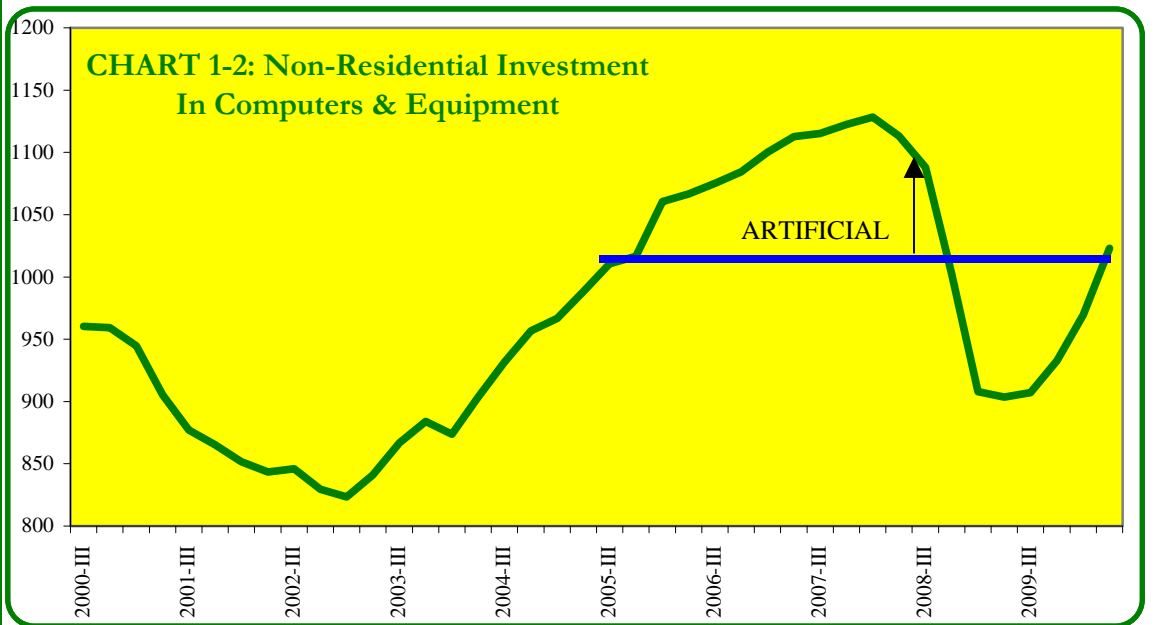
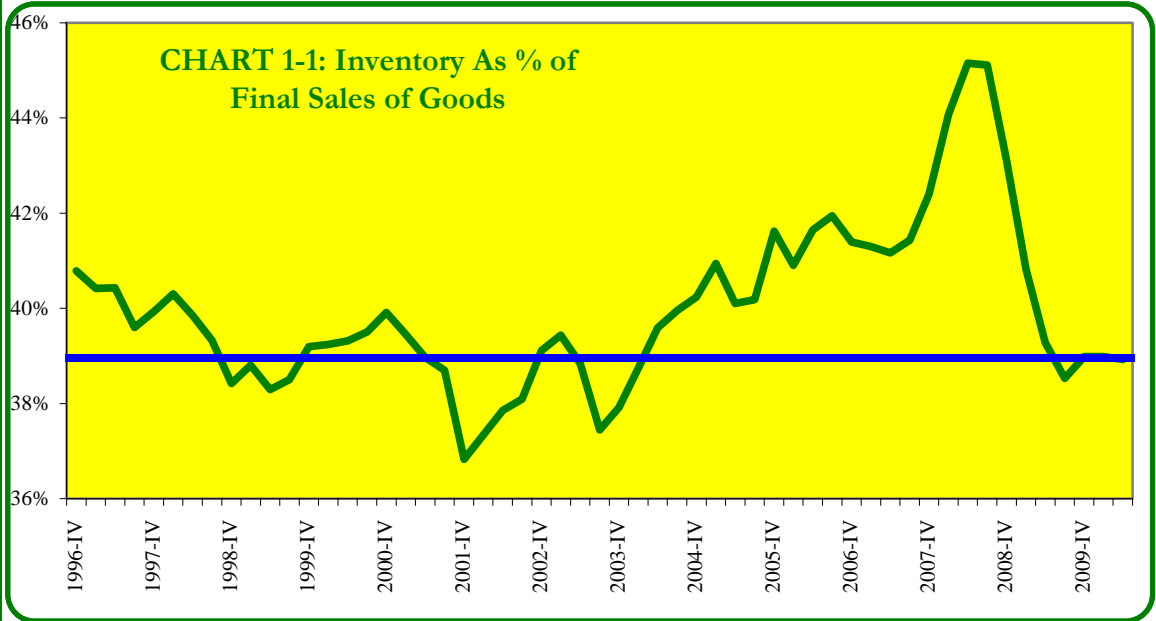
this may just explain the 8% decline in capital goods spending that “unexpectedly” appeared in August, and why Intel cut its revenue forecast by 3% - 7% on August 27.

It is not hard to imagine another slowdown in inventories and business investment if you look at the data in the context of common sense. If you analyze this data in

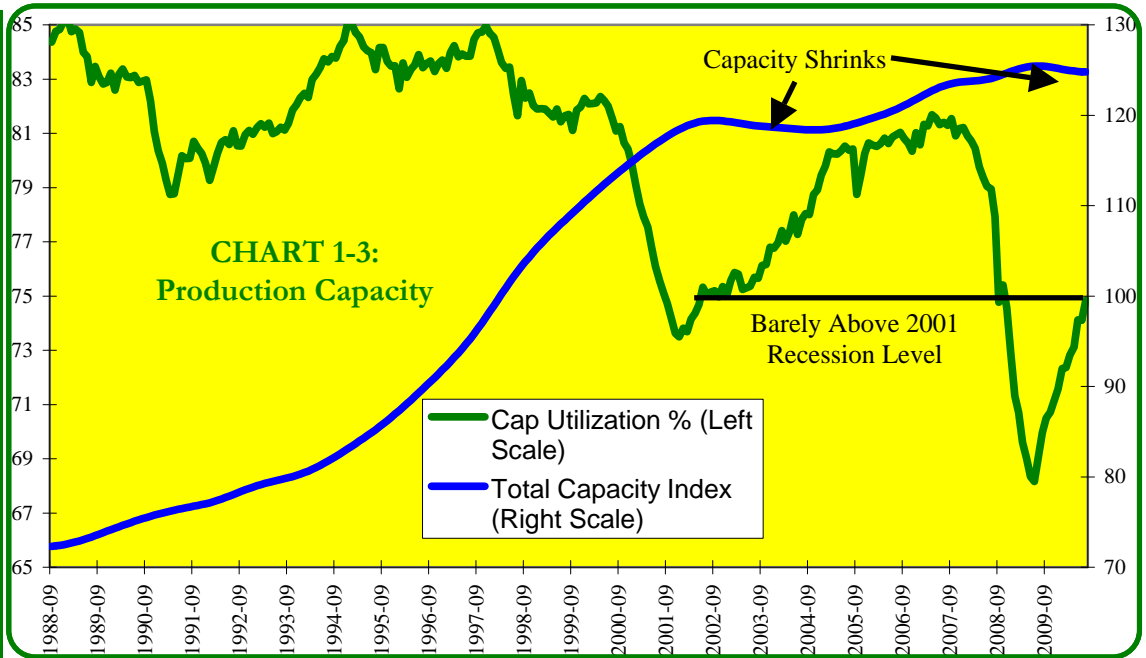
the orthodoxy of the “science” of economics you may actually believe that M2 growth and a steep yield curve are enough to keep the economy on a slowing growth trajectory. Or you can just blindly follow this September 1 Bloomberg headline, “Economy Avoids Recession Relapse as Data Can't Get Much Worse”<sup>3</sup> without ever investigating its veracity.

Inventories, though low in relation to sales, are still well above recent lows. Just going by recent history suggests that inventories can still decline significantly.

Business investment in equipment and computers is reaching levels seen during the height of the housing bubble. It may have to decline again as revenue growth fails to materialize. This is especially true in light of Chart 1-3 on the next page.



After growing rapidly during the innovative 1990's, capacity has stagnated for much of the 2000's. Utilization has dropped precipitously and has a long way to go to recover. This implies that the capacity overhang is not going to be overcome in the short-term by rapid inventory growth. Rather, overall capacity likely has to shrink much more.



## Part 2 Self-Similarity

Nassim Taleb's "Black Swan: The Impact of the Highly Improbable" has made an impression on commentators, portfolio managers and regular investors. Everyone, it seems, is on the lookout for the Black Swan, the highly unlikely event that cannot be predicted (at least by conventional probability regimes). But looking for a failed US Treasury auction or Israeli strike on Iran misses the real point. A true Black Swan is not an earth-shattering event, it is more likely to be something seemingly benign such as a sale of 100 shares of some stock for a client on a truly non-descript day - and two weeks later the market crashes. It is the "butterfly effect", some version of which you have probably heard of.

I said in the Introduction that the Panic of 2008 was a result of crushed expectations and forced liquidation, but that any panic in 2010 may not need the forced liquidations to amplify the selling. To explain exactly what

I mean by this I will detour into other disciplines for a moment.

In the early 1990's, engineers were beginning to think ahead about managing network traffic in a broadband environment. This posed many unique challenges that were just beginning to be understood; particularly as computer networks were becoming more complex and less uniform. The challenge for any network environment was to ensure that the network was reliable and functioned continuously. That meant that each node within the network had to have a robust set of controls that allowed it to predict when to send data packets. The main goal was to assure that data packets made it from origination to network egress without loss. This meant rigorous models for predicting network data traffic had to be built.



An oft-cited 1993 paper by Leland, Taquq, et al., titled “On the Self-Similar Nature of Ethernet Traffic”<sup>4</sup>, describes this in detail<sup>5</sup>:

“In the absence of a central controller allocating access to the channel, a *random access* procedure is used in which each station decides independently when to transmit its packet. If an Ethernet station wants to send a packet, a *carrier sense* technique is first applied and forces it to defer transmission if some other station is transmitting a packet. It will wait until the packet has passed before transmitting its own packet. Collisions can nevertheless occur, because two or more stations can sense the channel to be idle and start transmission simultaneously. However, since each sender continues to monitor the channel during transmission, it can provide collision detection when the signal on the channel does not match its own output. In that case, each station interrupts transmission, uses a collision consensus enforcement procedure to ensure that all other colliding stations have seen the collision, and then stops. Retransmission is then scheduled for some later time, but in order to avoid repeated collisions, each station waits for a random period of time before retransmitting. Furthermore, to avoid overloading the channel (i.e., making the system unstable), a *binary exponential backoff* algorithm is employed and guarantees that the range of the retransmission interval increases properly in times of heavy load of the system.” [emphasis in original]

The binary exponential backoff algorithm regulates the retransmission mechanism, but they were originally based on conventional probability distributions. This led to problems since traffic across the LAN’s in reality was not following predicted patterns<sup>6</sup>:

“Leland and Wilson (1991) present a preliminary statistical analysis of this unique high-quality data and comment in detail on the presence of “burstiness”

across an extremely wide range of time scales: traffic “spikes” ride on longer-term “ripples”, that in turn ride on still longer term “swells”, etc. This *self-similar* or *fractal*-like behavior of aggregate Ethernet LAN traffic is very different both from conventional telephone traffic and from currently considered formal models for packet traffic (e.g., pure Poisson or Poisson-related models such as Poisson-batch or Markov-Modulated Poisson processes (Heffes and Lucantoni (1986)), packet-train models (Jain and Routhier (1986)), fluid flow models (Anick et al. (1982), etc.)” [emphasis in original]

The “burstiness” waves that this paper focuses on were behaviors described by Benoit Mandelbrot as “multi-fractal geometry”<sup>7</sup>. What conventional probability distributions described as nearly impossible or remote were occurring on a regular basis. Self-similarity refers to patterns in complex systems (human and natural) that reoccur at any scale. In other words, an object in which part of the whole resembles the whole.

Multi-fractal geometry is the study of self-similar properties embedded within complex systems. The waves of “burstiness” described by Leland and Wilson refer to the same traffic pattern at different time scales, none of which were predicted by the random probability distributions currently used. One of the reasons for this is that conventional probability distributions assume a randomness to behavior. That is, what happened yesterday (or at the iteration just before current observation) has no impact on what happens today. In reality there is a reoccurring pattern that can have serious affects on down the line. That cascading pattern in a system approaching or at criticality (imbalance) can have serious consequences.

There is a measure of self-similarity, called the Hurst parameter, or  $H^8$ :



“The fact that the Hurst parameter  $H$  captures the intuitive notion of burstiness in a mathematically rigorous manner through the concept of self-similarity and, at the same time, also seems to agree well with the visual assessment of bursty behavior challenges the feasibility of some of the most commonly used measures of “burstiness”.”

Network traffic design must take into account congestion avoidance. Congestion avoidance is “basically a prediction problem and involves detecting when congestion is imminent, and taking actions designed to prevent it.”<sup>9</sup> The problem of burstiness in self-similar systems makes that prediction process difficult using the normal probability architecture. Until they controlled for self-similarity and began to use a multi-fractal approach, the networks were prone to these patterns or bursts that would degrade or collapse the network.

So how does all this relate to the stock markets? First, the stock markets are complex systems. If we think of stock trading along the lines of network traffic, then the issue of “burstiness” ascends in importance. After all, a market crash event is nothing more than a burst of sell order traffic. If the stock market is supposed to maintain a decent balance of buyers and sellers, then the mechanism of stock exchange is a lot like congestion avoidance predictions described above. Ensuring market operation without breakdown or interruption is a function of predicting burstiness. The fact that this prediction function is done by individual stock market participants rather than a central controller nearly exactly replicates the network traffic problem.

Conventional probability theory about market crashes relegates them to the tails of the probability distributions. They are five-sigma events (events so rare that they are five standard deviations from the mean) that do not demand rigorous protection. And since there was a panic only two years ago,

conventional probability puts the odds of another one at something less than remote.

But lost in current probability theory or randomness is the idea of self-similarity, that there are patterns within complex systems that replicate throughout any timescale. The thought experiment commonly used is a pile of sand. Building a pile of sand one grain at a time produces a system that appears to be stable and may appear to be in equilibrium. But as the pile grows larger and larger, a single grain of sand can set off an avalanche. The avalanche can be any size and occur on any side of the pile. One second the pile of sand was stable, and the next second a single grain of sand produces a catastrophe.

This is because the pile of sand is really not stable; it is in a state of criticality or disequilibrium. The fact that it stood in a state of criticality for a long time says nothing about its stability. In fact this is precisely the point of the “Minsky” moment: that a system can appear stable, but in a state of criticality the longer it appears stable the larger the potential for disaster. And even if the disaster is large, as in an avalanche on the sand pile, it may not still represent the true potential for catastrophe.

Let’s say that the sand pile has grown rather large, and that a single grain of sand set off a seemingly large avalanche, but that large avalanche did not restore equilibrium. Rather, it only affected some of the areas of instability while keeping others in a state of criticality. The fact that new grains of sand can be piled on without immediately triggering additional avalanches says nothing about the potential for another avalanche, large or small. The pile of sand after the first avalanche can remain in a critical state for another grain of sand or for an infinite number of grains. In a state of criticality the potential for another avalanche is not a function of randomness.

Traditional probability theory ignores any self-similar characteristics in the pile of



sand. In its view of randomness, the presence of the first avalanche, because it was pre-determined as a rare event, renders the occurrence of second avalanche rarer still. But the reality of the complex system in critical state is that the avalanche did not necessarily restore equilibrium, therefore there is no randomness to the probability of the second avalanche.

Where this theory meets the real world is the trading strategies of large market players. Almost every institutional trading firm (or desk) will only take hedged equity positions. The amount of hedging required and the application or triggers for those hedges are calculated using standard probability theory, particularly the use of standard deviation (volatility) as the primary parameter. But using a volatility measure that is based on randomness misses the issue of criticality. Because extreme movements are determined to be “rare” by standard probability theory they are not even considered. Instead, hedges are designed to withstand movements of only a few standard deviations.

A further flaw in randomness, as we mentioned above, is the forgetfulness of the data. The further away from a large market movement the data progresses, the less impact it has on the time series calculations. Eventually it disappears altogether as standard calculations focus on the recent past, not the whole past. In the context of our sand pile discussion this is extremely dangerous. In a complex system that exhibits self-similarity, the first avalanche may only be a sign of criticality. Rather than assuming the avalanche has worked to restore equilibrium, it is just as likely that the avalanche has created additional *instability*. Rather than relieving systemic pressures, it may have added to them within the critical state, meaning that the next avalanche (or series of avalanches) will be truly catastrophic.

So hedge funds and large institutions carry out their hedging activities assured in the

## MORE HFT DANGERS

*ZeroHedge (www.zerohedge.com) has covered HFT extensively, long before anyone had really heard of HFT. The links below, and the link to the Bouchet-Franklin paper quoted in Part 2 were provided by ZeroHedge.*

A report that is gaining attention from Nanex provides evidence for more nefarious HFT practices. Among these is something they termed “quote stuffing”. HFT algorithms send massive amounts of quotes per second to exchanges to either confuse other HFT algorithms (they have to sort out which ones are the real quotes and which ones are noise, giving the quote stuffer a millisecond trading advantage) or produce a kind of latency arbitrage.

The latency arbitrage is a function of the inability of the NYSE (mainly) to process so many quotes at once, delaying the dissemination of quotes to other market participants (except those on a premium service). This disconnect between the real quotations within the trading system and what most investors actually see presents an arbitrage opportunity.

Not only is this a questionable practice, it may have been a prime contributor to the flash crash, from the Nanex Report:

“While analyzing HFT (*High Frequency Trading*) quote counts, we were shocked to find cases where one exchange was sending an extremely high number of quotes for one stock in a single second: as high as 5,000 quotes in 1 second! During May 6, there were hundreds of times that a single stock had over 1,000 quotes from one exchange in a single second. Even more disturbing, there doesn't seem to be any economic justification for this. In many of the cases, the bid/offer is well outside the National Best Bid/Offer (NBBO). We decided to analyze a handful of these cases in detail and graphed the sequential bid/offers to better understand them. What we discovered was a manipulative device with destabilizing effect.”

[http://www.nanex.net/20100506/FlashCrashAnalysis\\_CompleteText.html](http://www.nanex.net/20100506/FlashCrashAnalysis_CompleteText.html)

Another account, including more analysis from Nanex on the flash crash and the role of quote delays:

[http://assetinternational.com/ai5000/channel/NEWSMAKERS/NYSE\\_Confirms\\_Price\\_Reporting\\_Delays\\_That\\_Contributed\\_to\\_the\\_Flash\\_Crash.html](http://assetinternational.com/ai5000/channel/NEWSMAKERS/NYSE_Confirms_Price_Reporting_Delays_That_Contributed_to_the_Flash_Crash.html)

These links should be required reading for anyone that wants to know what is happening in the HFT darkness.



random nature of collapse. But when the truly large avalanche occurs, they are forced to react in ways that their hedges were designed to prevent. In the case of severe and “unexpected” market declines it means liquidations on a large scale, adding to the “burstiness” of sell orders. By not being prepared for the real risks that lie outside of their hedged scope, the entire system is awash in unseen risk.

Bringing the sand pile analogy together with the data from the network designers, we can begin to piece together risks currently building outside of “random”. If we think of the May 6, 2010, “flash crash” as an avalanche on the sand pile, we can begin to build a theoretical framework of a complex system in the critical state. Further, if we add some data that pretty conclusively demonstrates the self-similar characteristics within the stock market, we really begin to fill in a picture of a market in crisis.

On June 29, 2010, Reginald Smith of the Bouchet-Franklin Institute in Rochester, NY, published a paper online titled “Is high-frequency trading inducing changes in market microstructure and dynamics?”<sup>10</sup>. The purpose of the study was to demonstrate a marked change in stock market characteristics as high frequency trading (HFT) has evolved into a market dominating force.

In June 2005 the SEC revised Regulation National Market System. While some of those revisions were minor,

“...the biggest change was Rule 611, also known as the Order Protection Rule. Whereas with the Limit Order Display rule, exchanges were merely required to display better quotes, Reg NMS Rule 611 mandated, with some exceptions, that trades are always automatically executed at the best quote possible. Price is the only issue and not counterparty reliability, transaction speed, etc.”<sup>11</sup>

This rule change made it possible for HFT to expand and grow rapidly. Using June 2005 as a benchmark, the paper outlines the changes in market structure that can be traced to the expanding HFT usage. First is that average trade size has shrunk considerably on exchanges. Second and more importantly, the increase in HFT after 2005 seems to have introduced or enhanced self-similarity.

“The first clear feature is a trend across all stocks for the time periods shown. For the NYSE stocks, the Hurst exponents increase from 2002 onward but by late 2005 barely break the average of  $H=0.55$ . Therefore, during this time (and before), short term trading fluctuations do not appreciably depart from an approximation of Gaussian white noise. However, once Reg NMS is implemented the structure of the trading noise begins to change rapidly increasing to 0.6 and beyond in a couple of years. This is a new behavior in the high-frequency spectrum of trading data that indicates increasingly correlated trading activity over increasingly shorter time scales over the last several years. Correlations previously only seen across hours or days in trading time series are increasingly showing up in the timescales of seconds or minutes.”<sup>12</sup>

This study used fourteen stocks (seven on the NYSE and seven on the NASDAQ) so it is possible that any self-similarity is limited to them. But this analysis of the data makes intuitive sense in the context of the decreasing average shares per trade and the fact that HFT volume now accounts for anywhere from 60% to 70% of all market volume. It is also pretty clear from the evidence presented that the change in Hurst exponent occurs for the NYSE stocks exactly when Reg NMS is altered by Rule 611.

Just how HFT trading is leading to self-similarity is unclear, and there may be a tendency to go too far into causation. It is still possible that the flash crash and the



strange movements of individual issues (Procter & Gamble on May 5 during the crash, Washington Post and other stocks we mentioned in our June 2010 Special Report) since are random, one-off events that are caused by individual news or events. But if we take the increase in self-similarity at face value and evaluate it in the context of what we know of network “burstiness” we begin to see something larger.

Again, if we think of the market like network traffic control, burstiness is essentially having everyone on the same side of a trade (network nodes all transmitting data packets at the same time). The stock markets are supposed to stay within balance, as in sellers and buyers being pretty much even to keep stock prices from fluctuating too much. But if we have a self-similar system creating periods of burstiness, then we would expect to see periods where traders all seem to be on one side of transactions. Not only would we expect something like the flash crash, but we also expect stocks to rise with little apparent fundamental underpinnings. This has been especially apparent on days when there is little volume, suggesting that when fundamental investors stay home for whatever reason, the burstiness results in a material rise in stock prices.

The fact that fundamental investors are continually exiting the stock markets may mean that criticality will be a continuous market feature. How is it possible that we have had so many odd stock movements just in the past few months? On August 26, Core Molding Securities was untraded until 2:19 pm when a series of massive sell orders took the stock from \$4.21 to \$0.0001 in less than two seconds<sup>13</sup>. Of course the NASDAQ cancelled all the trades below \$3.94 (where exactly did they get that number from?) but this kind of activity has gotten more frequent. It points to a system that is not in equilibrium, and where burstiness can have profound effects.

There is no arguing that fundamental investors have been withdrawing from the stock market (see Part 3). If fundamental investors are the balance to swings in stock prices generated from HFT or momentum players, then a lack of fundamental investors would leave the market dangerously unbalanced. Again, back to the sand pile analogy, what if the 2008 Panic did not “cleanse” the market of imbalance, but rather fundamentally altered its construction and operation? And that the “flash crash” of May 5 was another avalanche directly related to that alteration. It is possible that these avalanches are creating greater instability, not less. In the sand pile, smaller avalanches can be punctuated by periods of seeming stability while true instability grows as each successive avalanche alters the state of balance. Eventually, all it takes is one single grain of sand to set off a collapse of the entire pile.

I am not contending that we are on the brink of an historic collapse of the financial system. Instead, I believe that as the nature of the markets is changing, due in large part to these avalanches, the probability of another avalanche (perhaps even a huge one) is *rising*.

The massive outflows from equity mutual funds was somewhat balanced in 2009 by inflows into exchange traded funds (ETF). The self-similarity we are witnessing is certainly a partial product of HFT and ETF actions being highly correlated with one another (HFT’s typically follow only a couple of strategies while an increase in ETF’s leads to more market-wide or sector-wide movements as opposed to movements in individual names).

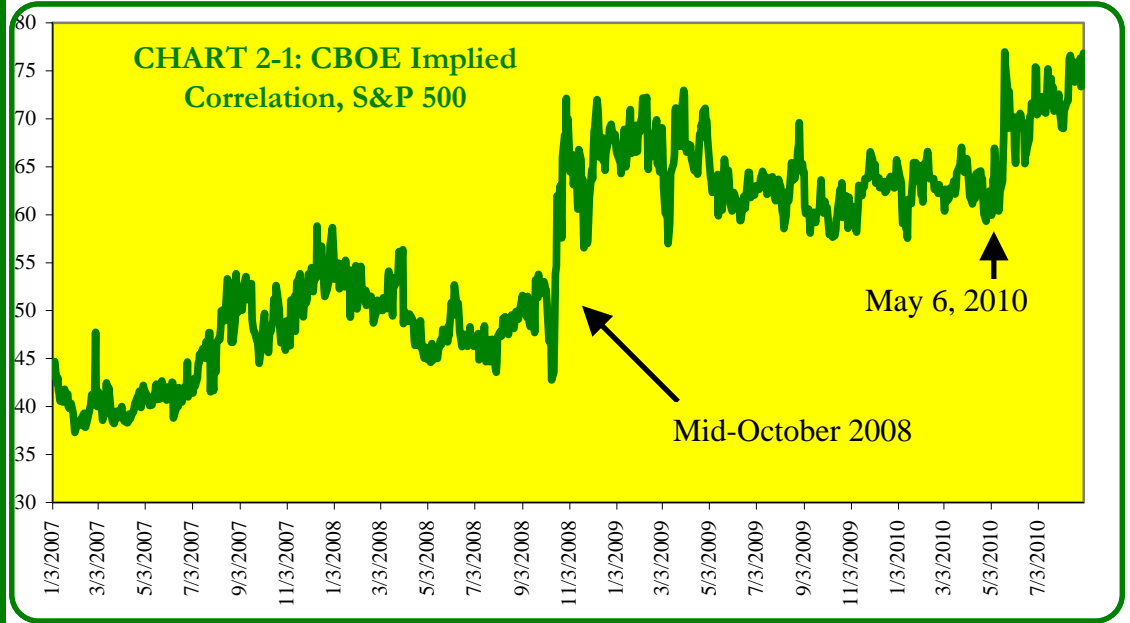
Since October 2008, implied correlation within the stock market (more specifically the S&P 500) has risen on average (Chart 2-1). In 2010 alone, implied correlation has risen even further, particularly since late May. In fact, correlation has consistently risen to levels not seen since the fall of 2008.



The implication of all these data points is, in my estimation, a market that is adding instability and remaining in a state of criticality. Not only is there the danger of burstiness, but the high levels of correlation mean that any single episode of burstiness can push the entire market at once. Given

the probability (not a random probability either) that the economy is moving against expectations, it may be reasonable to expect much more burstiness on the sell side. And it may only take one grain of sand, one small trade, to set it all off.

Correlation of individual stocks within the markets rise as with investor fear. The first increase occurs with the onset of the credit crunch in mid-2007, ending with the collapse of Bear Stearns. There is calm in the summer of 2008 before the liquidation events drive correlations to new highs. After drifting slowly lower (but remaining elevated) correlations have risen dramatically since the flash crash.





## Part 3 The Myth of Valuations

Bulls continue to say that the market is cheap and valuations are at extremely low levels. Again, in normal times I may agree with that statement, but these are not normal times.

The real test of market valuations is not to use Price/Earnings (PE) ratios as definitive measures, but as relative measures of alternative uses of money. This goes beyond comparing alternative investments. Stocks were cheap in 1982 precisely because investors could own a 15% US Treasury bond. The calculus for stock valuation is really a function of investor preferences.

Ratio compression is thought to be the sole function of interest rates. Indeed, in 1982, single digit PE's were a function of high inflation and high interest rates. But that does not tell the full story. Consider the low interest rates of the early 1930's. Market PE's then were also compressed into single digits.

Rather than degenerate into an argument of hyperinflation vs. deflation, we can see that ratio compression is really about where investors need money the most. In other words, it is not always the E that drives market valuations. If we break down the history of the S&P 500 since 1929 into segments of rising or declining PE ratios, we begin to see that it is either the denominator *or* the numerator that drives valuations, not both at the same time.

In the 45 separate time periods of distinct PE movements up to October 2007<sup>14</sup>, we see that in 34 of those periods prices are moving in the opposite direction from earnings. Not that they are moving in the same direction to different degrees, but they are moving in *opposition* to one another. On seven other occasions prices and earnings are both moving higher, but two of those occur back to back in the periods from February 1992 to July 1999. In both of those cases, even though prices and earnings are moving in the same direction, the degree of movement is massively different. The same can

be said of the four month period ended November 1957, where both are declining but at vastly different rates.

So what we can tell from this data is that in 37 of the 45 periods the change in PE ratios is due to prices not agreeing with earnings. And in the vast majority of those cases, one moves significantly higher while the other *declines outright*.

During the period after October 2007, we see PE ratios run through the roof as both earnings and prices fall drastically (with earnings falling much faster, getting close to zero). Then after March 2009, prices and earnings both rise dramatically (with earnings moving faster off their lows). This is unprecedented in this series going back to the market peak of 1929.

Some of this confusion is probably due to the mathematical problems with the near-zero earnings trough in March 2009. So if we cut off the period from March 2008 through March 2010 we can normalize the series. In doing so, we see that PE's have fallen largely through the same historical process: prices have fallen while earnings have risen (that's right, earnings in March 2010 are higher than those of March 2008). The same result holds no matter where we cut off, prices are falling and earnings are rising in relation.

The process driving this PE compression is simply investor preference. In these unusually turbulent times, with massive interference in markets and the economy, investors now prefer safety through liquidity and principal protection. That is what the movement of bond prices is certainly telling us, especially in US Treasuries and Investment Grade bonds.

Since the beginning of the year retail investors have pulled out almost \$15 billion from equity mutual funds, while adding \$210 billion to bond funds. The trend intensified for equity funds after the flash crash – retail investors have



pulled out \$51 billion for seventeen straight weeks (and counting) from the beginning of May through late-August. This means that these same retail investors have only added \$17 billion in equity mutual fund holdings since the bottom of the market in March 2009<sup>15</sup>!

Over the same time period, there has been a dramatic shift in other household assets. The banking system saw a decline of almost \$400 billion in time deposits (CD's), but gained \$800 billion in savings deposits, while retail money funds have seen \$316 billion in withdrawals. Individuals shifted 28% of their CD's balances and 30% of their money market funds to add to savings account balances. Why would such a major change occur?

The answer is liquidity and safety. Without a large interest rate spread to attract time deposits, individuals would much rather be liquid. The same is true for money market funds, since it appears that the SEC rule change allowing for suspension of redemptions and the mandated effective maturity maximum of 60 days is weighing on the minds of investors. All else being equal (interest rates), individuals are choosing to be as liquid as possible in the safest vehicles possible. The mutual fund holdings data confirms that explicitly.

There is another reason for the liquidity preference beyond fear. It is the lack of solid income sources we have been talking about for several years. With a persistently weak job market and an extremely bad fixed income investment climate, households and consumers are maintaining liquidity in case of adverse individual conditions.

The distinct lack of available credit is also a major factor in this calculation. And we can thank our old friends at the FASB for a lot of this (see our November 2009 Special Report for a full analysis of FAS 166 & 167). Looking at the balance sheet of the banking system at first it appears that consumer credit has expanded by about \$250 billion at large banks and \$37 billion at small banks since July 2009. But if we look at the off-balance sheet moves mandated by FAS 166 & 167, we see that large banks moved \$315

billion in consumer credit onto their balance sheets, while small banks repatriated \$65 billion. Adjusting for these movements, consumer credit has actually *declined* by \$93 billion.

And that was the easy part of the accounting changes. Large banks still have \$1.37 trillion in off-balance sheet securitized real estate loans while small banks have \$25 billion. Neither of those balances have changed much since July 2009, meaning there will still have to be some onboarding of loans already made years ago (not all the securitizations will be moved), which will certainly displace even more potential new lending.

Large banks as a group have expanded bank credit by about \$173 billion - \$136 billion was in US Treasury securities alone. They dropped \$50 billion in other securities, \$110 billion in commercial and industrial loans and \$97 billion in real estate loans, to accommodate the \$300+ billion in old consumer credit loans. Small banks show a similar story, increasing bank credit by \$68 billion, of which securities (mostly US Treasuries) were \$30 billion and the old consumer loans were \$37 billion.

The banking system is simply allocating available capital to US Treasuries and old consumer loans. And that is it. We described the preference for Treasuries in our March 2010 Special Report (Fed policy, limited available leverage). The fact that there is no available credit now and there is not likely to be any in the intermediate future feeds the preference for liquid safety.

Going back to the potential for PE compression, each generational low in PE's corresponded with the same type of equity avoidance. From a valuation perspective, each of the three periods highlighted by Chart 3-1 show exactly the same compression. Stock prices fell during each of those periods despite the rapid increase in underlying earnings. In the first (1938-1942) and third periods (1972-1980) the PE compression is certainly a function of inflation. But in the first period, interest rates did not rise nearly as fast as inflation did as wartime restrictions were put in place. It was also a



period where savings were nearly universally directed to US debt (avoiding stocks). In the third period, interest rates followed inflation throughout. This provided a favored investment alternative to stocks.

In the second period (1946-1949) inflation began running higher almost immediately through early 1947, but then moderated through early 1949. The economic contraction in that year produced a small bout of deflation but interest rates were relatively constant throughout. Irregardless, earnings rose consistently throughout the period meaning that they were not the primary driver of equity valuations. With inflation falling through most of the period, it was not the primary setter of valuations either.

What seems to be driving equity valuations through that period is nothing more than the same investor preferences that we see today. At either end of the period we have rather nasty economic contractions. In between there is a period of rapid growth and rapid inflation. This might fairly be termed as a short period of extreme instability. During such periods it is no surprise that equities might find themselves out of favor.

Household income growth was robust throughout the entire period until the second quarter of 1949. The savings rate averaged 10.2% in that timeframe, including an average of 13.3% in 1948 alone. But the other side of the household balance sheet really tells the story. From September 1945 through May 1947 consumer credit growth averaged more than 3% *per month*. That was by far the fastest and longest buildup of credit in the last eighty years. Real estate loans jumped 55% from 1947 through mid-1949, increasing by 27% in 1947 alone. In other words, this period produced one of the largest debt hangovers in history.

With so much uncertainty and balance sheet impairment, regardless of the postwar emotional

high and extremely robust corporate earnings, equities were simply out of favor for investors. Liquidity and safety were the primary concerns. So while households were taking a breather from debt growth during this economically sensitive period, even though there was really no compelling alternative investment (from an interest rate perspective) equities were not just disfavored, they were avoided.

In 1948, as inflation was dropping but before the recession, the market enjoyed a nearly 15% respitive upswing in prices; earnings grew 27%. As the economy began to weaken into 1949, the market gave all of those gains back despite the fact earnings continued to grow robustly, producing the generational low PE ratio.

The main point about PE compression is not that there needs to be inflation and high interest rates to attract money away from stocks. Robust growth in earnings is not necessarily the main driver of equity valuations. In the current climate, it is pretty clear that earnings are experiencing the same kind of irrelevance (much to Wall Street & CNBC's collective consternation). With a lack of alternate sources of spending, and with uncertainty surrounding future prospects, investors are favoring the liquid and safe (and the shenanigans due to HFT are only cementing this disfavor).

Earnings in this case are really only important in the sense of timing – if earnings continue to advance then the next generational low in PE values will come much sooner. However, if earnings growth slows, or even reverses, the PE low moves further into the future or falls to a much lower price level. In either case, there is no valuation floor being provided by a currently “cheap” PE. The ratios are not standalone assessments, but are captive to the parameters that affect investor preferences (including, but not limited to, inflation and interest rates). Stocks will not be considered cheap until the dynamics *outside* of earnings are settled.

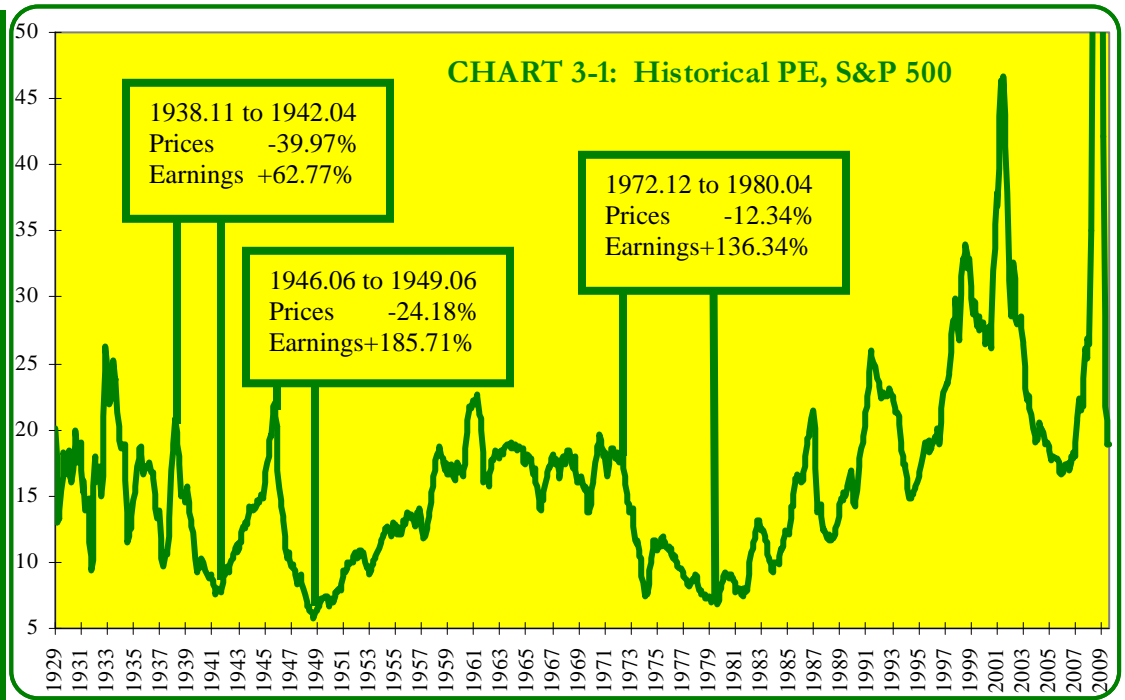


	S&P Comp	% chng P	% chng E	Dividend	Earnings	PE
1929.09	31.300			0.94	1.55	20.2
1932.06	4.77	-84.76%	-67.14%	0.66	0.51	9.4
1933.07	11.23	135.43%	-16.18%	0.47	0.43	26.3
1935.03	8.41	-25.11%	70.76%	0.45	0.73	11.5
1936.03	14.86	76.69%	8.22%	0.50	0.79	18.8
1937.11	11.2	-24.63%	46.84%	0.79	1.16	9.7
1938.10	13.06	16.61%	-45.98%	0.61	0.63	20.8
1941.09	10.24	-21.59%	89.89%	0.70	1.19	8.6
1946.06	18.58	81.45%	-29.41%	0.68	0.84	22.1
1949.06	13.97	-24.81%	185.71%	1.02	2.40	5.8
1952.12	26.04	86.40%	0.00%	1.41	2.40	10.9
1953.09	23.27	-10.64%	6.25%	1.42	2.55	9.1
1957.07	48.51	108.47%	34.77%	1.74	3.44	14.1
1957.11	40.35	-16.82%	-0.97%	1.78	3.40	11.9
1959.01	55.62	37.84%	-12.93%	1.76	2.96	18.8
1960.03	55.02	-1.08%	14.40%	1.94	3.39	16.2
1961.11	71.08	29.19%	-7.28%	2.00	3.14	22.6
1962.06	55.63	-21.74%	10.39%	2.06	3.47	16.0
1964.07	83.22	49.60%	26.13%	2.40	4.38	19.0
1966.10	77.13	-7.32%	26.20%	2.88	5.52	14.0
1967.09	95.81	24.22%	-4.04%	2.92	5.30	18.1
1968.03	89.09	-7.01%	2.64%	2.95	5.44	16.4
1968.12	106.5	19.54%	5.88%	3.07	5.76	18.5
1970.06	75.59	-29.02%	-4.17%	3.18	5.52	13.7
1971.04	103	36.26%	-4.83%	3.11	5.25	19.6
1971.11	92.78	-9.92%	6.79%	3.08	5.61	16.5
1972.12	117.5	26.64%	14.44%	3.15	6.42	18.3
1974.09	68.12	-42.03%	41.90%	3.59	9.11	7.5
1976.02	100.6	47.68%	-7.50%	3.69	8.43	11.9
1980.03	104.7	4.08%	81.45%	5.80	15.29	6.8
1980.11	135.7	29.61%	-3.47%	6.13	14.76	9.2
1982.03	110.8	-18.35%	0.34%	6.72	14.81	7.5
1983.06	166.4	50.18%	-14.99%	6.94	12.59	13.2
1984.07	151.1	-9.19%	29.63%	7.33	16.32	9.3
1987.08	329.4	118.00%	-5.76%	8.61	15.38	21.4



1988.12	276.5	-16.06%	54.49%	9.73	23.76	11.6
1990.06	360.39	30.34%	-10.52%	11.67	21.26	17.0
1990.10	307.12	-14.78%	1.63%	11.93	21.61	14.2
1992.01	416.08	35.48%	-25.73%	12.24	16.05	25.9
1994.12	455.19	9.40%	90.69%	13.18	30.60	14.9
1999.07	1380.99	203.39%	37.25%	16.29	42.00	32.9
2000.10	1390.14	0.66%	24.92%	16.32	52.47	26.5
2002.03	1153.79	-17.00%	-52.92%	15.73	24.70	46.7
2003.02	837.03	-27.45%	19.07%	16.17	29.41	28.5
2006.07	1260.24	50.56%	157.91%	23.66	75.85	16.6
2007.10	1539.66	22.17%	-1.83%	27.22	74.46	20.7
2010.03	1152.05	-25.18%	-19.67%	21.91	60.93	18.9

PE patterns in each of three time periods are consistently with the overall series. If the numerator (P) is driving the ratio as a whole then the denominator (E) moves in the opposite direction, and vice versa.





## Conclusions

The stock market has entered another dangerous period. Investors that remain have become rather complacent about the dangers of another economic contraction, though less so recently. Trading activity on August 31 and September 1 shows that many still expect a sustainable recovery. Much of this has to do with mistaken beliefs in the yield curve shape and money supply expectations, among other miscalculations. But just as the Fed's "low interest rates = stimulation" belief is being conclusively proven wrong, the misconceptions about credit production in the face of both uncertainty and accounting changes will likewise prove fatal to the economics orthodoxy.

If expectations are again calibrated too much toward sunshine and rainbows, a dose of reality will hit hard. In 2008, it took a massive liquidation event to drive stock correlations to 100%. But with the current market structure horribly imbalanced and susceptible to HFT machinations, liquidations are no longer a necessary ingredient for a sustained selloff (it could still happen, it just is not a prerequisite). As more retail investors leave the markets there is less of a buffer against short-term trading and the imbalance grows. The high implied correlations within the markets simply mean that stocks are likely in a state of criticality. From there, it really only needs a catalyst, which does not have to be a massive, earth-shattering event.

There certainly is the possibility of a news-driven event, or a liquidation-driven process – most likely with currency trading and the massive leverage that has been piled into it. But a true "black swan" would be something that appears to be much more benign. It could be another spike up in initial unemployment claims, or a succession of weaker industrial numbers combined with disappointing retail sales. We have seen many of these in the past few months so another one *shouldn't* be the final grain of sand, except that randomness is an illusion. In this market the avalanche does not need another Fannie/Freddie/Lehman/Wachovia failure

parade to get started. Correlation is already today where it was *after* those failures.

Finally, investors should take no comfort in the supposedly cheap valuations. Every single bull market has begun with generationally cheap PE ratios. Until that happens it is likely that each and every stock revival is nothing more than a bear market rally. Earnings will make little difference to the price of the stocks as a group until investors can resume some form of economic and net worth normalcy. There is simply too much turmoil to consider stocks as a "preferred" investment regardless of whether those overly rosy 2011 earnings estimates ever come to fruition. Even if we accept the sanguine \$90 per share earnings estimate on the S&P 500 for 2011, a generationally low PE of 8 or even 9 still implies a huge decline, let alone one that matches the 5.8 in 1949, or the 6.8 in 1980.

The combination of expectations, correlation, plus a lack of truly cheap valuations are a replica of 2008. Since the Fed has interfered in so many markets it has gotten increasingly tricky to obtain good information from price movements. Therefore it is rather difficult to really get a handle on how bad conditions have deteriorated, and just how much room stocks have to drop. From our position on the economy and our belief that we still have yet to see a real low in valuations, we believe that the decline is likely to be severe. Given this setup and the history of the markets in September and October (allow me another instance of intellectual laziness) the timing is ripe for Panic 2.0.

There is even historical precedence (not that it is needed) for this. In 1890 there was a banking and stock market panic caused by a shortage of money. British investors, mainly banks, had been speculating in Argentina since credit was widely and cheaply available in the period before the panic. When these investments soured, Britain began to claim an unusually high amount of gold from abroad, especially the US. After causing a brief depression, monetary



growth was restored due largely to an imbalance of crop productions between the US (strong) and Europe (weak). This caused a massive increase in money due to gold flowing back to the US.

But that respite was short-lived as currency agitation continued (the silver vs. gold debate). By May 1893 gold outflows abroad and internal hoarding had caused a severe decline in money levels. That sent stock prices sharply lower in 1892 and early 1893 (while the business climate was still growing). Then in May 1893 these forces combined into a panic that launched one of the most devastating depressions in US history.

The proximity and circumstances of the dual panics hold some compelling comparisons to today. If we think of subprime mortgages as an analogy to the British Argentine investments, we can see the failure of each causing systemic liquidity problems. After the initial panics money supply grew rapidly, gold inflows due to

crops in the 1890's and Federal Reserve monetization in the 2000's. These intervening money growth periods were both marked by instability, and both only temporarily masked the true underlying problems. The collapse in 1893 was borne out of currency doubts due to government interference (both real and perceived) in the gold convertibility of the dollar.

These parallels are simplistic but should not necessarily be dismissed. Technology may have changed over the past 120 years, but the primal economic instincts at the individual level remain undeterred. In both cases the economic carnage was caused by massive monetary creation and overextended credit. Is it really too hard to imagine that the end result in the 2010's can be similar to the 1890's? Any hubris added in the interim due to the supposed growth in sophistication of both the economy and the monetary is really just an illusion produced by an absolute faith in randomness.



## Endnotes

<sup>1</sup> *New Release*, The Conference Board, August 19, 2010.

[http://www.conference-board.org/pdf\\_free/economics/bci/dswingle.pdf](http://www.conference-board.org/pdf_free/economics/bci/dswingle.pdf)

<sup>2</sup> *Ibid*, Page 2.

<sup>3</sup> “Economy Avoids Recession Relapse as Data Can’t Get Much Worse”, Bloomberg.com, September 2, 2010.

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