STRATEGIC ECONOMIC DECISIONS

Leaders in the Economics of Uncertainty

CLIENT MEMO

Five Delectable Examples of "Stein's Law"

The most basic statement of Stein's Law says: "If something cannot go on forever, it will stop". More specifically, the late Herb Stein stressed that, when a trend cannot go on, it always stops—even when nothing is done about it. This yardstick of common sense is particularly apposite today, as we see in the following five examples of trends whose time has come and gone.

1. Housing: Many people suspected that the housing boom was indeed a bubble. There is no longer any doubt that it was, and for the following ex post reason: For house prices to have fallen as much as they have—*and to do so with no interest rate shock*—is proof positive that a pure bubble was in play. It was a speculative bubble fueled by excess credit creation and lax lending standards. What could not go on did not go on.

2. Financial Services: The growth, profitability and excessive pay in this sector were always too good to be true, and now much of this excess may be over. Between **(i)** the deleveraging of bank balance sheets, **(ii)** the loss of confidence in exotic "financial products" by the investing public, and **(iii)** the need for banks to repay the Fed (or whomever) for existing and prospective bailouts, tepid growth and reduced profitability lie ahead for this sector during the next 5 years. For an analogy, look back on the growth and profitability of the telecom sector between the years 1991-2007, and in particular on the breakpoint of the late 1990s. What could not go on in telecom ceased to go on, and so shall it be in "finance".

3. US Wealth Growth: A March 7 front page headline of the *Financial Times* proclaimed, "Fed Data Alarms Markets – Wealth of US Households Contracts". We have written about "mean reversion in national wealth" for the past five years, and explained why it would have to take place. Due to the actual contraction of family net worth by $500 billion in 2007 and a comparable (probably greater) contraction between now and mid-2009, and due to a 3% - 5% growth of nominal net worth that is likely to prevail between 2009 and 2020, the quarter century era in which wealth growth far exceeded 5.5% GDP growth is over—and over for a far longer period than most investors could imagine.

This will fundamentally change both American politics and daily life. In particular, it will be the final nail in the coffin of hopes of early retirement for most baby-boomers. One of the most fundamental of all theorems in economics tells us that national wealth *must* (and empirically *does*) grow over the long run at the rate of GDP growth. “Wealth reversion” is thus finally coming home to roost. What cannot go on does not go on.

4. Excess Leverage: Commentaries about and explanations of today’s credit market implosion continue to roll in from luminaries everywhere. Martin Feldstein of Harvard (allegedly the most important macroeconomist in the world) concludes that blame lies with the failure of Fed regulators to properly supervise the banks within their purview. Others blame the incompetence of those charged with “risk assessment” for dramatically underestimating risk. They claim that the solution to today’s troubles lies in instituting much more effective risk management procedures.

Still others call for greater market transparency, truth in lending, and incentives to guarantee more of both. Finally, there are repeated complaints about the extent of greed on Wall Street. Yes, we have all become shockingly greedy!

Yet almost no one singles out the distinctive role of excess leverage not only as the principal culprit, but perhaps the only variable than can and should be regulated by government—as it once was. Indeed, in his lengthy and much discussed March 17 Op-Ed piece in the *Financial Times*, former Fed Chairman Alan Greenspan never once cited the role of leverage in wreaking today’s havoc. This oversight is as irresponsible as it was unbelievable, but it epitomizes the deficient analyses of consensus pundits.

Chapters II-IV of our February 2008 ***PROFILE*** report explained how excessive leverage has exacerbated today’s crisis, and why leverage is the principal “control variable” that must be managed in the future. More specifically,

- The Fed has no direct control over institutions that now make over 70% of all loans. As Chairman Bernanke has stressed in recent months, the Fed’s powers are thus limited in dealing with the kind of crisis now at hand.

- The risks that allegedly should be “properly assessed” are largely *endogenous* in nature. The joint probability distribution characterizing such risk is often *non-knowable*. Think Heisenberg Uncertainty Principle! Because of this non-knowability, glib assertions that recent happenings are “four sigma events” are wholly invalid. For to state that an event is four-sigma implies knowledge of an underlying probability distribution that in fact does not exist and thus cannot be assessed!

- Human nature never changes, and hoping that people will become less greedy and optimally transparent is unrealistic.

- Leverage, however, is controllable. Moreover, since it exponentially amplifies endogenous risk, and in doing so creates “perfect storms” like that of today, the regulation of leverage can accomplish a very great deal, at least in circumstances when such measures are called for.

Yet even in the case of the demise of the Carlyle Capital Corporation, the crucial role of a **31:1** leverage ratio has received scant attention. [We learned of this ratio in the financial press, but cannot vouch for it.] Yet it should have, since it was this excessive leverage that cost investors almost their entire investment.

To sum up, those writing about today's morass seem as ignorant of the reality that excess leverage is largely responsible for what has happened as they are that much reduced leverage is the appropriate remedy for the future.

> Perhaps this oversight is no accident. After all, those who now run our major financial institutions increasingly owe their own fabled fortunes to the utilization of leverage subsidized by the public. Moreover, those financial economists who are handsomely paid to report today's developments happen almost exclusively to be employees of the very same institutions that have created, peddled and profited from toxic CDOs and SIVs.

In short, are we not forced to ask whether the foxes are finally guarding the chicken coop? If they are not, you would never know it. This author is frankly appalled by the failure of those who should know better to single out and stress the all-important role of excess leverage in creating today's crisis. Leverage will end up hurting millions of innocent bystanders far more than any other factor will have done. Hyman Minsky: Where are you when we need you most? And where for that matter are Wisdom and Common Sense?

In this regard, please recall that our final result in Chapter IV (op. cit) was the sketch of a proof of why excess leverage is *bad for society:* It is a non-market "externality" because it dramatically increases the riskiness of wealth growth over time, while failing to deliver any corresponding gain in aggregate societal wealth itself. That is to say, excess leverage creates an "inefficiency" since it generates more pain—but no more gain.

> This is a deep observation that constitutes a paradox within the very foundations of modern financial theory: The irrationally high levels of leverage justified by the <u>Efficient</u> Market Theory via its dramatic underestimation of risk becomes the source of Economic <u>Inefficiency</u> in the precise and revolutionary sense first proposed by Kenneth Arrow in 1953: a misallocation of risk itself. [Recall the reason why the EMT necessarily *underestimates* risk: It implies zero endogenous risk.]

Yet just as Stein's Law predicts, this trend too has had its day. Stay tuned for that large-scale deleveraging of Wall Street and indeed of the consumer that is just commencing.

5. Modern Financial Theory: Modern financial theory *as applied* ranks with string theory in physics as one of the greatest intellectual frauds of our time. Whereas the vacuous pretensions of string theory have finally been exposed (we now know that the theory never generated a single falsifiable prediction), those of "financial engineering" are just beginning to be exposed both in the press and in lawsuits alike.

What is remarkable to us is how this masquerade has continued for as long as it has both at a practical and at a theoretical level.

- At a practical level, it finally dawned on succored investors that you cannot transform a sow's ear into a golden purse. That is, in an era of 3.5% risk-free yields, investors should never have expected that securities yielding 6% could have been "AAA" in the first place. They have now learned that such a risk/return transformation is indeed impossible, notwithstanding claims to the contrary by modern alchemists of finance.

Investors have also been discovering the vacuity of the longstanding claim that "the market correctly prices every security"—arguably the central tenet of the Efficient Market Theory. When the Chairman of the Federal Reserve Board stands up at lunch in New York and asks a packed audience, "Could someone please tell me what this stuff (mortgage-backed securities) is worth?"—then you know the game is over.

The same holds true for the growing realization of the complete inadequacy of today's models of risk assessment. Indeed, this is one of the main points made by Alan Greenspan in his March 17 column. [Greenspan as always is allergic to good theory, so his analysis falls back upon "data analysis problems". But he is on the right track in admitting the sorry state of today's models.]

- At a theoretical level, are those professors of finance and CFA curriculum officials who have peddled efficient market dogma for decades aware of what is really happening? Do they understand that they are witnessing the collapse-in-disgrace of the *fundamental theoretical conceit* that has landed us in today's quagmire, namely: "Armed with portfolio theory, options pricing theory, Arbitrage Pricing Theory, reams of data, and banks of computers, we the Wizards of Wall Street can now optimally assess, price, slice, dice, and manage risk. Government happily is no longer needed to save us from ourselves in times of irrational exuberance."

In Chapter II of our February 2008 report, we discussed what went wrong in the evolution of financial economics. In particular, we retraced the way in which Kenneth Arrow's original 1953 conception of the Economics of Uncertainty was bastardized by the Chicago School a quarter of a century later. Whereas Arrow's theory assumed that agents had diverse opinions about the future and were thus regularly wrong in their forecasts—***wrong, not irrational***—the Chicago School imposed the dogma of Rational Expectation: Agents all know and agree upon the true probability distribution of future news, and are thus never wrong. Moreover, they are assumed to know how to price all such news perfectly, with the result that markets are blithely assumed to price all assets correctly. Assumed, not demonstrated. Yes, assumed, not demonstrated.

> This was the origin of the theory of *Economics Without Mistakes* (our phrase) that lies at the heart of what has gone wrong in global markets. In particular, this was the origin of a family of theories predicting that financial market risk is very small, is fully assessable, is fully priceable, and thus is fully manageable. <u>And this in turn was what intellectually justified today's extremely dangerous levels of leverage</u>. [An agent of a given risk tolerance will be "excessively leveraged" if his models significantly underestimate the true risks at hand. In the real world, some 80% of

total risk is endogenous, not exogenous. Yet in Efficient Market Theory models, there can be no endogenous risk at all.]

Having discussed all this in past commentaries, we conclude on a somewhat lighter vein with a proposal for improved pedagogy in financial theory in the future. In doing so, we express our own version of Stein's Law: Teachings that are absurd are eventually recognized to be absurd, and will cease to be taught to tomorrow's young.

Three Proposed Definitions for an 'Idiot Savant' in Finance

– To Be Inscribed on the Frontispiece of all Future CFA Materials –

First Definition: An idiot savant in finance is a scholar who receives the Nobel Prize for developing models as elegant and useful in practice as their underlying assumptions are preposterous.

Second Definition: An idiot savant is a scholar whose ability to mathematize half-baked half-truths is as impressive as his inability to demonstrate the consistency and establish the veracity of the axioms underlying the theory upon which his "models" are based.

Third Definition: An idiot savant is a scholar whose Nobel Prize is as celebrated as the absurdity of his theory is ignored—even by those who should know better, but who timorously refuse to tear up their own stale resumes.

[Recall the disgrace of the Nobel Prize Committee in 1921 when it could not bring itself to award Einstein his Nobel Prize for Relativity Theory. Despite having been fully confirmed experimentally in 1919, this theory was simply too threatening to the physics establishment, as chagrined committee members confirmed in the twilight of their lives.]