

QUANTUM CAPITAL MANAGEMENT, L.L.C.

November 26, 2007

Debt Deflation and the Comforting Calculus of Value

“A central bank will intermediate only until the costs of intermediation outweigh the benefits.”

— *Ludwig von Mises (paraphrase)*

The late, eminent monetarist, Milton Friedman, often said “there is a great deal of ruin in a nation”. An ambiguous comment, there was hope in its meaning. Friedman, quoting Adam Smith, meant that resilient economies can withstand the shocks of wars and natural disasters and recover with the vitality inherent in a capitalist system. We would extend his meaning to credit contractions as well and we couldn't agree more about the durability of democratic capitalism. But capitalism, like all of us, requires a cleansing from time to time. Curative processes like debt contractions and recessions clear intemperance and imbalance and refocus our energy on productive activity.

It is one thing to talk about the unwinding of credit excess. It is quite another to witness it firsthand. There appears to be a budding awareness that what many have attributed to a “sub-prime mortgage problem” (at varying levels of containment depending on the day of the week), could be the beginning of what interest rate observer James Grant has referred to as an “old testament caliber credit crisis”.

Credit cycles, expansions and contractions of debt, are as old as credit arrangements. The earliest recorded grain trade agreements, employing credit, have been documented back to 3000 B.C. Mesopotamia. Although credit cycles have led to technical advances in lending, throughout history, human behavior has remained remarkably consistent. Credit cycles tell us more about human nature than innovations in consumer finance as they are marked by man's propensity to overreach at cycle peaks and unfailingly suffer paralysis at cycle bottoms.

The current credit crisis traces its roots to the so-called socialization of risk, the 1980's innovation of the bundling, securitization and sale of loan pools called Asset Backed Securities (ABS) to the global investment community. Like most good ideas carried to excess, it has become problematic. The descriptive of some of these securitizations fall under the acronyms CDO, CMO, CLO and variations thereof. Think of them simply and collectively as credit instruments. There was a time, not long ago, when a lender had a vested long term interest in the suitability of a borrower. Adequate collateral and cash flows to support debt service over the term of the loan were prerequisites for deployment of lender capital. But changes in credit issuance delineated refinements among

stakeholders where none had existed before. A necessary distinction among lenders is that those who lend their own money are capitalists. Lenders of other people's money are called bankers and bankers who originate, package and securitize loans are substantively called brokers. From capitalist to banker to broker there is a cascading entropy of interest in long term risk management. What used to be a vetting process to determine who was worthy of capital for the long term, degenerated into a process to determine who fit a statistical profile and could remain credit worthy for a period, just long enough, to unload the loan onto the marketplace. Hypothetical risk replaced actual risk as finance and statistics, being what they are, were manipulated to turn sow's ear borrowers into silk purse securities. To compound the problem, the interests of the rating agencies that rated these securities became increasingly aligned with those who sold them. This conflict of interest inured to the misfortune of those who bought them and disappointment grows almost daily.

The curative process appears to have begun in that these securitization activities have slowed dramatically, at least for the time being. The duration of this process is unknowable. Because of the broad dissemination of these instruments over the last few years, the unwinding of this chapter of credit excess is manifesting itself in places and in ways that many have never dreamed possible. Changes in accounting rules and CEO housecleaning will accelerate the recognition of loss, reclassification of opaque assets and reevaluation of capitalization needs. New asset classification requirements, under SFAS 157, are effective for fiscal years beginning after November 15, 2007 and new bank capitalization rules, under Basel II, are effective January 2010. It is the future flow of credit, however, and the economy's intermediate term response to new credit creation that is the pertinent issue.

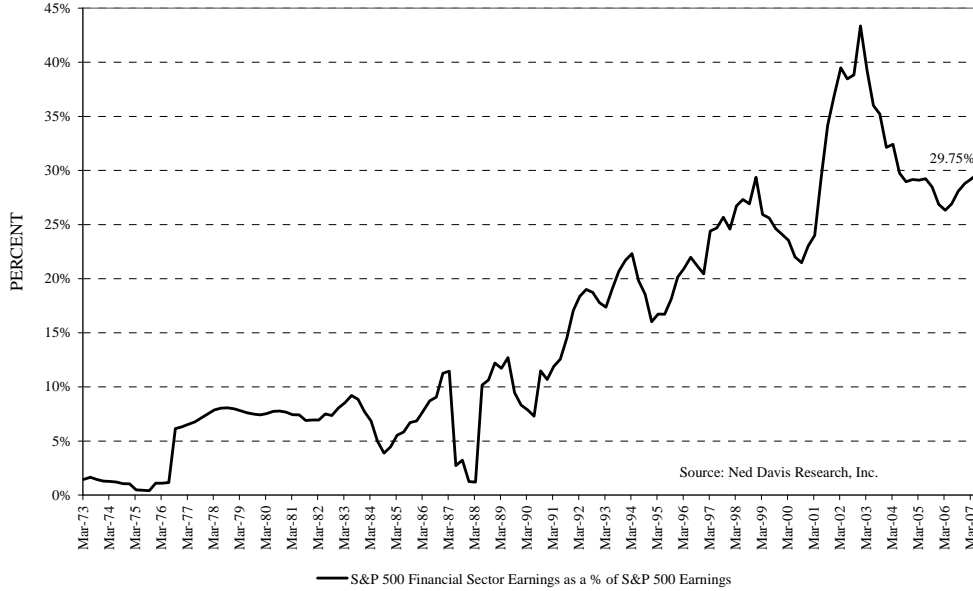
Can a debt laden economy continue to thrive as a renewed appreciation for risk works its way into the cost and availability of credit? Will monetary policy prove as effective for the current Federal Reserve chairman as it appeared to be for the last? We will attempt to explore these questions in the following paragraphs, but first a primer on a few basic notions of balance sheet accounting. While asset value is ephemeral, debt is typically set in stone. Not all assets generate cash flow but all debt requires it, eventually. The leveraging of assets can have exponential effects on earnings. The de-leveraging can have a correspondingly radical effect. Balance sheet contractions come in two flavors: voluntary and involuntary.

The pervasiveness of the write-downs and the shifting direction in price of interest rate sensitive assets has resulted in some well publicized involuntary contractions among banks and brokerages. Involuntary contractions may augur a voluntary shift in investor behavior and indicate a slowing of the velocity of capital flows. Federal Reserve Governor Frederick Mishkin in a recent speech entitled "*Financial Instability and Monetary Policy*" said "...during macroeconomic downturns, the value of collateral may fall, problems of adverse selection and moral hazard again become central, and lenders become much less willing to lend". Governor Mishkin's concern is well founded. Balance sheet contraction may have more deleterious effects in this cycle. What makes this cycle different from past cycles is the extreme level of leverage in the economy, the role that the annual change in the level of credit has played in generating growth in

domestic output and the growing amount of credit that has been provided from external (non-US) sources.

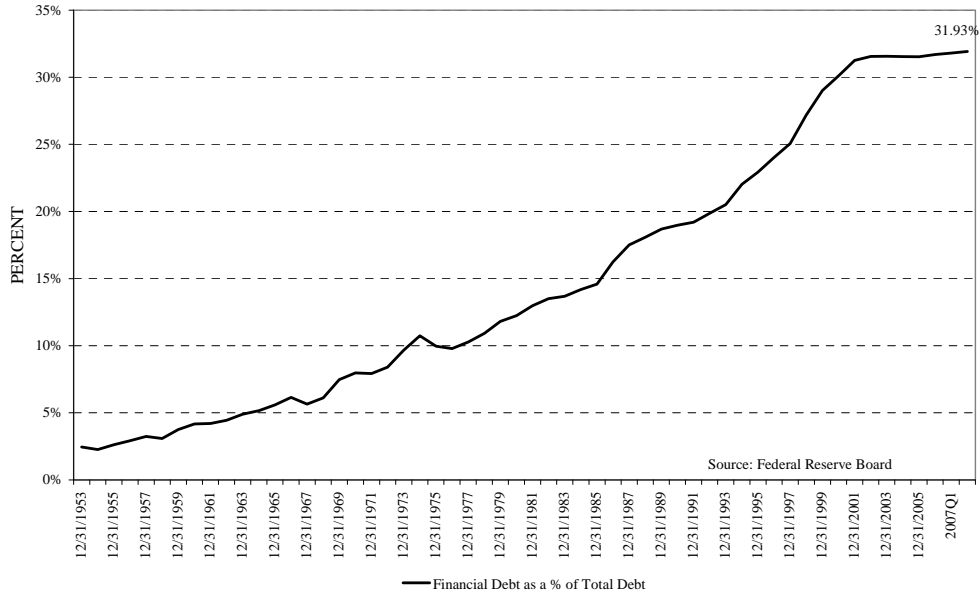
The swelling of financial balance sheets is particularly noteworthy in this latest cycle. It should not be lost on the reader that the earnings of financial companies now comprise roughly 30% of S&P earnings after making up only 10% of earnings in the 1980's.

S&P 500 FINANCIAL SECTOR EARNINGS as a % of S&P 500 EARNINGS



It is by no coincidence that financial debt as a percentage of total debt has grown dramatically and commensurately with financial services profits.

FINANCIAL DEBT as a % of TOTAL DEBT

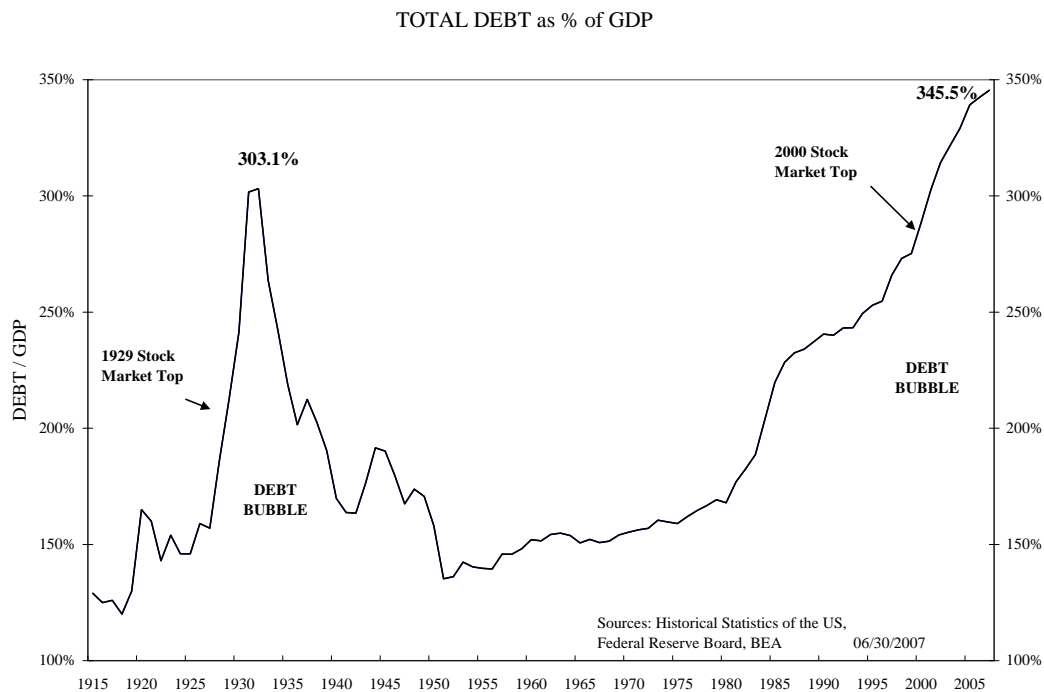


Goldman Sachs US chief economist, Jan Hatzius, was recently quoted as saying that “banks would have to shrink their lending by \$10 for every \$1 in losses in order to maintain capital ratios, vastly multiplying the effects as lending multiples kick into reverse.” “The macroeconomic consequences could be quite dramatic. If leveraged investors see \$200bn of the \$400bn (his estimate) aggregate credit loss, they might need to scale back their lending by \$2 trillion. This is a large shock” he said. We agree with Mr. Hatzius, that in the economic context, this is indeed a large “shock”, but certainly no surprise.

The sustainability of financial leverage has been of particular concern to us for the last few years and explains our heretofore aversion to banks, in general. Balance sheet contraction in the financial sector should have far reaching effects during this cleansing process. Fortunately, a derivative effect will be selective opportunity.

Things that cannot go on forever usually don't

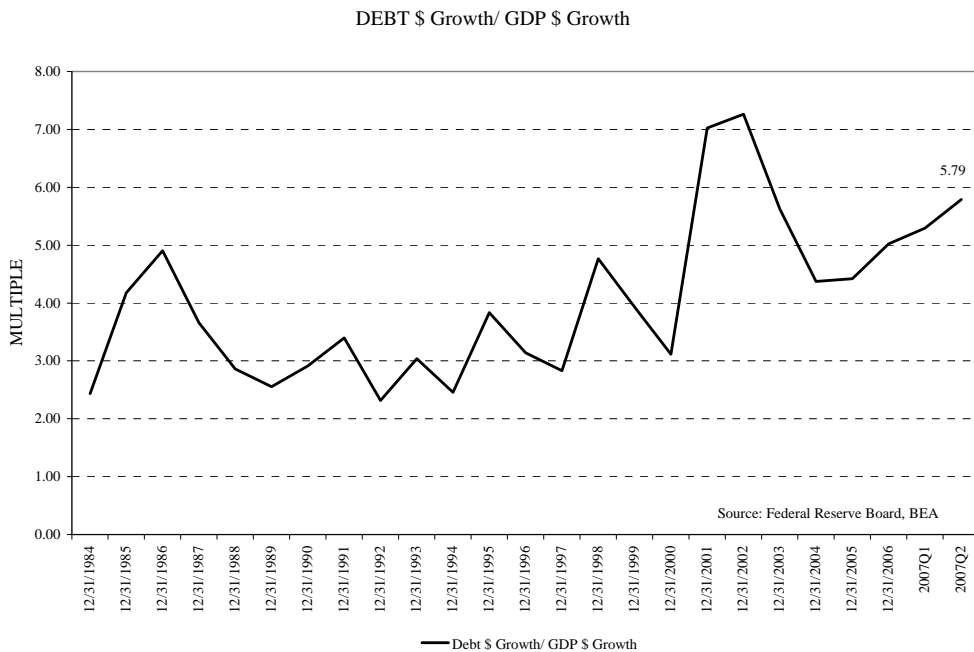
The Debt /GDP statistics have been a staple regularly served at Quantum since day one. The amount of debt relative to gross domestic product or GDP has reached levels not seen since the 1930's.



To reiterate our view, and sparing one the algebra, we believe that a rising debt to GDP ratio argues a declining return on the nation's capital stock. We define the capital stock as all assets tangible and intangible, productive and non-productive, financial and non-financial. We define GDP output as the return. There are a plethora of reasons for this degradation; application of capital, leverage spread, productivity and demographics among them. A topic, perhaps, to be discussed in the future.

The relative value of the dollar and the threat of inflation limit the flexibility of the government in stimulating credit creation. This is particularly problematic in an economy

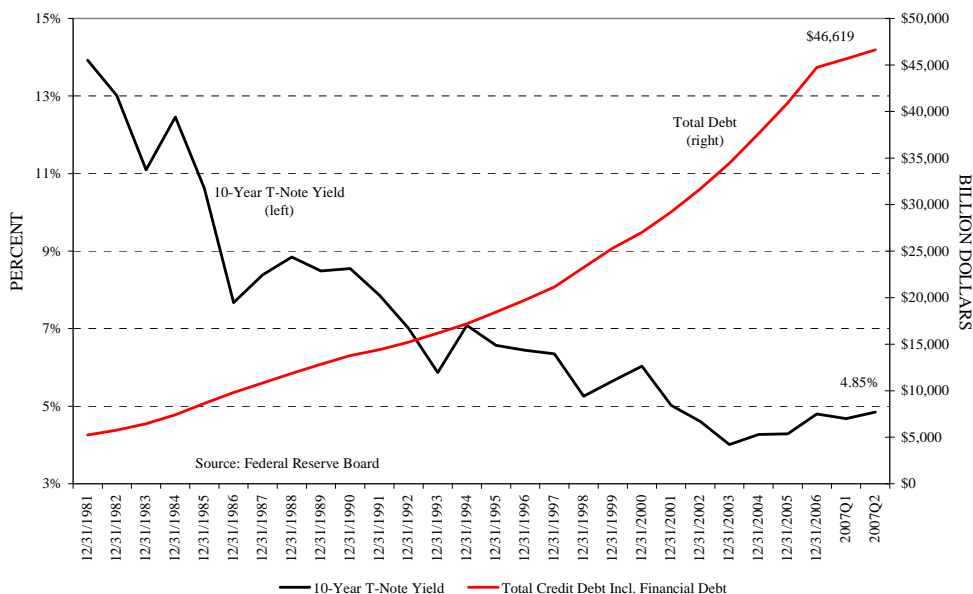
that thrives on new credit creation. The Austrian economist Ludwig von Mises in his magnum opus “*Human Action*” stated “**The dearth of credit which marks the crisis is caused not by contraction but by the abstention of further credit expansion.**” A relevant point today, we think. We have embraced the idea that the gratuitous nature of debt leads to a misallocation of resources and obscures the signals that measure economic progress both at a macroeconomic and microeconomic level. We believe that debt growth as a percentage of GDP growth is the proverbial elephant in the living room. Throughout most of the twentieth century new debt and new GDP grew at less than a 2:1 basis. In the 1980’s the ratio started to ascend. Today, it takes \$5.80 worth of new debt to generate \$1 of additional GDP. A continued ascent in the debt growth to GDP growth ratio will become increasingly unlikely based on current investment trends. Eventually it becomes a mathematical impossibility.



I'm richer than dad, is it because I'm smarter?

Sure you are. The rest of the population however, in terms of credit, has lived through the salad days. Partially by design and primarily by historic accident, a wonderful confluence of factors has shaped our economy in the last twenty-five years. Those of us who have assumed debt to acquire assets in the last two and one half decades have, with few interruptions, been blessed with an ever-increasing availability of credit at lower costs with fewer restrictions. Debt capital has grown from six trillion dollars to over forty-six trillion, while the cost of debt capital, as measured by the ten year treasury yield, has declined from fourteen percent to less than five percent after hitting an interest cycle trough of close to three percent in June of 2003.

TOTAL DEBT vs. 10-YEAR T-NOTE



Coincident with this period of domestic credit expansion, emerging nations, democratic and autocratic alike, have endorsed a hybrid form of market capitalism. The result has been a shift to the right in the supply curve which has provided us with low cost consumer goods and the capital in which to finance them. These low cost goods and the concomitant low cost capital have obscured the growing and unsustainable imbalances in debt and trade that we define as symptoms of inflation. The Federal Reserve, in setting monetary policy, largely ignores these imbalances. By mandate, emphasis is placed on two coincident indicators: a narrowly defined and improperly weighted basket of goods known as the core CPI (or consumer price index less energy and food prices) and what we believe to be dubious employment data. The Federal Reserve has only recently acknowledged that the rising level of price volatility in energy and food may be permanent in nature and not entirely a result of temporary supply-demand imbalances. The Fed has discussed the relationship between price stability and asset prices. They are aware that asset prices play an important role in monetary transmission policy. This implies that the Fed will intervene to support asset prices, when deemed appropriate and when able.

It is a well established tenet of Austrian economics that man-made money and credit imbalances portend economic boom and bust cycles, which tend to be inflationary. Inflation often accompanies booms and is frequently preferred to busts. The concepts of trade cycles and the inflationary impact of market intervention are not universally shared ideas today, but may be tomorrow. Like credit and economics in general, economic ideology is cyclical.

Unwinding of a credit cycle

An economy, unfettered by regulation and disincentives, is a wonderful dynamic organism. A nation's capital stock, labor and productivity can be leveraged by the private

sector to optimize output. But private sector credit has limits. Only governments, foreign and domestic, can create new money and credit. Individuals and businesses can provide credit, and depending on the level of animal spirits in the economy, private sector credit can be levered and multiplied at what appears to be an infinite measure, but it is merely a redeployment of existing assets. As governments set short term interest rates and “print” money, they can affect the level of activity in an economy. By maintaining interest rates at a level below what would be negotiated at arm’s length in the marketplace or what some economists call the “natural rate” of interest, governments effectively lower the hurdle rate for new ventures and force risk-averse savers to compete with their own government for yield, thus assuming more investment risk. Increased money supply at a level greater than what would be demanded at a natural rate of interest may be leveraged and multiplied as it flows through the economic vascular system. This causes balance sheets to swell. When the government can no longer perpetuate a rate lower than the natural rate, balance sheets can contract.

To provide a primer as “comprehensive” as the balance sheet lessons learned earlier in this essay, please note that economics is conflicted between two views: *activist* as promulgated by the Keynesian or more refined New-Keynesian view and the classical *laissez faire* view or the view that markets work best left to their own devices, without government intervention. Austrian and Monetarist economics find their roots in the classical school. All schools of thought share some overlap as do many practitioners. After seven years of impassioned study, we remain noncommittal, but have a bias towards the Austrian view. We have come to one incontrovertible conclusion, however. It is much easier to embrace classical liberalism in economics than in the raising of a teenager. We aspire to both. Let’s talk about credit.

One of the distinguishing characteristics of Keynesian versus Austrian economic philosophy is that while the former interprets consumption as the cause of prosperity, the latter looks at consumption as the effect. In terms of credit creation, however, there appears to be some common ground. A reading of Thomas K. McCraw’s “*Prophet of Innovation*” provides that the economist Joseph Schumpeter, was an Austrian by training but sympathetic to the idea of Keynesian money creation. In clarifying the role of capital in capitalism, Schumpeter declared “the Oxford English Dictionary defines **capital as “accumulated wealth reproductively employed”**. That is a wonderful definition. **But capitalism is something else again, because it relies so heavily on credit—wealth that has not yet been accumulated.** Credit must be created out of nothing but future expectations, which is the basic reason why capitalism, of all economic systems, is so distinctly oriented towards the future.”

We think Schumpeter hit the nail on the head. Capital reproductively employed is the gift that keeps on giving. Capital nonproductively deployed is a one time event. Credit, however, nonproductively deployed is a one time event encumbered by debt service for a term that usually exceeds the life of a flat screen television.

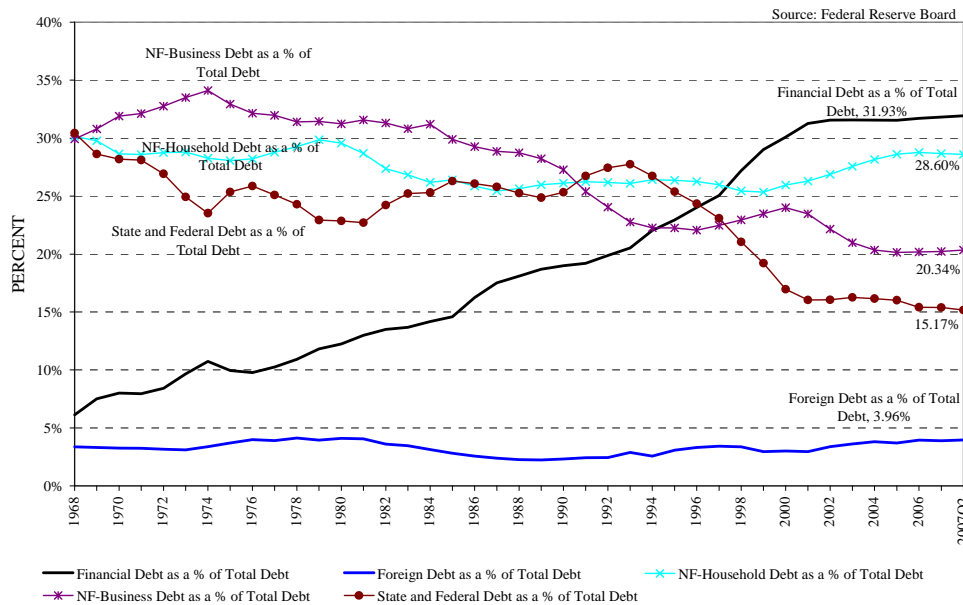
When credit as a percentage of total capital deployed grows in an economy, it is imperative that the proceeds of newly formed credit be deployed productively. It is only with “wealth that has not yet been accumulated” that we can satisfy the service of our ever increasing debt. The problem is exacerbated by chronic trade deficits. Trade deficits

imply that “wealth not yet accumulated” must be transferred to external creditors. If our current monetary regime, as described by former Fed Chairman Alan Greenspan, is designed to resemble the system governed by the gold standard, then chronic trade deficits, as a result of the consumption of nonproductive assets, should permanently impair domestic wealth.

GDP growth is a function of funds provided from the private sector, our government and our trading partners. The availability of Schumpeter’s equity capital—“accumulated wealth” and credit—“wealth not yet accumulated”, will be the primary determinant of growth in the economy. Should the dollar continue to weaken and exports expand relative to imports, our current account deficit may level off or contract. A shrinking trade deficit is a positive development but will impose greater responsibility for investment on domestic savers.

Monetary policy is constrained by the fact that the government can control the supply of money or the price but not both at the same time. The government additionally walks a tightrope between fiscal policy (taxing and spending) and monetary policy. Since the 1980’s the government has favored the control of the cost of money, the interest rate, to stabilize the economy. This policy is evident in the declining balance of government debt as a percentage of total debt outstanding. Monetary policy has been effective, not only in smoothing out economic contractions but also in shifting credit creation to the private sector. Government debt as a percentage of total debt outstanding has declined from thirty percent in 1968 to approximately fifteen percent today.

SECTOR DEBT as a % of TOTAL DEBT OUTSTANDING



The slow, inexorable decline in home prices appears to be driving the daily economic discourse. The permutations of possible outcomes are many, however, there appears to be a high probability that the household sector, facing declining home equity, may suspend expansion of credit at a level that exceeds increases in personal disposable income. Funds provided by virtue of the current account deficit, as stated above, may level off or even

contract. Despite a falling dollar and recent surge in exports, the velocity of capital flow could be muted by a structural shift towards less consumption, currently at seventy percent of GDP or three percent higher than its long term average, and the public revelation that domestic savings and investment may be necessary to augment domestic output in the future. Historically moderate debt levels in the business sector are favorable, but business is motivated by return on capital and does not exist to maintain trend GDP growth. Business sector balance sheet expansion will be a function of household or government spending, not the other way around. Gross private domestic investment as a percentage of GDP, historically a coincident indicator of recession, has trended down in the last four quarters. Although this indicator is primarily under pressure from a decline in residential construction, business investment appears to be leveling off.

In college, usually after arriving home at some ungodly hour, hunger pangs would inspire a discussion of how we would fund the purchase of a pizza. The solution was simple and always the same—whoever had money, paid. It was not fair, it was not equitable. Given the fact that it was often the same payer, it probably wasn't even moral, but it was effective. Government as spender and borrower of last resort may be the residual outcome required to stimulate private sector activity. There are certainly monetary policy alternatives, but historically low, relative government debt levels will bring out the pragmatist in any public servant intent on mollifying an economic slowdown. Should this be the case, a twin deficit family reunion, an expanding fiscal deficit and contracting current account deficit, could work to unwind the interest rate benefits that deficit asymmetry has provided in the last few years.

Inflation is insidious. The symptoms, owing to the availability of cheap credit, elevated asset prices and low cost financing from abroad, appear harmless, even desirable. It is in the clearing of growing imbalances that one realizes the predicament. Is it so surprising that inflation would reveal itself in the CPI after being so openly displayed in asset, debt, currency and trade imbalances?

It is our humble view that as the terms “inflation premium and credit risk premium” reassert their place in the lexicon of capital providers, long term interest rates will most likely rise. Dislocations, like some of those discussed above, may lead to a contractionary head-fake along the way, but history argues an eventual shift in the balance of power from those who borrow to those who lend as the highest probability outcome. We should keep an open mind and an open ear to von Mises regarding central bank intermediation. A government may have the will to create a quantity of money and credit as an expedient solution to contemporary problems but those who choose to accept it, or not, will ultimately determine the price.

Microeconomic effects

An analyst on CNBC last week was debating whether or not the much publicized write-downs at banks and brokerages constituted “real money”. The implication being that the one time write-down of assets is not a reflection of current operations and therefore equity prices have been unfairly punished as a result.

What the analyst seems to miss is that a write-down of assets represents a previous overstatement of earnings, a misallocation of capital or both. Earnings and assets tell a wonderful and complimentary story about a company. A subsequent write-down is, at best, an admission of a mistake and at worst, a misrepresentation of the earnings power of the enterprise. Intelligent investors will re-evaluate restated earnings power. They will adjust capital and evaluate the operational repercussions of a shrunken capital base. And they may just pay a bit more attention to the potential for future write-downs. "*Document and understand dynamics of Structured Investment Vehicles*" will now be on every analyst's checklist. We place a great deal of weight on the normalized earnings power and the net assets of an enterprise. The realization that earnings and assets have been overstated speaks volumes about past operations and the operators and alerts us to difficulties that, in all probability, will have to be discounted in the future.

At cyclical inflection points it is important to remember that, in finance, changes at the margin can have a magnifying effect on the bottom line. We tend to anchor to recent prices, margins and multiples and extrapolate them into the future. For an analyst to determine what "normalized" margins and "absolute" value look like in a changing credit environment requires a change in perspective. Sensitivity builds like a wave, through credit and activity; activity and gross margins; gross margins and operating margins; operating margins and asset prices; asset prices and animal spirits; animal spirits and credit and yes, going full circle, through credit and activity again. This feedback loop fuels exponential growth in earnings and asset prices during credit expansions and may result in radical implosive price declines during credit contractions. In an astute observation, Jeremy Grantham of GMO provides that markets historically have paid higher multiples for peak earnings and price-in the lowest multiples for trough earnings. This critical perversion in valuation can exacerbate the radical effects that one must factor as credit environments shift.

Taking comfort in Value

Simply put, price volatility brings opportunity. Protecting capital allows one to exploit opportunity as it avails itself. The time and study required to determine value, is the heavy lifting that allows one to confidently deploy capital with a margin of safety.

The basic mathematics of value is easy. Return is a function of magnitude, velocity and frequency. Magnitude of your discount, the velocity of accretion or how fast price mean reverts back to fair value and the frequency in which one can enter into these transactions. A fancy way of saying, how much, how fast and how often. We have ultimate control over the determination of magnitude by virtue of our intimacy with the determination of value. If it isn't cheap enough, we don't buy. The velocity is less controllable in that the recognition of catalysts is one thing while the timing of them is quite another. We have no control over the frequency of opportunity. It is based on a very schizophrenic market. But as the sun also rises, market cyclicity has remained remarkably consistent throughout history as well.

There are many ways to make money in the short run but we are a one-trick pony at Quantum. The calculus of value is the only way, empirically, to generate robust, market beating returns in the long run.

One of the basic tenets of value investing is to understand what one owns. It is difficult to value something otherwise. Like many aspects of the value investing philosophy, it emphasizes investing habit over investing acumen. A commitment to the time and study necessary to determine if one can understand the drivers of value. The mindset precludes the limits we put on ourselves when we make choices based on intuition and herd thinking. Whether railroads in the 19th century, technology at the end of the 20th century or emerging markets and alternative asset classes today, there is a value and there is a price and it is incumbent upon an intelligent investor to determine if they have the proper information to evaluate the attractiveness of the price/value equation. We have yet to come up with a satisfactory answer regarding the microeconomic impact of energy trading in fiat currencies as it relates to hog-corn cycles. And we remain curious about emerging market command center capitalism and why equity markets are pricing in democracy as a default ideology, when history seems to argue otherwise. Hopefully you get the point. If not please email an answer. The calculus encourages the humility to recognize one's limitations, or what Warren Buffett refers to as a "circle of competence" and the courage to walk away from the siren song of momentum.

The calculus of value emphasizes the present value of cash flows and net asset value of an investment whether it be a stock, bond, coal mine or loaf of bread. The calculus requires not only the recognition of earnings and earnings growth but the cash costs required to sustain them. It sees not only the market value of assets but the factors driving that market value. It invokes awareness that accounting is just a quantitative window into qualitative economic action. It provides insights into relative marginal utility within the value chain. It eschews crowds; even crowds of value investors. The calculus requires us to evaluate the macroeconomic drivers of activity and margin even if it has been a fruitless exercise for what seems like an eternity. "A need to understand the interrelationships among macroeconomic variables and to develop linkages between these variables and the performance of capital markets, economic sectors, industries, and companies" says Graham and Dodd's *Security Analysis*. There are many investors of the value ilk who feel that these linkages are unknowable or inconsequential. Twenty five years of lower rates, record margins and expanding multiples will do that to someone. But inflection points and credit cycles, we think, can change attitudes.

This calculus causes one to "miss out" on exciting and profitable opportunities as well, as not all incomprehensible ideas will be losers, not all complex ideas are incomprehensible to others, and the herd is not always wrong. But the risk-reward is asymmetrically favorable in that an optimist, yes we are optimists, interprets loss of investment opportunity as relatively small given the belief that another opportunity will avail itself. A permanent impairment of capital however, eliminates all future opportunity for that capital. Protection against permanent impairment of capital is both emotionally and mathematically critical to long term capital appreciation.

But perhaps most importantly, the calculus protects us from ourselves and leaves us with only a few very financially satisfying decisions. About a year ago, as the markets were humming and we had, in retrospect, quite a bit of capital in short term treasuries, cash and a little gold, a new client inquired about our, arguably, conservative exposure and screening technology. There was no cash mandate. We were just indifferent regarding

existing opportunities at current prices. The response was as follows—“We take our time and we look for interesting ideas, one at a time, among great companies that we can understand. Competitive advantage and sustainable cash flows are a prerequisite. New lows in price tend to provide opportunities in good companies. We try to buy dollar bills for sixty or seventy cents. It provides us with a margin of safety and protects us from our own ignorance. We sometimes find ourselves with a lot of cash, little time and markets that are moving away from us.” Recently, a very complimentary client inquired about our “current” investment strategy, given the volatility in the equity markets, the potential for recession, the well publicized sub-prime carnage and our own view, that margin contraction and dislocations among companies with pricing power and those lacking, will be a challenge. The reply was as follows—“We take our time and we look for interesting ideas, one at a time, among great companies that we can understand. Competitive advantage and sustainable cash flows are a prerequisite. New lows in price tend to provide opportunities in good companies. We try to buy dollar bills for sixty or seventy cents. It provides us with a margin of safety and protects us from our own ignorance. We sometimes find ourselves with a lot of cash, little time and markets that are moving away from us.”

Today we find that markets that are moving toward us. We are cautious as always, but there is a lightness in the air at Quantum. We have not been this excited about potential opportunity since 2002.

Best Regards,

John Hughes

Please send questions or comments to jhughes@quantumadv.com

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