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INVESTMENT ADVISORS

Market Commentary
Fourth Quarter 2008

False Dawn

A thousand years ago, as Europe was firmly ensconced in its Dark Ages, the Islamic world, stretching from the Atlantic Ocean to the Indian Sea, was in its Age of Enlightenment. The two great cities of that Arab-Persian empire were Cairo and Baghdad, but a growing Turkic power, the Seljuks, overthrew the Abbasid rulers, and established its capital in the third great city of the Muslim world, Nishapur (or Neyshabur), in northeast Persia. The city was recognizable for its turquoise roofs and mosques, sourced from nearby mines, the origin of the city's vast wealth.

Islamic culture flourished, in music and literature (*One Thousand and One Nights* gave us the stories of Ali Baba and Aladdin, Scheherazade and Sinbad), astronomy and mathematics (*al-jabr*, algebra, was invented here). In the year 1048, a boy was born to a poor family of tentmakers, and named Ghiyāth ad-Dīn Abul-Fat'h Umar ibn Ibrāhīm al-Neyshābūri al-Khayyāmi. Ordinarily, a boy from a poor family would have no chance at an education, but this was no ordinary boy. As a child, his powerful intellect came to the attention of the greatest imam, or teacher, of that time, Nizam al-Mulk, who was to become grand vizier to the great Shah, Malik.

The boy's accomplishments would come to surpass his teacher's, and his discoveries in mathematics and astronomy are studied today. But his lasting fame would come from his poetry, whose insights and philosophies influence us today, helping to put our world into perspective.

Perspective can be painful, especially as we review the last few months of 2008. World equities plunged 22% last quarter, closing the year down 42%. Some markets saw near-total collapse last year (Iceland lost 94% as massive leverage in its oversized banking sector blew-up the economy, but Ukraine, Bulgaria, Russia and the United Arab Emirates all lost about three-quarters of their value). We could find just three countries out of 200 or so with positive returns: Ecuador (+6%), Tunisia (+10%) and Ghana (up 60%, which makes sense as its principal exports are gold and cocoa, the two essential materials for the world today).

"We could find just three countries out of 200 or so with positive returns."

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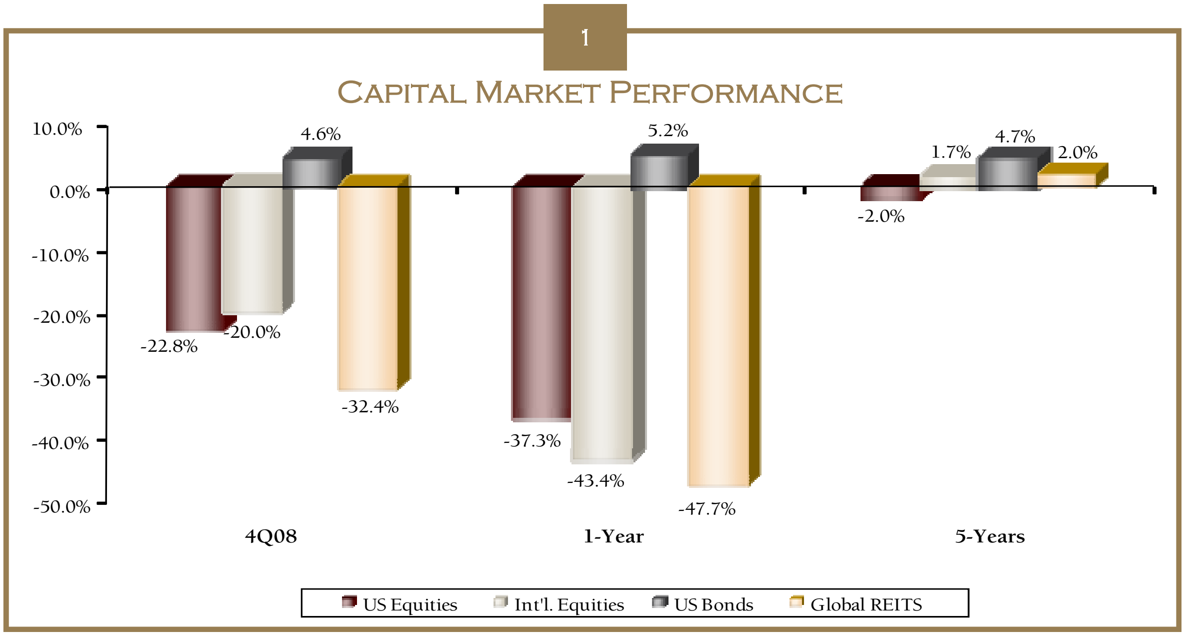
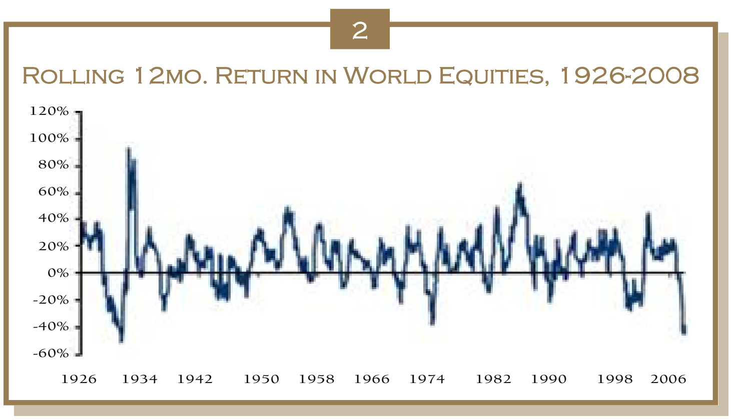
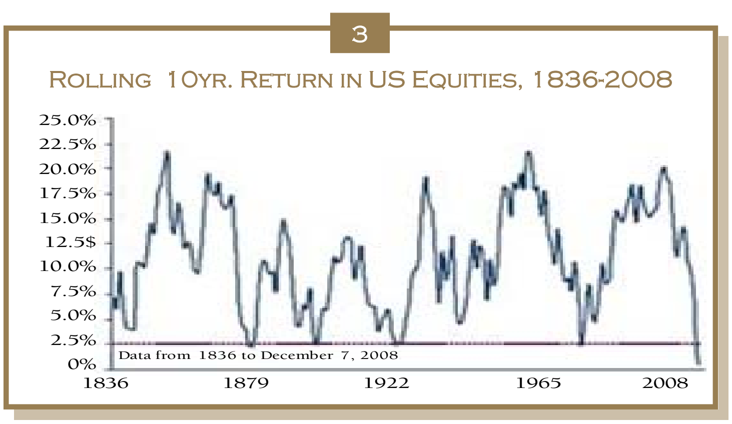


> *"It also marks the worst ten-year period for US stocks in the past 200 years."*



Courtesy: Barclays Capital



Courtesy: Goldman Sachs Asset Management DataStream, Investment Strategy Group

2008 was the worst year for equities since the 1930s (see Chart 2). It also marks the worst ten-year period for US stocks in the past 200 years (see Chart 3) and, barring a 32% return in 2009, this first decade of the 21st century will be worse than even the 1930s (see Chart 4, pg. 3).

Equity markets exhibited not only excessive declines, but also record high volatility (see Chart 5, pg. 3) and correlations, within markets (see Chart 6, pg. 3), and among markets (see Chart 7, pg. 3).

This decade has not been kind either to a well-balanced portfolio of global equities and bonds. With a nominal annualized return of less than 1% and a real return of less than -2%, this is the worst decade for owners of financial assets since the 1940s (see Chart 8, pg. 3).

It was a pretty difficult period for hard assets, too. Real estate securities saw their worst year ever, off 38%. Commodities (the CRB In-

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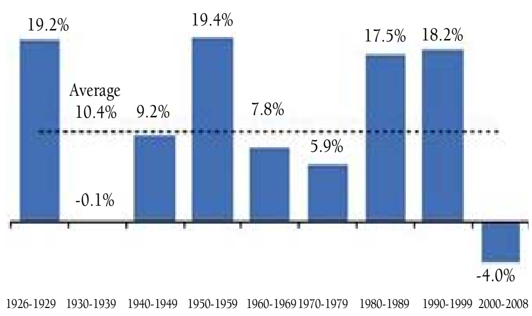
Avg. Annual Rate by Decade for US Large Cap Stocks, 1926-2008



Courtesy: Morgan Stanley

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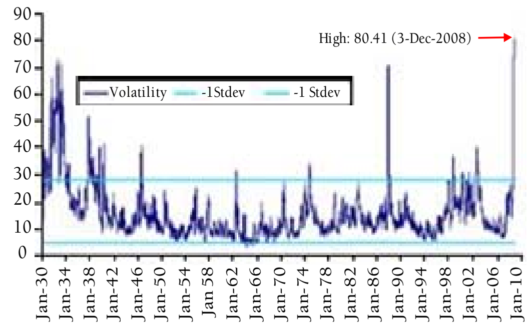
S&P 500 Annualized Daily Volatility, 1929-2008



Courtesy: Goldman Sachs

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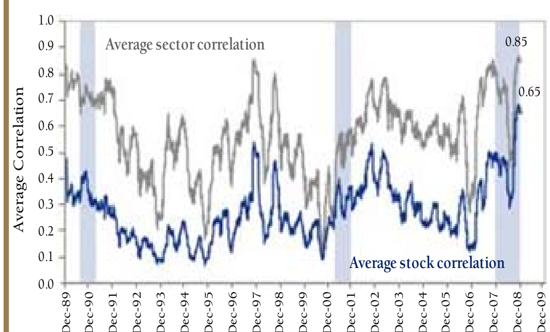
S&P 500 Average Stock Correlation 1989-2008



Source: Bloomberg; Courtesy: Merrill Lynch

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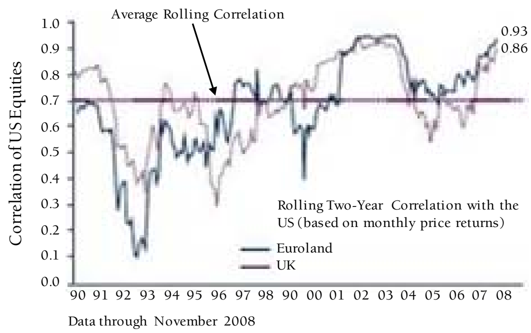
Europe, UK Rolling 2-Year Correlation with US, 1990-2008



Source: Barclays Capital Fixed-Income Research; Global Fin. Data, OECD; MSCI

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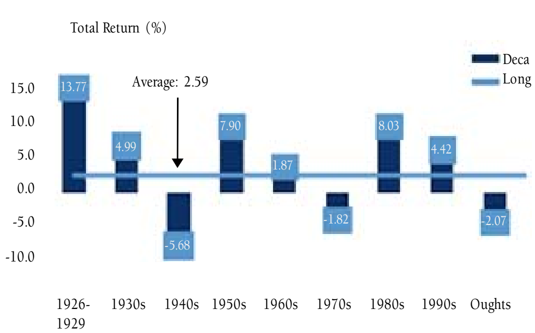
Global Financial Asset Real Return By Decade, 1926-2008



Courtesy: Goldman Sachs

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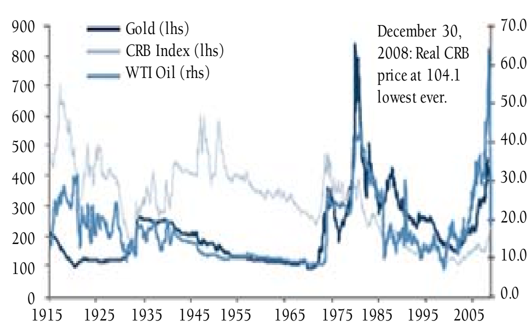
Real Commodities Prices



Source: Bloomberg, Courtesy: Barclays Capital

"This decade has not been kind..."

dex) also declined 38%, giving back six years of gains, and marking the worst 12-month period since June 1932 (-40%). More than half the loss came in October, as commodities plunged 22% that month, the largest one-month drop on record. The decline has brought real commodity prices to their lowest in a century (see Chart 9, pg. 3).

As awful as the equity markets have been, at least the declines have been within observable ranges: less than the 89% decline in 1929-1932 or the 49% declines in 1973-74 and 2000-2002. For truly extreme devastation, we need to look at the bond markets.

"It's possible we haven't seen the low in yields..."

At first glance, the 5.24% return of the Barclays Aggregate Index seems normal, nearly identical to its long-term average return. But this masks the dichotomy between direct government obligations and everything else. Long-term Treasuries returned nearly 34% in 2008, the second best year in over a century (30-year Treasuries were up 51% in 1982). For every other sector of the bond market, 2008 was the worst year in history: investment-grade credit trailed the Aggregate Index by over 1,000 basis points, emerging market debt by more than 2,000 basis points, and non-investment grade credit by more than 3,000 basis points. Spreads over Treasuries blew out to levels last seen in 1932 (see Chart 10).

Some government yields are at their lowest in history. The Bank of England dropped its overnight target rate to 1.5%, the lowest in over 300 years (see Chart 11). Nominal US T-bill yields turned negative at a December auction, perhaps a technical aberration, but the official Fed funds target is now zero, a record low (for now). Longer term government rates, globally, are also at record lows (see Chart 12).

It's possible we haven't seen the low in

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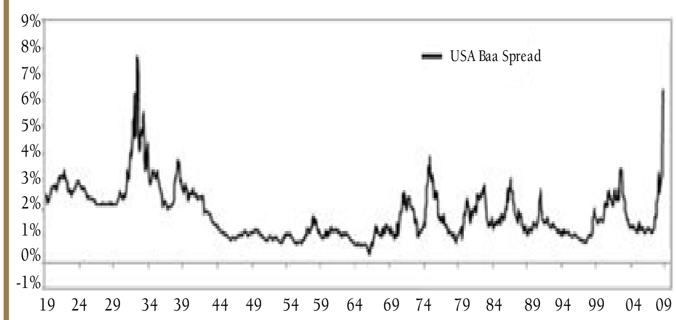
BAA-RATED SPREAD OVER TREASURIES, 1919-2008



Courtesy: Bridgewater Associates

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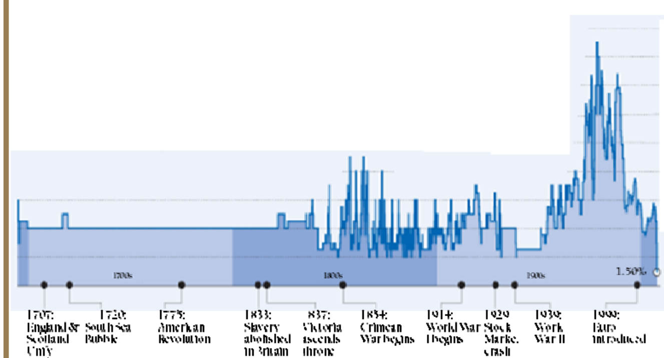
BANK OF ENGLAND TARGET RATE, 1693-2008



Source: Bank of England

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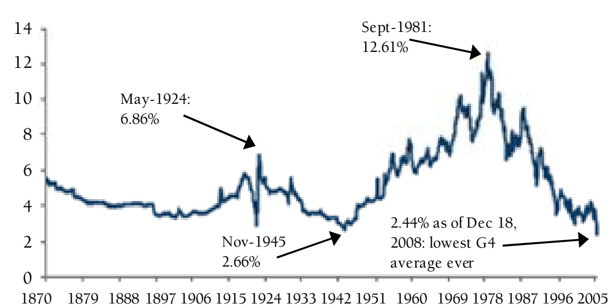
G4 AVERAGE 10 —YEAR TREASURY YIELD, 1870-2008



Note: Japan 10-year yield from 1870 to 1972 is from 7-year government bond, 10-year bond after 1972 U.K. 10-year yield from 1870 to 1958 is from 2.5% consol, 10-year bond after 1958.

Source: Morgan Stanley; Bloomberg, Moody's the Yield Book, the Federal Reserve

Treasury yields, and even possible that we may not for years. The bottom in long US Treasury yields was 1.98% in June 1941, twelve years after the Great Crash. In Japan, bond yields troughed at 0.435% in June 2003, fourteen years after its asset bubble burst. It can take a long time before recovery is in place.

Depression is not a happy word. Fortunately, we don't experience them often. In the past sixty years, every economic cycle followed a pattern of rising capacity usage and inflationary pressures, monetary tightening to counteract rising inflation, a decline in output due to constricted credit, followed by monetary easing and a resumption of economic growth. Some contractions (termed "recessions") were deeper than others (1980-82 was much more severe than the recessions of 1990 and 2001), but all expressed essentially the same dynamics.

This is not a description of the current economic cycle. Rather than tightening monetary policy, the Fed has been easing aggressively. Rather than encouraging borrowing with lower rates, credit is contracting at a rapid pace. Rather than stimulating growth, the economy is contracting at an ever faster pace. Monetary policy hasn't lost its importance, but it has lost its effectiveness, because the obstacle to economic growth is not the cost of credit, but the burden of debt.

"...the obstacle to economic growth is not the cost of credit, but the burden of debt."

Total debt in the US stands at 350% of GDP, well above the previous high of the past hundred years of 250%, reached in 1935. As a percentage of net worth and as a percentage of disposable income, household debt is also at record highs, the latter ratio having risen as much in the past seven years as in the previous 39 years (see Chart 13). But with net worth declining at a record pace, households are rapidly reversing their borrowing binge (see Chart 14).

Household net worth has dropped more than $7 trillion in the past year, two-and-a-half times the $2.8 trillion decline suffered in the 2001-2002 equity meltdown. This massive loss in net worth necessitates bringing debt levels in-line with lower asset values, but it's not happening fast enough. In

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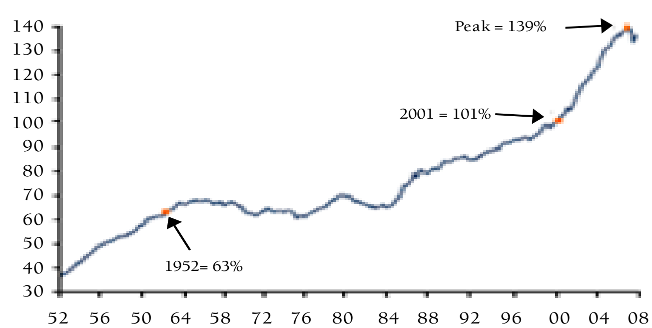
HOUSEHOLD DEBT-TO-INCOME RATIO, 1952-2008



Source: Federal Reserve Bank, Courtesy: Merrill Lynch

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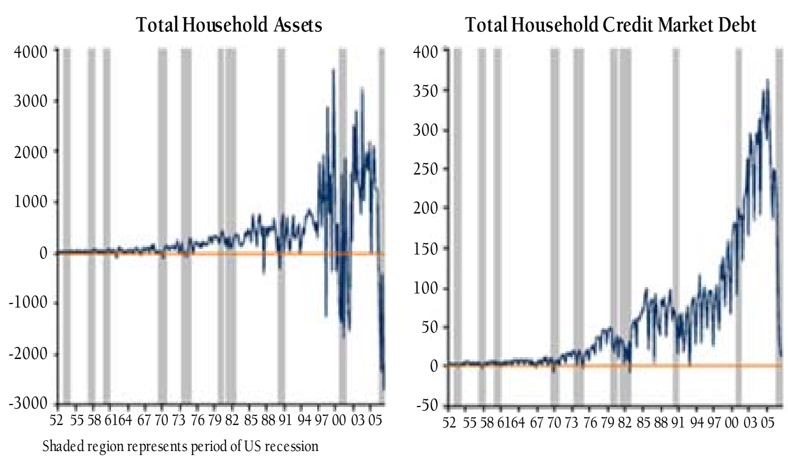
CHANGE IN HOUSEHOLD ASSETS AND DEBTS Q/Q, $BILLIONS, 1952-2008



Source: Federal Reserve Board, Merrill Lynch

3Q08, households reduced debt by $29 billion, but household assets fell $2.7 trillion. Over the past few years, households and non-financial businesses were borrowing about 16% of GDP per year. Now that is barely positive for corporations and negative for households, and combined, this is an enormous loss of an important source of economic demand. Automobile sales are at 25-year lows, and retail sales are contracting at the fastest pace since the 1930s.

> *"...doesn't address the original problem of global imbalances."*

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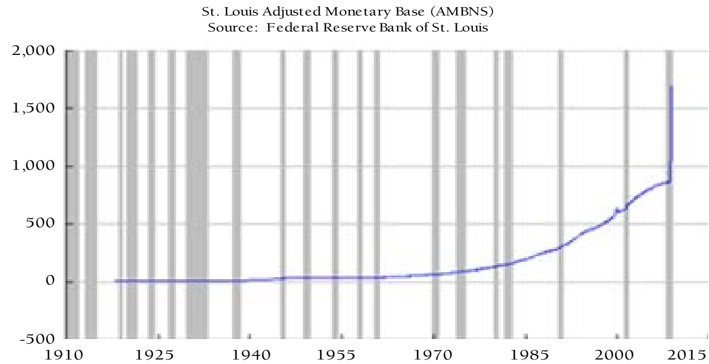
FEDERAL RESERVE ADJUSTED MONETARY BASE 1918-2008



Shaded areas indicate US recession as determined by the NBER.
2009 Federal Reserve Bank of St. Louis: research.stlouisfed.org

Offsetting this large contraction in private sector balance sheets is the federal government. The Federal Reserve's monetary base has doubled in the past three months, to $1.7 trillion (see Chart 15). In the past 50 years, the federal government has never borrowed more than 5% of GDP per year, but this year's net borrowing may be three times that, producing a budget deficit approaching $2 trillion.

Shifting a nation's balance sheet from the private sector to the public doesn't address the original problem of global imbalances – excessive accumulated savings, primarily in Asia and the Middle East, and excessive borrowing, notably in the US - that precipitated (or certainly exacerbated) the financial crisis. To reduce a current account deficit, some combination of currency decline, rising interest rates and higher inflation is required. Surplus countries must redirect growth toward domestic consumption, but this is not a simple transition and carries inflation risks, not to mention political ramifications in countries where institutions are less well-established.

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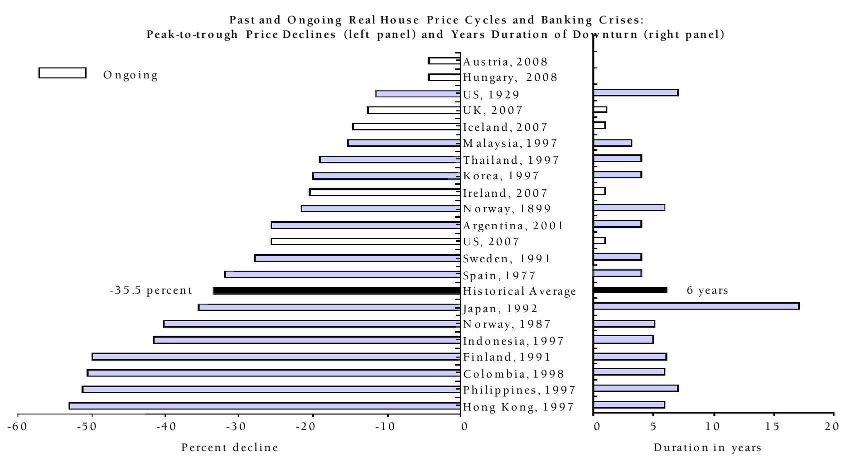
REAL HOUSING PRICE CYCLES AND BANKING CRISES



Source: Reinhard and Rogoff (2008b) and sources cited therein
Notes: Each banking crisis episode is identified by country and the beginning year of the crisis. Only major (systemic) banking crises episodes are included, subject to data limitations. The historical average reported does not include ongoing crises episodes. Consumer prices indices are used to deflate nominal house prices./

These processes will play out over years. In October 1929, the US unemployment rate was 2.3%. It rose to 25.6% in the depths of the depression, and fell only to 10% by June 1941. The war brought the rate down to 1.2% in 1943. So even nine years after the stock market bottomed, unemployment was considerably higher than prior to the crisis. Carmen Reinhart and Kenneth Rogoff have documented the prolonged nature of the effects of financial crises[1]. They note that severe financial crises have three dominant characteristics. First, the decline in asset prices is significant and lengthy. Real equity prices typically fall 55% over three and one-half years and real housing prices decline 35% over six years (see Chart 16, pg. 6). Secondly, there is a very large drop in output and employment. Peak-to-trough output falls 9% over two years, and the unemployment rate rises 7% over four years. Thirdly, the real value of government debt surges 86%, interestingly, due less to the cost of bailouts than to the collapse in tax revenues.

Every example has its unique characteristics, but if we look, on average, at past crises, we might be able to reason that the majority of the decline in asset values may be behind us. Equities are down 50% from their peaks, not far from the average 55% decline. Housing prices are off 28% (using Case-Schiller data), close to the 35% average drop. Again, these are averages, and the distribution around the means is large, and today's crisis differs in some notable ways, principally in scope, to past events. More sobering are the data on the real economy and the duration of the contraction. The declines in output and employment have, thus far, been modest relative to past crises, and we are not even halfway through the typical duration of the downturn. The unemployment rate has risen 2.8% from its low in March 2007. Based on these averages, the unemployment rate could be expected to rise to over 11% in the next two years. The economic pain isn't over.

To identify the most gifted and accomplished person in history is surely a subjective pursuit. Many Americans might point to Thomas Jefferson, a talented writer, scientist, agronomist, architect and politician. Europeans might think of Leonardo Da Vinci, a brilliant artist and scientist. Others may come to mind, but a strong case can be made for al- Khayyāmi.

He first came to notice as the author of the definitive text on algebra. He derived the general method for solving cubic equations and discovered the binomial expansion (the expansions of the power of sums—don't ask). He was the first to call an unknown x (pronounced shay, or something, in Arabic). We solve quadratic equations today as he set forth for us, and other work of his was the genesis of non-Euclidean geometry.

Shah Malik appointed al- Khayyāmi as the empire's chief astronomer. He used his new observatory to help him calculate a more precise solar year, which he determined was 365.24219858156 days. Based on our calculations today, this was correct to the sixth decimal, indicating he made an error of one hour every 5,500 years. He also built a revolving model of a heliocentric solar system (600 years before Galileo).

Arabic-Persian poetry at the time was written in quatrains, four lines of verse, and the Arabic word for quatrain is *rubaiyat*. His epic poem is known to us today as simply The Rubaiyat, and al- Khayyāmi is known in the West as Omar Khayyam. A hundred years ago, every educated person would be able to quote from The Rubaiyat; sadly, it is generally no longer taught in schools, perhaps because institutions are threatened by its message.

Impermanence is the heart of The Rubaiyat: life is always in flux, and death the symbol that nothing lasts. This is similar to the Buddhist concept of *anitya*, and Khayyam has much in common with Buddhist philosophy. Neither faith nor reason can explain life, and it is futile to try:

Since neither truth nor certitude is at hand,

Do not waste your life in doubt for a fairyland.

Only by giving up trying to make sense of

"...the economic pain isn't over."

[1] Reinhart, Carmen and Rogoff, Kenneth, *The Aftermath of Financial Crises,* December 2008.

things are we able to live:

Desire no gain from the world with bliss you trade,

In good or bad times you need not wade,

Remain sedate so that the whirling wheel,

Would snap itself and blow us days it made.

There is no past, and there is no future; there is only the present, which should be our only concern:

The Moving Finger writes; and having writ,

Moves on: nor all your Piety nor Wit,

Shall lure it back to cancel half a line,

Nor all your Tears wash out a Word of it.

Khayyam urged us not to dwell on the past or obsess over the future, but to live for the moment. We are simply inadequate to be able to gain any insight into our world. What matters most is our moral progress.

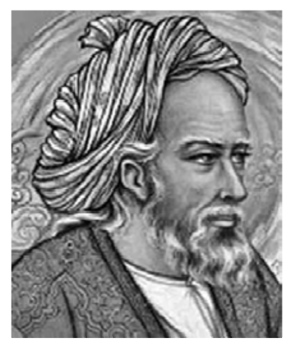
Progress is cumulative in science; unfortunately, it is cyclical in finance and morality. Consider these words: *…the rulers of the exchange of mankind's goods have failed, through their own stubbornness and their own incompetence…. Practices of the unscrupulous money changers stand indicted in the court of public opinion, rejected by the hearts and minds of men…. They know only the rules of a generation of self-seekers. They have no vision, and when there is no vision the people perish.*[2]

"Let us hope for a true dawn, while we are watchful of the false ones."

We will endure the current economic challenges, as we have long endured, survived and thrived. But the magnitude of this challenge is immense, and it will not be resolved in short order. Along the way, hopes will grow and then deflate, maybe many times, before we can be assured of being safely beyond the greatest risks.

At certain times of the year, a faint glow of light can be seen in the eastern sky a few hours before actual sunrise. Astronomers call this the Zodiacal Light, and we know now that it is the sun's reflection off space debris that remains following the formation of our planets 4.5 billion years ago. Ancient observers were confused over the appearance of these "two dawns." It was Khayyam that first explained this Zodiacal Light, which he called the "false dawn," and it is cited in The Rubaiyat. The phrase has entered our vocabulary.

Khayyam's breadth of achievements awes us still, and his poetry inspires us: past and future are of no concern, let us concentrate on the present; reason and faith by themselves are inadequate to attain true understanding. Let us hope for a true dawn, while we are watchful of the false ones.



[2] Franklin Delano Roosevelt, Inaugural Address, March 1933

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MICHAEL A. ROSEN
PRINCIPAL & CHIEF INVESTMENT OFFICER
JANUARY 2009