

There is a fifth dimension beyond that which is known to man. It is a dimension as vast as space and as timeless as infinity. It is the middle ground between light and shadow, between science and superstition, and it lies between the pit of man's fears and the summit of his knowledge. This is the dimension of imagination. It is an area which we call the Twilight Zone.

- Opening narration (Season 1)

For those younger readers who may not know of the Twilight Zone, Wikipedia offers the following description:

*“**The Twilight Zone** is an American science-fiction/fantasy anthology television series created by Rod Serling, which ran for five seasons on CBS from 1959 to 1964. The series consists of unrelated stories depicting paranormal, futuristic, Kafkaesque, or otherwise disturbing or unusual events; each story typically features a moral and a surprise ending.”*

Beyond being a show, and later on a movie, it has become part of the modern lexicon. As presented in the Urban Dictionary:

*“**A state of surrealism, where things that should not make sense seem to do so.** Term taken from the 1960's TV show hosted by writer Rod Serling.”*

What an apropos way to describe the current monetary system! The financial markets are a fascinating arena. They are interesting, intellectually stimulating, economically lucrative, filled with intelligent, provocative individuals, and are a perfect showcase of behavioral psychology. The fact that markets are usually a step or two removed from reality is much of the fun and is ultimately the reason that they can be so lucrative over meaningful periods of time. We are all so lucky to be a part of it.

In 1999, the world's stock markets ventured beyond being a little off-kilter and “crossed over into the Twilight Zone.” While this was happening, it was the most painful time of my career. The subsequent dozen years were the most satisfying and rewarding of my life, as our clients benefitted handsomely from the market's inevitable return toward the direction of reality. I think 1999 is still fresh enough in people's memories that I don't need to spend much time on it. Suffice it to say that stocks of tech, media and telecom companies ran to inconceivable heights even as “old-economy” stocks were figuratively given away.



From my vantage point, the world's stock markets recently, for the second time in a one-third century long career, "crossed over into the Twilight Zone." To co-opt the opening narrative from the show's second season, in this Commentary we will *"travel through another dimension, a dimension not only of sight and sound but of mind. A journey into a wondrous land whose only boundaries are that of imagination."*

It is important to ask questions. Sometimes it can be fun. For example:

- Why are a wise man and a wise guy opposites?
- Why do you park in a driveway and drive in a parkway?
- Why does a ship carry cargo and a car carry shipments?
- Why are there interstate highways in Hawaii?
- If you try to fail, and you fail, have you succeeded or failed?
- If pro is the opposite of con, is progress the opposite of congress?
- How do a fool and his money get together in the first place?
- Is a metaphor like a simile?
- Did Noah keep his bees in archives?
- How come we choose from just two people for president and 50 for Miss America?
- Does expecting the unexpected make the unexpected expected?
- Is it good if your vacuum really sucks?
- Have you ever imagined a world with no hypothetical situations?
- Why do you recite at a play but you play at a recital?
- Why is quite a few the same as quite a lot?
- Why do people who know the least know it the loudest?

Often it is imperative to ponder more serious questions. Before getting to the important questions du jour, a little background is in order. What Kopernik Global Investors ("Kopernik") do for a living is appraise businesses and opportunely buy these businesses when the market offers them at large discounts to our estimate of their risk-adjusted intrinsic value. **History demonstrates that when inexpensive stocks have been falling for years, they seldom extend to us the courtesy of immediately reversing course. Before rewarding our patience handsomely, they usually force us to look foolish for a period of time.** Being wrong approximately 30% of the time is the expected cost of investing against the crowd. Being right 70% is our expected reward. Similarly, subpar years worming their way into the mix is a requisite byproduct of looking different from the crowd. Endeavoring to continue our long-term record of generating significant alpha, we willingly endure the occasional unpleasant period. The fourth quarter of 1999, the July through October period of 2008, and the September through December 2014 chapters of my career warrant special attention. These three periods all demonstrated the bipolar nature of the market at its worst, and our propensity to drastically underperform during these environments. Valuable properties that had reached levels that appeared to be too low to be true, dropped significantly further as they were "puked-out" (sorry, can't come up with more fitting words) by "investors" who simply couldn't bear any more pain. These periods of capitulation can be very painful. Compounding the discomfort, this often happens in conjunction with expensive stocks catapulting upward. At these moments, two things are important. **It is very important not to lose one's conviction at these pivotal moments in time. Equally important though, is not to cavalierly dismiss the situation.** One must, in good times and bad, question everything. **Does the wholesale dumping of tangible assets, and of growing businesses in emerging countries, represent the figurative "canary keeling over in a coal mine," or does it present thoughtful investors with one of the better buying opportunities of the century?** Proceeds from this wholesale dumping of tangible value are apparently being used to finance purchases of the polar-opposite, expensive financial claims on miniscule expected future cash flow from securities that lack meaningful asset backing. Does this mean that a new paradigm is underway, or that supreme caution is in order?

Canary in a Coal Mine

*"Now if I tell you that you suffer from delusions
You pay your analyst to reach the same conclusions
You live your life like a canary in a coalmine
You get so dizzy even walking in a straight line"
-The Police*



Let's begin this investigation by using some artistic license with Sting's lyrics, "Now if I tell you that the marketplace suffers from delusions, let's see if analysis reaches the same conclusions." This analysis is intended to help readers form their own opinion as to the extent to which it is the market, or Kopernik, that has taken a brief detour from the realm of reality.

Let's frame the questions and then examine the data:

EMH (efficient market hypothesis) assumes that investors tend to be rational. **Is this rational?**

EMH assumes that it is not possible to consistently outperform the market. **Really?**

EMH assumes that capital structure, taxation and trading costs don't matter. **To whom?**

EMH assumes that investors have equal access to information and that they analyze it diligently. **In what world?**

In the nascent 21st century, have we finally discovered the Philosopher's Stone?

Can wealth be conjured up by bureaucrats or does it need to be earned?

Is it logical that the U.S. Dollar was considered risky in 2011, but now is considered 'safe' at a level that now is meaningfully more expensive (risky) relative to other currencies?

Is it logical that U.S. long bonds, viewed as risky at 14% yield, are considered safe at sub-3% yields?

Is it logical that bonds were considered much more risky when the debt was a low percentage of GDP than they are now, when the debt is an astounding 100% of GDP and all liabilities exceed 700% of GDP?

If bonds are a claim on dollars, and dollars are backed by those same bonds (on the other side of the Fed's balance sheet), should we be scared? Shouldn't investors demand more than 3% of annual compensation?

Is it likely that Developed Country governments' involvement in the bond markets makes bonds more attractive while Emerging Country governments' involvement in electricity, phones and resources effectively renders their stocks un-investable?

Can the cost of capital be calculated from a formula that doesn't incorporate the price of the security?

Is it wise to invest in a sector or country that has recently attracted an outsized proportion of the available capital?

Is economics a science?

Is government a science?

Is investing a science?

Is the world flat?

Does the sun revolve around the earth?

Is nuclear power a dead industry?

Is coal a dirty relic of a bygone era?

Can risk be boiled down to a number?

When did risk to a manager's career become more important than risk of permanent loss of capital to investment portfolios?

While some of these questions are self-evident – effectively rhetorical – let's look at our answers to most of them.



Assessing the Canary's Health

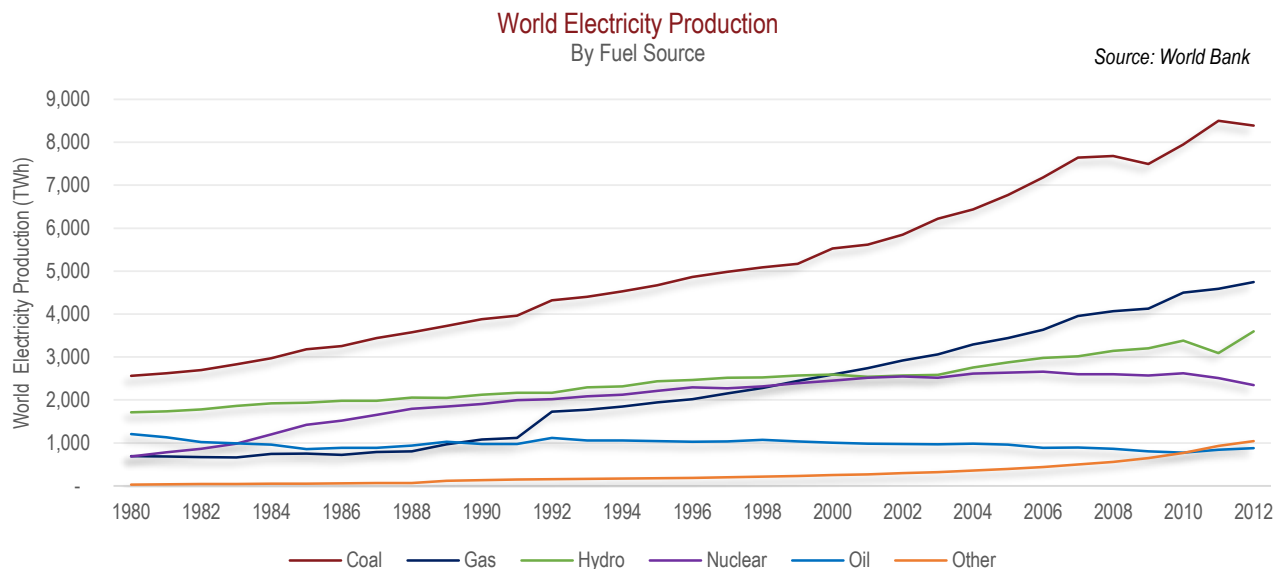
"In the world of investing, being correct about something isn't at all synonymous with being proved correct right away."
-Howard Marks

"You are neither right nor wrong because the crowd disagrees with you. You are right because your data and reasoning are right."
-Benjamin Graham

Let's take a look at Kopernik's portfolio holdings and analyze whether recent price movements are indicative of long-term trends or short-term volatility. In other words, does it appear we're mistaken or that we're merely early and the market's mistakes are creating tremendous profit-making potential? In the current, extraordinary environment, the answer to this question is virtually all that matters to those assessing portfolio decisions. We'll start with specific industries and companies and then migrate to a 'big-picture' perspective.

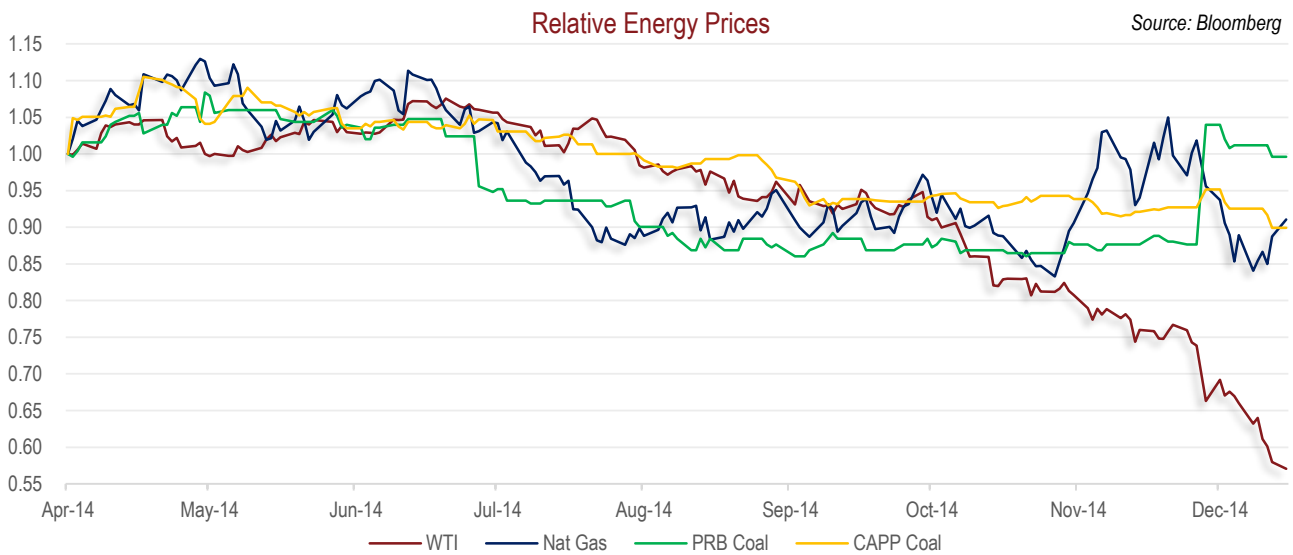
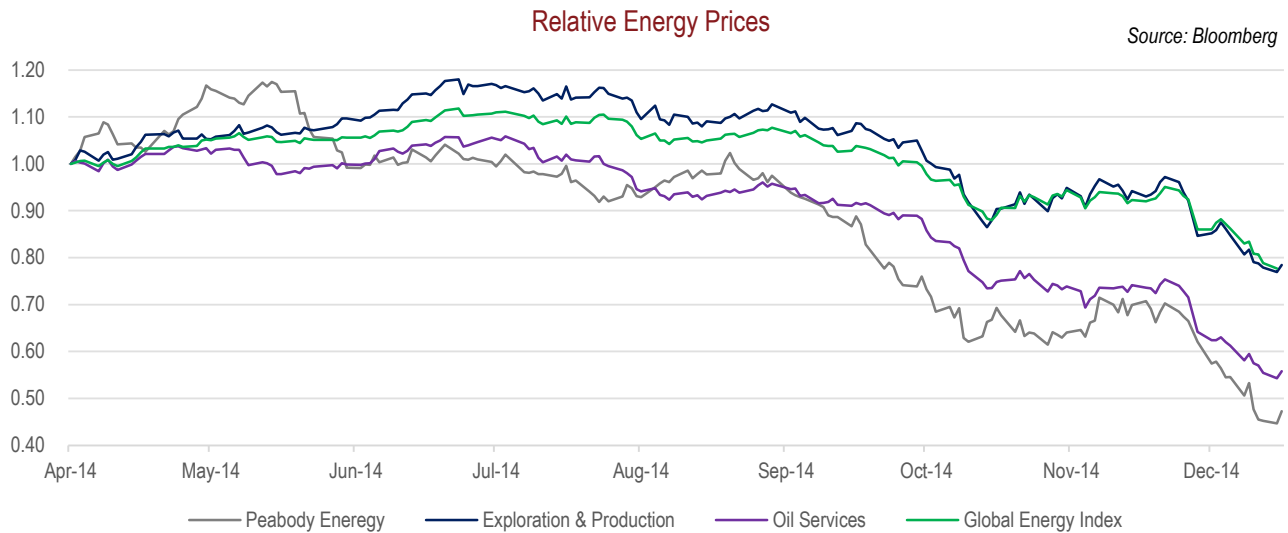
1) **Coal**

The market is suggesting that coal is about as relevant as oxen are to meeting the energy needs of the future. It is dirty and in some ways mankind might be better off if this perception that it were going away was true. But it is not going away! The population of the world has more than doubled over the past half-century, and resides predominately in the emerging economies of the world. They are, and will be, doing what the rest of us did when we were in our development stage – exploiting their resources and using energy extensively. Meeting this objective will require utilizing any and all sources at their disposal. The exhibits illustrate that coal is a predominant source of electricity. Its use will undoubtedly level off, but is it realistic to expect it to drop dramatically?





Importantly, coal is also cheaper than almost all other sources. It represents millions of years of solar energy captured in fossil fuel form. It will be used. Using Peabody Energy as an example, it is clear that the market has always exhibited bipolar tendencies in its attitude toward coal stocks. Buying when the market hates it has always been a winning strategy. Should this time be different?



WTI – West Texas Intermediate | PRB Coal – Powder River Basin | CAPP Coal – Central Appalachian Coal

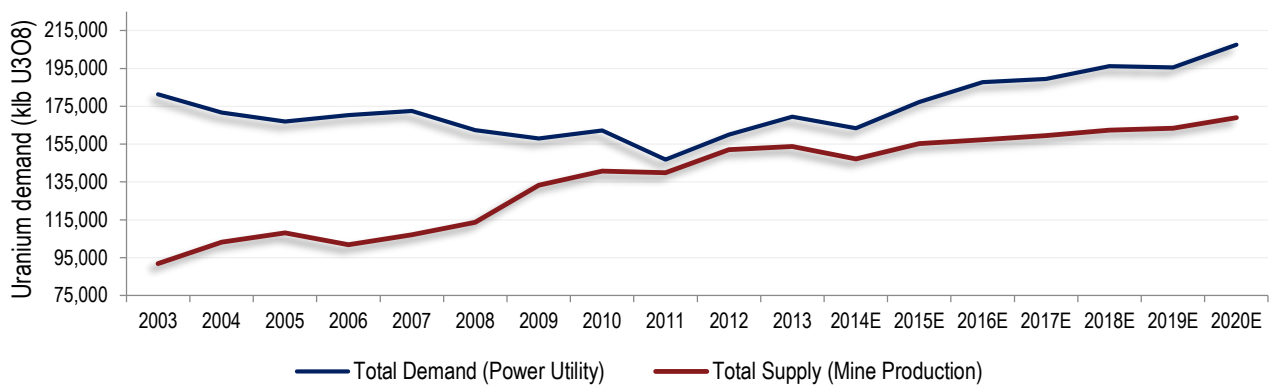
It is interesting how oil has dropped much harder than coal but coal stocks have plunged much more than oil stocks. This will likely prove to be a temporary aberration.



2) Uranium

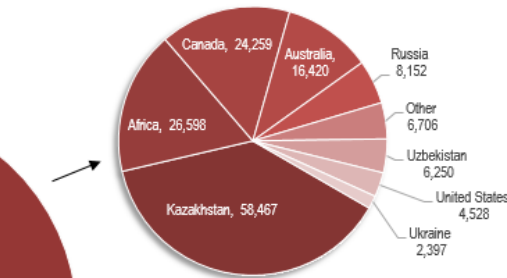
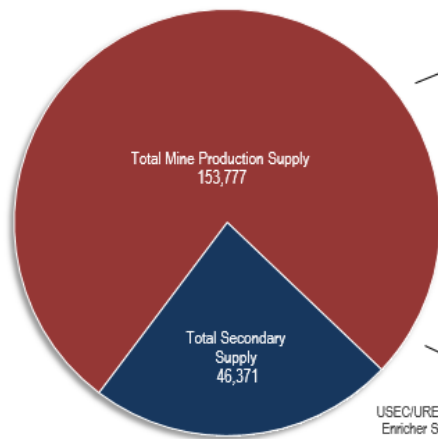
The market is assuming that Fukushima was the “coup de grace” for nuclear power. They couldn’t be more wrong. As discussed with coal, meeting the needs of 7 to 8 billion people will increasingly be a challenge. Nuclear, like all energy sources has some unfortunate negatives, but it is cheap and clean and CO2 free. The exhibits show that mine production has consistently been below demand. The Mega-tons to Mega-watts program is over, one of many factors suggesting that mine supplies will need to grow. In addition to existing reactors, many more are being built. Inventories are currently high but falling. It is believed that sufficient mine production will require a more than doubling of price.

Uranium Supply & Demand
2003-2020E

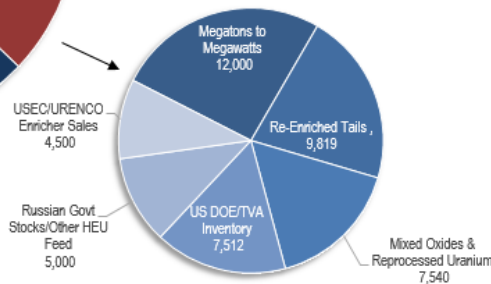
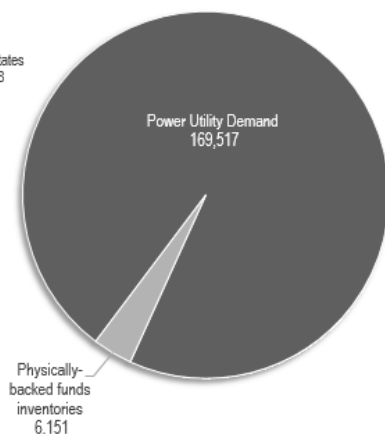


Mine Supply by Country

Total Supply 2013



Total Demand 2013



Secondary Supply by Source

Source: UX Consulting Company



New Reactors Under Construction

90 net new reactors by 2023

Source: Cameco, Q2 2014

Region/Country	Operable 2014	New	Shut	Operable	Change	Under Const. 2014
Americas	126	8	(8)	126	0	6
Europe	136	10	(16)	130	(6)	4
Asia	77	14	(14)	77	0	9
Other*	6	16	-	22	16	5
India	21	15	-	36	15	6
China	21	57	-	78	57	27
Russia & E. Europe**	49	21	(13)	57	8	12
Total	436	142	-51	526	90	69

*Other: Bangladesh, Iran, Pakistan, Saudi Arabia, South Africa, Turkey, United Arab Emirates

**E. Europe: Armenia, Belarus, Ukraine



“And then I thought, What better hedge than a uranium centrifuge?”

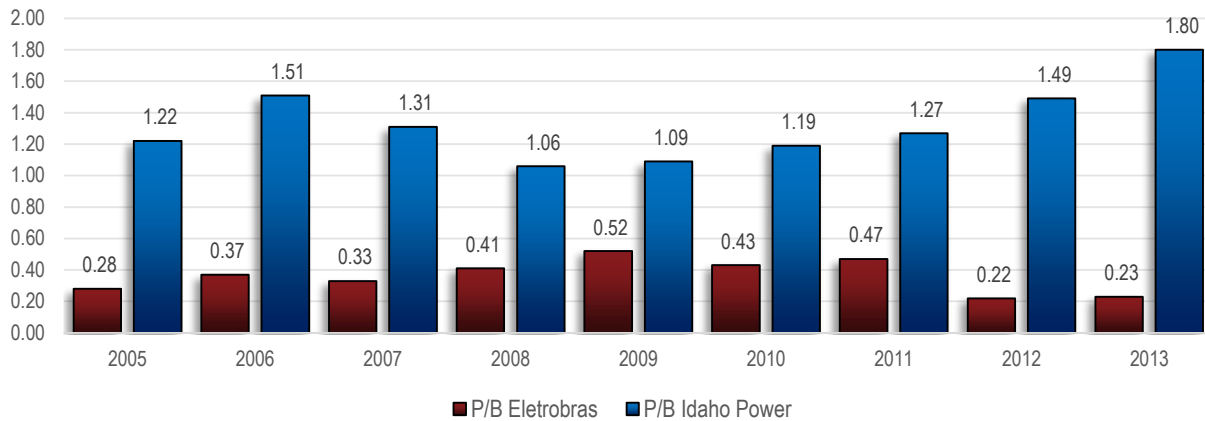


3) Hydropower

The stock market prices of mundane U.S. utility companies are up substantially, as people trip over themselves to secure a 3% dividend yield. Naturally, one would expect the stocks of utilities generating cheap, clean hydroelectric power, and doing so in growing economies, would be leading the pack. After all, hydro is arguably clearly superior to other forms of electricity. Yet, in the "Twilight Zone", these stocks have not only failed to keep pace with U.S. utilities, they have fallen into the bargain basement. Are cost leading monopolists really worth only 20% of replacement cost or is the market making a colossal mistake?

Idaho Power vs Eletrobras | P/B

Source: Bloomberg

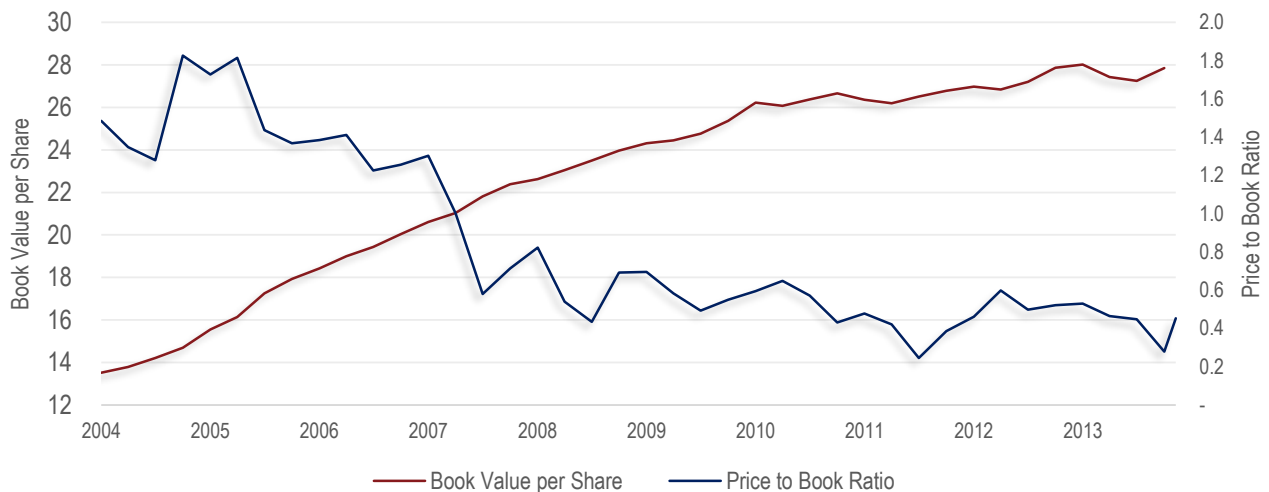


4) SkyWest, Inc.

As a result of lower fuel prices and previously distressed prices, the airline stocks have had quite a run. As one of the few industry participants to have fairly consistently added to book value over a long period of time, SkyWest, with its strong market niche, surely deserves to sell at a premium to book value and to other airlines. In fact, it has been left out of the rally and sells at less than half of book value. We believe that the market should focus less on the volatility of earnings and more on the long term growth of book value.

SkyWest

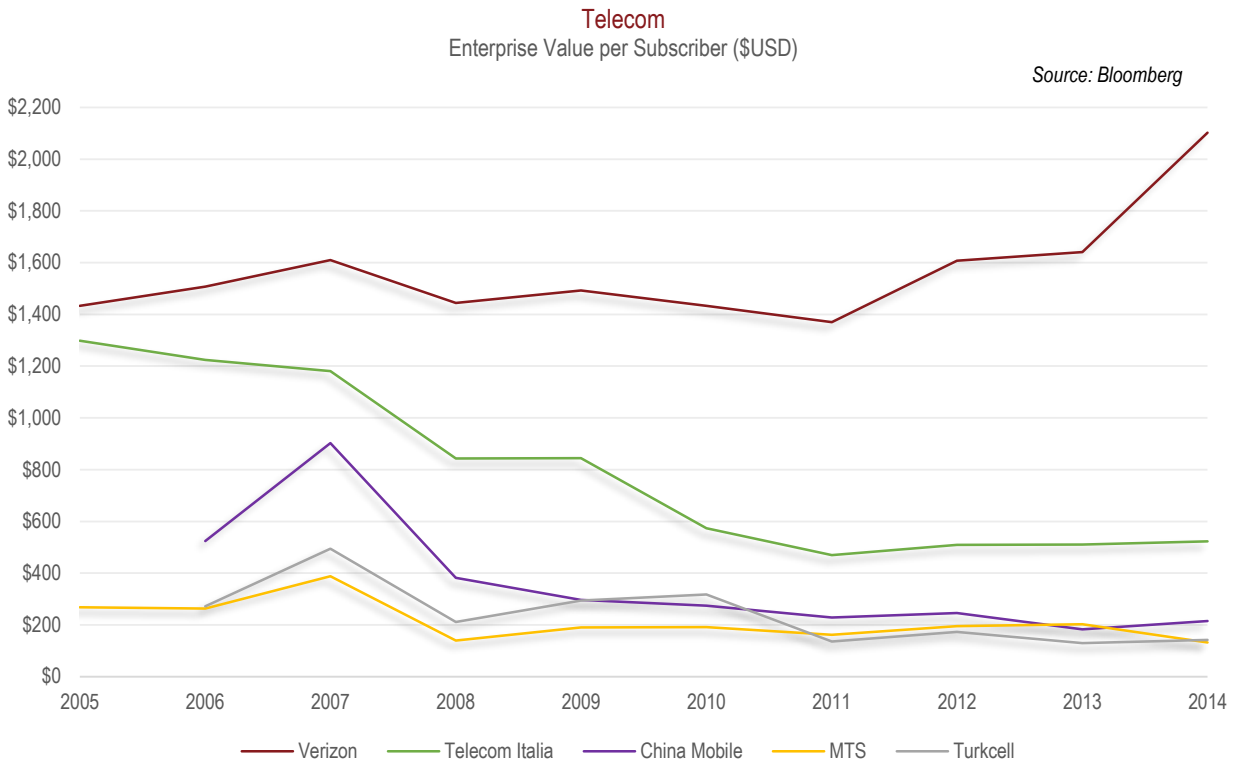
Source: Bloomberg





5) **Telecom**

Is there a better poster child for market inefficiency and human irrationality? The whole industry was priced insanely in 1999 and yet, despite phenomenal growth, was figuratively being given away three years later. NTT had the largest market cap on the planet during the late '80s and yet, was offered at only four times free cash flow, two decades subsequent. Investors have, at various times, preferred mobile, then wireline, then mobile. They have vacillated between a preference for emerging markets and developed markets, big and small, cable and fiber, code division and time division, current cash flow and growth, etc. Within emerging markets, investors' fondness is especially fickle. Opportunities are frequent.





6) **Russia/AAPL**

Twenty years from now, students won't believe that this anomaly ever happened. The table says it all. No further comments should be necessary.



Market Capitalization	\$362 billion	\$627 billion
Price-to-Sales	70%	357%
Price-to-Book	0.65	5.62
Size of Workforce	77,000,000	83,000

Resources		
Land	6.6 million sq. miles (4.2 billion acres)	2.9 sq. miles(1,866 acres) ³
Rivers	100,000 ¹	-
Lakes	2,000,000 ¹	-
Freshwater Reserves	1/4 of the World	-
Crude Oil	80,000 (m b)	-
Natural Gas	48,676 (billion standard cu m)	-
Gold	36.8 million ounces (1,150 tons) ²	31.1 million ounces (970 tons) ⁴
Gold Reserves	125 million ounces (3,906 tons)	-

Rapidly Obsolescing Products	No	Yes
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¹The largest of Russia's bodies of fresh water, Lake Baikal, is the oldest, deepest and purest fresh water lake in the world. Baikal alone contains over one-fifth of the world's fresh surface water. Of the country's 100,000 rivers, the Volga at 2,294 miles is the longest river in Europe.
²Over a period of six months, Russia has purchased 54 tons of gold and has now overtaken China as the fifth largest country in total gold reserves.
³Apple Inc., Form 10-K for the FY ended Sept 28, 2013. Approximately 15% is leased property, 85% is owned.
⁴Cash and Short Term Investments of \$37.8 billion as of June 28, 2014 converted to ounces of gold (\$1.215/ounce as of Sep 14, 2014).

Sources: The World Bank, Britannica, OPEC, Bloomberg, IMF

"Undervaluations caused by neglect or prejudice may persist for an inconveniently long time, and the same applies to inflated prices caused by over-enthusiasm or artificial stimulants."
Ben Graham

"The best opportunities are usually found among things most others won't do."
Howard Marks

"To buy when others are despondently selling and to sell when others are euphorically buying takes the greatest courage, but provides the greatest profit."
John Templeton



7) **Bonds**

*"She walks like she don't care
Walkin' on imported air
Ooh, it makes you wanna die*

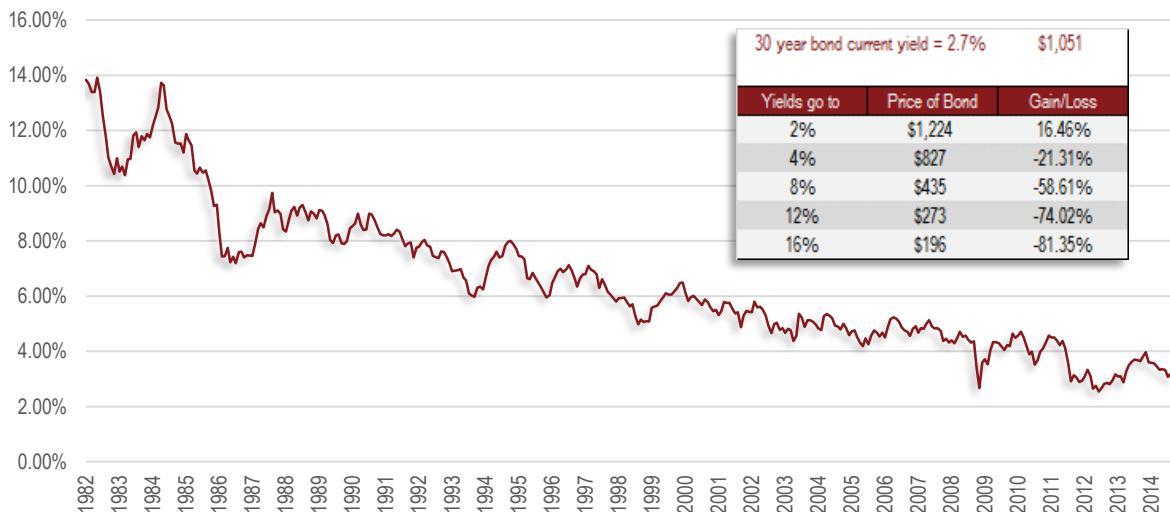
*(the Market), you've gotta see (it)
Go insane and out of (its) mind
Won't come in from the rain
She's oceans running down the drain
Blue as ice and desire" – Blondie*



The bond market certainly is 'walking on air'. Rarefied air! Lately it seems that a central banker spewing out hot air is all that is necessary to levitate the bubble higher still. It is interesting (to me anyhow) that Blondie, one of the greatest New Wave bands ever, was popular during the latter days of the last great bond bear market. It was an environment that couldn't have been more different from today's. It was a time of extreme negativity and fear. Bonds were commonly derided as being "Certificates of Confiscation" due to their tendency to drop relentlessly. In hindsight there were many reasons to be positive, but people were blinded by fear. Nowadays, investors have no fear. Today they seem blinded by greed or, at the very least, by complacency. There are many reasons to be fearful of bonds. Where is the negativity now that it is in order? Rates are miniscule; fundamentals are scary.

For example, **Bonds are claims on cash, while cash is a claim on those very same bonds!** (Fed's balance sheet liabilities are cash (currency and demand deposits) while they are backed by the Fed's assets which are primarily bonds). Could this circularity eventually come to be viewed as fraud? Or at least viewed as an accident that was waiting to happen? Further relevant bond fundamentals: the U.S. has run annual budget deficits in 46 years of the past half-century; liabilities have now reached 692% of GDP; national debt is now 4 times the cash which will ultimately be required to pay the bonds off (bonds do settle for cash); 29 times more cash will have to be conjured up by the central 'alchemists'-bankers to pay off the estimated \$115 trillion of unfunded obligations of the U.S.! (Data sources are in the Appendix, Pg. 28.)

Historical 30 Year Bond Yield





Bonds ended 2014 at a mind-blowing yield (or lack thereof) of 2.75% (and quickly dropped another ¼ percent, to below 2008 levels). The above chart shows the three decades long journey of interest rates from compellingly high to virtually nonexistent. The insert shows that a further drop to 2% could lead to gains of 16.5% but that a small increase to 4% could result in relatively larger losses of 21%. A return to rates of the early 1980s, a time when investors were distraught over the financial situation of the U.S. (which incidentally looked Herculean in comparison to our current predicament), would result in a plunge of over 75% in the price of a 30 year Treasury. There is a reason that some refer to bonds as offering 'return-free risk!'

As a completely random aside, it is merely a coincidence that the lyrics used in this Commentary from music groups (Blondie, The Police, and Oingo Boingo) are all from circa the end of the last major inflection point for financial assets relative to real assets. Maybe subconsciously I miss the high yields as well as the music of the era. (We'll end the Commentary with some lyrics from this century.)

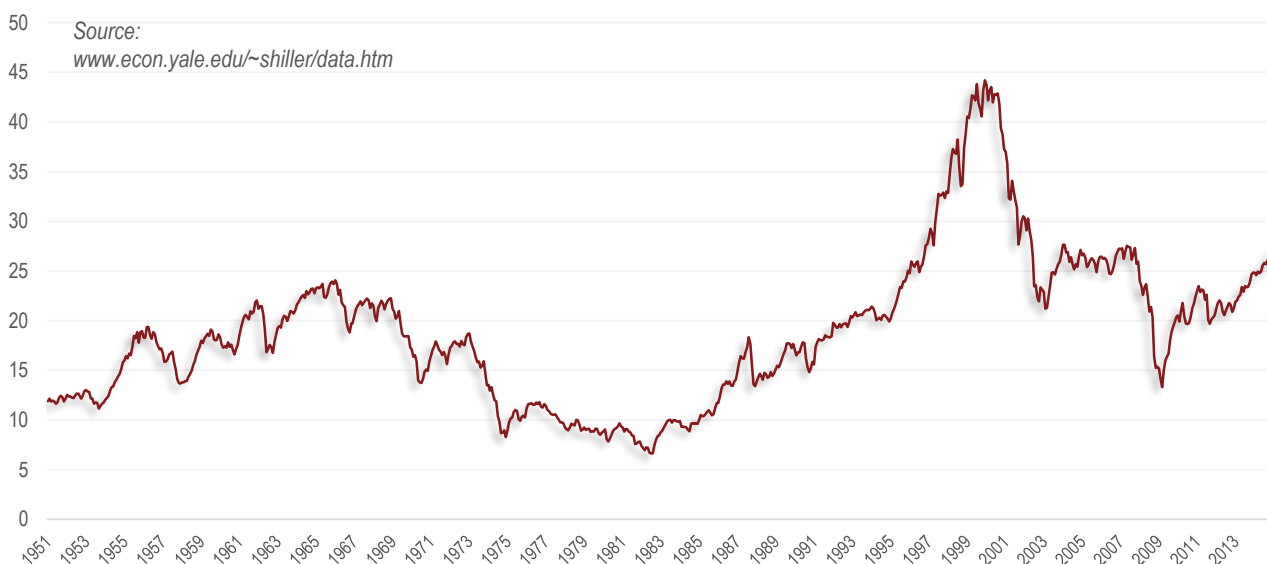
8) U.S. Stock Market

Stocks in the United States are reasonably valued **if** one believes that: 1) margins will permanently hover significantly above historic norms; 2) interest rates will always be close to zero; 3) taxes, in aggregate, won't rise much from current levels; 4) the rule of law won't weaken; 5) labor will be content to accept an historically low 'piece of the pie' even as they watch capital earn a historically outsized slice; 6) the U.S. is an oasis, immune from the challenges afflicting the rest of the world; 7) cycles are a thing of the past; 8) there will be no 'black swans'¹; 9) one single country can deserve to be valued at more than the cumulative value of every other country (as represented in the MSCI -ACWI (all country world index)).

Kopernik is very thankful to have the latitude to invest elsewhere!

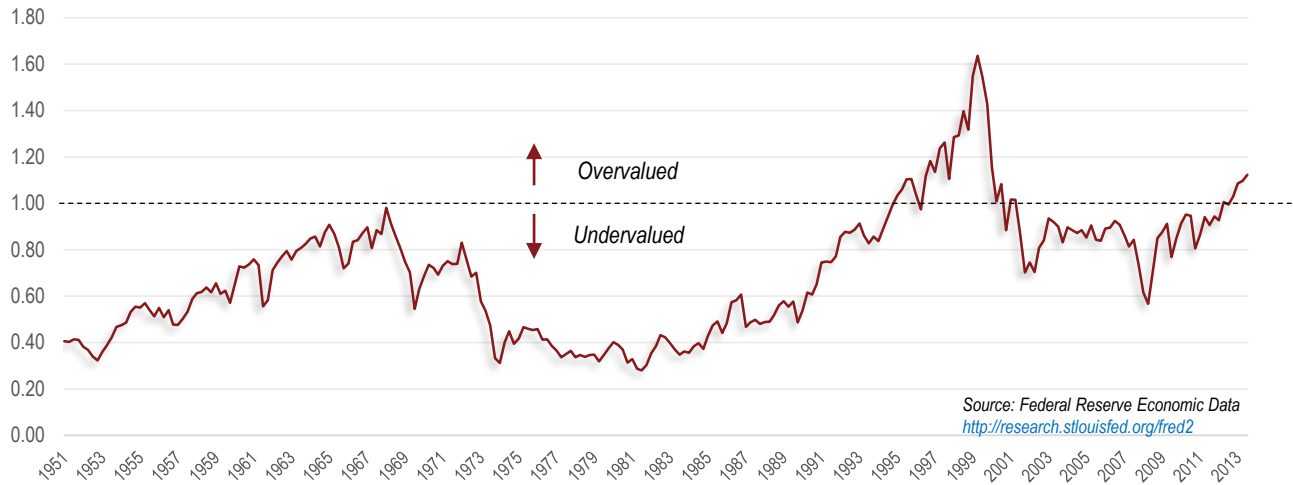
¹The black swan theory is a metaphor that describes an event that comes as a surprise, has a major effect, and is often inappropriately rationalized after the fact with the benefit of hindsight.

Cyclically Adjusted Price Earnings Ratio (CAPE)
1951-2014





Tobin's Q Ratio
1951-2013

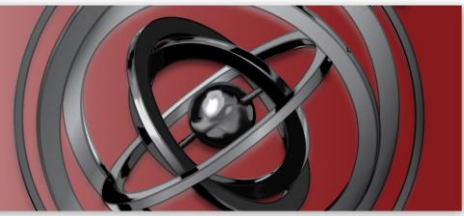


Tobin's Q: A ratio devised by James Tobin of Yale University, Nobel laureate in economics, who hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a company divided by the replacement value of the firm's assets.

Top 500 | Price to Book



Source: Morgan Stanley Research



Stock Market Cap as % GDP



Cap weighted indices have proven to be a valuable warning system whenever they've become highly concentrated in one industry, sector, or country. Examples include energy (1980); Japan (1989); TMT (1999); Financials (2007); perhaps the US now?). If it weren't for 1999, this would be the most expensive the U.S. market has ever been!

9) Emerging Markets

Growth is a wonderful thing! It is worth a lot. The problem with paying up for future growth is that, more often than not, it doesn't fully materialize. Four years ago, despondent about the lackluster prospects for the US and Europe, investors excitedly paid up for growth in the BRIC¹ countries. Growth turned out to be pretty good but far short of lofty expectations. This led to market losses. Flash forward to 2015. Investors now are willingly paying up for prospective growth in the large, mature, heavily-indebted United States, while giving away prospective growth in the growth economies of the world. You can't make this stuff up.

¹BRIC: grouping acronym that refers to the countries of Brazil, Russia, India and China, which are all deemed to be at a similar stage of newly advanced economic development.

	% of World GDP 2013	% of MSCI ACWI Jan 2015
United States	22%	52%
China	12%	2%
Japan	7%	7%
Germany	5%	3%
France	4%	3%
United Kingdom	4%	7%
Brazil	3%	1%
Italy	3%	1%
Russia	3%	0%
India	2%	1%
Other	36%	23%

Source: World Bank, Bloomberg



Ticker	Name	P/B	P/E	Curr EV/T12M Sales	EV/T12M EBIT	FCF Yld	Dvd 12M Yld - Gross
SPX	S&P 500 INDEX	2.736	17.920	2.118	15.132	5.124	1.993
MXEA	MSCI EAFE	1.539	16.248	1.343	13.689	4.197	3.163
HSI	HANG SENG INDEX	1.371	10.323	2.228	11.158	6.680	3.692
MERVAL	ARGENTINA INDEX	1.256	11.448	1.693	15.276	-5.282	1.345
IBOV	BRAZIL IBOVESPA INDEX	1.211	15.491	1.418	10.637	15.784	4.824
KOSPI	KOSPI INDEX ¹	1.097	130.344	0.986	21.028	2.749	1.105
RTSSTD	RTS STANDARD INDEX ²	0.405	4.450	1.013	6.095	32.889	0.090

¹ KOSPI – Korea Stock Exchange Index

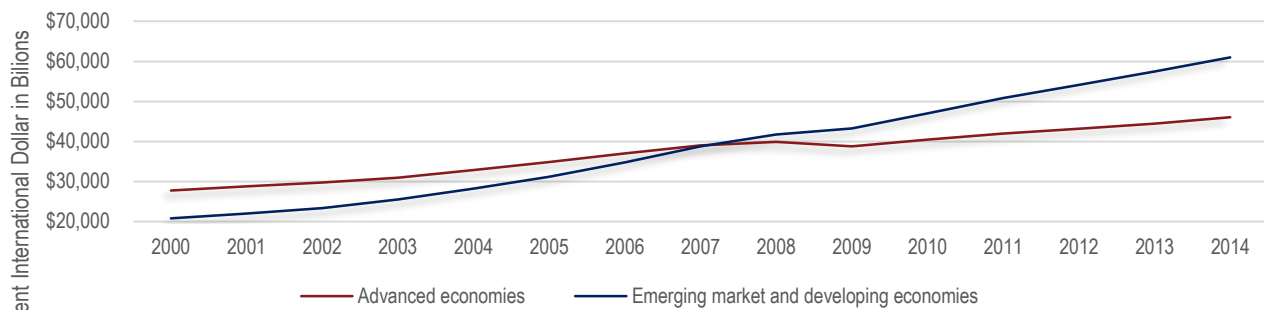
² RTS Index – Moscow Exchange Blue Chip Index

Source: Bloomberg

Advanced Economies vs Emerging Economies

Gross domestic product based on purchasing-power-parity (PPP)

Source: IMF



Performance of Global Equity Markets

September 30, 2011 - December 16, 2014

Source: Bloomberg





10) Gold

“The Barbarous Relic”

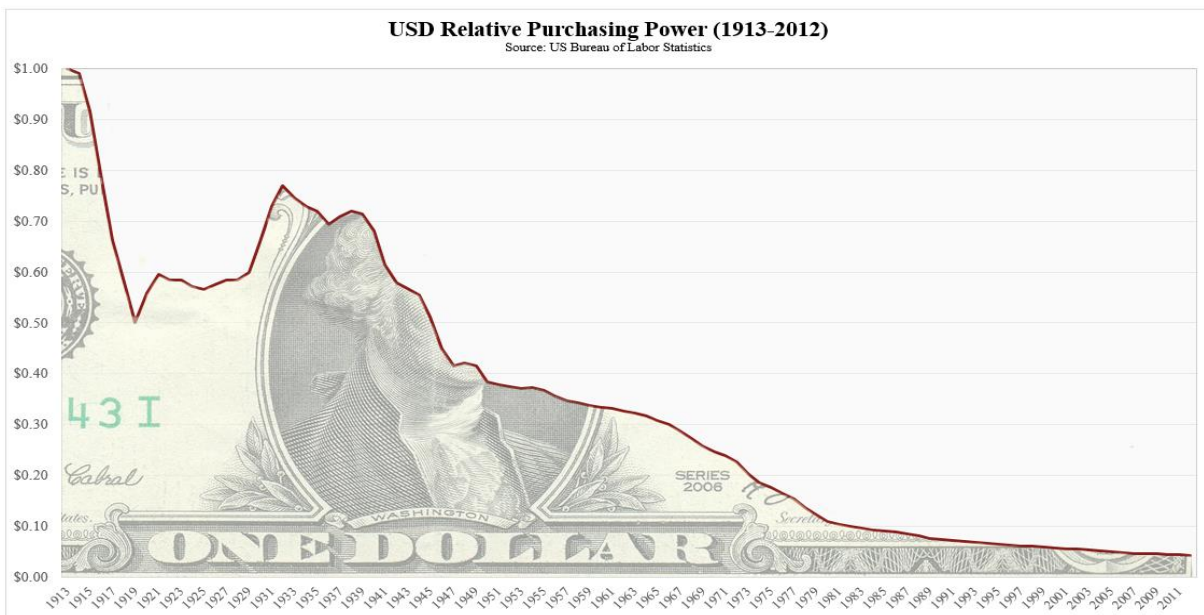
Definition of Intrinsic Value

The actual value of a company or an asset based on an underlying perception of its true value including all aspects of the business, in terms of both tangible and intangible factors. This value may or may not be the same as the current market value.



	Gold	Dollar
Production Input	No	No
Generates Income	No	No
Edible	No	No
Medium of Transaction	Fair	Excellent
Store of Value	Excellent	Poor
Intrinsically Valuable	*	*

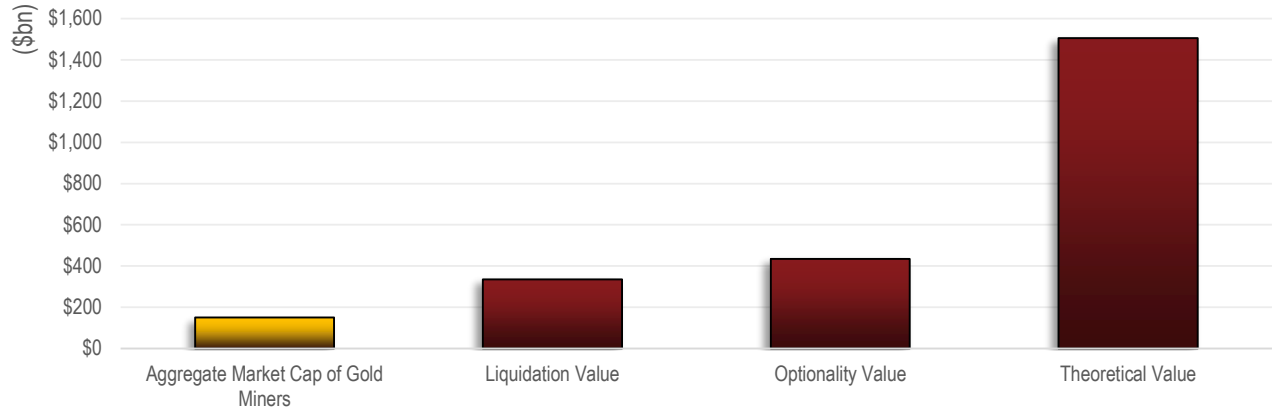
- If one googles “intrinsic value of gold” they will encounter many articles about how “gold has no intrinsic value.” Such is the contemporary mindset.
- The wisdom of the ages is perhaps best captured by Voltaire’s famous quip that, “Paper money eventually returns to its intrinsic value – zero.”
- Gold has been used as money since at least 550 B.C. when it was coined by King Croesus of Lydia. It has maintained its purchasing power for thousands of years.
- Regarding fiat currency, “The average life expectancy for a fiat currency is 27 years, with the shortest life span being one month. Founded in 1694, the British pound Sterling is the oldest fiat currency in existence. At a ripe old age of 317 years it must be considered a highly successful fiat currency. However, success is relative. The British pound was defined as 12 ounces of silver, so it’s worth less than 1/200 or 0.5% of its original value. In other words, **the most successful long standing currency in existence has lost 99.5% of its value.**” (source: Washington’s Blog)
- When comparing money that has held its purchasing power for thousands of years with the dollar, that has lost more than 95% of its purchasing power thus far in my lifetime, it is probable that modern social scientists have awarded the “no intrinsic value” moniker to the wrong one.



Data: <ftp://ftp.bls.gov/pub/specialrequests.cpi/cpiat.txt>



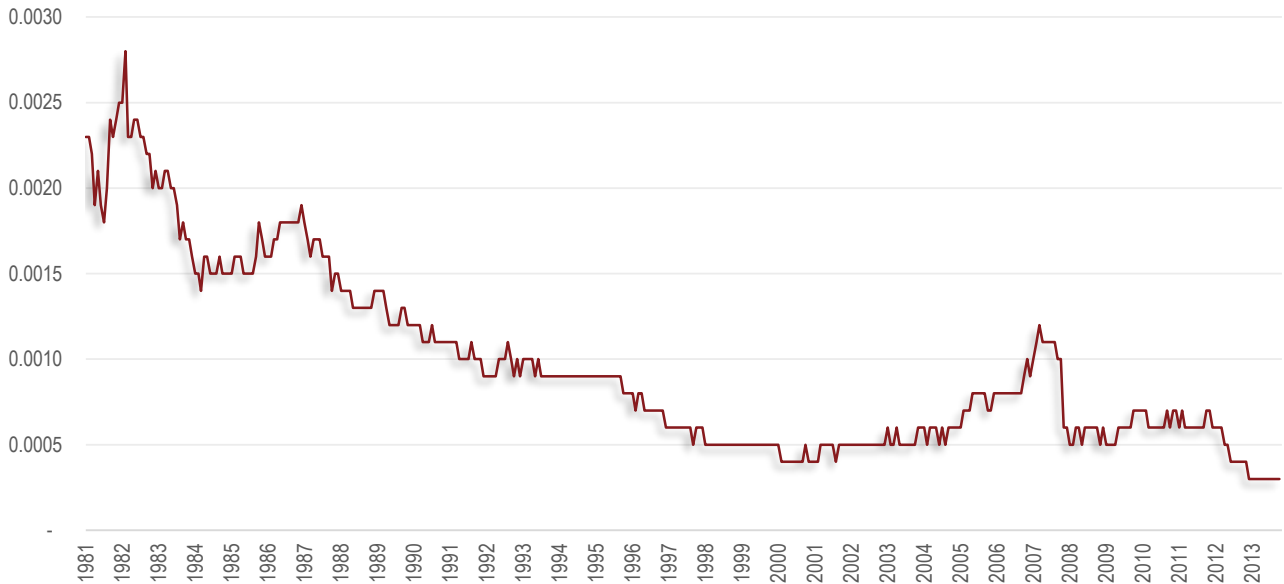
Gold Miners Market Cap vs Upside Potential



Kopernik Estimates (see pg. 28 of Appendix for valuation assumptions)

Gold Price / U.S. Monetary Base

Source: Bloomberg



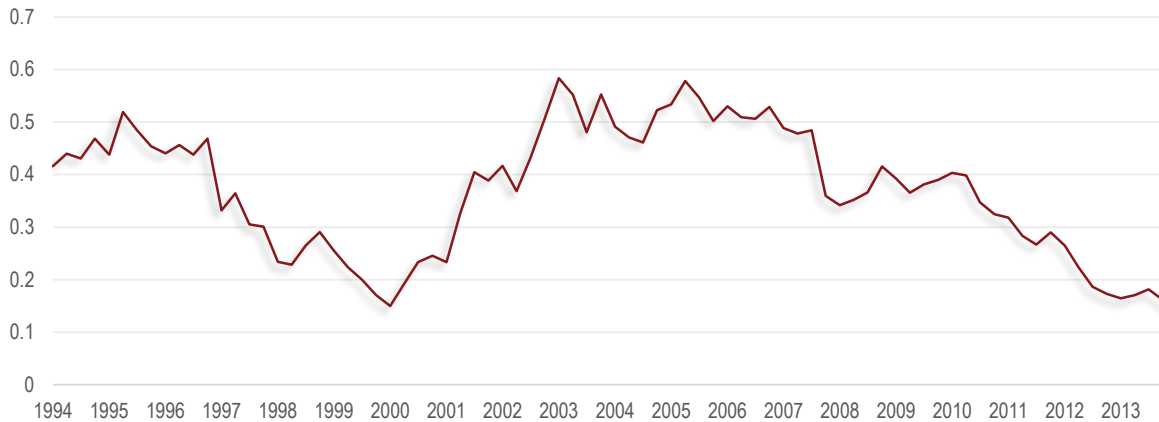
Certainly each and every argument against gold's intrinsic value is equally applicable to the dollar's value. The case in support of gold's worth is not applicable to the dollar. The dollar's value is primarily psychological. Economically, its value has been virtually all diluted away. The dollars in circulation in 1980, per ounce of gold held by the Treasury, amounted to 400. That number has now grown to 15,000! Arguably, 97% of its value has been diluted away. Theoretically, the price of gold should have appreciated by 37.5 times (it has gone up 2.5 times). One of these two monetary mediums will still have value a hundred years from now. We believe people should exchange a good portion of their dollars into gold posthaste, while they still can.



11) Gold Mining Companies

HUI Index¹ / Price of Gold
1994-2014

Source: Bloomberg



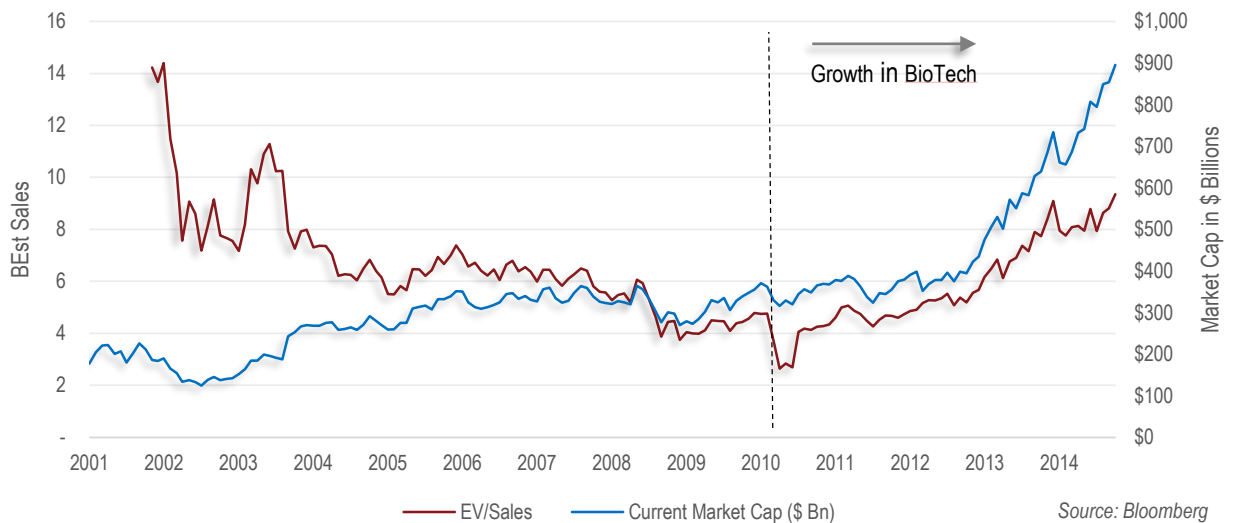
¹HUI Gold Index: The NYSE Arca Gold BUGS Index is a modified equal dollar weighted index of companies involved in gold mining. BUGS stands for Basket of Unhedged Gold Stocks. It is also referred to by its ticker symbol "HUI"

While every prudent household must, in our opinion, own some physical gold, the most compelling way to gain exposure to the attractive gold fundamentals is to own the businesses that own massive amounts of gold in-situ. The above chart illustrates how cheap these stocks have become relative to the gold they own.

12) Biotech

Nine times sales! Many with no earnings. In this market earnings are not necessary, a nice story will more than suffice. Déjà vu!

BioTech Growth
2001-2014



Source: Bloomberg

Capitalization is up nine-fold over the past decade!



The Big Picture – Living in a World of Sounds Bites and Weird Science

Having switched from pre-veterinary studies to economics in college, it is interesting to observe how, over the years, the social sciences have been trying to metamorphosize into physical sciences. Various wags have suggested that they suffer from a bad case of “physics envy”. A more accurate interpretation could be that people try to create certainty in an uncertain world. At extremes they choose to believe in myth rather than deal with discomfort. How nice it would be if risk, inflation, and well-being could be boiled down to a single number. Grander still would be if that “number” allowed for formulaic policy management rather than requiring thought, sacrifice, hard choices, using common sense, and defense of one’s policy choices, in order to achieve economic success.

*“Magic and technology, Voodoo dolls and chants, Electricity, We’re makin weird science
Fantasy and microchips, Shooting from the hip, Something different, We’re makin weird science
Pictures from a magazine, Diagrams and charts, Mending broken hearts, And makin weird science*

*From my heart and from my hand and, Why don't people understand my intentions?
Weird, Weird science”*

-Oingo Boingo

But, alas, our policymakers want us to believe in magic. Let’s start with **economics, which in many ways has just become a servant of government and public policy, not unlike the role played by astrology to rulers in the past**. Before, yet again, pointing out some of the flaws with Keynesian economics, let’s take a look at the following comments by Robert Schiller:

*“The problem is that once we focus on economic policy, much that is not science comes into play. **Politics becomes involved, and political posturing is amply rewarded** by public attention. The Nobel Prize is designed to reward those who do not play tricks for attention, and who, in their sincere pursuit of the truth, might otherwise be slighted. Why is it called a prize in “economic sciences”, rather than just “economics”? The other prizes are not awarded in the “chemical sciences” or the “physical sciences.” Fields of endeavor that use “science” in their titles tend to be those that get masses of people emotionally involved and in which crackpots seem to have some purchase on public opinion. These fields have “science” in their names to distinguish them from their disreputable cousins.”*

- Robert Schiller, 6 November 2013, post winning the Nobel Prize



It is interesting that the award went to Mr. Schiller, whom I respect, and to Mr. Fama, even though the two of them have contrasting ideas. It certainly isn't a physical science.

Now, turning to Keynes, I confess to beating a dead horse. Keynes was a bright guy, but his opinions did sway with the times. He said a lot of smart things over the years. Unfortunately, many of his theories seem more fanciful than sensible. Yet, the fault in current economic theory isn't entirely his *ideas* but more the fact that government bureaucrats have used them as an excuse to grow government ever bigger. His theories make it easy for them. In his defense, he proposed to use government to counter-balance private cyclicalities, not to spend incrementally more during bad times **and** good. But this was all too predictable. Unlike with physical sciences, human behavior can't be precisely modeled, merely studied and anticipated. Unlike Keynesians, Behavioral Economics and proponents of the Austrian economic school understand this.

"Although most economists in the 20th century and our time would disagree strongly, Mises insisted that economic theory itself was an a priori discipline. What he meant is that economists shouldn't ape the methods of physicists by coming up with hypotheses and subjecting them to empirical tests. On the contrary, Mises thought that the core body of economic theory could be logically deduced from the axiom of "human action," i.e., the insight or viewpoint that there are other conscious beings using their reason to achieve subjective goals."

- Wikipedia

The following discusses some of the ways that academics and government careerists attempt to formulize non-formulaic factors.

***"It is the middle ground between light and shadow, between science and superstition,
and it lies between the pit of man's fears and the summit of his knowledge."***

-Twilight Zone (Season 1)

C + I + G = Y

(consumption + private investment + government spending = GDP)

The addition of imports and exports improves the formula but the flaws are fatal. Does consumption equal income? Seriously?!!!! One great analogy found on the internet was that of a corn farmer. The corn he harvests is income. The amount he stores in a silo is savings. The amount he eats is consumption. Consumption is negative production, negative income, and negative savings. But here is a formula that regards negative income as positive income. This formula is taught in most colleges and used by academia and government. Surreal! Similarly, if two neighbors grow their own food, prepare their own food, and consume their own food, it is doubtful that anyone would claim that they've contributed to national income. But if neither produced any food, but one neighbor served breakfast to the other who in turn serves lunch to the first, has income increased?

And what about government spending?!

Once again, spending is not producing income! But even if it were, the government has no money, they take it from the citizens. If a citizen foregoes spending so that they can pay tax to the government, who in turn spends the money for him, has aggregate income increased? The critic could go on endlessly but enough said. Interested parties should Google for more info.



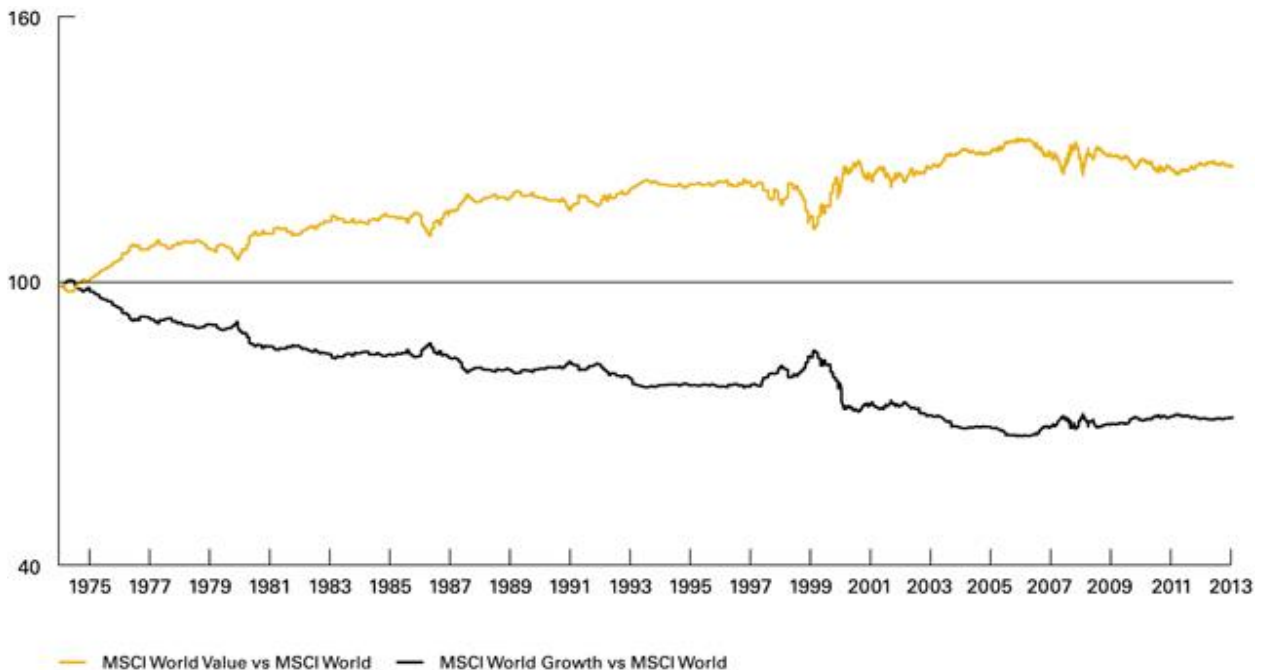


Keynesian Multiplier Effect

(an increase in government spending results in an even greater increase in national income)

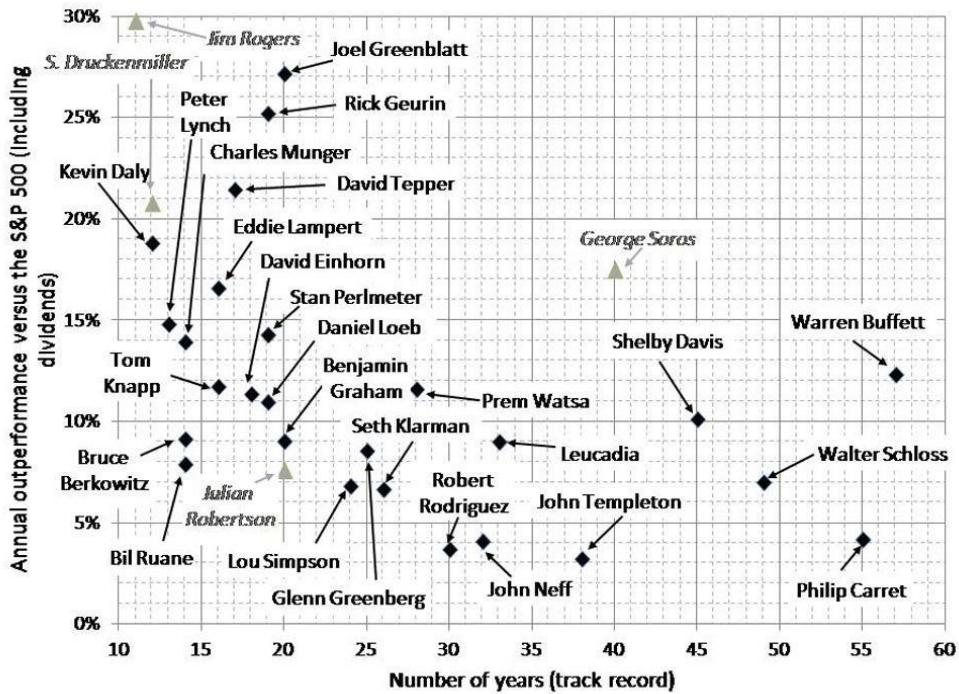
Who wouldn't be in favor of spending ones way to prosperity? Each dollar spent will create enough income and investment to generate more income than was spent. A perpetual motion machine would be nice, too! There is plenty of material available to those who would like to read further on this, including the marginal propensity to save/consume. There is no need to discuss further here.

EMH (efficient market hypothesis) – Logic and empirical evidence demonstrate decisively that buying assets when they are attractively priced leads to better performance than does buying those same assets at expensive valuations. The following chart is but one example:





James P. O'Shaughnessy's book, "What Works on Wall Street" shows that low prices relative to sales and book value have led to substantial outperformance for many decades. Reams of other empirical findings are readily available. Beyond the studies, it should be clear that stocks could be purchased 90% cheaper in 1933 than in 1929. Fifty percent discounts were available in 1974 (vs 1972), 2002 (vs 2000), and 2009 (vs 2008). The fact that certain managers fairly consistently outperform the market can be explained away using the logic that even routine coin-tosses will lead to some lucky consistent winners and some perennial losers. The fact that many can be identified a priori based upon their thought process and disciplines, cannot be explained away.



Source: "Investment Wisdom from Wall Street's Legends", Frederik Vanhaverbeke



NON SEQUITUR
BY WILEY



Furthermore, the fact that the assumptions underlining EMH are indefensible is a huge problem. I don't know of anyone that seriously believes that humans are rational beings, that taxes don't matter, that information is evenly distributed, that fundamental analyses is commonly performed diligently (certainly ETFs are proof to the contrary), etc. It is a fact that assets routinely become too expensive and too cheap. It is a cyclical phenomenon. A la 1999, the current environment shows that suspension of disbelief and even giddiness can happen.



As mentioned in past commentaries, efficient markets (if true) make ETFs/passive products attractive, yet these products, in and of themselves, undermine the assumptions upon which the theory is based. The passive investment craze of the late nineties sowed the seeds of many good years for active managers/bad years for indexers. We believe the current uber-enthusiastic stampede into ETFs has created a similar environment once again. We're excited about it.

The nearby comics pertaining to growth investing peaks, the shallow, short-term nature of analysis, and technical analysis say all we want to say, but we're more than happy to discuss further with interested parties. Suffice it to say, they are short term strategies that work well for some, but not for most, and most importantly, in the process, create opportunities for long-term investors.

Rather than subscribe dogmatically to a certain methodology, be it momentum, technical analysis, growth, GARP¹, quant, or specific definitions of value, all of which at moments in time have their days in the sun, we prescribe hard work, common sense, independent thought, a valuation-based foundation, and discipline. "There is no free lunch."

¹GARP: "Growth at a Reasonable Price" An equity investment strategy that seeks to combine tenets of both growth investing and value investing to find individual stocks.



"It's not supposed to be easy. Anyone who finds it easy is stupid."
Charlie Munger

CAPM (capital asset pricing model)

$$\bar{r}_a = r_f + \beta_a (\bar{r}_m - r_f)$$

Where:

r_f = Risk free rate

β_a = Beta of the security

\bar{r}_m = Expected market return

Can a model that does not even incorporate price as a variable conceivably be valid? Clearly not! Only in the Twilight Zone. If a stock's share price fluctuates from \$20 to \$100 and back to \$40, has the cost of equity remained constant (all other things equal)? Can't be true. If true, investors should be as happy to pay \$100 as they were at \$20 and the company should be equally happy to raise capital by selling shares at \$40 as they would be at \$100. The fact that many seem to conduct their affairs in this manner does NOT make it rational. Other flaws include the facts that: rather than a "risk-free rate" there only exists a central bank manipulated rate; the beta of a security has nothing to do with the expectation of future permanent gain or loss; and the expected market return doesn't include the single most important variable – valuation – thus CAPM is merely poppycock.

MV = PQ

(money supply * velocity = price * quantity)

In the vein of logical inference versus precise imprecision, it should be clear that an increase in money supply should lead to higher aggregate price levels. It is important to recognize that while this is typically useless information, during times of major change it matters greatly. When Paul Volcker slammed the brakes on money supply growth in 1979, price appreciation was going to level off meaningfully. In the realm of economics, that **was** what mattered. How soon and by how much was an important matter only to those who routinely can't see the forest for the trees. In that case it took three years, but a multi-decade bull market in financial assets ensued, even as real assets began their descent into a long bear market. Currently, at year-end 2014, the profligate monetary growth of the past half-dozen years has caused, and will continue to cause, increasing aggregate price levels. A quintupling of the monetary base is a **major** event. It **is** what matters. A significant consequence has been the launch of asset and of service prices. Not all assets and services, but specifically those that are paid for by the two main beneficiaries of the inflationary policy (governments and/or the rich). Trying to ascertain **when** the bulk of the price increases finally hits the system is a mug's game.

Reducing the relationship between money and price to a precise formula is another example of physics envy. There is always a lag effect. M (money supply) is a variable with many different definitions upon which the 'experts' disagree. V (velocity) is a plug figure that is solved for or assumed to be constant. Both are problematic approaches. P (price) is very hard to measure accurately, but the government's goal is all too often to measure it inaccurately. High prices mean higher expenses and lower revenues for the government. Therefore, it is important to be cognizant of the fact that it is the government that measures and publishes the price index. They have created commissions with a mandate to lower the calculated number. They use only consumer prices which means excluding industrial prices and asset prices. Asset prices are a glaringly important omission. Prices are then 'hedonically' adjusted, meaning that if a price increase is accompanied by perceived quality improvements, it is deemed not to be a price increase. They seem to be clueless that quality has always improved over the ages and to believe that subjective input from government bureaucrats is a helpful addition. If the price of beef goes up, people are assumed to substitute chicken at a lower price (what about a negative hedonic adjustment here?). And Q (quantity) is fairly impossible to measure and is also 'adjusted.' Other than these complaints, MV=PQ is a nifty little formula.



*"My creation, is it real?
It's my creation—I do not know
No hesitation—no heart of gold"
-Janet Yellen, Oingo Boingo*

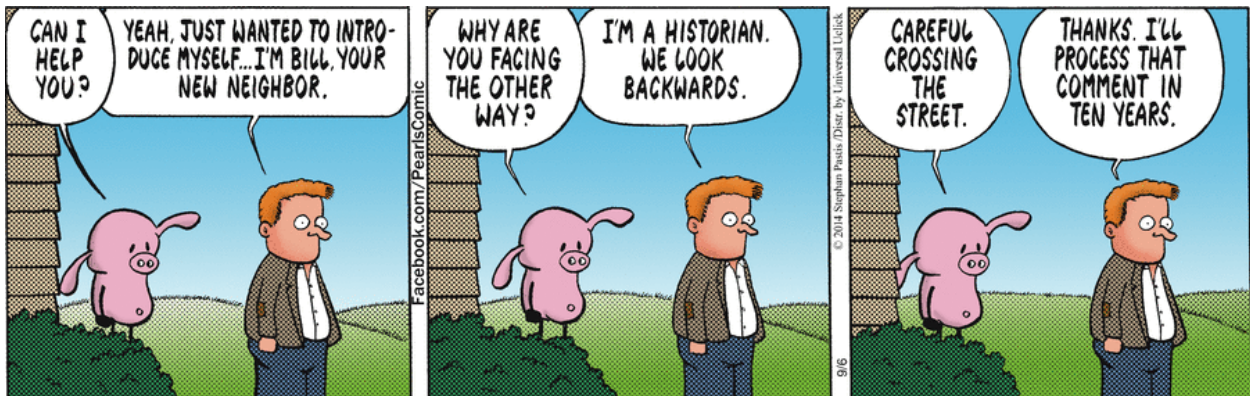
Money can be created by fiat (and further created by banks using another multiplier effect)

Voltaire famously said that fiat currencies eventually reach their intrinsic value of zero. Will and Ariel Durant's must read, "The Lessons of History" summarizes that "bankers understand that history is inflationary and that money is the last thing that a wise man will hoard." Various internet sites suggest that the average duration of fiat currencies is less than four decades, with none having reached four centuries. In contrast, a sell-side analyst, (we'll do him a favor and leave his name out), recently claimed that gold was in a six-thousand year old bubble. He elected to assign the term "fiat currency" to gold as well. Fiat currencies get their name from the fact that they aren't underpinned by anything tangible, but rather get their value by government mandate (fiat). Gold, on the other hand, has been chosen by people to serve as money. For thousands of years people have chosen gold as money because they value its scarcity, attractiveness, anti-corrosive property/durability, divisibility, and coin-ability. Most importantly, it is nobody's liability and cannot be 'printed by governments. As discussed earlier, while currency can be conjured out of thin air, **wealth cannot!** Life would be easy if it could. The world's central banks would like us to believe that they have found the Philosopher's Stone. Rest assured that they have not. Because fiat currency is always mismanaged and loses value relative to gold, it always has had an interest rate yield to compensate savers for their diminishing purchasing power. Such a yield seems to be requisite everywhere except in the "Twilight Zone."



**Quantifying Risk
(VaR, Standard Deviation, Tracking Error, etc.)**

We would highly recommend Howard Marks' great book, "The Most Important Thing" to all investors. Risk is many things to many people. Some investors' aversion to non-portfolio risks creates opportunity for other investors, those willing to accept/mitigate these risks. Kopernik resides firmly in the camp of investors who focus on managing and mitigating the risk of permanent loss of purchasing power to the portfolio. Many commonly used metrics such as those in the sub-heading measure the past. Risk pertains to the future. Volatility measures often fail to distinguish between upside volatility and downside volatility. Tracking error as a measure of risk implicitly assumes that the index being tracked is riskless. It would be a very different world if the past always predicted the future and if events always conformed nicely into a bell-shaped pattern. Mr. Marks demonstrates that risk cannot be calculated precisely, and suggests that effective management requires expertise, common sense and discipline.



"It is easier to rationalize than it is to be rational."
-unknown



Conclusion

"There is no such thing as a free lunch"



"To thrive as a value investor you have to risk being called a dummy from time to time."

Christopher H. Browne

"Value investing is at its core the marriage of a contrarian streak and a calculator."

Seth Klarman

In 1999, society began to believe that the creation of the internet had somehow suspended the laws of the universe. Mathematics, human behavior, and the principals guiding economic decision-making held no sway. Price did not matter. In 2014, society seems to believe that central bank omnipotence has negated the laws of the universe. Once again, mathematics, human behavior, and economic principles are considered to be quaint. Price does not matter. Scarcity is not valued. Wealth does not need to be worked for; does not need to be earned! It can merely be conjured up by bureaucrat magicians with a printing press.

We, at Kopernik, believe that math is an absolute. We believe that human beings tend to do what they are incentivized to do. It is clear that marginal utility drops as supply increases (i.e. scarcity matters immensely). We simultaneously believe that modeling of the physical world has been one of the utmost accomplishments of mankind, and that attempts to model human behavior and other imprecise and interdependent variables have led to many of the great follies of mankind. Furthermore, we believe that there are many risks in the market but none are a more important contributor to future loss than **excessive price**.

The central banks of the world made fiat currency extremely abundant. The population is growing. Gold, uranium, clean water, energy, farmland, phone franchises, and transportation infrastructure have remained quite scarce. Their value relative to cash and bonds has soared. For years, this fact was reflected in the marketplace. The market's recent excursion into the "Twilight Zone" has surrealistically given us **the opportunity to buy these useful, important, and scarce assets at pre-QE3 prices!** (Queue twilight zone music here.) Wants are valued well above needs. This appears to be the buying opportunity of a lifetime. Kopernik are taking full advantage of a "Twilight Zone" world where many prefer to buy high and sell low. As was the case in 1999 and 2008, it is likely that this year some investors will awaken to a nightmare, even as fundamentals-based, value-focused investors stand to reap the rewards of due patience, fortitude, and diligence.

Happy New Year!
May 2015 bring you much health and happiness!

Cheers,

David B. Iben, CFA
Kopernik Global Investors
January 2015

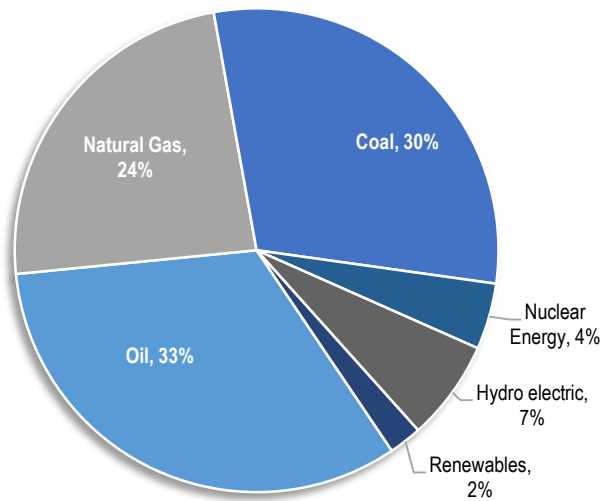
"I ain't happy, I'm feeling glad
I got sunshine in a bag
I'm useless but not for long
The future is coming on
It's coming on"

-Clint Eastwood, by Gorillaz

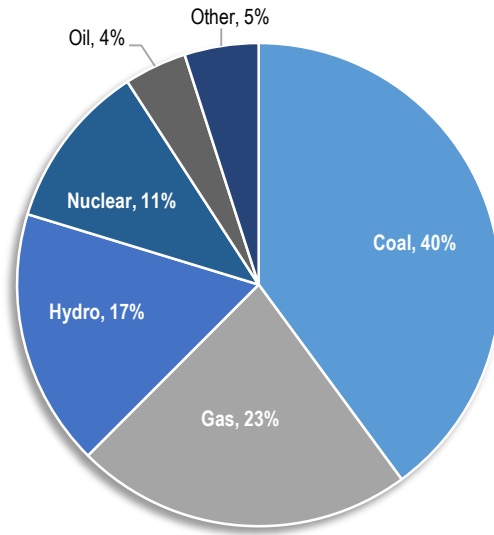


Appendix

**World Energy Consumption
2013**



Fuel Source of Electricity generation



Source: World Bank

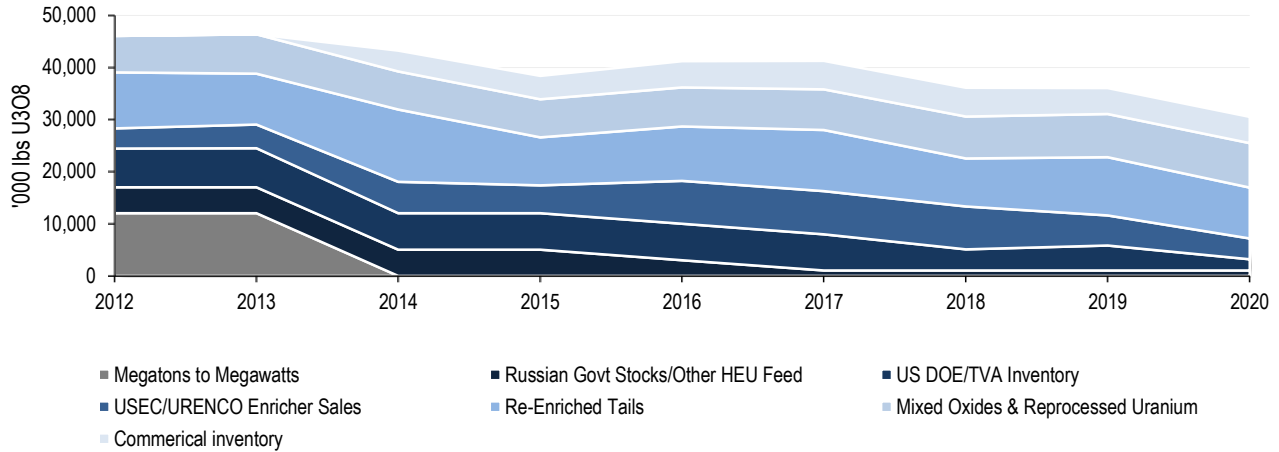
	Price		\$/BTU	\$/MWh
Coal (PRB)	\$11.55	\$ per Ton	\$0.66	\$6.56
Coal (CApp)	\$49.95	\$ per Ton	\$2.08	\$20.81
Coal (Ill. Basin)	\$44.55	\$ per Ton	\$1.89	\$18.88
Coal (China)	558.31	RMB/Metric Ton	\$3.84	\$38.38
Coal (Europe)	\$71.30	\$/Metric Ton	\$2.99	\$29.95
Coal (S. Africa)	\$65.00	\$/Metric Ton	\$2.73	\$27.30
Coal (Australia)	\$62.75	\$/Metric Ton	\$2.64	\$26.36
Natural Gas (US)	\$3.21	per Mcf	\$3.21	\$24.05
Natural Gas (UK)	£0.50	Pence/Therm	\$7.84	\$58.77
Natural Gas (Gazprom sales into Europe)	\$10.30	\$/Mcf	\$10.30	\$77.25
LNG (Japan)	\$16.02	\$/Mcf	\$16.02	\$120.15
LNG (China)	\$12.20	\$/Mcf	\$12.20	\$91.50
Brent Crude Oil	\$62.18	\$ per bbl	\$10.68	\$116.86
Heating Oil	\$1.85	\$ per gallon	\$13.74	N/A
Gasoline	\$1.63	\$ per gallon	\$13.05	N/A

Source: Bloomberg



**Global Uranium Supply
Secondary Sources
2012-2020E**

Source: UX Consulting Company



US run a deficit in 46 of last 50 years.
 US national debt is now \$17.9T
 End of 2013 GDP = \$16.768 trillion
 Total US unfounded liabilities = \$115.5T
 Monetary Base 11/1/14 = \$4.018T

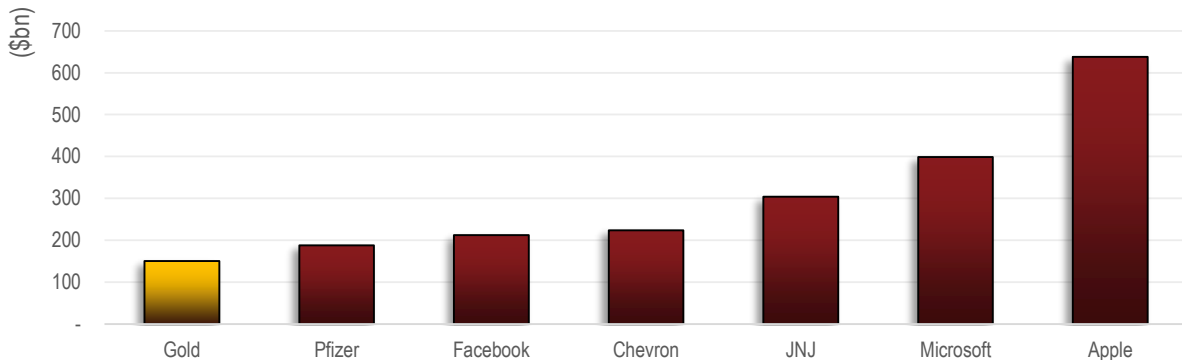
Source: Bloomberg
 Source: <http://www.usdebtclock.org/>.
 Source: BEA.Gov
 Source=<http://www.usdebtclock.org/>.
 Source= <http://research.stlouisfed.org/fred2/series/AMBNS>

US Gov. deficit as a % of GDP = $17.9T/16.768 = 1.067x$ or 106.7%
 Total unfunded US liabilities as a % of GDP = $115.5/16.768 = 6.92^*$ or 692%
 Cash as a percent of Gov. deficit = $4.018/17.9 = 0.22x$ or 22%
 Cash as a percent of total US liabilities = $4.018/115.5 = 0.034^*$ or 3.47%

Gold Miners Market Cap vs Upside Potential

Liquidation Value: \$200/ounce for ounces in the ground and an 85% recovery rate.
 Optionality Value: \$260/ounce (the price of a 5yr call option with a strike price of \$1300); same ounces and recovery rate
 Theoretical Value: \$900/ounce; same ounces and recovery rate.

Gold Industry | Comparison of Market Caps





The ONION

From 2000

NEW YORK—Excitement swept the financial world Monday, when a blue line jumped more than 11 percent, passing four black horizontal lines as it rose from 367.22 to 408.85.

It was the biggest single-day gain for a blue line since 1994.

"Even if you extend the blue line's big white box back many vertical lines, you won't find a comparably large jump," said Milton Vogel, a senior analyst with Merrill Lynch. "That line just kept going up, up, up." The blue line, which had been sluggish ever since the red line started pointing down in April, began its rebound with an impressively pointy 7 percent rise Friday. By noon Monday, it had crossed the second horizontal line from the top for the first time since December. Ecstatic investors are comparing the blue line to the left side of a very tall, steep blue mountain.

"It's a really steep line," said Larry Danziger, a San Jose, CA, day trader and golf enthusiast. "I stand to make a tremendous amount of money as a result of the steepness of this line."

"It looks like the line's about to shoot out of the box," said Boston-area investor Michael Lupert, enjoying a glass of white zinfandel on the bow of his 30-foot yacht. "I'm definitely going to keep a close eye on this line as it continues to move to the right."

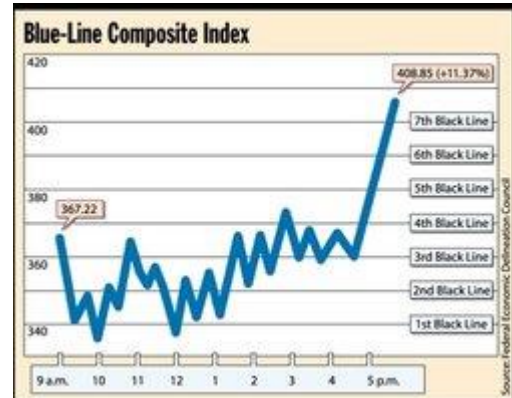
Despite such bullishness, some financial observers are urging caution.

"Given this line's long history of jaggedness, we really should take a wait-and-see approach," Fortune magazine associate editor Charles Reames said. "And even if this important line continues its upward pointiness, we must remember that there are other shapes, colors, numbers, and lines to consider when judging the health of the economy."

Reames also warned that the upward angle of the line, which most analysts agreed was approximately 80 degrees, may have been exaggerated by the way the graph was drawn.

"The stuff that's written along the bottom of the graph is all squished together, making the line look a lot more impressive than it is," Reames said. "Had that same stuff been spread out more, the line would have looked a lot less steep." Still, most U.S. investors found it hard to contain their enthusiasm as the blue line shot up sharply, outperforming the green line, the yellow line, and even the thriving dotted purple line.

"Typically, the blue line rises or falls no more than 10 in a day," said Beverly Hills plastic surgeon Dr. Jeffrey Gruber. "But Monday, it went up an astonishing 41—and during a time when we have a big red slice showing on our pie charts, no less. We live in a truly remarkable time."



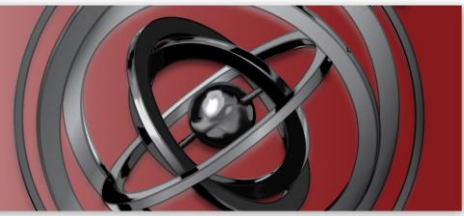
Blue-Line Composite Index



Wall Street traders react to the blue line's 41-point leap.



A group of white men make cell-phone calls to discuss the blue line.



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