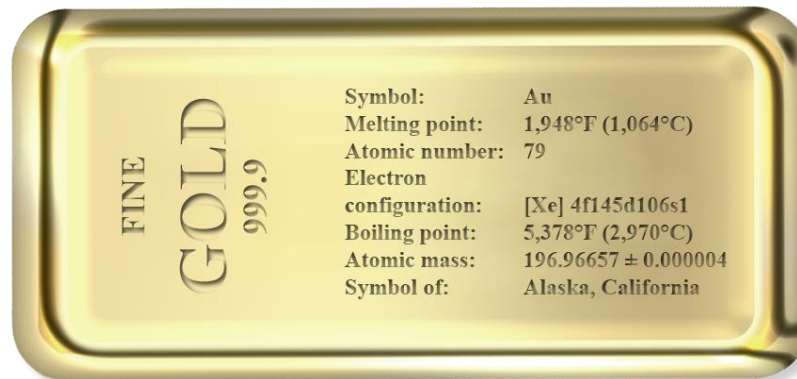




KOPERNIK PERSPECTIVE

Gold

Gold: a chemical element with symbol Au and atomic number 79. In its purest form, it is a bright, slightly reddish yellow, dense, soft, malleable and ductile metal. Chemically, gold is a transition metal and a group 11 element¹.



The U.S. (and the world) abandoned the gold standard in 1971, in favor of what James Grant (*Grant's Interest Rate Observer*®) refers to as “the PhD Standard.” He continues, “One can think of the original Federal Reserve note as a kind of derivative. It derived its value chiefly from gold, into which it was lawfully exchangeable. Now that the Federal Reserve note is exchangeable into nothing except small change, it is a derivative without an underlier. Or, at a stretch, one might say it is a derivative that secures its value from the wisdom of Congress and the foresight and judgment of the monetary scholars at the Federal Reserve. Either way, we would seem to be in dangerous, uncharted waters.” Since 1971, the value that society has ascribed to gold has waxed and waned. With its esteem seemingly at an all-time low, this is a perfect time to analyze gold’s role.

Our gold mining exposure is currently at our maximum industry portfolio weight, a position that has raised many eyebrows and led to many questions from investors. Gold, after all, is a useless and barbarous metal that produces no cashflow, right?

One of the best investors of our time came out publicly against gold in a speech he gave at Harvard in 1998 saying:

“It gets dug out of the ground in Africa or someplace. Then we melt it down, dig another hole, bury it again and pay people to stand around guarding it. It has no utility. Anyone watching from Mars would be scratching their head.”

Warren Buffet again wrote negatively about gold in his 2011 shareholder letter calling gold an “unproductive asset”

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Hmmm....an unproductive asset...does that mean it has no value? One question we often pose to our clients is whether or not the Mona Lisa has value. We think it does – as do the millions of people who visit the Louvre every year.

As we have mentioned in some of our other publications, we think that the market today has a parochial view of value, focusing simply on immediate cash flows without paying much attention to scarcity, usefulness and efficacy.

Such is the case with gold. The goal of this paper is to show that gold *does* have utility and that Mr. Buffett’s Martians would not be scratching their heads about why we mine for gold but rather why we have let our governments around the world fool us into accepting fiat chit as money and allowing the resultant massive transfer of wealth from savers to debtors.

¹ Wikipedia



History of Money

Let's start with a brief history of money. Prior to 9000 B.C., there was no such thing as money. Everything was on a barter system. I will trade my corn for your cow.

However there are many problems that arise with a barter system. What if I only had half a cow's worth of corn to sell? How many ears of corn should a healthy cow fetch vs a skinny sickly cow? What if the person who needs the corn is half way around the world from me? We read numerous articles regarding the concepts of money and or intrinsic value. One thing that we've found amusing is that a comedian seems to have a much better grasp of the subject than do most PhD economists. Dave Barry, in his book [Dave Barry's Money Secrets](#), describes an ancient Chinese solution to the cow problem: seashells. Seashells had a lot of advantages over cows – they were small, non-perishable, easy to transport. The biggest problem however, was that they were seashells. All you had to do is go to a beach, get your fill and you were rich! ***Today's government's printing presses are the equivalent to yesterday's Chinese's beaches. Paper money abounds and the supply is growing by the day.***

To this day, there is no better form of money than gold. Gold is homogenous, easy to transport, inert, divisible, attractive, and rare. Gold is difficult to get out of the ground and is not used industrially – reducing the risk of wild swings in money supply. And as such, it has been used as money for 6,000 years.

One problem with gold as money is that it is bulky and heavy. Paper IOUs made its way into the system in China around the 6th century and in the West in 1661. Goldsmiths kept gold safe and issued paper receipts to be redeemed at a later point. These goldsmiths eventually evolved into bankers and started lending the gold out at interest. The trustworthiness and reputation of a bank would largely determine whether or not the gold would be there when you came to redeem. Over time, governments took over for banks as the primary issuers of these receipts/currency.

Early on, these paper receipts were backed by gold. Under a true gold standard, the number of paper receipts can only be as big as the amount gold backing it, which creates a problem for government with unlimited budgets. James Grant states, "An unanchored currency presents a temptation that mortal man finds irresistible". Unrestrained governments throughout history have an impeccable track record succumbing to 'irresistible' temptation to fund all of the spending desires of its citizens via diluting their purchasing power.

Which eventually the leads the system to break down...

The Fate of Fiat Currencies

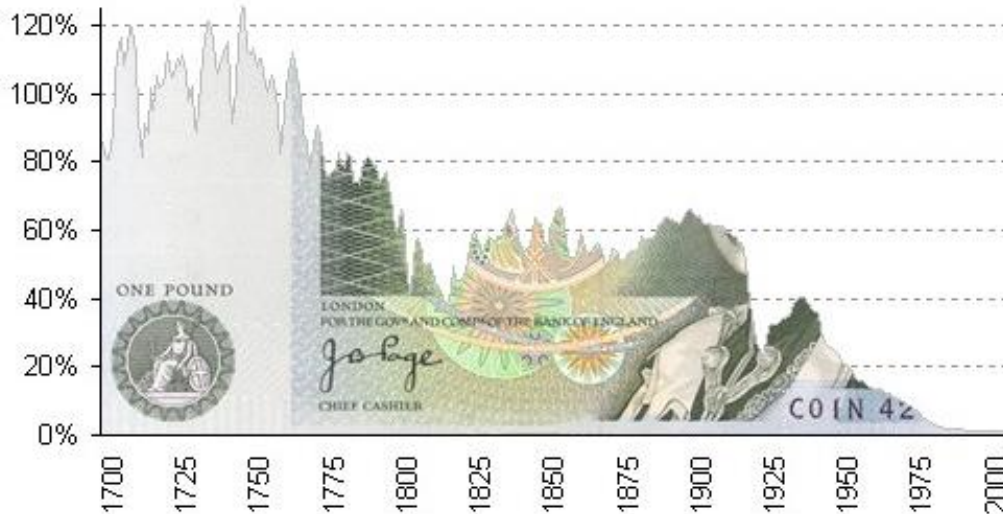
"Paper money eventually returns to its intrinsic value – zero" (Voltaire 1694-1778)

The lives of fiat currencies are short ones. A study by DollarDaze examined 775 fiat currencies and found that not one was able to hold its value. 20% failed through hyperinflation, 21% were destroyed by war (many in this group also experienced hyperinflation), 12% failed through acts of independence, and 24% failed through voluntary monetary reforms such as the creation of the Euro in 1999 and the US dollar in 1792. The other 23% are still in circulation but have been greatly devalued. The study found that the average life is 27 years.

The British pound, one of the oldest fiat currency still in existence, may be one of the best examples. The currency has been around since 1694. What a success! Does this buck the trend that currencies have a short lifespan? Technically yes, economically no. When the Bank of England was established and paper notes were issued 1694, the British pound represented one troy pound of sterling silver, or 12 silver ounces. Today, early 2015, it takes 129.6 pounds to buy those same 12 ounces. ***This is equivalent to a 99.2% loss in purchasing power.***



Purchasing Power of the British Pound Since 1694



Source: DollarDaze.org

In 1914, the British went off a gold standard to print money to pay for World War I. As the chart above shows, the purchasing power declined drastically relative to precious metals when this happened. We can also see that there was a dramatic increase in the value during the 1920 when Winston Churchill put Britain back on the gold standard. However this was short lived as the Brits were off again in the early 1930s. Ever since then, the pound has continued to fall.

In the U.S., the financial system has broken down twice in the last 100 years. It broke down in 1933 when Franklin Roosevelt forced every American to hand in their gold for \$20/ounce and then revalued the price to \$35/ounce, which is equivalent to a 41% hit to the saver's wealth. And it broke down again on August 15, 1971, when President Nixon announced his New Economic Policy and effectively killed the Bretton Woods version of a gold standard, and with it, the U.S.' obligation to purchase gold at \$35/ounce.

Under the 1944 Bretton Wood system, foreign currencies were pegged to the U.S. dollar, whose value was backed by gold at the set price of \$35/ounce. Countries held dollar reserves instead of truing up deficits every year through gold. The rules of the game allowed countries to convert their dollar reserves into gold at any time.

During the 1960s, foreign nations had begun to catch on to the fact that the U.S. hadn't been living up to its side of the bargain, that is, keeping a stable money supply that justified \$35/ounce. Instead, the U.S. had been inflating its money supply (in order to pay for things like President Johnson's "Guns and Butter" policy) and paying for imported goods with an overvalued dollar.

The French were among of the first to call the U.S. out on this. French President Charles De Gaulle referred to the U.S. buying European companies with overvalued dollars as "expropriation". In 1965, De Galle converted \$150mn (today's value = \$12.1bn) of their dollar reserves into gold and said they planned to convert another \$150mn.² The French government even offered to send the French navy to help ferry the gold back to France. Spain followed France, and other European nations followed Spain. By March 1968, the gold outflow from the gold pool was running at a peak rate of 30 metric tons per hour.³

Realizing that the amount of foreign dollar reserves overwhelmed the amount of gold at Fort Knox (at the \$35/ounce price) President Nixon closed the gold window on August 15, 1971 and announced that the dollar would no longer be convertible into gold. The last semblance of a gold standard was dead.

² James Rickards, "Currency Wars" 82

³ James Rickards, "Currency Wars" 84

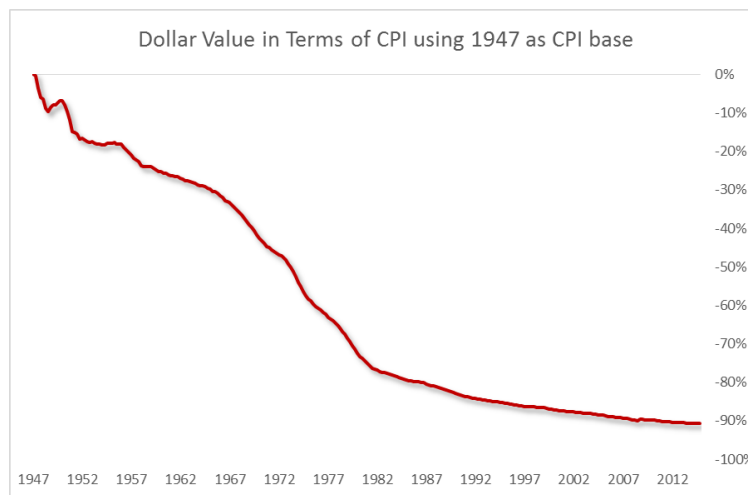


David Stockman (once the budget director for the Reagan administration) quotes, "The gold standard wouldn't have allowed forty years of deficits...Nations were compelled to live within their means...The gold standard was an honest regulator of Wall Street greed...nor did we [in upholding a gold standard] punish people who invested in savings accounts". An untethered currency has allowed the U.S. to compromise its balance sheet, and, as a result, the dollar has lost 97% of its purchasing power since 1971.



Source: DollarDaze.org

For those who prefer to measure the dollar's purchasing power in terms of CPI, the story is the same:



Source: Bloomberg

Since 1947, the dollar has lost 91% of its purchasing power measured against the CPI. Using 1971 as our base, the dollar has lost 82%.



Valuation of Gold

America had used gold to value the U.S. dollar successfully for ~180 years before Nixon. The last 40 years of a fiat money system in America is actually a departure from the norm, and it is becoming more evident that this fiat money experiment has been a failure for everyone except the top few percent who have benefited from inflating asset prices and the U.S. government who can pay back debt with a devalued dollar. Countries worldwide are in a solvency crises and have currency devaluation as the only option. In a zero-rate environment, savers, earning nothing on their bonds, are standing idly by as governments siphon money from savers' pockets into their own.

We do not agree with the quantitative easing policy as we ultimately don't think that printing money prints jobs, however, we are in a position to take advantage of an investment opportunity the money printing has presented. Like all assets in which we invest, we strive to determine the intrinsic value, a level from which we purchase at a significant discount.

Gold as a Commodity

According to the World Gold Council, the total stock of 'above-ground' gold is about 177,200 metric tonnes at the end of 2013. 50% of this is kept for investment purposes and 50% of this exists as jewelry. Comparing this figure to the annual new mine supply of about 3,000 tonnes, the above ground supply is almost 60x as large as new supply. Put another way, the new mine supply accounts for only 1.7% of the annual supply. As such, gold does not follow the normal supply/demand dynamics of other commodities (as mentioned, it is not consumed nor used industrially), as the gold supply is mostly fixed.

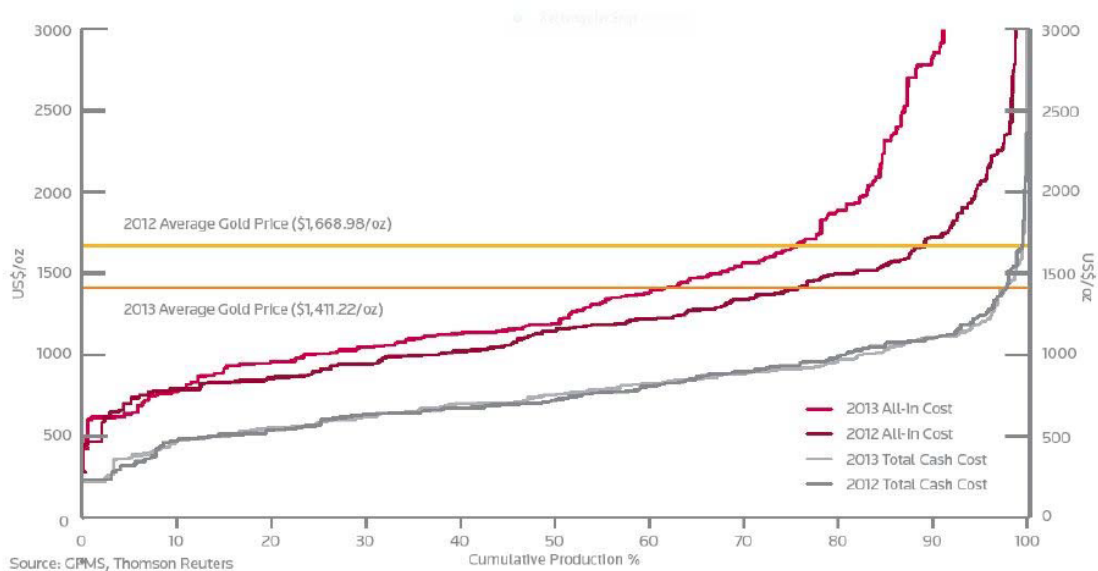
However, let's suppose that the price of gold does respond to changes in mine supply. At Kopernik, we often look at the incentive price, the price of a commodity that drives investment in new mines. There are many projects out there today that need a higher gold price to drive a good return on invested capital. While there are many smaller projects that may only need a \$1,500-\$1,700 gold price to justify their existence, many of the undeveloped world class mines will cost multi-billions of dollars to develop. We estimate that gold needs to be about double today's price for any decent board (of which there are only a few) to give a development thumbs up.

This estimate is based on conversations with professionals in the industry and economic analyses from technical reports of large undeveloped deposits. In addition, a quick glance at the industry all-in-cost⁴ curve shows that the marginal cost of production in 2013 was close to \$1,700 (note that this chart does not include taxes or financing costs, which are significant in the mining industry), leading us to conclude that the incentive price must be higher than this.

⁴ All-In-Cost includes: all on-site mining costs; all G&A; Royalties; Exploration; and Capex (both growth and sustaining). Income tax and financing charges are notably NOT included.



WORLD TOTAL CASH AND ALL IN COST CURVES



Lastly, the risks of developing new mines is increasing. New discoveries have much lower grades than previous projects, which leads to higher operating costs (if you halve the grade, you double the costs); governments around the world want a larger piece of the pie and are increasing taxes, royalties and/or their equity share of the projects; environmental regulation is becoming more stringent; and capital cost overruns have been a constant theme in the mining industry over the last 50 years (since 1965, capital cost overruns in the mining sector have averaged between 20%-60%).⁵ Thus, purely from a commodity perspective, investors *should* demand a large margin of safety before funding new development projects.

While it appears that gold is not a typical commodity, to the extent that it is, economics argue for a much higher price!

Gold as Money

One of Warren Buffett's main critiques of gold is that it is unproductive. However, as we made the case above, gold is not a typical commodity, and thus we would argue that Buffett should be comparing gold to currencies rather than industrial metals.

As mentioned previously, gold possesses the qualities inherent in a good monetary medium. As a result, people have chosen to use gold as money for thousands of years. Thus, it is important to think about a different demand/supply dynamic; that of gold relative to fiat currency. To value gold as money, we compare the supply of fiat dollars to the gold stock.

Let's start with paper money. There are a number of definitions of money: M0, M1, M2, and M3. M0, also known as the monetary base, is the narrowest definition of money and includes only liquid or cash assets held within the central bank. Each larger numbered "M" includes more assets in its definition. M3 is the broadest definition of money and includes everything in M0, M1, M2 as well as assets that are less liquid. To be conservative, let us only consider base money, the federal bank reserves, since other "M"s are actually forms of credit. How have reserves changed?

A simple chart says a thousand words...

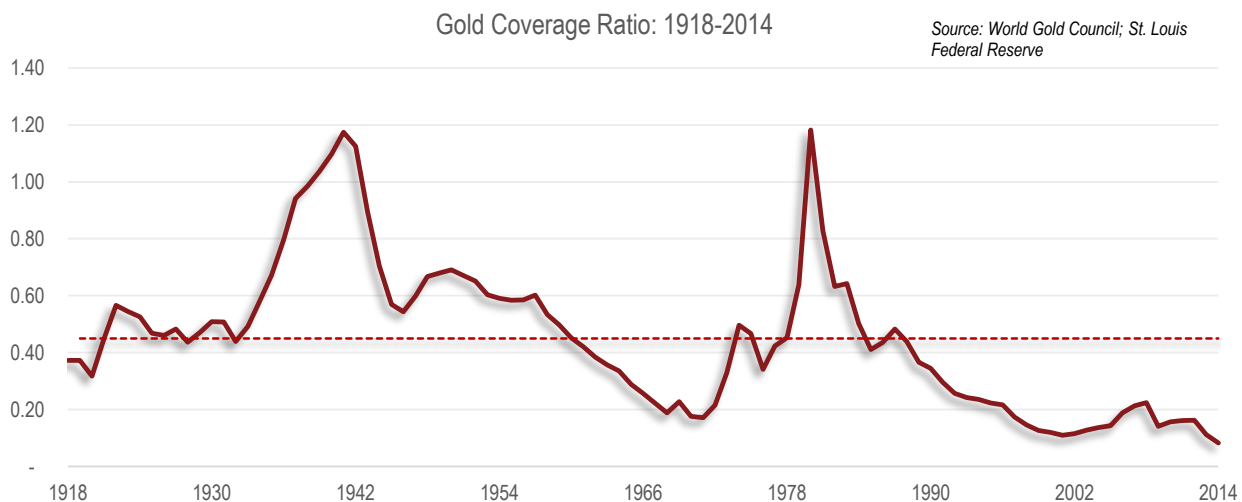
⁵ <http://www.miningmarkets.ca/news/why-building-a-mine-on-budget-is-so-rare/1002963028/>

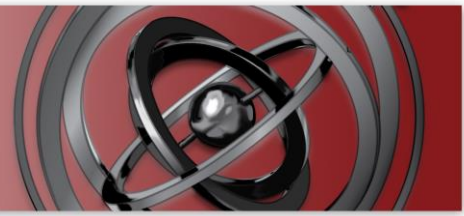


Since September 10, 2008 - the Fed has increased the U.S. money supply from \$900bn to \$4.45trillion. Today's Fed balance sheet is almost 5x as large as it was in 2008. This means that money supply has been growing at a 31% CAGR for the past 6 years.

The amount of gold in the world changes by ~2% each year. In the U.S., the amount of gold stored at Fort Knox has not increased for many years. It has stayed constant at 8,000 tonnes, or 260mnoz.

The chart below shows the ratio of U.S. gold holdings (in dollar terms) relative to M0. As we can see, the average gold coverage ratio is about 45% versus today's ratio of 8%! For this ratio to revert back to more normal levels, either the money supply has to drop dramatically (probability of that is EXTREMELY low given the amount of debt in the US) or the gold price has to rise.





If we assume that we backed 25% of the \$4.45 trillion USD dollar reserves– that would imply that gold would be worth \$4,300/ounce. This is an interesting fact since this was the arrangement under the Bretton Woods agreement that preceded Nixon's 1971 default. One hundred percent backing today would suggest a \$17,000 price.

People have assigned value to gold for thousands of years and in hundreds of currencies. Currently, whether looking at gold's incentive price of ~\$2,000-2,400/ounce or thinking about gold as money and backing into a price of \$4,300/ounce, it appears either way that gold at \$1,300 is underpriced.

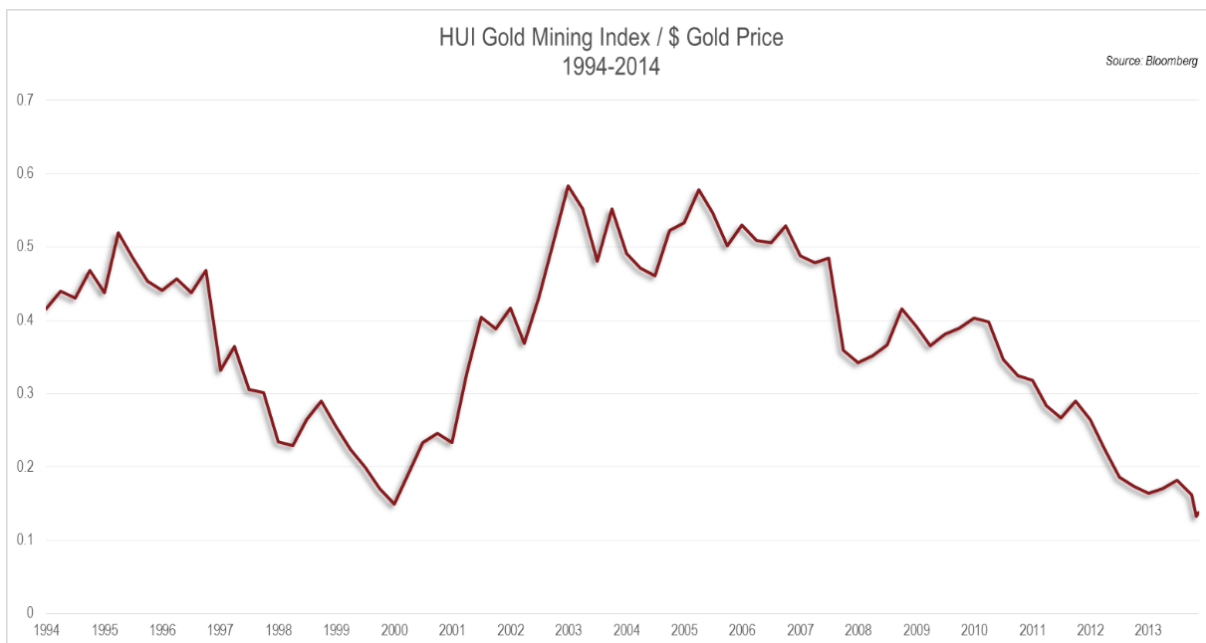
How do we invest? Gold miners offer opportunity

We believe that it is prudent for everyone to hold some gold bullion as a safety-net/rainy day fund. But additionally, now more than ever, investment in businesses that own gold appear very attractive.

As we have seen over the last 3 years, gold miners have considerable leverage to the gold price – both on the positive side and the negative side.

Since gold peaked in 2011, gold is down 33%, while the miners are down 60-80%. Undoubtedly, some of the selloff is warranted – during the 12 year gold bull run, management teams did a horrible job of allocating capital, incurred massive cost overruns on their development projects, and levered up their balance sheets. However, the valuations today take all of this into consideration...and more. For example, gold is where it was in 2010, yet the miners are 60% cheaper!

In fact, gold miners relative to the gold price have never been cheaper as the chart below demonstrates:



Like in Dec 2000, the market is extremely negative on gold miners. As we have laid out in this paper, the fundamentals for gold haven't changed and support a higher gold price, and the gold miners offer additional leverage to the gold price since a large proportion of their operating costs are fixed. If/when gold does go up, we believe the gold miners should trade at multiples of where they are trading today.

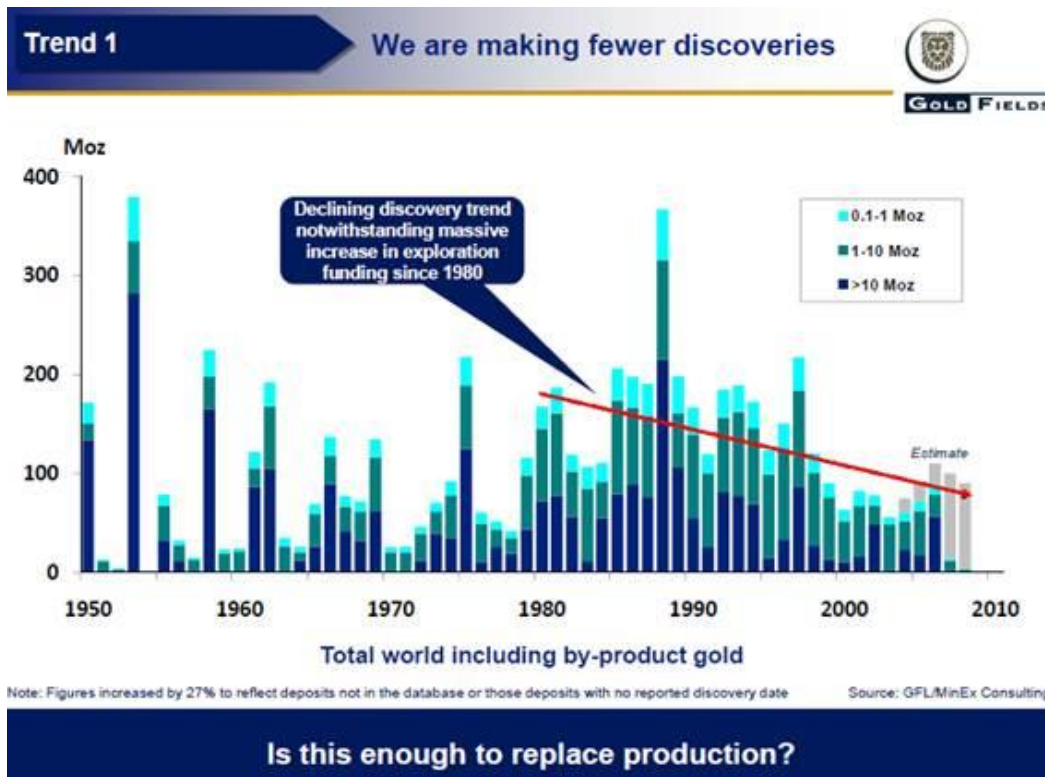


When valuing gold mining businesses, Kopernik Global Investors start by trying to determine what we think gold could be worth. As we discussed above, this can be done two ways – by viewing gold as a commodity or by viewing gold as money (or by considering both, which we do at Kopernik). Either way, a strong case can be made that the price of gold will appreciate by two-thirds, if not by multiples. This is far from a guarantee, but because it is a strong possibility, optionality should be an important part of a valuation model.

Many traditional Discounted Cash Flow (“DCF”) models result in a strong preference being given to gold miners selling their gold sooner rather than later (time value of money). However, when dealing with an incredibly underpriced good, time is the investor’s friend rather than enemy. The longer the timeframe the more likely the true economic price will be reflected in the marketplace. Options-based models capture this. The longer the time until expiry, the higher the value of the option. Because it is complex, Kopernik treats it as complex, running multiple models. DCF is used, but as part of scenario analyses, not predictive models. We utilize liquidation models, designed to neither punish nor reward early exchange of true money into dollars. This helps to evaluate our downside protection as well as upside potential. And we use models designed to help us understand the enormous upside potential in massive, long-dated optionality.

Some miners will obviously do better than others. As a bottom-up investment firm, we want to own the companies with the best gold assets. We look at factors such as reserve size, mine life, grade, management, geopolitical risk, and the balance sheet. As with all industries, we demand a higher margin of safety for the less predictable geologies, geographies, managements, etc. Our positions include large miners and small companies who have the good fortune to own massive, world-class resources with tremendous optionality.

While many market participants believe that intrinsic value is derived from cash-flow, one of the key tenets of Kopernik is that, in reality it is the inverse, cash-flows are derived from assets that are intrinsically valuable. Data over the last few decades show that these world class deposits are getting harder and harder to find. As the following charts demonstrate, the number of significant discoveries has dwindled, and the grade of those that have been discovered has fallen.





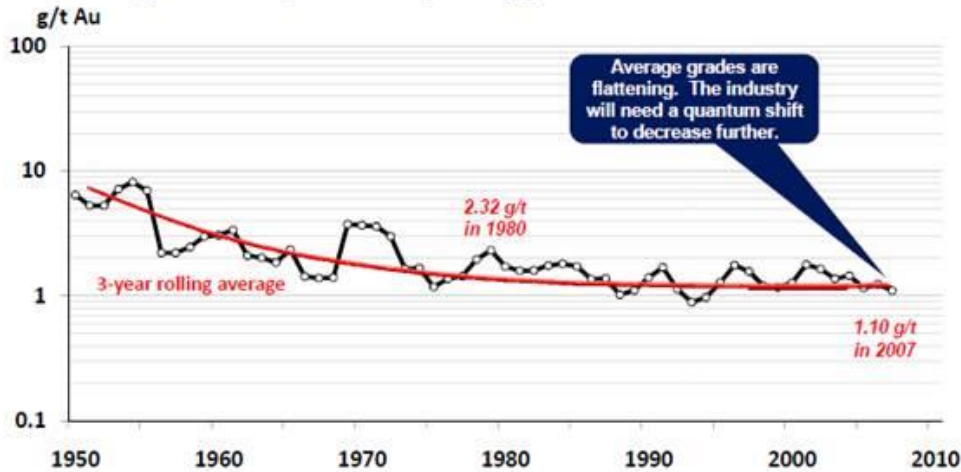
Trend 2

Quality of resources declining



GOLD FIELDS

Average resource grade for all primary gold discoveries >1Moz in the world



Driven by technological improvements (economies of scale, CIL, heap leaching)

Note: Excludes deposits where gold is a by-product (<50% of mine revenue)

Source: GFL/MinEx Consulting

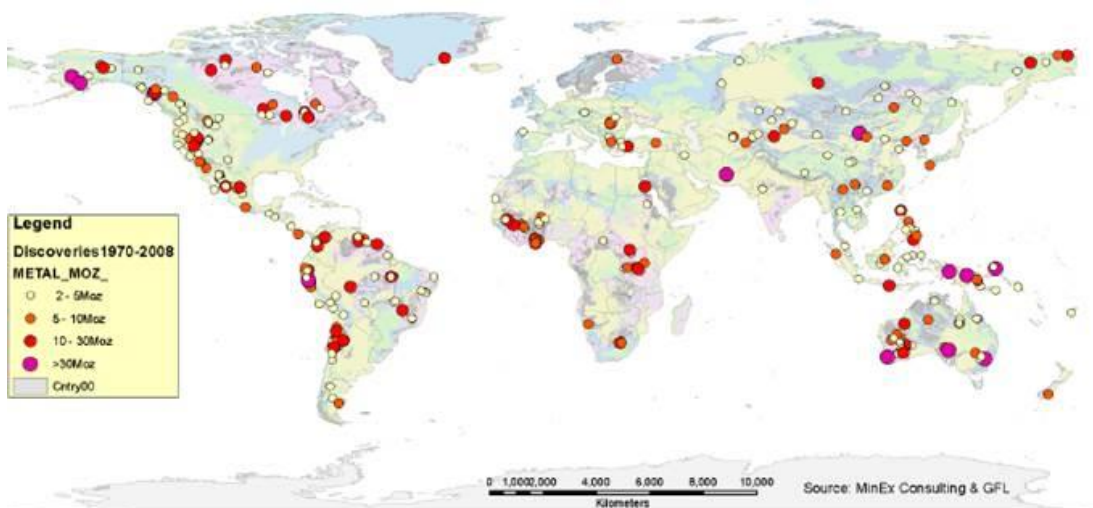
Trend 5

Discoveries well distributed



GOLD FIELDS

Gold discoveries by size for the period 1970 to 2008



Maps the known gold belts – but

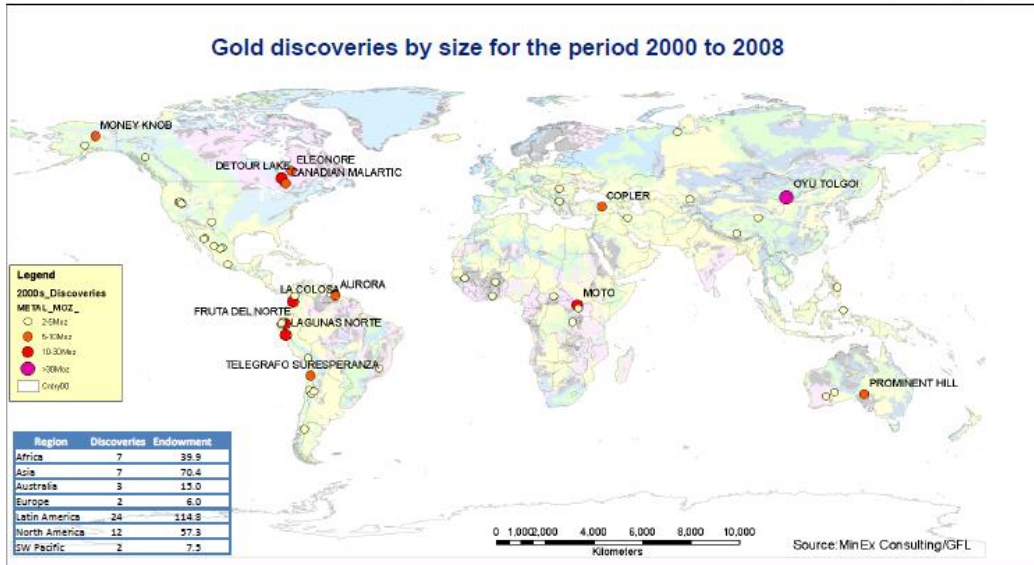


Trend 5

Recent discoveries in new areas



GOLD FIELDS

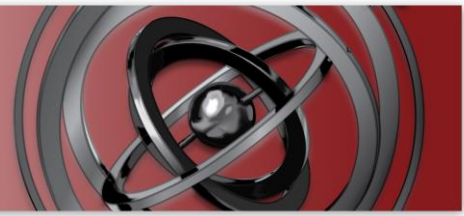


Traditional developed areas poorly represented

Source: GFL/MinEx Consulting

Value investors get excited when the price of a stock with valuable assets falls, since it opens up an investment opportunity. The gold miners have been completely decimated over the last couple of years and are trading at extremely attractive levels given the fundamentals for gold. As the historian William Durant states, "history is inflationary and...money is the last thing a wise man will hoard". We have certainly seen the loss of purchasing power of the US dollar over the last hundred years, and the last five years of money printing should support a much higher gold price. Leverage to gold's revaluation through ownership of gold mining companies appears to offer an investment opportunity of a lifetime.

Alissa Corcoran
Kopernik Global Investors, LLC
April 2015



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Investing involves risk, including possible loss of principal. There can be no assurance that a fund will achieve its stated objectives. Equity funds are subject generally to market, market sector, market liquidity, issuer, and investment style risks, among other factors, to varying degrees, all of which are more fully described in the fund's prospectus. Investments in foreign securities may underperform and may be more volatile than comparable U.S. securities because of the risks involving foreign economies and markets, foreign political systems, foreign regulatory standards, foreign currencies and taxes. Investments in foreign and emerging markets present additional risks, such as increased volatility and lower trading volume.

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