

THE MATTERHORN INTERVIEW – Jan 2013: Robert Blumen

“What’s really key for the price formation of gold?”



In this exclusive interview for Matterhorn Asset Management, Robert Blumen discusses some important but widely misunderstood elements acting on the gold price. He explains that frequently cited gold demand statistics have no relationship to the gold price. In addition, he explains that the annual gold mine production is of very little influence, as gold is hoarded, not consumed like other commodities.

By Lars Schall

Robert Blumen was born in 1964 and grew up in Boulder, Colorado, United States. He is a graduate of Stanford University in physics and the University of California Berkeley in engineering. He lives in San Francisco, United States where he works in the technology sector as a software engineer, specializing in server applications and the architecture of scalable systems. He has maintained a lifelong interest in the Austrian School of Economic Thought and is an avid reader in economics and finance. His writings on gold and a variety of economic topics have been published by Financial Sense, the Ludwig von Mises Institute, LewRockwell.com, The Dollar Vigilante, and Marc Faber's Gloom Boom and Doom letter as well as other gold and financial sites.

Lars Schall: Mr. Blumen, how did you become interested in the subject of gold in general?

Robert Blumen: There were two main influences when I was growing up in the 1970s and 80s. We went through a period of very high inflation in the United States. President Nixon imposed wage and price controls in a misguided, or perhaps very cynical, attempt to fight inflation. And Nixon's successor, President Ford, handed out these silly little lapel buttons that said “Whip Inflation Now”. I remember seeing a young man on the TV news who had reported a chain store for the economic crime of raising the price of one of their products. He was being given some kind of award for this.

The second historical event was the gold bull market of the late 70s. Then Reagan came in along with Paul Volker who he inherited from the former president, Carter. I wasn't paying much attention at the time but it stuck with me that gold had made this huge move.

Those two things came together and had a life-long influence on me. From that time I took away a curiosity about inflation. And that led me eventually to be curious about the whole field of economics. I was lucky that I came upon the Austrian School of Economics. I started reading Austrian economics in high school. The Austrian School emphasized gold as the basis of the monetary system and how well that has worked out over the course of human history.

L.S.: The growing interest in gold was underlined recently in a report that was published by the Official Monetary and Financial Institutions Forum (OMFIF), which has the title “Gold, the renminbi and the multi-currency reserve system“. (1) I think that this report is quite remarkable for various reasons. Do you agree?

R.B.: The report suggests that the international monetary system will accept gold in a more recognized way as a reserve asset. I think that this is already true, informally. There are many signs of this. Central banks have gone from selling to buying in recent years.

On the intellectual plane, I think there the consensus of many decades, namely that gold had been permanently removed from its monetary role, is changing. There is increasing discussion gold as a monetary metal among the elites. Several years ago, Benn Steil, a CFR economist wrote an opinion piece for the Financial Times (excerpted here) suggesting that the global gold standard worked better than the current system of floating rates. Robert Zoellick, who was president of the World Bank at the time, wrote a gold-friendly op-ed also in the FT a couple of years ago.

L.S.: What is your overall view on China?

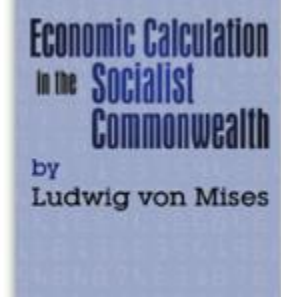
R.B.: The popular perception of China an economic juggernaut on a path to eclipse the economies of the developed world. And how did that happen? Because their wise central planners chose an export-driven growth strategy. Many people now think that this strategy has gotten them to a point where they are deficient in domestic consumption, so they need to switch to a consumption-driven mode of economic growth; and that this also will be accomplished by the same wise central planners through a series of carefully designed five-year plans.

I think almost everything about this view is wrong; it is still largely a centrally planned economy and we know from the economics of the Austrian economist Ludwig von Mises, central planners cannot allocate resources.

L.S.: Why not?

R.B.: Mises wrote a paper in 1920, which became quite a famous and very controversial thesis in economics that was debated for decades. His paper was called Economic Calculation in the

Socialist Commonwealth and you can find it for free at the Mises site.



If you have a very simple economy where people make consumption goods with their bare hands, this can be done with central planning. But Mises was trying to explain the economic growth that has occurred in the world from small villages to vast modern economies with millions of goods and a complex division of labor. How could this type of growth occur? The process requires the development of a complex inter-relationship of capital goods, natural resources, and division of labor.

In a modern economy, the number of things that could be produced is nearly unimaginably large. And the number of different production methods for even a single good is incalculable. Take gold for example – finding a deposit is quite complex. There are many ways to look for it. Magnetic fields, chemistry, electrical, drilling. How much drilling and where? And then, when you have the deposit, should it be open pit or underground? Should a resource estimate be established first or start mining and follow the vein? And what about the metallurgy, the chemistry? What type of electrical power? What types of labor? Refine the ore on site, or partially refine? Build roads, rail, or ship the ore? There are millions of decisions and each one needs to be fully answered down to the hire or purchase of specific pieces of capital and individual workers.

Mises' point was that all of these production decisions, not only what gets produced and what does not, but how it's done, can only be decided on the basis of prices. In particular Mises noted that the prices of capital goods are crucial to production decisions. Contrary to what you read endlessly in the financial news about consumption driving the economy, spending on capital goods is the major part of total spending.

Only with prices can you have accounting, which is the ability to calculate profit and loss. In a market economic system, the important decisions are made on the basis of an anticipated profit and loss, which is the difference between the expected prices received on sales and the costs.

Mises had the insight that prices of capital goods are only a meaningful tool for resource allocation if they are established by a competitive bidding process among entrepreneurs. Entrepreneurs must choose how much they are willing to pay to acquire a specific capital asset and hire the skilled workers they need. Entrepreneurs are people who put at risk their own capital, and will either earn a profit or suffer a loss.

The diversity of entrepreneurs is a key part of this. Each business firm or company founder has a unique view of their own market, which may be highly detailed and based on years of experience. Mises also noted that each entrepreneur has his idea about what the customer will want. The market is a decentralized process in which the entrepreneur who has the best plan for each particular asset, along with some cash, will end up in a position to choose how that asset gets used.

In my own former job, I worked for a company that was in a small sub-sector of a sub-sector. There are perhaps half a dozen people in the world who truly understood our industry, maybe fewer. The entire world is full of experts like this, people who understand a particular industry or product really well.

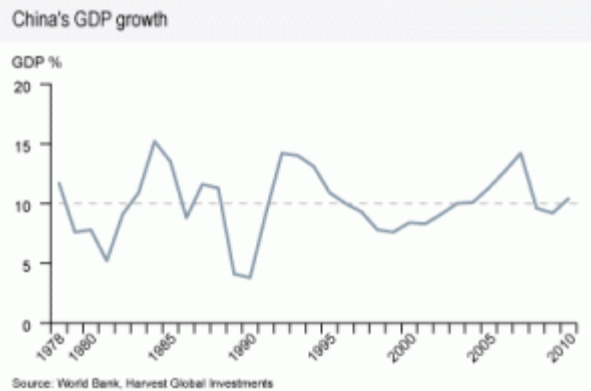


Can you imagine, for example, that we would have iPhones or Kindles if the technology industry was planned by a central committee? Before the iPhone, competition in the mobile industry was primarily over how many minutes per month you got on weekdays or weekends. When Steve Jobs decided to develop the iPhone, he risked \$150 million of his shareholder's money and took on the US mobile industry, who did not want a disruptive phone taking away the spotlight from their monthly plans.

Central planning means the abolition of this type of competition. And that is the problem that Mises identified. There is no way to replace this competitive bidding process with a single planner or a planning committee. The central committee cannot bid against itself for the opportunity to acquire specific capital goods and labor. That would be nothing more than the left hand bidding against the right hand. They could assign fake prices to resources and pretend to calculate the best projects, but the numbers that would come out of this process would not be prices, they would be arbitrary numbers that did not reflect the best possible use of scarce productive resources. Mises showed that a central planner has no basis for making economic decisions, even if the process did not become entirely politicized, as it always does.

L.S.: So how does that apply to China's growth prospects?

R.B: The China bull story as far as I can tell is based on the growth rate of GDP. Their economy is allegedly growing at 9%, if you believe the number. But the GDP number is more of a measure of spending. You can go along spending money for quite a while, but that doesn't mean that it's a useful allocation of resources in the face of scarcity. In the end if you have nothing that people want to show for it, it was wasted. And GDP does not capture that distinction.



The idea of export driven growth, it's a contradictory concept. Economic growth means the ability of an economic system to produce more goods and services that people want and are willing to pay for, at a higher price than it cost to produce them. What they call export-driven growth is really a policy of holding their own currency exchange rate below the market rate in order to reduce the domestic monetary costs of their export industries. This creates a misallocation of labor and capital and a relative over-productive of export goods at the cost of fewer imports and fewer goods for domestic consumption.

If the cost of China's policy were properly accounted for, it would be evident that the marginal export goods that is apparently produced at a profit (under the phony accounting of depreciating money) is in reality produced at a loss. But this loss is hidden because it is distributed over the entire population by reducing the purchasing power of their currency. And that impacts their ability to buy imported goods, or, as many domestically produced goods that have an import component.

They have a huge infrastructure bubble. They are building far more roads, bridges, power plants in relation to the rest of their capital structure. Bridges and roads to nowhere show up as GDP because spending is required to create them. But not all spending is created equal. Spending on things you don't need or things that cost too much to produce is waste and it moves resources away from where they are needed to create real growth.

A lot of the writers in the West are in awe of China's centrally planned economic system. A friend of mine, the American investment writer Chris Meyer, sent me news story a few years about the highly reputed UK fund manager Antony Bolton who had come out of retirement to manage a new China fund. Bolton cited the advantages of central planning compared to a market economy as one of his reasons for his enthusiasm. Things didn't work out so well for Bolton. The fund has under-performed, which can happen for a lot of reasons besides believing in an incorrect political-economic theory. But I think that he came in right near the top of China's planning bubble.

Economist Brad Setser wrote a paper around 2006 about the Chinese banking system. In his paper, he went back a number of years into the history of their banking system. Setser found that during this time, interest rates had been set at below-market levels by the central planners. This of course meant more demand for loans than banks could supply. Rather than rationing by price, resource

allocation had been largely driven by political favoritism. Not surprisingly, most of the loans from this period went bad. The entire banking system eventually became nothing but a sea of bad loans. Then there was a bail-out, putting all of the bad loans in a bad bank. And then, they started over from zero and rebooted the whole system. But by the end of the time that Setser covered in his research, they had gotten right back where they started, full of bad loans again. More recently Edward Chancellor and Mike Monelly of the respected value investing firm GMO have produced a research piece saying more or less the same thing.

Overall they have a completely dysfunctional capital allocation process. That's why I'm a bit of a skeptic on China.

L.S.: Last year the Austrian gold analyst Ronald Stöferle mentioned you in an interview with me for GoldSwitzerland. (2) Mr. Stöferle, in my opinion one of Europe's best men in this field, said that you belong to the crème de la crème when it comes to the issue of price formation, and that you have something original and unique to say in your writings. So I am curious about this. But let's begin the discussion with a more general question: In your opinion, where do you think that many analysts go wrong in their understanding of the gold market?

R.B.: I see four problems but in a way they are all different versions of one problem.

The first is a focus on the annual statistics. Whatever happened in the last year is not that significant because most of the gold that exists at the end of one year was there at the beginning of that year.

The second problem, which you could argue is a subset of the first one, is the emphasis mine supply. While a lot of ink or electrons are spilt on mine production, it has very little impact on the gold price.

The third is the vast amount of brainpower that goes into quantifying gold flows into market segments, such as industry, jewelry, coins, and funds. These quantities may be interesting for some purposes, but they're not really that relevant if what you're trying to do is understand the gold price, because there is not a connection between quantities and price in the way that most people think there is.

The last problem is the idea in some circles that there is a gold supply deficit. If you really look at the market, the concept doesn't make sense. It's based on a strange way of lining up the numbers to produce something like an optical illusion. The gold market, structurally, cannot be in a deficit in the way that any other commodity market could be in a deficit.

L.S.: We will discuss the last point in detail later. — As already mentioned, in the past you have written several pieces about the price formation mechanism in the gold market. Why have you chosen to focus on this area?

R.B.: I think the reason I have chosen to focus on this is that I see a lot of misunderstanding about this topic, and since very few people are active in this area, I have decided to take it on. I am hoping

that through my writing and through interviews such as this one, I can play some part in shifting the thinking of the gold community.

There are a few others who get it. Stöferle who you mentioned has covered this in [his gold report](#). Paul Mylchreest wrote [about this exact issue](#) when he was at [Chevreux/Credit Agricole](#). [Acting-man](#), a site that covers the Euro market, has [some excellent content](#) looking at gold and the price system from the correct perspective. James Turk and the people at [GoldMoney](#) are quite friendly to this concept. And I recall reading something by the fund manager [John Hathaway](#) in which he seemed to be saying approximately the same thing. I hope that I haven't left anyone out.

I believe that the tide is slowly turning on this issue. While the incorrect view still predominates, increasingly the correct understanding is beginning to be expressed more frequently. A report such as Stöferle's from a prominent research firm is a good sign.

L.S.: How does your view of gold price formation differ from the views of most analysts of the gold sector?

R.B.: I think I need to start out by giving a little background, and then proceed to directly answer your question. I am going to start by talking about where the wrong thinking comes from so you can see that it might make sense to someone to think that way. Then I will show where they go wrong and then, the correct way to think about it.

There are two different kinds of commodities and we need to understand the price formation process differently for each one. The first one I'm going to call, a *consumption commodity* and the other type I'm going to call an *asset*.

A consumption commodity is something that in order to derive the economic value from it, it must be destroyed. This is a case not only for industrial commodities, but also for consumer products. Wheat and cattle, you eat; coal, you burn; and so on. Metals are not destroyed but they're buried or chemically bonded with other elements making it more difficult to bring them back to the market. Once you turn copper into a pipe and you incorporate it hull of a ship, it's very costly to bring it back to the market.

People produce these things in order to consume them. For consumption goods, stockpiles are not large. There are, I know, some stockpiles copper and oil, but measured in terms of consumption rates, they consist of days, weeks or a few months.

Now for one moment I ask you to forget about the stockpiles. Then, the only supply that could come to the market would be recent production. And that would be sold to buyers who want to destroy it. Without stockpiles, supply is exactly production and demand is exactly consumption. Under those conditions, the market price regulates the flow of production into consumption.

Now, let's add the stockpiles back to the picture. With stockpiles, it is possible for consumption to exceed production, for a short time, by drawing down stock piles. Due to the small size of the stocks,

this situation is necessarily temporary because stocks will be depleted, or, before that happens, people will see that the stocks are being drawn down and would start to bid the price back up to bring consumption back in line with production.

Now let's look at *assets*. An asset is a good that people buy it in order to hold on to it. The value from an asset comes from holding it, not from destroying it. The simplest asset market is one in which there is a fixed quantity that never changes. But it can still be an asset even when there is some production and some consumption. The key to differentiating between consumption and asset is to look at the stock to production ratio. If stocks are quite large in relation to production, then that shows that most of the supply is held. If stocks are small, then supply is consumed.

Let me give you some examples: corporate shares, land, real property. Gold is primarily an asset. It is true that a small amount of gold is produced and a very small amount of gold is destroyed in industrial uses. But the stock to annual production ratio is in the 50 to 100:1 range. Nearly all the gold in the world that has ever been produced since the beginning of time is held in some form.

Even in the case of jewelry, which people purchase for ornamental reasons, gold is still held. It could come back to the market. Every year people sell jewelry off and it gets melted and turned into a different piece of jewelry or coins or bars, depending on where the demand is. James Turk has also pointed out that a lot of what is called jewelry is an investment because in some parts of the world there's a cultural preference for people to hold savings in coins or bars but in other areas by custom people prefer to hold their portable wealth as bracelets or necklaces. Investment grade jewelry differs from ornamental jewelry in that it has a very small artistic value-added on top of the bullion value of the item.

So, now that I've laid out this background, the price of a good in a consumption market goes where it needs to go in order to bring consumption in line with production. In an asset market, consumption and production do not constrain the price. The bidding process is about who has the greatest economic motivation to hold each unit of the good. The pricing process is primarily an auction over the existing stocks of the asset. Whoever values the asset the most will end up owning it, and those who value it less will own something else instead. And that, in my view, is the way to understand gold price formation.

Many of the people who follow and write about this market look at it as if it were a consumption market and they look at mine supply and industrial fabrication as the drivers of the price as if it were tin, or coal, or wheat. People who look at gold as if it were a consumption market are looking at it the wrong way. But now you can see where the error comes from. In many financial firms gold is in the commodities department, so a commodities analyst gets assigned to write the gold report. If the same guy wrote the report about tin and copper, he might think that gold is just the same as tin and copper. And he starts by looking at mine supply and industrial off-take.

I wonder if more equity analysts or bond analysts were active in the gold area, if they would be more likely to look at it the same way they look at those assets.

L.S.: In your writings, you mention quite often the marginal price theory. Where does this theory originate and what is it all about?

R.B.: Marginal price theory has been part of economic theory for well over a hundred years. Most historians of the field of economics itself see the so-called marginal revolution as the boundary between the classical school of economics and modern economics. I learnt **marginal price theory** from Murray Rothbard's book, Man, Economy and State, but it's something you could learn in any course on economics.

Marginal price theory was developed to answer a question a lot like what we are discussing today. It was known as the diamond-water paradox. The question that classically economists could not answer is, "Why do diamonds cost so much more than bread when bread is necessary for human life and diamonds are a luxury?" The problem was that classical economists did not think in terms of individual units. The breakthrough was the realization that we need to think about economic action in terms of individual units. A marginal theory says that human action acts on individual units of a good. The last unit that you buy or sell is always the marginal unit. As an economic actor you're thinking, "What do I want to do with this next dollar? Do I want one more unit, one more dollars' worth of diamonds or one more dollars' worth of bread?"

L.S.: How does that apply to the gold market?

R.B.: Gold is an asset. People buy it in order to hold it. The price of gold is set as people balance, at the margin, the amount of additional units of gold they want to hold against additional units of other assets or cash they want to hold, or consumption.

If you think of the possible gold buyer as the guy who is saying, "Do I want to hold one more ounce of gold or this \$1,800 that I have?" The answer to his question is going to be different for each person and for each additional ounce. You might say "yes, I want one more ounce of gold instead of \$1,800". Now, you have an ounce of gold and if I ask you the question again you might say, "No, now that I have bought that additional ounce, I've got enough gold".

On the supply side, are the people who own gold. From their point of view they have to answer the question, "Do I want to keep holding this ounce of gold or do I want to sell it on the market and have \$1,800?" That \$1,800 might stay in cash or maybe they have another use in mind for it. The supply side is everyone who has any gold and the buy-side of the market is anyone who has any money that they might want to put into gold.



Now, we can eliminate people who don't know what gold is, the ones don't know where to buy it or how to buy it, and those don't want any because they don't understand it, or maybe they do understand it but they don't like it. But that still leaves a large number of people who might add to their position some quantity of gold at the right price. The people who already own gold, they could be active on either side of the market as a buyer or a seller. I want to emphasize that everyone who owns any gold at all is part of the supply-side of the market, not all at the current price, but at some price.

In micro-economics there's a nice formalism where they use supply and demand curves. If you took a micro course you would have seen those. Many people might feel more familiar with these concepts if they can see the curves. You can do a lot with these curves but you can't forget that they supply and demand curves are a way of aggregating of the preferences of all the individuals in the market. Murray Rothbard does a great job of explaining this.

In the market, people rebalance between gold and dollars until they're happy with what they own. At that point there will be no more trading if no one ever changed their mind. But now and again people do change their mind; they realize they want more of one thing and less of another thing. Then you have more trading to bring the market back into balance.

In finance there is a similar concept called, optimal portfolio theory in which they see portfolio management in terms where people are trying to hold the ideal amount of each different form of savings. The portfolio manager rebalances based on the expected properties of each asset until they have the right mix.

L.S: Is it realistic to assume that everyone is willing to sell their gold? The gold buyers are perceived as very strong hands with long time horizon, people who hoard for a crisis.

R.B.: Many of the people who have bought gold in the last few years are not remotely interested in selling at the current price or even double the current price, but there is always a price or some combination of price and circumstances where somebody would put some of their gold on sale — maybe not all of it but some of it. And people on the money side of the market are asking the same question in relation to gold. The market balances all of those choices out and you have a price that brings out the quantities on both sides of the market into balance.

Maybe that's not totally true, maybe some gold is held by people who wouldn't sell it for any reason. But I think that the concept of the gold bug who plans to take it all to the grave is over-stated. I asked a person the gold business whether gold retail trade is all selling and no buying. He told me, "No of course not, there are always buyers and sellers". After all, what is the point of having a store of value if you never use the value? That is John Maynard Keynes and his parable of the cake that is never eaten. But Keynes was really painting a caricature of the capitalist system which encourages saving for the future. The future does arrive at some point, whether it is old age or emergency, and at that time, the value of additional saving is diminished relative to spending.

And it is important to understand the cost of owning gold is not necessarily the amount of money you could get by selling it. Prices are only a way of quantifying true costs. The cost of owning an ounce of gold is whatever other sort of economic opportunity that you are sacrificing by owning the gold instead. People who own gold are every day looking at "what other economic opportunities am I giving up by holding this ounce of gold?" and then "Do I want to shift the next ounce of gold somewhere else that will give me a better return or a better consumption experience?". If you could swap an ounce of gold for one unit of the American Dow Stock Average that was at the time yielding 12% then the cost of owning an ounce of gold is not owning a unit of the DJIA. The cost of owning gold is the opportunity cost, of which holding cash instead is only one possible choice.

Let me give you another example; if the price of a new car that you like is twenty ounces of gold, you might prefer the gold. The cost of owning the gold is $1/20^{\text{th}}$ of a car. But if the price of that car in gold ounces dropped to one ounce, you might say, "Nineteen ounces of gold is enough and I'd like to have that new car". And at that point it makes sense to swap a single ounce of gold for a car. You still have nineteen ounces of gold, so you haven't sold all of your gold, but at the margin, you have sold the least valued ounce for something that became more attractive.

L.S.: So your view is basically that of portfolio balancing. Do you see the price mechanism in the gold market as similar to the share market?

R.B.: Yes, in terms of the formal model of how pricing works it is similar. You see you have a relatively fixed quantity of a good and people are bidding the price up or down, based on who is the most motivated to hold that good, who is most willing to sacrifice the opportunity to hold a different asset or to increase their consumption.

Now, gold is different than shares in that gold is more of a cash-like asset whereas with shares you are buying an actual business that has a management team, products, and a financial statement. So, in that way it's different. But in terms of the pricing process it's quite similar.

L.S.: You use in your writings also the concept of "reservation demand". Can you explain this further, please?

R.B.: There are two different expressions of demand for a good. If I trade with you, I supply one apple and I demand one banana and you do the opposite. We each demand something by offering

something in supply. When there's a buyer and a seller, the buyer demands and the seller supplies. That is exchange demand.

The concept of reservation demand is where you demand something by holding onto it rather than selling it. This concept might sound unfamiliar but it is very relevant to everyone's life. We all have reservation demand for many goods. I have reservation demand at the moment for an auto, a dining room table, a couch, a mobile phone, and so forth. My reservation demand for cash in my pocket is \$20. Any good that you're any holding onto rather than selling, you are exercising reservation demand.

Most of the market research about gold deals with exchange demand, which has the advantage that you can measure it. But reservation demand is far more relevant to the price. The profile of reservation demand among people who own gold is the main determinant of the gold price from the supply side.

A very closely-related concept is reservation price. This is the price where you would be willing to sell a good that you currently hold. In the gold market, you can think of every ounce with a price tag on it. Or maybe today, it would be a QR code instead of a tag. That price depends on who owns that ounce of gold and their reason for holding it. Short-term traders might take a position for five minutes looking for a small move. If they got their \$10 move they would sell and lock in a profit. You have other people who have a much longer time horizon, years or even decades, and a much higher expectation of where they're going to sell. And even the same person will have a different price tag on each ounce. The first ounce you might be more willing to sell than your last ounce. It is important to understand that reservation prices are not necessarily money prices; they may be construed more broadly in terms of economic opportunities as I described just a moment ago.

You also might object that a lot of people may not know exactly what their reservation price is in money terms because it is impossible to know accurately what the purchasing price of money will be at a time when you might want to sell. And this is true. Many gold buyers are envisioning that we are going to experience hyper-inflation in some countries and their plan might be to look for distressed assets that go on sale during a hyperinflation. That would be the time to sell their gold, or more accurately, to swap their gold for assets. This type of person may conceive of the reservation price as, "When I can buy a small business, like a cleaners, for five ounces of gold" or "when I can buy a rental apartment for 10 ounces of gold". People conceive of the reservation price more broadly in terms of what is going on in the world around them.

There is reservation demand on the money side of the market as well. Why does everyone not spend all of their money? Because we have reservation demand for money. The reason that you have any money at all and you haven't spent it is you see some potential use for that money, possibly when you see something you need or want at a low enough price, that the good comes in ahead of your reservation price in so you buy the good.

The bid and ask that you see in the gold market at any point in time is the price offered by the marginal non-buyer and the price asked by the marginal non-seller. The marginal non-buyer is the person whose reservation price for their money is just below the ask and the marginal non-seller is the person whose reservation price for that ounce of gold is just above the bid. The equilibrium of the market is that you have the bid and the ask which are the best reservation prices are on each side.

L.S. Why do you object to the emphasis on annual statistics in looking at this market?

R.B: What I want people to take away from this interview is that the gold price is not primarily a way of rationing gold that was mined during the last year, it's a way of rationing all of the gold in the world because all of the gold is held and everyone who holds it cares about the price one way or the other.

The gold market is not segregated into one market for the gold that was mined this year and another market for gold that was mined in past years. The buyer doesn't care whether he's buying a newly mined ounce of gold or buying from somebody who had purchased gold that was mined 100 years ago. All of the buyers are competing to buy and all of the sellers are competing to sell.

I think that the focus on annual numbers is another residual of the domination of this space by commodities-type thinking.

L.S. You have stated that mine supply is not a key factor driving the gold price. Most gold analysts would not agree with you. Please explain your view on this.

If you pick up a typical research report on a gold market from a research firm or a bank, you will find that the main portion of the report is about annual quantities. Annual mine production is the most important followed by the jewelry melted, jewelry bought, coin and bar sales, dental, industrial, and central bank. And these quantities are thought by most analysts to be critically important in determining the gold price but that is just not the case.

Gold is always owned by whoever has puts greatest value on it. The ask price is the value placed on gold by the individual who values their last ounce the least of anyone who owns gold, compared to the last buyer who got rationed out of the market, the guy who values gold the most of anyone who does not own that last ounce.



Mining add about 1% to the total supply each year. If the total amount of gold is 5.05 billion ounces rather than 5.0 billion, that allows a few more of what were the marginal non-buyers to become buyers.

I think of the miners and the gold destroyers – such as dentists and the electronics industry, as a small delta on top of the price formation process that is mainly about who is willing to bid the most to hold all of the gold. Mine supply is only a small share of all gold.

The only difference between a miner and someone else who owns the same amount of gold is that the miners pretty much have to sell because they are businesses and they have to cover costs. The investor who owns some gold doesn't necessarily have to sell, they can hold as long as they want to or until they have a better place for their savings than gold. You can say that they are price takers.

You can think of the miner as coming in to that market and selling down into the bid side of the market a little bit. Of course the miner is going to enable some people to get into the market at a lower price than without the miner because those buyers are not forced to go up higher into the ask side of the market in order to buy their gold.

A lot of analysts go even further down the road to absurdity by looking at the growth rate of gold mining. If you start out from year 1 where mine supply is, let's say 2000 tonnes, and in year 2 mine supply is 2,500 tonnes, that is an increase of 25%. So the thinking goes, if supply is up by 25%, then demand also has to go up by 25% and that looks like a lot. If buyers bought 2000 tons last year and this year you are asking them to buy the same and then 25% more, how is that going to happen? It's really not a big influence. In math terms, mine supply is the first derivative and now we are talking about second derivatives.

L.S.: You have given your reasons for thinking that the impact of mining on the gold price is small. Do you have any way of quantifying that?

R.B.: I can't say for sure but there are some ways to make an educated guess.

One is that mine supply only adds around 1% or 2% to the total stockpile of gold. You can think of mining as a form of gold inflation with a rate of around 1-2%. If we were looking at the supply of money in a country or shares of a stock we would expect the value to be diluted by something close to the growth rate. Miners are diluting the value of the existing gold stock by 1%. If this is correct, and if everyone who owned gold was trying to maintain a constant amount of gold in purchasing power terms, then all other things being equal, a 1% dilution would have a 1% impact on price.

Another way of looking at it is when the supply of gold is 5 billion ounces there is a price quotation, which is the best ask. Now one year later mining has brought us up to 5.05 billion ounces. A group of buyers was able to come in and buy the additional 50 million ounces. Where do those new buyers value gold? If we assume static preferences, maybe slightly above their buy price. Not a lot above their buy price or they would have become buyers the year before. So that would suggest a slightly lower price, depending on how deep you have to go down into the bids to fill the additional ounces.

I looked at some figures from geologist Brent Cook showing that all of the gold mined in any one year is about equal to a few days volume on the LBMA. And the LBMA is not the only market where gold is traded in the world. I'm not saying that the difference due to mining is equal to the ratio of trading days to volume. But the point is, selling the mined gold onto the market is a very small part of the market activity. It's easily absorbed into a liquid market.

L.S.: In your most recent article you argue that many analysts are incorrectly bullish or bearish, because their data does not support their price outlook. Is that so?

R.B.: You see every day in the media statements like "Gold investment demand is up by 20 percent this year" and that's supposed to be very bullish. Or "investment demand was down by 15 percent" and that is supposed to be bearish.

There is also I remember a wave of stories in the early 90s as the gold industry was increasing up exploration and bringing new properties on line, where it was popular to say, "Gold mine supply was 2000 tons this year and it's going to be 2500 tons next year". That is an increase of 25 percent in supply, and wow, that sounds like a big, big increase in supply. To keep up, the demand side of the market has to step up by 500 tons this year otherwise the price is going to be much-much lower. That would be a huge increase in demand. Where is all that demand going to come from to keep up with supply?

When you see statement like that, what does that mean, exactly? It means something like this. If investors as a sector had a net addition to their portfolio of 50 million ounces one year and the next year they added 60 million ounces they're calling that a 20 percent increase in demand. And that's supposed to be very bullish.

This way of thinking about the market is not logical. What they call "supply" and "demand" is the amount of gold that got moved around the market. And that is fine as far as it goes. The problem is when they go from the number to the price. Those numbers do not characterize the forces of supply and demand that do set the price.

L.S.: Then what do they mean by supply and demand? And why do you dislike their definitions?

R.B.: Let me explain how they come up with these numbers and what they're supposed to mean and then, where they go wrong.

What analysts typically do is divide the market up into sectors such as mines, investment, jewelry, industrial and central banks and maybe funds or ETFs get their own sector. Often a country like China is considered a sector. They want to measure the amount of gold that was bought and sold that year by individuals or actors within each sector. Those are gross amounts. From grosses you can compute net amounts. The net is the difference between the gross bought and sold quantity for that sector. There's always a net outflow from the mine sector because they're in business to sell.

For any other sector, the net might be a positive or a negative number during a year because people may have bought more jewelry than they sold, or the opposite. During any given year investors might on net have added to their positions or diminished their holdings.

When you read “supply” or “demand” in the financial media, the definition is not consistent from one place to the next. There are a lot of ways people slice and dice all of the numbers. Everyone does not do it the say way. However you do it, you have a number made by adding up some gross and net quantities. For example, one report might say that supply is mine supply plus gross jewelry scrap. Someone else might include gross investment purchases, and someone else might count only net investment as part of the demand number. When you read that demand is up, what they mean is that one of these contrived Rube Goldberg definitions that has the misleading name “demand” has changed from one year to the next.

Let me give you one example. The CPM Group (a research consultancy that produces in-depth reports on the gold and silver markets) does it like this: they define supply as the all of following: mine supply, the gross industrial sales, and gross jewelry sold. CPM defines demand as the sum of all of these: gross industrial purchases, gross jewelry purchases, net central bank activity and net investor activity.

CPM uses a mix of gross quantities and net quantities. This definition by itself strikes me as quite eccentric because of the mixture grosses and nets into the same aggregate. Gross quantities measure a flow, while nets are the change in magnitude of a stock. What happens when you add grosses and nets together? I have no idea. This reminds me of breaking the rules of dimensional consistency, something that the physics faculty at my university prohibited.

Now let's delve into these net quantities a bit more. To simplify the situation, suppose there are only two sectors in the market. Let's call those two sectors “mines” and “everyone else”. Then the relationship between the quantities is very simple. Whatever the miner sold somebody bought. There's always a market for gold at some price. An ounce of gold is worth more than zero. Any quantity of gold that someone offers on the market will find a buyer at some price and that gold will end up in someone's portfolio or maybe consumed. Mine supply gross (or net) sold is equal to everyone else net purchased. That is a simplified understanding of a two-sector market.

Now let's complicate the model a bit more to get it closer to reality. If you have three sectors, mines, jewelry and investment, then you can have a net outflow from jewelry one year and that would have to show up as a net inflow into investment because all the quantities have to balance out. Everything still has to net out to zero across all sectors. The gold miners are always sellers but any other sector could be a net buyer or a net seller in any one year period.

You can keep making the model more complex by adding more and more sectors. Each time you add another sector to your model, that sector has inflows and outflows. But this doesn't change the fundamental logic which is that every ounce that is sold in one place is purchased in another place.

All of the flows have to balance out to the net change in the world's total position, which is mine supply less destruction. And that is always a positive number as long as anyone has been counting.

Now, I've been saying that this is at best, not very useful, and at worst, misleading. By now you probably want to know, "what is the problem?" The problem is that these quantities and these flows have no causal relationship with the gold price. All we have done is to add up some of the volume in the market and shifts in aggregate holdings. But we are still no closer to the price because neither the volume of trading, nor position changes as are causes of the price. Quantities are not the cause of the gold price. Gross quantities are not the cause of the gold price. Net quantities are not the cause of the gold price. And so it must also be true that any Frankenstein monster number you invent, even if you give it a familiar name, like "supply" and "demand" also does not cause the gold price.

Suppose I tell you that there was a net flow of gold from sector A to sector B last year, then what is the impact on the gold price? There is no way to say. The gold price could be higher, lower or unchanged when gold moved from A to B. If the gold moved from A to B because the buyers on the A side were more aggressive and raised their bid prices, then you would see a higher price. If gold flowed because the people in B valued it less, so they were willing to let it go for less in return, then you would see a lower price. If both of those things happened, there would be a lot of trading but the price might end up about the same.

A price is a quantity of money that is exchanged for a quantity of gold. In these voluminous reports about mine supply and jewelry and everything, they're only looking at quantities of gold. There is no way that looking at quantities alone can tell you anything about price because there is no money involved. It's sort of like the is-ought problem in philosophy, which says that you cannot derive a sentence containing "ought" from any number of propositions that contain only "is". You cannot make any conclusions about money if you do not have money in your premises. No matter how hard you study these quantities it won't tell you anything about the price. Whatever the driver is of the price, it has to involve both gold and money.

L.S.: If not cause and effect, is there any relationship between these quantities and the gold price?

R.B. : Yes, it's almost the opposite of what most people think. The gold price is formed by a balancing process, as investors shift different assets in order to hold the amount of gold, cash, and other assets they want. These quantities come about because of discrepancies between what people own, what they want, and the collective preferences of the rest of the market. These discrepancies are resolved by exchanging and that gets counted as a quantity. But these quantities do not drive the price. The more preference changes among the buyers and sellers, the greater the volume of trading required to get back to an equilibrium.

I recall Warren Buffet describing a cartoon of a financial news anchor with the caption, "There was no volume on the market today because everyone was happy with what they own". This is quite

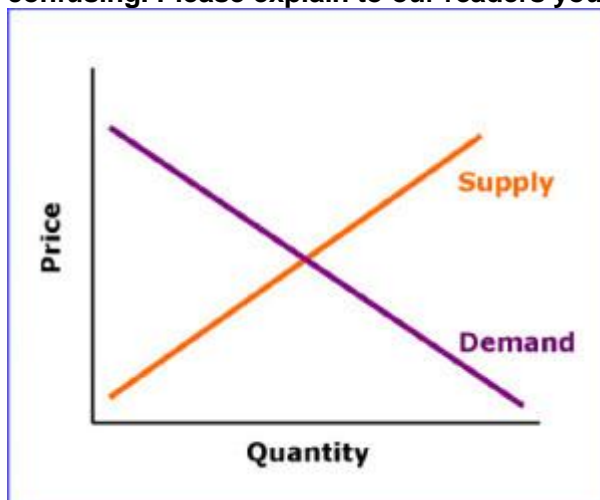
funny but the serious point is that buying and selling comes about because there are people who wish to change their position in a way that is complementary to what someone else wants, so they are both able to change their positions to something that they like better. The one side wants more cash, less gold; the other wants the opposite.

The volume of buying and selling shows how far out of adjustment people are between their own positions and the preferences of other people in the market which is what creates the opportunity to trade. Buying and selling as such do not cause the price, buying and selling come about because of a preference disequilibrium. That disequilibrium requires trading to equilibrate but it does not tell us at what price the trading occurs.

There might be a statistical correlation between, for example, a net inflow into one sector and higher (or lower) prices. If someone has a statistical model that works, that is great. But it's not causal.

But it seems to me that even if someone has discovered correlations like that, they will be coincident with the price, rather than predictive. In order to forecast the price, you need an indicator that moves in advance of the price. You read all the time how bullish it is that people bought so many coins, or bars or whatever, but buying that was the cause of the price going up, then it would have already gone up due to the buying. That would not help you forecast at all.

L.S.: You say that the way supply and demand are reported in the financial media is confusing. Please explain to our readers your thought process in more detail.



R.B.: When the average reader, or even the quite sophisticated reader sees the word “supply” and “demand” they don’t think to ask, “what is definition of that word” because we already have a good intuitive feeling about what those words mean. And we all know that an increase in demand drives the price higher, while an increase in supply sets us up for a lower price. And that is true if you use the terms “supply” and “demand” correctly to mean as the intensity of investor preferences on each side of the market.

If the author got all their numbers right – and some of these firms go to a lot of trouble to count up every microgram of gold dust in the entire world – then these statements are accurate in a very limited sense. But it is not true that a quantity made out of the sum of various flows and position shifts has any relationship to the forces that set the market price.

Everyone will agree: “The price of gold is set by supply and demand”. But what does it mean? We all just agree on? Correctly understood, this statement means that the price balances out the overall set of choices people make to offer on their desired terms from each side of the market. The price results from balancing those two sides.

Suppose that instead of “supply” and “demand” these aggregates were called X and Y, if you like algebra. Now if I change my statement to say “The price of gold is set by X and Y” you are immediately going to ask “what do you mean by X and Y?” And when you find that $X = A + B + (C - D) + (E - F)$, etc. and Y is something similar it starts to make a lot less sense. At that point your head will probably start exploding. When you use X and Y in place of “supply” and “demand”, you no longer have a true statement.

The problem happens by starting out from truth and then changing the definitions of terms so the statement looks the same but it is no longer means the same thing and the thing that it now means is not true. By using words that have a clear meaning in our minds, but using them to mean something else this creates immense confusion. And hardly anyone realizes this when they are reading an innocent-looking statement.

L.S.: If not by quantities, then can the gold price otherwise be analyzed quantitatively?

R.B.: The gold price is set by investor preferences, which cannot be measured directly. But I think that we understand the main factors in the world that influence investor preferences in relation to gold. These factors are the growth rate of money supply, the volume and quality of debt, political uncertainty, confiscation risk, and the attractiveness (or lack thereof) of other possible assets. As individuals filter these events through their own thoughts they form their preferences. But that's not something that's measurable.

I suspect that the reason for the emphasis on quantities is that they can be measured. Measurement is the basis of all science. And if we want our analysis to be rigorous and objective, so the thinking goes, we had better start with numbers and do a very fine job at measuring those numbers accurately. If you are an analyst you have to write a report for your clients, after all they have paid for it, so they have to come up with things that can be measured and the quantity is the only thing that can be measured so they write about quantities.

And in the end this is the problem for gold price analysts, you're talking about a market in which it's difficult to really quantify what's going on. I think that looking at some broad statistical relationships over a period of history, like gold price to money supply, to debt, things like that, might give some

idea about where the price is going. Or maybe not, maybe you run into the problem I mentioned about synchronous correlations that are not predictive.

Part of the problem is that statistics work better the more data you have. But we really don't have a lot of data about how the gold price behaves in relation to other things. The unbacked global floating exchange rate system has never been tried before our time. How many complete bull and bear cycles has the gold/fiat market gone through? My guess is that when we look back we will see that we are now still within the first cycle. Our sample size is one.

L.S.: Some people, for example the Gold Anti-Trust Action Committee (GATA), assume that the gold market is in a structural supply deficit which would require the gold price to be much higher in the absence of central bank selling. You do not agree with GATA that the gold market is in a supply deficit? What's your thinking on that point?

R.B.: I should first explain what they mean by a deficit. A deficit implies a situation where demand exceeds supply. This is a sensible definition in some situations but it doesn't apply to gold. It sounds logical but when you drill down into it, there are conceptual problems.

When would it make sense to talk about a deficit? Let's go back to the consumption-type commodities. In the wheat market, it is possible that consumption could exceed production for a limited time until stock piles are used up, and then, you would only be able to consume what was produced. When stocks were exhausted, the price would have to go much higher in order to bring consumption in line with production. This type of deficit does not exist in the gold market because the gold market is in a surplus of production over consumption every year.

But the bigger reason that it does not make sense to talk about a deficit is that unlike a commodity, the buyer does not destroy the commodity. The trade of gold is not drawing down any stock piles. When a transaction takes place, that does not reduce the total amount of gold in the world, it only changes ownership. Once an ounce of gold is sold, the buyer could then sell it to someone else, and they could sell it again. There is no limit to the amount of gold that can get shuffled back and forth between different people over time.

So how did they come up with the idea of a supply deficit? I'll tell you how they do it. They are talking about a supply-demand deficit rather than production-consumption deficit. A deficit means that a number called "supply" is less than another number called "demand". These definitions are problematic, due to the Frankenstein monster problem that I have discussed.

They define supply and demand using some combination grosses and nets. "Supply" is less than the "demand" and difference between the two is approximately the quantity sold by central banks. So this is the basis of why they say that there is, or was, a structural supply deficit that was made up by central bank selling.

Right away you should be suspicious about this because we know that if supply is defined the total quantity sold then demand is the total quantity bought then they have to be equal at the end of the

year, because every time there is a transaction, a buyer and a seller are involved with the same quantity.

If you define annual gold supply as mine production plus scrap, plus net producer hedging but not official sales, and then define demand as everything else on the buy side, then when you add things up, then the difference is going to have to be the official sector selling because that wasn't included in supply. You will get the same thing if you left out any other sector from the market from your definition of supply. For example, if you defined demand as all the gold that was bought by the different buyers and all the gold that was sold, accepting gold that was sold by China, then it would look like there was a supply deficit in the market that was made up by China. The difference between this type of deficit, which is not a real deficit, and a true deficit that you could have in in a commodity market, is that this deficit is an artifact of an illogical definition.

Where this really gets misleading is if you say that there is a 500 ton deficit, and you compare that to "supply" which is again misleadingly defined as mine supply, around 2500 tons, it looks like the market has a deficit equal to 20% of annual supply. In a commodity market, like copper, that would be a huge deficit because the stockpiles are maybe only equal to 20% of one year's production. After one year of a deficit like that you would have run out, and then the market would hit a hard wall. But in the gold market, as I have shown, the data means nothing like that at all. The comparison is wrong on both counts: there no deficit and the supply is not represented by one year's mine supply.

I won't dispute that if central banks decided to sell 400 tons in one year and they wave a big white flag in front of their sale, as the Bank of England did, the price will be lower that year than if they had not sold, or if they had bought. In the late 90s, it really did appear that central banks were trying to get the worst possible sale price rather than the best. And I won't dispute that at some point if central banks had continued to sell, then at some point would have sold all their gold and would have to stop selling. That is all true, but the way they talk about a supply deficit vastly overstates the importance of central bank selling.

L.S.: Do you agree with GATA that the precious metal markets are rigged and what is your opinion about GATA in general?

R.B.: I have no special expertise in the issues that they raised but I have been a follower of their reports since near the beginning and I read nearly everything that they publish. They have a daily email service where they pick out the most interesting stories in the gold market. I have been persuaded of the correctness of their main thesis, namely that a cartel of central banks conspired in the late 1990's to hold down the gold price; that this strategy has become unsustainable; and that they are now in a controlled retreat.

I'm not sure of the motives of central bankers. GATA have cited some quotes and other evidence indicating that some of these bankers may have a belief that they could permanently kill off gold as an asset if they could force its price down low enough and hold it there for long enough. I suppose they must have thought that everyone would lose interest.

If they did think that that they could permanently exterminate gold, that would demonstrate a belief by central bankers that gold is money is merely a convention; and that once the convention was discarded or people have forgotten about it, people would abandon gold and we would have centrally planned paper money forever. But they obviously didn't know who they were up against. Gold bugs are pretty stubborn.

I recall reading a report by a former Mitsui analyst Andy Smith, not exactly a friend of the gold bugs. Smith saw the progression from commodity money to paper money and central banking as a natural technological improvement, like those that occur in all areas in a free market economy. Just as we now have better mobile phones and better cars, we have replaced an outdated form of money with a more modern form of money.

This view fails to recognize any inherent advantages of commodity money over the centrally planned system of paper money. People have been using commodity money as long as there has been money, which is for thousands of years. That continuity has been interrupted briefly by paper systems. The reign of paper experiments has been short because that have ended badly. And then, the world has returned to a commodity.

This idea that a choice between a paper and a commodity system is purely conventional ignores the basic properties of monetary commodities, which have been known since ancient times. The properties have roots in physics, chemistry, geology and human nature. These realities will always drive human society in a direction toward commodity money. Even if commodity money were forgotten, it would be rediscovered because it has a basis in nature.

Or perhaps this was not their view. Maybe they did not think they could permanently destroy gold as an asset. Maybe the rigging was more of a short-term strategy to protect some of their friends who were short many tons of gold and had no ability to go into the market and buy that much. In that case, the central bank activity might have been a way of bailing out their friends, enabling them to cover, and then this thing turned out to be a lot bigger than they expected. They don't know how to get out without driving up the price much, much higher. GATA has uncovered some evidence that the controlled retreat is a strategy to get out of their shorts without any big spikes in volatility.

In the end, I'm not sure exactly what the motives for the scheme were but I think GATA are substantially correct in their main contentions.

L.S.: But if now some people / institutions rig the gold market indeed, what does this mean for the theory of price formation? You know, theory versus the reality on the ground?

R.B.: There is the physical market and the paper market. My thought process and our discussion concern the physical market. GATA believes that central banks have sold a lot of physical gold.

But the more significant answer to your question would involve the use of paper markets to achieve a synthetic supply greater than what could be mobilized in the physical market. The GATA thesis is that price suppression mainly involves the short selling of short large amounts of paper which drag

the physical market down along with it. And this could go on unless there was a boycott by the longs in which they insist on physical delivery.

Since I have no particular expertise in that area, I won't say any more than that other than what they're saying sounds plausible to me.

L.S.: We all know about the disdain of some of the more successful value investors for Bullion. Why is it that Buffet and the ilk do not like gold? Furthermore, can gold hold the place in the value investor's portfolio?

R.B.: The value investor school goes back to the work of Benjamin Graham. The way the value investor looks at the world is that every asset has two prices. There is the market price which is observable in the market, and then a theoretical price which they call, *intrinsic value*. The concept of intrinsic value is the primary innovation of the value school. There are difficulties in calculating it accurately, it involves guesswork and judgment but intrinsic value represents the price that a rational investor would pay for that business. It is a theoretical price, but based on economic logic, the asset should trade at its intrinsic value.

What they're looking for is a situation where you have the price in the market much lower than intrinsic value and that's where you should buy. You're probably going to make money when you can do that because eventually the market will understand the rational economic value of the business.

How does the value investor estimate intrinsic value? There are various ways but they all rely on other market prices. If you look at the income statements of a business you get profits or you look at the cash flow and you have cash flows coming in. You have stream of money flows, how would you price that stream? You would price it by looking at what is the market paying for similar streams of income, either by comparing it to other comparable stocks or bonds or by using interest rates which is essentially the same thing.

Or you can do it from balance sheet standpoint. If the corporation has assets, those might be things like land, real estate, mineral deposits, regulatory permits, brands, patents. The economic value of these assets can be determined if there is an external market where you can price comparable assets. Then you can break the business up into pieces (on paper) and value the assets individually. If you can buy the assets for much less than the market place then that is also a buy within the value discipline.

The other thing the value investors really like is dividends or interest payments. This gives them a chance to earn some money while they're waiting to be right. If you have a very high yielding asset and you're able to hold it for five or six years, you might get your purchase price back, even if the price of the asset doesn't go up. Then you are protected if the asset went to zero.

So now, I think we can see why value investors don't like gold: because it doesn't have cash flows, it doesn't have dividends, it doesn't have a balance sheet and therefore, it doesn't have an intrinsic value *in the sense that they use the term*. The value investor looks at gold and says this stuff can be

any price at all depending on what people are willing to pay for it. Andy Smith who I mentioned before, he came out with \$90 gold forecast at one point. I guess he thought that someday everyone would wake up and just decide that gold was worth \$90.

Value investors hate to buy something if they don't know what it's worth (and by that I mean intrinsic value) because they can't ground that action in their rational framework. They think that such a move would be an irrational speculation, so they stay away from it.

I think that they are right within their framework, that you cannot buy gold for reasons like that because you cannot analyze it that way. Where I disagree with the value investors is that many of them think that that value investing is the only rational approach to risk, something that we all face in every area of life and we have to deal with it somehow.

I don't think that any decision you make outside the value investment framework is irrational. I see rationality as broader in that we're all trying to survive and adapt in this world with an uncertain future. We know that there are regularities in the world, that cause and effect relationships exist. Rationality means that we try to choose our own actions within that context.

Thousands of years of commodity money have been interrupted by brief but spectacular failures of paper money. And we know that the use of gold as a commodity money is rooted in geology, chemistry, metallurgy and aspects being a human being on this planet. For example, with our built-in optical system we can recognize gold pretty well. And given our size and strength as humans we are able to carry a decent amount of purchasing power – not too much, not too little – in the form as gold in our pockets. And so I don't think it makes you a crazy person that you should want to have a portion of your savings in a good that has always maintained some value in a world where central bankers are desperately trying to destroy the entire monetary system.

L.S.: A controversial topic within both the gold community and the anti-gold crowd is whether gold is money. What is your view on that?



R.B.: Money is a medium of exchange. That means money is the thing that people ask for in return when they supply goods and services to the market. You often see money being defined as something having three properties: medium of exchange, store of value and unit of account. But my view – and this is in agreement with Austrian school economists Menger and von Mises – is that store of value and unit of account are not the definitional properties, they are derivative properties that money has because of its function as a medium of exchange. There can be other goods in the economy that function as a store value but not as a medium of exchange, like property for example.

And I would include gold in that category. It is a store of value, maybe superior to the performance of money proper in that respect.

Whether gold is or is not money, is simple to determine. If you look around where you live and ask whether prices are quoted in terms of a particular thing then that will tell you if that thing is or is not money. Now, if I look around where I live here in San Francisco, prices are quoted in US dollars and in other places I've travelled in the world, prices are usually quoted in terms of a national currency, or sometimes in terms of dollars if the country has dollarized its monetary system.

Most prices here now are quoted in dollars. I have read somewhere that property values in Vietnam are sometimes quoted in gold so, in that case, it would be accurate to say that gold was functioning as money but for the most part world-wide, gold is not money at this time.

We went through a period here in San Francisco during the tech stock bubble in the 90s in which the prices of certain goods were quoted in terms of stock options on technology start-ups. That was a strange time. Companies could not hire workers for money wages; they had to offer stock options. Rents on business properties where the landlords would not accept money rents, they required a combination of money and stock options. Buyers were making offers on homes for sale in Palo Alto California consisting of a combination of money and stock options. I even read about a restaurant that was serving food to employees of a tech company for options instead of cash.

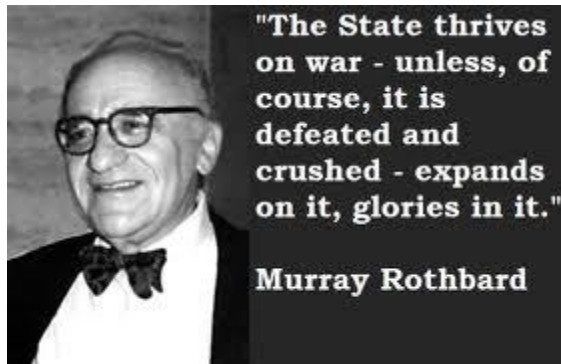
My interpretation of this strange phenomenon is that we were in a period of asset hyperinflation. Money was losing value so fast in terms of technology stocks people were reverting to the hyperinflation behaviour you see in end stages of a monetary collapse. In the late stages of a hyperinflation, people buy goods of any kind as fast as they can in order to get rid of money. This was the equivalent of people buying bed pans in Weimar. But that is a bit of a tangent.

Professor Salerno, an economist of the Austrian School who teaches for the Mises Institute said that when the US broke the last link between gold and the dollar, 1970 the economist Milton Freedman had forecast that gold would collapse. Friedman thought that the dollar was the only thing that was holding up gold.

Andy Smith's view is similar. Smith was saying back in the 90s that central banks are stuck with all this gold that they no longer want. They know that it's useless but how are they going to sell it? If they started liquidating, then that would announce to the world that gold is no longer money. All the stupid gold bugs, who hold it because they think that it is money, would realize that they had been played for fools, and the gold price would immediately collapse. Smith saw the Washington Agreements, an agreement among the major gold-owning central banks to restrict quantities sales each year, sort of like the OPEC cartel, as their solution to this problem. Smith characterized this as a form of welfare for the gold industry, as if banks were forming a cartel to keep the gold price *up*, not down. So in Smith's view, central bank gold reserves only reinforce the perception that gold is still money, or, if not money, at least some kind of quasi-monetary thing that is of interest to central

banks. That totally artificial perception was, according to Smith, the only thing restraining the gold price from a total collapse.

But this is all nonsense; Friedman and Smith are completely mistaken in their view. Governments do not define what money is. Ultimately, the market defines what money is and people will use centrally planned paper money only up to a point. The point where people reject paper money is when its purchasing power becomes so unstable that it is no longer of any reliable use as a store of value or unit of account, even for a short time. And when that happens, that is called hyperinflation.



The Austrian economist, Murray Rothbard, identified three phases of inflation; in the first phase the money supply expands but prices do not rise as much because people perceive a new influx of money as temporary and they prefer to save it rather than spend it all. The second phase is when people realize that inflation will continue and they start to spin down their cash reserves faster than money supply is growing, so prices outpace money supply growth. In the final phase, which von Mises called the *crack-up boom*, the public perceives that inflation never stop until, it will only accelerate. While it is theoretically possible that we could all adapt to using money that was losing 99% of its value each year, in practice that does not happen. At that point, people choose to exit from the monetary system an alternative store of value, either another form of money, or non-money.

We have an uneasy co-existence with state money because there is always that threat that its value erode or the threat of a bank credit deflation in which the purchasing power of each money unit increases but a lot of bank credit money is destroyed. If it happened to be your money that was destroyed, then you would be broke, even if the purchasing power of the remaining money has increased. We have this co-existence with state money because it's already in use, that makes it convenient and all of the taxing and regulatory frameworks that we have to interact with are denominated in state-issued money.

In favor of gold, the adoption of gold as money is based on sound reasons. It has the characteristics of the ideal money which has been known since ancient times. The possibility of using gold as an ideal form of money will never go away as long as there is gold and there are people. And there is always this threat from the point of view of central bankers that society will reject their centrally planned monetary system and start using something else.

My view then of gold is no, it's not money, not exactly but the continuing demand for gold arises from its function as a shadow money. It's something that people hold to hedge against the possibility that it will become money or become more closely tied to money in the future. And even if it does not, the public's valuation of gold functions as a check on the behaviour of the monetary authorities.

As central banks continue to issue vast quantities of unpayable debt, most of which will be monetized, we are never so far away from the possibility of a collapse that there is no need to have insurance against it.

L.S.: Final question; you've mentioned the strange time of the dot.com bubble. Do you think the excitement, the hype and the greed during that period will be nothing compared to the time when gold and silver will really begin their bubble phase?

R.B.: I do think we will have a bubble in gold, although it may take the form of a collapse of the monetary and a return to some form of gold as money in which case, the bubble will not end, it would simply transition over to the new system in which gold would go from being a non-money asset to money.

I have been following this market since the late 90s. I remember reading that gold was in a bubble at every price above 320 dollars. I very much like the writings of William Fleckenstein, an American investment writer. He has pointed out how often you read in the financial media that gold is already in a bubble, a point he quite rightly disputes. Fleckenstein has pointed out that the people who say this did not identify the equity bubble, did not believe that we had a housing bubble, nor have they identified the current genuine bubble, which in the bond market. But now these same people are so good at spotting bubbles that they can tell you that gold is in one.

Most of them did not identify gold as something which was worth buying at the bottom, have never owned a single ounce of gold, have missed the entire move up over the last dozen years, and now that they're completely out of the market, they smugly tell us for our own good that gold is in a bubble and we should sell.

So, I don't know that we need to listen to those people and take them very seriously.

L.S.: Should we begin to think about the possibility that gold is in a bubble when they buy gold?

M: Very good, yes. (*laughs.*)

L.S.: Thank you very much for taking your time, Mr. Blumen!

You are most welcome Mr. Schall. Thank you for allowing me to share my views with your readers.

SOURCES:

(1) Official Monetary and Financial Institutions Forum (OMFIF): “Gold, the renminbi and the multi-currency reserve system“, published January 2013 under:

<http://www.omfif.org/downloads/Gold,%20the%20renminbi%20and%20the%20multi-currency%20reserve%20system.pdf>

(2) Compare Lars Schall: “The Seeds For An Even Bigger Crisis Have Been Sown”, Interview with Ronald Stoeferle, published at GoldSwitzerland on July 11, 2012 under:

<http://goldswitzerland.com/the-seeds-for-an-even-bigger-crisis-have-been-sown/>

Further reading recommendations by Robert Blumen:

- [Misunderstanding Gold Demand](#)
- [The Myth of the Gold Supply Deficit](#)
- [Mining Doesn't Matter](#)
- [Gold Mine Supply has no Bearing on the Price of Gold](#)
- [If gold supplies are rising why aren't prices falling?](#)
- [Value Investors Hate Gold](#)
- [Is Gold Money?](#)
- [Is Gold in a Bubble?](#)

Is Gold in a Bubble?

by Robert Blumen

Previously by Robert Blumen: Why Health Insurance?

Gold has recently broken out to new highs, topping \$1150/ounce. The financial media doesn't trust this move. Widespread commentary has it that gold is in a bubble. Google reports numerous hits for a search on "gold bubble Nov. 2009." Financial writer and frequent television guest Dennis Gartman agrees:

"It is a gold bubble and to say otherwise it'd be naïve," Gartman said. He called the trade on the precious metal: "mind boggling and unbelievably crowded," but also said he is currently long — or betting gold will go higher.

To be fair to Gartman he is a short-term trader who has been both long and short gold at various times in the last ten years. I am not original in the following observation (I think it was Bill Fleckenstein but I can't remember for sure) but it is worth saying again. Gartman aside, many of the financial media have a pronounced anti-gold bias. Of the writers and news anchors now calling gold a bubble, not only did they fail to identify the stock market bubble in the 90s or the subsequent housing market boom as a bubble, they actively promoted the excesses of those unsustainable booms, encouraging their viewers or readers to participate. For the most part, these pundits have failed to identify a rising gold price as an investment trend at any point in the past ten years (during which gold had a positive return each and every year); and most have never recommended any form of gold as an investment to their viewers — who probably don't own any gold either.

Few if any of the financial commentariat are presently warning investors of the government bond bubble. Yet if there is any financial event more certain than the eventual default of most government debt in the developed world, I cannot identify it.

Witness the irony of the financial media transformed from hypesters who never saw a bubble they couldn't promote into *bubble vigilantes*, issuing concerned warnings to "get out, now, before you get hurt."

But so far all I have done is to make ad hominem attacks on media figures. In spite of their past failures, they could be right. Let's have a look at the data and try to figure out whether gold is or is not in a bubble.

A bubble is a deviation between price and fair value of an asset. Because fair value is to some extent a matter of opinion, identifying a bubble involves opinion as well. There are various widely accepted methods for valuing assets, but these methods use inputs that involve judgment and opinion. Stocks can be valued on the underlying earnings or the balance sheet of the issuing corporation. Housing can be valued on the basis of rental income. While these numbers are also open to interpretation, a firm call of a bubble can be made when values are in an uptrend and reach multiples of historic valuations.

But estimating the fair value of gold is at best, less straightforward, and at worst, impossible. Other assets are valued on the income stream that they produce, or by breaking them down into pieces that have independent market prices. Gold cannot be analyzed the same way as other assets because it can't be broken down into anything more fundamental than itself. Its current price is its only indication of what it might be worth. Its price can change from day to day. This makes it difficult to determine what is a low or a high price. Various models have been proposed to calculate the fair value of gold, but they all run into assumption-making at some point.

Paul van Eeden has published some articles (1 2) in which he proposes that the fair value of gold can be calculated on the basis of purchasing power parity of an ounce of gold, relative to the end

of the gold standard (when gold was last official money). He projects the current gold price based on the growth in the supply of mined gold over this time, compared to the growth in the supply of fiat money over the same period.

I do find value in van Eeden's work, mainly for emphasizing that gold is a global asset, one that is in demand in terms of all fiat monies. Gold has one price in each currency. The dollar price of gold is not the price of gold, only a price of gold. The dollar price of gold reflects the foreign exchange value of the dollar against other fiat monies as well as the global valuation of gold itself. Van Eeden shows, for example, that gold was not in a global bear market throughout the entire period from 1980—1995. On the contrary, much of the decline in the dollar price of gold was a rise in the exchange rate of the dollar over this time. Gold's price over this period in other fiat currencies was *not* uniformly down (a fact frequently cited to "prove" that gold is not an inflation hedge). The gold price went up in some currencies and trended sideways in others, depending on their foreign exchange rate.

However, I am not convinced that gold should trade at van Eeden's theoretical price. The exchange rate between fiat money A and fiat money B tends toward purchasing power parity because participants buy and sell goods and currencies to arbitrage away differences. This arbitrage process assumes that goods are sold in the market in terms of both A and B. But there is no good reason to expect that the price of gold should reflect purchasing power parity when it is no longer used as currency because goods are not sold on the market for gold. It is purely a financial asset at this point. Van Eeden's model might be approximately true because gold functions as a sort of shadow money but that's not exactly the same as actual money.

Van Eeden also ignores the likelihood that the purchasing power of gold would have grown since the end of the official gold standard, since the growth rate of the goods and services in the world economy has exceeded the growth rate of the gold supply.

Another problem with van Eeden's model is that, while under the gold standard, currencies were redeemable for a fixed amount of gold. In that regime, any measurement of money supply should count *either* currencies *or* gold. Counting currencies **and** gold would be double counting. His model compares gold against currency, which would be correct if we went back on a convertible gold standard, but right now, gold trades along side currencies, so it should be counted as an addition to total money.

Professor Mike Rozeff has written several articles for LewRockwell.com showing calculations of what the gold price could be using different models. As Rozeff points out, "Numbers such as [those presented in certain models] surely give the impression that gold can go higher, but we knew that already. Any asset can go higher. These numbers give the illusion of certainty and necessity, or in other words they suggest that gold will go higher. But the model has no reasoning in it to say why this has to happen, if it has to happen at all." I agree with Rozeff's point here: if you assume that a particular model is correct, it can be used to generate a theoretical price. But the models all depend on an assumption that gold should behave as it is modeled.

How expensive does an asset need to be to be called a bubble? During the stock market bubble, equities traded at three to four times historic valuations, with the NASDAQ index trading at something like six times or more times a realistic valuation (notwithstanding the large number of NASDAQ companies whose value proved to be zero). During the housing bubble, home prices averaged over the entire country were about twice historic valuations, but the major bubble cities saw homes reach three or more times historic valuations.

If you think that gold is in a bubble, is it trading at two times fair value? Three times? Five or six times? That would imply a fair value of anywhere from \$550 to \$200. During most of the last ten calendar years, gold has experienced a decline of 20% at least once during the year and then resumed its upward climb. Would a fall in gold from the recent \$1100 to a low of \$900 validate the bubble hypothesis? Or would it only be a medium-term correction in an ongoing bullish trend?

Can an analysis of trends and cycles tell us whether gold is in a bubble? I recall a speaker at an investment conference in the mid-00s stating that gold's bull run was over because "the average gold bull market lasts for four years." But where did this average come from? Prior to 1971, the "price" of gold was a fixed convertibility ratio between fiat money; or at worst, an administered price. Gold has only had a market price in fiat money terms since the day when Nixon closed the gold window. How many gold bull markets have we seen that time? At most: two. Can we average together all two points of data and get a meaningful statistic?

Relying on historical valuations is useful for stocks and houses since we have a century more of data for both of those asset classes. But for gold, the world has only been on a pure fiat money standard for 40 years. How many complete bull and bear cycles have we seen during that time? Nassim Taleb, in his book *Fooled by Randomness*, emphasizes that, when you are collecting data about some observable phenomenon, it is difficult to know when you have seen enough data to encompass the full variability of the phenomenon. In other words, if you have 100 years of data about floods in a river bed, your data set might not include any occurrences of the once-every-200-years flood, or the 500-year flood.



It seems implausible to me that in the last 40 years we have seen the full range of variability in the relationship between gold and fiat money. I suspect we have not experienced multiple bull/bear cycles in gold; it is more likely we have not even seen **one** complete cycle yet. In our 40 years since Nixon closed the gold window, we have not seen the 100-year flood. It is more likely that we are now reaching the end of the *first* full market cycle of gold in a pure fiat world. This is now the 100-year flood. The current cycle will end with a world-wide currency crisis and a wipeout in the value of most government debt.

If I am correct, then the next phase of monetary history would almost certainly involve an informal or formal recognition of gold as a monetary reserve asset by central banks. Gold would then be revalued at a much higher level of purchasing power relative to recent history.

November 23, 2009

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Is Gold Money?



SEPTEMBER 5, 2008 [Robert Blumen](#)

TAGS [Free Markets](#) [Money and Banks](#) [Gold Standard](#)

Is gold money? Many would say so, including owners of the top-level domains [GoldIsMoney.com](#) and [GoldIsMoney.info](#). A web search returns 18,000 additional affirmative responses. If you want to start a fight with a [gold bug](#), take the opposite view.

But is it so?

To answer the question of whether gold is money requires a definition. This one, [from Wikipedia](#), is typical:

Money is anything that is generally accepted in payment for goods and services and in repayment of debts. The main uses of money are as a medium of exchange, a unit of account, and a store of value.

Wikipedia refers to three properties of money. However, according to the Austrian economist Carl Menger, its acceptability in trade is the defining property. While money undoubtedly does serve as a store of value and a unit of account, these properties are derivative, not definitional properties. The reason that a medium of exchange necessarily is also a store of value is the anticipation of its exchange value in the future.^[1]

On this point Menger [wrote](#),

[1] It appears to me to be just as certain that the functions of being a "measure of value" and a "store of value" must not be attributed to money as such, since these functions are of a merely accidental nature and are not an essential part of the concept of money.^[2]

Using the above definition, the question of whether any particular good is or is not money, can be posed in this way: *is the good in question accepted as the final means of payment for transactions?*

At present, in the developed world, nearly every nation has its own money or belongs to a currency union, such as the EU. Some nations in the developing world use the US dollar. In highly inflationary environments, the local currency is often spontaneously rejected in favor of the dollar or another foreign currency. Hardly anywhere do we find gold generally accepted as a means of payment. So gold must fail the definitional test of money.

Is this the end of the argument (and so the end of a very short article)? Not quite. Gold is not money, but it has most of the desirable properties of money, and the process by which it became money in the past gives some clues about how it may become money once again.

A store of value is not necessarily a medium of exchange. As Menger says, a nonmonetary commodity can serve as a store of value:

But the notion that attributes to money as such the function of also transferring "values" from the present into the future must be designated as erroneous. Although metallic money, because of its durability and low cost of preservation, is doubtless suitable for this purpose also, it is nevertheless clear that other commodities are still better suited for it.[3]

Analyst Paul van Eeden has shown that gold has maintained its purchasing power relative to the time that the gold standard ended. In "Is Gold an Inflation Hedge?" I have provided links to van Eeden's articles and a more detailed discussion. I will summarize his analysis here. A theoretical gold price equivalent which would give gold the same purchasing power as it had at the end of the gold standard is calculated by taking the convertibility ratio of \$35 in 1933, and then multiplying by a factor representing the growth in the quantity of fiat money from that time. Under the classical gold standard, gold was the entire world's money. By counting worldwide growth in currency (not only US dollars) and comparing it to a worldwide price currency index of the gold price, van Eeden avoids the pitfalls of looking only at gold's dollar price, which can experience significant volatility due to the dollar's exchange rate against other national currencies.

Van Eeden's research shows that, since the end of the gold standard, the price of gold in units of fiat currency has tracked its purchasing-power-equivalent price fairly well, oscillating in a band around its theoretical value. In essence, the purchasing power of gold has been reasonably stable in the time since the end of the gold standard, which is only another way of saying that gold has served as a store of value.

Even today most of the demand for gold is not for direct use, but demand to hold. In the developed world, people purchase coins and bars for storage in vaults. In other areas, people save by accumulating bullion jewelry. Distinct from ornamental jewelry, bullion jewelry has low workmanship value added. Its price is not much greater than the melt value of its metal content.

I wrote the following in "The Myth of the Gold Supply Deficit":

The World Gold Council estimates that 52% of gold is held as jewelry. James Turk subdivides jewelry holdings into low carat and high carat. The former is purchased mainly for the gold value, as an alternative to buying bars and coins. The latter is purchased mostly for fashion. According to Turk's estimate (which was published in 1996), monetary jewelry at that

time accounted for about 60% of jewelry with fashion jewelry accounting for the remaining 40%. However, even when made into jewelry, the gold is not destroyed and can come back into the market as scrap. The WGC figures show significant recovery from scrap.

That gold continued to be a store of value post gold standard was unexpected by many economists. In the early 1970s, when the dollar's link to gold was cut, economist Milton Friedman predicted that the price of gold would collapse.[4] The Nobel laureate believed that the gold derived its value from its relationship with the dollar; without gold backing, there would be far less demand for gold. There would, of course, continue to be industrial demand for the metal, but without monetary demand provided by the dollar, the vast supply that had been accumulated during the preceding centuries would overhand the market, depressing the gold price for the foreseeable future. Friedman could not have been more wrong. It was the dollar that collapsed in the 1970s, while the gold price in dollars began a bull run that was not eclipsed in nominal terms until late last year.

A similar and still widely held view in the world of mainstream financial analysts is that gold has been "demonetized." [5] The argument goes like this: central banks decide what money is; central banks have determined that gold is not money; therefore gold is not money. Only the stupid gold investors haven't figured this out. This view of the gold market sees the price of gold as determined primarily by central banks (who own an estimated 10–17% of above-ground supply). The critical variable is how they will time the sales of their gold hoards without causing a selling panic as market participants realized that their gold coins and bars have no monetary value.[6]

But why is gold a better store of value than most any of a vast number other nonmonetary goods? Why were Milton Friedman and the other economists wrong? Their error was the assumption that political institutions have the final say over what is and is not money. But this is not so: the market has final say. Looking at the process by which money originated from barter helps to understand why. According to Menger, money came into being through the efforts of individuals to expand the range of goods they could acquire through exchange beyond the possibilities available.[7] Some individuals in a barter economy begin by bartering their goods for a commodity that they do not need but is generally in demand throughout the market, with the intention of *later* exchanging that commodity for other goods. This strategy is called *indirect exchange*. These astute traders realize that "the acquisition by trade of the consumption goods that he needs ... can proceed ... much more quickly, more economically, and with a greatly enhanced probability of success." [8]

As societies moved from barter to monetary economies, different goods were in competition with each other for use as money. Over time, as monetary exchange expanded in proportion to barter, some commodities were found to work better as money than others, until only a handful of them became "acceptable to everyone in trade." [9] Those were gold and silver.

What qualities have made gold (and silver) the winners of the monetary competition in centuries past? The qualities most often cited by monetary historians are durability, divisibility, recognizability, portability, scarcity (the difficulty of producing more of it), and a value-to-weight ratio that is neither too high nor too low. Too low a ratio would make it hard to carry enough for spending, while too high a ratio would make small transactions difficult and prevent the commodity from being sufficiently widely owned in the prior barter economy. Gold still has these

qualities today. While fiat money has some of them, it fails the scarcity test: it is too easy to create more of it.

The result of market competition is not necessarily permanent. Market competition is an ongoing process. Even when one commodity emerged as money, there continued to be competition from other nonmonetary commodities. Once the world's money, even gold could have lost its place had a superior alternative emerged. But that is not the reason we no longer use it. Political money did not *prove* its superiority through a market process. What happened instead was a politically imposed change from a better system to a worse system.

Although the central bankers have used political means to replace gold with paper, they do not have the power to end the competition between their money and commodity money. The "demonetization" of gold by central banks has rigged the competition — but not ended it.

Gold as money may not be over for all time. As the monetary system melts down, gold functions as "shadow money," an alternative that competes with the political money. It remains a store of value because of its potential to become money again. There is continuing demand for gold as a hedge against the breakdown of the fiat system.

Governments cannot force people to use their money beyond a point. The market will only continue to accept fiat money as long as it works well enough (or even, not too badly). If governments debase their currency beyond a point where it maintains some value over time, people will stop using government currency and switch to something else.

In countries suffering hyperinflation (or even just excessive inflation), people typically start quoting prices and accepting in trade in the more stable currencies of other countries. Earlier this year, [VietnamNet](#) reported that land prices are being quoted in gold rather than the local currency, the [dong](#).

The world is lurching through a serious monetary disorder. The proximate cause is the collapse of the housing bubble and the subprime-credit crisis, but the ultimate cause is the inherently unstable monetary system foisted upon us by a banking cartel. Central bankers are called upon to act as lenders of last resort, but in their efforts to inflate their way out of the credit collapse, they risk igniting a hyperinflationary bonfire that will destroy the world's major fiat currencies. Gold was money once, and could become so again.

[1] Assuming that it is not expected to lose value too quickly, see below.

[2] Menger, *Principles of Economics*, p. 280.

[3] Menger, p. 279.

[4] Austrian Economist Joseph Salerno, an expert on monetary economics and banking, refers to this in [an interview](#) with historian Thomas E. Woods and in [a lengthy interview](#) on C-SPAN.

[5] The analyst Andy Smith, formerly of Matsui, was one of the leading exponents of this position.

[6] Accounting irregularities on the balance sheets of central banks make this a murky issue, but, of the estimated 5 billion ounces of mined gold, central banks hold between 16,000 tonnes and 27,000 tonnes. The lower figure is suggested by organizations such as [GATA](#) with the higher figure typically cited by mainstream gold analysts.

[7] "The Nature and Origin of Money" in *Principles of Economics*, pp. 257–262.

[8] Menger, p. 260.

[9] Menger, p. 260.

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Readers' Comments: Calculate the official debt of the USA and do the math. You get a conservative value of Gold of 5,000. as Martin Armstrong has stated. Gold is not a stock or a bond its a currency without debt obligations. It's that simple. The key to Gold is government debt

Gold's "lack of value", in the monetary sense, from a monetary point of view was never about bullion but about poor liquidity based on underlying distribution systems. Now that gold floats and the ownership title can be digitized, I can buy a stick of gum from a merchant anywhere in the world and close out the transaction with exact bullion based payment by transferring digital title (currency denominated in weight).

David smith • 4 years ago

Value investors "need a quantitative estimate of (an investment's) intrinsic value". What happens when the measuring stick itself (the currency unit) has no intrinsic value, as in the case of fiat currencies? That would seem to invalidate the whole process. Ah, but what about a currency backed by precious metal? Then we would no longer have that problem, would we? Except that, according to the value investors, the precious metal has no intrinsic value, by their definition. The point is, someone, somewhere, has to demonstrate value by being willing to pay (offer goods and services in exchange) for the asset. Without the subjective human component, value, whether "intrinsic" or "economic", falls to the ground.

Cheryl Jones • 3 years ago

I really like your point about gold competes with fiat money "should the fiat money system shoot itself in the head. The more suicidal the fiat money system becomes, the greater the demand to hold gold as a store of value should fiat money fail in this function." That is an excellent point and what is currently occurring. You also expressed this very well. "During a monetary breakdown, variations in the supply and demand for money itself drive prices more than the supply and demand for goods." That is definitely occurring as well. Gold is becoming popular because people recognize the value of currency is headed towards zero. The big question is...what kind of gold is best to purchase? Gold that is 999.9 fine kinebar quality and that can be used in transactions because of its tiny size is the best, in my opinion. Ounces and coins are cumbersome to use in commerce, and also are not standardized effectively to be used in commerce itself as gram and half-gram size 999.9 fine kinebar gold can be used.

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If gold supplies are rising, why aren't prices falling?



Gold supplies are going up, but demand only has to rise about 1 percent a year to keep supply and demand in balance.

By Robert Blumen, Guest blogger MAY 31, 2010



• Brett Arends, writing in the Wall Street Journal Why I Don't Trust Gold explains the rise of gold in the following way:

If the price rises you'd think there must be a shortage. But data provided by the World Gold Council, an industry body, tell a remarkable story.

Over that period the world has produced—or, more accurately, recovered—far more gold than anyone actually wanted to use. Since 2002, for example, total demand for

gold from goldsmiths and jewelers, and dentists, and general industry, has come to about 22,500 tonnes.

But during the same period, more than 29,000 tonnes has come on to the market.

The surplus alone is enough to produce about 220 million one-ounce gold American Buffalo coins. That's in eight years.

Most of the new supply has come from mine production. Some, though a dwindling amount, has come from central banks. And a growing amount has come from recycling—old jewelry and the like being melted down for scrap. (This is a perennial issue with gold. I never understand why the fans think gold's incredible durability—it doesn't waste or corrode—is bullish for the market. It's bearish.) So if supply has consistently exceeded user demand, how come the price of gold has still been rising?

In a word, hoarding.

Gold investors, or hoarders, have made up all the difference. They are the only reason total “demand” has exceeded supply.

Arends' explanation is based entirely on a series of misconceptions about how the gold price is formed. He looks at it as if it were a commodity that is produced and then used up. But this is not the case. Gold is produced primarily to be held in the form of bars, coins, or jewelry.

We all agree that prices are the mechanism by which supply and demand come into balance. Arends is working from the assumption that the price of gold must balance annual mine production against the annual use of gold for fabrication and dentistry. That is not the case at all. This could only be true under the following two (false) assumptions: if all of the gold that already exists – about 100 times annual mine production – were destroyed or otherwise permanently removed from the market, and if potential gold buyers could only purchase gold that was mined in the last year.

The market for gold does not consist only of gold that was mined in the past year. In the gold market, newly mined gold and existing gold form a single market. As I have written on this site, the supply of gold that participates in the price mechanism is **all of the gold that exists..** Gold mining has very little impact on price. If mining were halted entirely that would not affect the price by much.

The demand for gold does include fabricators, gold smiths, jewelers and dentists, but these sources of demand constitute a tiny fraction of the total demand. The largest component of gold demand is reservation demand, or demand-to-hold gold by people who own it – also known as hoarding. By not selling their gold at or below the current price, gold hoarders ensure that the price stays at or above that level. By not bidding at or above the current price, dollar (and other money) hoarders ensure that the prices stays at or below the current level.

Trying to understand the gold price on an annual basis leads to the conclusion that there is a phony surplus (or deficit according to others).

Arends writes that more gold was mined than anyone wants to use, as if that has some kind of bearish implications. The mined surplus, according to Arends, has not yet depressing the gold price due to investors dramatically stepping up their hoarding. He implies that this big bump in hoarding is sure to be temporary, and then, gold will crash.

But there is nothing new, or special as Arends seems to think, about hoarding. Hoarding, or demand-to-hold, is the mechanism by which the price of any stockpiled good is set. Arends makes the quantitative increase in hoarding during the last few years seem about 100 times more important than it is by looking only at annual supply. In fact, the demand-to-hoard only needs to increase by about 1% per year in order to keep the market in balance because that is the rate of growth of supply. As long as investors, collectively, are willing to add to their hoards by 1% per year, the price of gold could stay at the same level.

The overwhelming majority of the world's gold supply is hoarded by someone. The annual demand for destructive uses of gold, e.g. dentistry or irrecoverable industrial use is minuscule and can be met out of annual mine production. The importance of hoarding applies as well to money or any other financial asset as to gold. Take, for example shares of equity of a corporation. Like gold, financial assets are not "used" as in "used up", they are hoarded. The price of any asset is set by the competition

between asset hoarders and dollar hoarders as they balance the sizes of their hoards (otherwise known as accounts or portfolios). The question is, what price will existing gold hoarders choose to increase their stockpiles of money, and at what price will existing money hoarders choose to increase their stockpiles of gold?

Suppose that you read a research report from a brokerage like this:

Corporation XYZ plans to issue 1 million shares in an upcoming equity offering. Last year's trading volume in this stock was 0.5 million shares. This new share issuance represents two times annual consumption of XYZ shares. Unless there is a 100% increase in the demand for XYZ shares this year as compared to last year, then the stock price of XYZ will clearly fall. Last year's demand of 500,000 shares of XYZ was based on investor "hoarding" of XYZ shares. This hoarding demand is clearly temporary, speculative, and irrational; as such, it cannot be relied on to carry into the current year. Therefore the price outlook for XYZ is bearish.

What are the problems with this analysis? The analyst fails to look at how many shares of XYZ are outstanding and then to compare the size of the new offering to the total share count. Suppose that XYZ has already issued 100 million shares, then the new shares only dilute XYZ's equity by 1%. If the equity offering is priced at fair value, then an equal asset is added to the firms' balance sheet and existing equity holders are not diluted at all.

The analyst fails to understand that all shares of any equity are "hoarded", that is, held in a stockpile by an investor somewhere; it is the nature of an asset to be

“hoarded”. The analyst confuses trading volume with demand: the 500,000 shares of XYZ that traded last year is not a measure of the total demand for shares, only of the turnover. The trading volume tells you nothing about the price – a stock can trade either up or down on rising or falling volume. The analyst fails to take into account that it is existing bids for the shares that are responsible for maintaining the price where it is. All demand to hoard is speculative in nature though not necessarily irrational. And so it goes with gold.

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WHY GOLD MINE SUPPLY HAS NO BEARING ON THE PRICE OF GOLD

Today we have a guest contributor, Robert Blumen. Robert is a subscriber to The Dollar Vigilante and is a software developer in San Francisco who writes for the Ludwig von Mises Institute, Lew Rockwell.com, and other financial and economics web sites.

Last week we responded to a Globe & Mail article in two separate blog pieces, titled “The Worst Argument Against Gold We’ve Ever Heard” Part I & II.

We pointed out many errors and misunderstandings of the gold market by the writer but today Robert Blumen wrote in to expand on another area in which the writer was wrong. Below, Robert Blumen explains more:

Hello Ed and Jeff,

I read with great interest your update last week about the Canadian fund manager who is bearish on gold -- bearish for all of the wrong reasons. In addition to the points you made in your follow up, it should also be pointed out that like most analysts and writers, he totally misunderstands how the gold price is formed.

While the author is correct that "gold must obey the law of supply and demand", his explanation of how the law works is fatally flawed. The supply and demand numbers presented in the article are meaningless and tell us nothing about the future direction of the gold price.

The key to understanding the gold price is that gold trades as an asset, not a commodity. A commodity is a good that is purchased in order to be permanently removed from the market (usually destroyed), while an asset is a good that is purchased in order to be held.

The most important consequence of peoples' desire to hold an asset is that the accumulated stockpiles of the good exceed the annual production volumes by a large margin. In the case of gold the ratio of the world's holdings of gold to annual mine supply is about 65:1 while for most other commodities it is less than 1:1, i.e. there is less than one year's total production in above-ground stocks for most commodities.

Let's delve more deeply into how this difference affects the fundamentals of each type of asset. For a given commodity, everything that is produced is sold; everything that is sold is purchased; and everything that is purchased is consumed. For the moment, let's idealize the situation a bit by assuming that there are no above-ground stockpiles of this commodity at all. Under the circumstances, then, we can say that the amount of the commodity that is traded is both the total supply and total demand. Another way to say this is that every time a commodity is traded, we can assume that the supply of the commodity decreases by that amount (because the purchaser will take it permanently off the market).

Now consider the situation for gold, or for any asset (such as shares of your favorite mining stock). Because so much of the asset already exists and so little is produced most of the trading takes place among individual shifting their existing stock piles back and forth. In an asset market, the simple relationship between the quantities produced, supplied, demanded, and consumed breaks down. For gold, the quantity consumed is effectively zero because gold is either held in investable form (bars and coins) or as jewelry.

The size of existing stockpiles of gold and the large trading volume makes the mine supply more or less a non-factor in determining the gold price. Far more important is the price at which existing sellers are willing to part with their ounces. As traders swap their ounces for fiat money and vice versa -- unlike a commodity -- the total supply of gold remains the same. All that has happened is that gold moves from one person's stockpile to someone else's.

To quantify the impact of mine supply on the market I have (elsewhere) estimated the trading volume on the London Bullion Market Association (LBMA). The LBMA can absorb an entire year's

mine output in about six trading days. And consider that the LBMA is only one of several investor bar markets worldwide, and that the investment market as a whole includes the coin market as well. While I do not have a precise number, I estimate that an entire year's worth of mine production turns over in the physical market in several days.

For a commodity, increases or decreases in the quantity produced can have a dramatic effect on the price because the quantity consumed must move either up or down along with the quantity produced. Because there are no stockpiles to buffer the difference between production and consumption, the only way for them to come into balance is through price. But for an asset, things work differently. An asset is not consumed, it is only traded. While the supply of an asset may increase, so long as the increases are small compared to the existing stockpiles, most trading consists of the change of ownership of existing stocks. These purchases and sales can take place at any price, and the price is not dependent on the volume traded.

The author of the Globe and Mail article, David Berman, states "the underlying fundamentals are now looking distinctly negative for the metal's long-term prospects."

However, his explanation shows a deep misunderstanding of the gold market. With the above background, we can begin to address the errors.

The first error is that he looks at the market only on an annual basis:

"According to GFMS, the London-based precious metals consultancy, global jewellery purchases plunged to 1,759 tonnes last year from more than 3,000 tonnes at the start of the decade, as the rising price of gold turned off consumers and jewellery makers cut back on gold content."

The entire gold market is a single integrated market with one price. There is not one market with one price for gold produced this year and another market selling at a different price where existing stockpiles of gold are traded. Looking at gold on an annual basis gives the appearance that the supply – and therefore the demand – are highly variable. If the supply goes from 1759 to 3000 over a few years, then demand must also nearly double, otherwise the price would plunge, right? Well, no. The supply of gold is not 1759 or 3000 tonnes, it is about 150M tonnes – the total world supply of gold. And what about demand? The demand is also 150M tonnes, exactly equal to the supply. And the supply has not doubled over the last few years, it has grown modestly by about 1-2% each year.

For a commodity, the demand consists of off-take from the market for destruction. An asset, on the other hand, is not destroyed; it is acquired in order to be held. The demand for an asset consists of what economists call reservation demand, meaning that investors demand an asset by holding it off the market while the price is below their selling price. Demand for gold has not and does not need to double to keep pace with mine supply. As the supply grows by about 1% each year, reservation demand must only grow by the same amount in order to keep the market in balance.

Here is where we get into the meat of Berman's case for the bearish gold supply fundamentals:

"At the same time as demand is falling, gold supply is rising. Most central banks, for instance, are jettisoning their gold holdings. According to the World Gold Council, total gold holdings were about 30,600 tonnes in December, down nearly 2,900 tonnes since the start of the decade – and these overall declines take into account an increase in gold holdings by China's central bank... Adding to

supply is ramped-up production from mines. This rose to a four-year high of 2,572 tonnes in 2009. In addition, consumers are now happily mailing in their “scrap” gold jewellery to the host of gold-dealing companies that have sprouted up in recent years. Add in this recycled gold and total world supply hit 4,034 tonnes last year, the highest level in at least a decade.”

Correction, Mr. Berman: a seller selling gold is not an increase in supply. It is only a transfer of existing supply from one owner to another. It does not matter whether this seller is a central bank or someone melting scrap.

Is central bank selling a huge bearish indicator? 3,000 tonnes per year is about annual mine supply. This is, as noted above, a few trading days’ volume. If there are no buyers near the market price, then it could be bearish, but not nearly as bearish as it sounds when you consider that the total supply of gold is 150,000 tonnes – 50 to 100 years annual production.

The real influence on the price is not possible to quantify. Once the gold changes hands, the price depends on the reservation price of the new buyers, which could be higher than that of the recent seller.

Berman also misunderstands the relationship between investment products and jewelry:

“Unlike most commodities, gold isn’t consumed in high quantities. Industrial uses account for only about 10 per cent of total demand, which is why jewellery makers have traditionally provided most of the market for the metal. However, global demand for gold jewellery has been in steady decline, replaced only by demand from fickle investors – a shift that could have a disastrous impact on the price of gold if those buyers turn squeamish.”

And:

“Of course, gold is still in high demand. But the source of this demand is now investors, who have become gold’s biggest buyers for the first time in about 30 years. These buyers have no uses for gold, other than the hope of selling it to someone else at a higher price somewhere down the road.”

In reality, investment and jewelry are not so different. They are two different ways of holding gold. In either form, the gold is not destroyed. The boundary between them is somewhat fluid based on the relative intensity of investment demand versus jewelry demand. As gold becomes more in demand by investors demanding bars and coins, the opportunity cost of using it for jewelry increases. At the margin, more people will sell back unwanted jewelry as scrap and (also at the margin) more buyers will substitute silver or other metals for gold. If the investment demand fell, then at the margin people would hold onto more of their family jewelry and use more gold in new jewelry fabrication. What Berman describes as a fall in demand is only a natural shift between different ways of holding gold as investor valuations change.

Can we analyze the price of gold by looking at supply and demand? While that should work for a commodity, it does not work for an asset. The reason is that supply and demand for an asset in quantitative terms doesn’t change (much). The supply is what it is and the reservation demand is equal to the supply. We cannot use the trading volume as a measure of supply and demand because the price at which the existing supply changes hands does not depend on the trading volume: the price can rise, fall, or go sideways on increasing, or decreasing volume. The deep

confusion exhibited by writers and analysts on this issue contributes to a lack of understanding by investors.?

Thank you very much Robert for providing some excellent information and analysis on how to value gold.

Does Gold Mining Matter?



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AUGUST 14, 2009[Robert Blumen](#)

TAGS [Gold Standard](#)[Prices](#)[Production Theory](#)[Subjectivism](#)

What Determines the Price of Gold?

The outlooks of gold analysts are diverse. After reading the latest [WGC](#) report, Mineweb is bullish: "Gold demand tops US\$100 billion and mine supply remains under threat." John Nadler, however, is bearish, citing the expected "additional 400–500 tonnes per annum" that will result from the exploration boom of the last few years. [Tom Barlow](#) even asks, "Are we running out of gold?"

I choose these examples not to pick on these authors. I could have just as easily chosen a hundred other examples: the vast majority of analysts who cover the gold market focus on mine supply as one of the main drivers of gold-price forecasts. I use these examples only to illustrate the ubiquity of this view.^[1] However, while analysts need something to analyze — and the mining industry provides many analytical complexities — ultimately, their efforts are wasted. Mine supply has very little influence on the price of gold.

Anyone who agrees that the gold trade is a market would accept the premise that the price depends on supply and demand. Where most analysts go wrong is to analyze gold using what I

will call the *consumption model*. This model counts the current year's mine production plus scrap (and, in some versions, central-bank sales) as supply, and the current year's purchases of jewelry, coins, bars, and industrial gold as demand.

Gold and the Consumption Model

The *consumption model* is good way to forecast the price of a commodity that meets two conditions:

1. it is destructively consumed (or spoils), and
2. the annual production of the commodity is large in relation to existing, above-ground stockpiles.

Oil is a good example of a commodity that meets these conditions. It is refined and then irreversibly combusted. The oil price *must* enable the market to clear more-or-less current production with current consumption, buffered only by the oil sitting on tankers and in underground reserves. Reserves cannot do not hold more than a few months' supply, due to the high rate of oil consumption in relation to the storage capacity.

The consumption model does not explain price formation of a commodity where the two conditions are not met, because owners of the existing stocks own much more of the commodity than the producers bring to market. Consequently, they have far more influence over the price than do producers. Gold is the best example of such a commodity: gold is not consumed; people buy it in order to hold it; gold has the largest ratio of stock to annual production of any commodity.

In fact, it is estimated that nearly all of the gold ever mined in human history still exists. This supply grows by only 1 to 2 percent on an annual basis; or, if we look at the ratio from the other side, approximately 50–100 times the annual mine production is held in stockpiles.^[2]

The consumption model would hold true if each year's gold were segregated into its own market, with no arbitrage from previous years' markets. But this is not the case: everyone who is buying, selling, and holding forms a single, integrated market. A buyer doesn't care whether he receives gold mined within the past year.^[3] Gold miners are competing with all of the holders of gold stockpiles when they sell. Contrary to the consumption model, the price of gold does clear the supply of recently mined gold against coin buyers; it clears all buyers against all sellers and holders. The amount of gold available at any price depends largely on the preferences of existing gold owners, because they own most of the gold.

Looking at the supply side of the market, each ounce in someone's stockpile is for sale at some price. The offered price of each ounce is distinct from that of each other ounce, because each gold owner has a minimum selling price, or "reservation price," for each one of their ounces. The demand for gold comes from holders of fiat money who demand gold by offering some quantity of money for it. In the same way that every ounce of gold is for sale at some price, every dollar would be sold if a sufficient volume of goods were offered in exchange. While some dollar owners are not interested in owning gold at any price, those who are interested have a maximum buying price for each ounce that they might purchase. You can think of their buying prices for gold ounces as their reservation price for holding dollars.

How the Price of Gold Is Formed

Rothbard provides a detailed, bottom-up analysis of price formation in a market like this. I will demonstrate his model with a sequence of diagrams that show how the dollar price of gold is formed. As a first step, suppose that while gold trading had been suspended for some time, the preferences of some of the gold owners and nonowners changed. Thus, when the market opens, some of them wish to buy while others wish to sell.

Rothbard constructs supply and demand curves using the reservation prices of the individual buyers and sellers. The supply curve at each price is the total amount of gold ounces for sale by all gold owners at or above that price. The demand curve at each price is the total amount gold ounces that could be purchased with the dollars offered at that price (or below that price). The market-clearing price is that point where supply and demand are balanced.

Figure 1: Before Trading

When trading opened, the market participants would converge on market-clearing price. Once a price had been established, all of the buyers offering at or above that price would buy, and the all of the sellers asking at or below that price would sell. Trading would continue until no one wanted to exchange gold for dollars or dollars for gold. At that point in time, the market will have cleared. Supply and demand curves would be as they are in Figure 2.

After trading, everyone has adjusted gold and dollar balances to their preferred levels. The market would show two quoted prices for gold: the best bid and the best offer. The *best bid* is the price offered by the marginal nonbuyer of gold, and the *best offer* is the price asked by the marginal nonseller of gold. More trading could occur only if a buyer increased their bid price, or a seller decreased their ask price, for at least one ounce.

Figure 2: After Trading

Suppose that, from this new starting point, one gold owner lowered his asking price for one of his ounces below the best offer of the most marginal seller. A trade would then take place between the gold owner and the marginal seller. What would the situation be after the trade? The same as before, except that the best bid and best offer prices *might* be different. The new prices would depend on the reservation price of the buyer of the single ounce. If his reservation price were above the best bid but below that of the next most marginal seller, then the new buyer would *become* the marginal seller and would set the best offer price. But his reservation price might be much higher — enough to make another one of the existing gold owners the new marginal seller.

The miner is different from other gold owners in that he produces gold, while the other owners bought their gold. But from a price-formation standpoint, it doesn't matter how or where it came from; the miner can choose a reservation price, or not. Most miners do not have a reservation price; they sell at market.^[4]

The gold analysts and I agree that, in a market, the marginal buyer and seller set the prices. It is also true that the miner is always a marginal seller because they sell at market. However, the *entire population* of suppliers and demanders must be considered in order to identify who the marginal buyers are and the price where the trades take place. All of the demanders influence the price through their decision not to offer a higher price. All of the (nonmine)

suppliers influence the price through their decision not to ask for a lower price. To sell *at market* means to sell *at the price set largely by those buyers and sellers who do have reservation prices*. The problem with the consumption model is that it ignores the influence of the majority of sellers on the price.

How does the presence of sellers selling *at market* affect the price? The miner's presence affects the supply curve as shown in Figure 3.

Figure 3: Mine and Nonmine Supply

Some trades will take place below what was the best bid before the miner entered the market, as shown in Figure 4.

Figure 4: Mining and Supply

Once the miner has sold his stocks, we are back to the situation shown in Figure 2. What was the freshly mined gold is part of the new buyer's stockpile. There will be a new bid and ask price, which will take into account the reservation price of the person who bought the miner's gold. We cannot say *what* the new bid and ask will be: either could be above or below the price before the miner sold.

Some Objections

Now that I've explained how the price of gold is determined in the market, I will look at two of the objections I have received when I have presented the ideas above:

Mine supply is the only supply available to the market, because gold investors are primarily of the buy-and-hold mindset.

If gold buyers typically have long holding periods, then is gold like oil that was burned or corn that was eaten? Is it gone forever and not part of the market?

Every asset is for sale at some price. While many small gold coin and bar buyers have a reservation price that is more than \$10 above today's price, they do have a reservation price. There is a point at which other assets (stocks or bonds) or consumption goods (cars or houses) would start to look more attractive than holding the marginal ounce of gold. There can be no doubt that a good many gold owners would become sellers at \$5,000, \$10,000, or \$100,000 per ounce.

Existing stocks of gold don't affect the price because they are not for sale at the current price.

On closer examination, this is not really an argument: it is only a restatement of the definition of *price*. A price in a cleared market is that quantity of money below which nothing is offered for sale. While this is true, it does not provide any information about *what* the price will be. As discussed above, the price at which the first mined ounce is sold is set by the marginal nonseller and nonbuyers of gold.

Suppose, for example, that all of the gold owners had a reservation price of \$5,000 or higher per ounce, with the buy prices of people holding dollars remaining where they are now. If that were the case, then once miners had sold their gold, gold would be offered at around \$5,000 per ounce.

Conclusion


While mining doesn't have much impact on the gold price, the reverse is not true: the gold price has significant influence on the mining industry. The economics of mining explains this. The cost of getting the gold out of the ground is sensitive to several factors, including the grade of the deposit, its depth below the surface, proximity to refining infrastructure, the cost of energy, the cost of labor, and other variables. The marginal cost of mining more gold above current production rises rather sharply. It would not be profitable for the gold-mining industry to increase production enough to have much impact on the total gold supply during any given year.


The consumption model of gold pricing ignores the influence of the majority of sellers on the price of gold. It counts only a minority of the sellers. The consumption model does include "scrap sales" (sales by those sellers whose reservation price was low enough to result in a sale). But the suppliers who *did not sell* outnumber those who did — by a large margin — and the selling price of those who did sell was primarily determined by those who did not.

[bio] See his [AuthorArchive]. Comment on the [blog](#).

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Notes

[1] The sole exception that I can think of is a report from Credit Agricole,  authored by Paul Mylchreest.

[2] You must register with the World Gold Council to download [their supply and demand data](#). For a comprehensive set of statistics, including the total above-ground stockpiles, see *Gold Market Knowledge*, .

[3] The time window of one year is entirely arbitrary — why not one week?

[4] Some miners sell at a predetermined price because they have entered into [hedging contracts](#). This price could be above or below the market. Other miners (though very few) do have a reservation price. These miners stockpile gold if it is above their reservation price.

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The Myth of the Gold Supply Deficit

by Robert Blumen
by Robert Blumen

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Analyses based on annual supply and demand of gold appear on a daily basis, whether posted to gold web sites or in the financial media, many of them by the most respected analysts of gold-mining shares. These articles typically show an imbalance between supply and demand, suggesting that there is a gold supply deficit. From there, the conclusion follows that a much higher gold price is required in order to bring supply and demand into balance.

There is no gold supply deficit. Even if there were, to cite Dick Cheney, "deficits don't matter". The dollar price of gold is formed through the balancing of total gold supply and demand against total dollar supply and demand. The incremental supply and demand during any one-year period is irrelevant to the price. The illusion of a deficit comes about from an incorrect interpretation of supply and demand figures: annual amounts rather than totals are compared.

On the supply side, the annual production of gold has almost nothing to do with its price. Neither does decades of under-investment in gold exploration, the lack of new discoveries of gold deposits, miners' cash cost per ounce, nor environmental delays in permitting new mines. The output of the gold-mining industry has very little impact on the gold price.

On the demand side, the "annual demand" for gold — as it is computed in the models showing a deficit — is a misleading figure. The comparison of annual amounts is relevant for a commodity that is consumed but not one that is held as is gold. For an asset that is held, the annual demand has no business being compared against annual supply, for the comparison tells us nothing about the price.

Whose Deficit?

While I could cite hundreds of examples if I had been collecting them over the years, in the interest of space, I will cite only two to make my point. These two examples were selected not to single out the particular writers, as there were many others that could have been chosen, but because they happened to pass in front of me recently.

First, this article on a mining site:

GOLD supply shortages were possible in the long-term, according to recent research produced by Canadian research house, Metals Economics Group (MEG). It said in a press statement that recently discovered deposits of more than 2.5 million ounces, enough to attract the interest of major gold producers, were not adequate to replace their production.

And this piece from a financial news site:

...JP Morgan believes the gold market outlook continues to improve. Demand continues to strengthen (even if only for one-off events such as the establishment of gold Exchange Traded Funds or ETFs), but this stronger demand is not being met by higher supply thanks to declining production from South Africa in particular. This means central bank selling is required to meet the shortfall, but the quantity of this selling is limited under agreements in place between the banks.

The Case for a Deficit

In order to understand why there is no deficit, I will explain why some people think that there is one. (To be fair, I believe that the gold analyst community is divided on this issue.) The problem with the supply deficit theory is in the interpretation of the numbers, and not the numbers themselves. Because the exact numbers don't matter so much, I will use the gold supply and demand figures from a prominent industry source, the World Gold Council, without attempting to verify them. Values for the last three years are found in their supply and demand spread sheet (may require free registration). Even if slightly different numbers were used, the point that I am going to make would not change.

Table 1, below, is based on the WGC figures for the last two years. Note that they do not show much of a deficit for 2004 and a slight surplus for 2005. The WGC, as far as I know, has not promoted the supply deficit argument. However, I am citing their figures because they use the annual supply and demand methodology, the same methodology that is used by analysts who think that there is a deficit.

Table 1: WGC Annual Figures

(tonnes)	2004	2005
Supply		
Mine production	2469.0	2520.3
Net producer hedging	-426.5	-131.1
Gold scrap	847.7	860.9
Official sector sales	469.4	660.6
<i>Total supply</i>	3359.7	3910.7
Demand		
Jewelry	2612.8	3131.8
Industrial & dental	409.7	420.1
Bar and coin retail investment	397.1	409.2
Other retail	-56.8	-22.5
ETFs	132.6	208.1
<i>Total demand</i>	3495.5	3726.6
Balance (total supply — total demand)	-135.8	184.0

A report from the UK branch of the French bank Cheuvreux caused considerable discussion when it was released last year. This report, using the same flawed methodology, showed much larger supply deficits on an annual basis. It is worthwhile to understand the discrepancy between

these two reports. On pages 26 and 27 of the report, the information used to construct Table 2, below, appears. While the WGC shows a surplus for both 2004 and 2005 on the bottom line a report from the Cheuvreux report, while using essentially the same numbers as the WGC, shows estimated supply shortfalls of hundreds of tons annually. (The Cheuvreux report cites the World Gold Council as the source of the data but the annual numbers differ slightly. I am not sure why but the differences are small so it doesn't affect the argument.)

Table 2: Cheuvreux Annual Supply and Demand

(tonnes)	2004	9M2005
Supply		
Mine production	2461	1842
Net producer hedging	-427	-123
Gold scrap	829	608
<i>Supply before official sales</i>	2864	2327
Demand		
Jewelry	2613	2129
Industrial & dental	409	316
Net retail investment	342	305
ETFs	133	125
<i>Total demand</i>	3498	2874
Supply Shortfall	-634	-547
Official Sector sales	475	489
Balance	-159	-58

The difference between the two reports using the same raw data are substantial and must be explained. The main source of the WGC definition of supply value includes official sector sales while the Cheuvreux definition of supply does not. In the Cheuvreux report, the net supply minus demand (which they call *supply shortfall*) is greater than the net of supply minus demand in the WGC report by an amount approximately equal to the size of official sector sales. Because the official sector sales are a fairly large number, the Cheuvreux value for net of supply and demand is a negative number in both 2004 and 2005.

Cheuvreux shows the official sector sales in a separate row appearing in their table after *Supply Shortfall*. By removing official sector sales from the supply, this format implies that official sector sales were necessary in order to fill a deficit between the other components of supply and the demand. While official sector sales offered "at market" probably do affect the gold price, this impact is exaggerated by offsetting official sales against annual figures rather than totals.

Deficits Don't Matter

Let's look at how the WGC and the Cheuvreux arrive at a deficit.

In the WGC report, a footnote states (with some caveats) that the *Balance* term is partly due to residual error (presumably errors in measurement); and that the remaining Balance is the "implied value of net (dis) investment" ("includes institutional investment other than ETFs and similar stock movements"). In the WGC report, a negative Balance (deficit) would occur in any year where there are net private (non-official) sales. (I should point out that the WGC does not use the term "deficit", though many writers using these figures, or figures like this, do use that term.)

The Cheuvreux report starts from the position of the WGC report, however, Cheuvreux does not include the additional differential due to the omission of official sector sales from their definition of supply. Cheuvreux defines a deficit year as any year during which there were net private plus official sector sales.

A word can be defined to mean anything, but is the definition useful? I will argue that to define a deficit year as a year in which there are private sector or official sales is more than a little bit misleading, because it leads to thinking about the gold market as if it were a spot market for a commodity that is consumed rather than held.

For a commodity that is consumed, an annual incremental deficit would imply a higher price in the future because the deficit could only be filled by a drawdown of existing stockpiles, which would eventually become exhausted if the deficits continued. Upon the depletion of stockpiles, the price would have to rise to the point where demand was in balance against only that supply that was produced.

But gold is not that sort of commodity. There is no need at all for supply on an annual basis *excluding private sales* to come into balance with demand on an annual basis. It is not even true that these must balance over any number of years. The reason for this is that a sale out of someone's stockpile of gold *does not reduce the total amount of stockpiled gold*. All it does is to shift the gold from the seller's private stockpile to the buyer's private stockpile. A market could remain in a "deficit" of this sort forever without the price ever going up (or going down) as buyers and seller shifted the contents of their stockpiles among themselves.

Stocks and Flows

We can divide economic goods into those for which the entire annual supply is destroyed in the process of consumption, and those for which new supply is hoarded. Economists call the former "flows" and the latter "stocks".

Analyzing the supply and demand over a short window of time for a flow-type good would tell you a lot about where the price was likely to go. But annual supply and demand for the second type — of which gold is the premier exemplar — tells you almost nothing about its future price movement.

First, consider a good that is consumed, where by "consumed" I mean that the economic value of a unit is destroyed over the course of its productive life. One example is DVD players. The economic value of a player is destroyed as the player wears out. All of the supply that manufacturers produce must be sold. There would be no real reason for Sony to sit on warehouses full of aging players. The price of the players can only fall as they become obsolete, and on top of that, they are costly to store. Sony must sell everything that they produce at whatever price the market will support at the time.

Competition from other manufacturers to sell, and competition among consumers to buy Sony's players, or other goods entirely, ensures that the price at which the players are sold will be whatever price clears the market between all buyers and sellers on a very short time scale. In micro-economic jargon, most final goods have a vertical supply curve once they arrive at the market. The same would be true of any perishable good, most manufactured goods, and commodities that can only be stored for a short time, such as beef or eggs.

But for most known commodities, the aboveground supply is relatively small compared to the quantity that is permanently used up every year. Most of what is mined, drilled, grown, or raised on a farm is consumed soon after it is produced. In some cases, large stockpiles of a particular metal — e.g. silver — have been accumulated and in other cases accumulated stockpiles have sold off (silver again). But absent a large stockpile the market price of these goods is pretty close to the level that balances the recent supply and current demand.

When it comes to a stock, total (not annual) supply and demand determine the price of each unit. Consider the following example concerning equity shares of a corporation. Suppose that an equity analyst appeared on CNBC stating that the price of a common share in company XYZ, with 100M shares issued, would rise (or fall) because they were only issuing 1M new shares this year, while the demand for those shares would be 2M. This analyst would be pricing the shares as if they were a stock-type of good. Using this method, a daily volume of 1M shares would be an annual volume of about 250M, which would create a "supply deficit" of 249M shares assuming 1M new shares issued.

It is easy to see the fallacy here. Even if the capital raised from issuing the new shares added no value at all to the corporation, at worst it would only dilute the value of the existing shares by 1%. A stock with 100M shares outstanding could easily trade 1M shares per day without the price rising *or falling* as people rearrange their portfolios with some who wish to hold fewer shares selling, and other investors who wish to hold more shares buying.

The True Supply of Gold

To understand the price of gold, the relevant supply is the *total* supply, not the *new* supply coming to market during the last year (or week or month). The supply of gold consists of all of the supply that exists. The relevant demand is the *total demand*, not the new demand coming to market during any year.

For gold, there is always a large stockpile, and it never gets smaller. The vast majority of all gold mined throughout human history still exists and is held either in bars, coins, or jewelry.

According to the WGC, this quantity was around 155,500 tonnes at the end of 2005. Almost no gold is used up (in the sense of being destroyed or becoming permanently unusable) ever. In most cases when a buyer purchases gold, it moves from the seller's hoard to the buyer's hold.

The World Gold Council estimates that 52% of gold is held as jewelry. James Turk subdivides jewelry holdings into low carat and high carat. The former is purchased mainly for the gold value, as an alternative to buying bars and coins. The latter is purchased mostly for fashion. According to Turk's estimate (which was published in 1996), monetary jewelry at that time accounted for about 60% of jewelry with fashion jewelry accounting for the remaining 40%. However, even when made into jewelry, the gold is not destroyed and can come back into the market as scrap. The WGC figures show significant recovery from scrap.

The reason that total supply and not annual supply matters is that the gold market is not segregated into two markets. There is not one gold market for the current year and another gold market for aboveground gold that was mined in previous years. The gold market is a single market in which all sources of supply are indistinguishable. Every existing ounce of gold competes for sale with every newly mined ounce. A buyer of gold doesn't care whether he is buying recently mined gold or gold that was held in bars for 100 years, or the product of melted jewelry.

Every ounce of gold that is held by someone is potentially for sale *at some price*. While not every ounce of gold in private hands is for sale at the *current* market price, any ounce of gold could potentially come to market. A lot of gold is held in small stockpiles among widely dispersed owners. Some is for sale just above the current spot price, some only at much higher prices. The varying levels of prices at which different units of goods held in a stock are offered for sale is what makes the supply curve upward-sloping rather than vertical as is the case in consumption goods.

Is it true that a lot of gold is not for sale at all, so it should not be counted as part of the supply? In short, no. Gold is held as a store of value over time. The point of holding a store of value is not to hold it forever and then have it cremated along with your corpse. A person will only store value over time because they anticipate the need for the value some time in the future. Anyone who anticipated having no needs in the future would not need to store value over time. And the stored value is only stored *for a finite period of time* until the person holding it becomes aware of something that they need more than what they have stored. That would be the time to sell.

Note also that every new ounce of gold that is mined does not need to be sold at the current market price. Unlike most manufactured goods, gold-mining companies do not necessarily have a vertical supply curve for their product because it does not spoil or become obsolete. While many mining companies do sell all of their supply at spot soon after they have mined it, some mining companies sell their supply at a pre-determined price that in some cases was fixed years in advance through hedging contracts. And other mining companies choose to hold mined supply in reserve with the anticipation of selling it later, at a higher price. Goldcorp has done this in the past, at one point accumulating more vault gold than the central banks of a large number of small nations.

The Demand for Gold

It is easy enough to see that the supply of gold is the total supply. But what is the demand? It turns out that the demand is *equal to the supply*. To understand this, we introduce the concept of *reservation demand*. Most people are familiar with exchange demand. Exchange demand is expressed by giving up something in an exchange in order to for the thing demanded.

Reservation demand is a demand that is expressed by holding onto something that you own.

People who hold gold are demanding it by holding it off the market. As Austrian economist Murray Rothbard explains,

At any point on the market, suppliers are engaged in offering some of their stock of the good and withholding their offer of the remainder. ... This withholding is caused by one of the factors mentioned above as possible costs of the exchange: either the direct use of the good (say the horse) has greater utility than the receipt of the fish in direct use; or else the horse could be exchanged for some other good; or, finally, the seller expects the final price to be higher, so that he can profitably delay the sale. The amount that sellers will withhold on the market is termed their reservation demand. This is not, like the demand studied above, a demand for a good in exchange; this is a demand to hold stock. Thus, the concept of a "demand to hold a stock of goods" will always include both demand-factors; it will include the demand for the good in exchange by nonpossessors, plus the demand to hold the stock by the possessors. The demand for the good in exchange is also a demand to hold, since, regardless of what the buyer intends to do with the good in the future, he must hold the good from the time it comes into his ownership and possession by means of exchange. We therefore arrive at the concept of a "total demand to hold" for a good, differing from the previous concept of exchange-demand, although including the latter in addition to the reservation demand by the sellers.

The Total Picture

Now that we have covered the total supply and total demand, the proper rendering of the supply and demand situation would look something like Table 3, though the numbers are not exact. Note that when all sources of supply and demand are counted, there is no deficit. Total supply and total demand must always equal because every transaction has a seller and a buyer. Over time, there is a gradual accumulation of the stock of gold and a possible shifting between investment holdings (bar, coin, ETF) and jewelry.

Table 3: Total Supply and Demand

(tonnes)	2004	2005
Supply		
Mine production	2469	2520.3
Destroyed by industrial/dental use	-409.7	-420.1
Recovered from scrap	847.7	860.9

Existing supply	149,131.90	152,038.90
<i>Total supply</i>	152,038.90	155,000.00
Demand		
Industrial & dental	409.7	420.1
New bar and coin retail investment	397.1	409.2
ETFs	132.6	208.1
Reservation demand from prior accumulation	151,099.50	153,962.60
<i>Total demand</i>	152,038.90	155,000.00
Balance (total supply — total demand)	0	0

The price of gold is determined as is the price of any stock: by total supply and total demand. The price is that price which balances *total supply* against *total demand*, including *reservation demand*. The price of gold, in terms of dollars, or other fiat money, balances supply of all gold offered for sale at a range of prices in dollars with demand for gold — including both demand to exchange dollars for gold and the reservation demand for dollars and for gold.

Looking at supply and demand over a single year tells us nothing because the annual supply and demand are only about 2—3% of the total supply and demand, while the price of gold depends mostly on the other 98%.

Suppose that during a particular year, there are net sales from stockpiles. This tells us nothing about what the price of gold will do, because when gold is sold, it goes from the seller's private stockpile into the buyer's private stockpile. There is no limit on the number of consecutive years in which sellers of gold can sell out of their stockpiles as long as there are buyers who add to their stockpiles that same year. This type of trade in gold could go on forever without the price changing because individuals' needs change all the time. During a given year, there will always be some people who have an increasing need of a store of value and others having a decreasing need. The former become buyers, the latter, sellers.

Annual changes to supply and demand do not influence the price much, if at all, because annual changes are small compared to the total. Around 98% of supply during any year was previously mined. And around 98% of demand is reservation demand, while only around 2% of demand is exchange demand for mined gold.

Newly mined gold does have some effect on the gold price, but only insofar as it dilutes the total supply of gold by a small amount. As previously discussed, mine supply dilutes existing supply by about 2% annually. If the supply of gold were diluted by 2% each year, and existing holders wanted to hold the same amount of gold in their portfolios *measured in purchasing power terms*, then existing holders would rebalance their portfolios adding about 2% to their positions and the price of gold would have to fall by about 2%.

If gold-mining were to increase by 50% from the current year to the next year, would the price of gold collapse? Not at all. After a 50% increase, the proportion of new mine supply out of total supply would only rise from 2% to 3%. Gold demand would not need to increase by 50% in terms of ounces to absorb this supply, only by about 0.98% ($1.03/1.02 - 1.0$).

But even this overstates the influence of newly mined gold. It is probably more relevant to measure demand in dollar terms rather than in ounces. In this example, if the price of gold in dollars declined by about 0.97% ($1/0.98$) while gold demand in dollars remained constant, the demand in ounces would increase by just enough to balance the new supply. With a total demand, *properly counting reservation demand*, absorbing the newly mined gold into the market doesn't appear nearly so difficult.

Another way of making the same point is to suppose that gold-mining stopped entirely. Investment demand by new investors in gold would have to be met by an equal amount of disinvestment by existing holders. In that case, then every buyer would have to buy gold from a private or official sector seller. If an annual deficit year is defined as one in which there are net private sector sales, the market would be in deficit every single year. No matter how high the price moved, the market would still be in deficit. There is no price of gold that would cure the deficit because of the way that the deficit is defined. But the price would not necessarily go up under these conditions because any sales out of a seller's stockpile are exactly offset by additions to a buyer's stockpile. All that happens in a market like this is that stockpiles change ownership from owners who value them less at that time to owners who value them more. No general statement about the price can be made; however, during periods of the classical gold standard, the purchasing power of gold tended to rise by a few percent per year.

Silver is Not Gold

When it comes to silver, deficits do matter. Here I cite the works of silver analysts David Morgan, Ted Butler, and Charles Savoie. For most of the past few thousand years, annual mine supply was in equal or in surplus over annual consumption, and stockpiles were accumulated year after year, at one point reaching

around 6 billion ounces. Over the last forty years, stockpiles have been drawn down to nearly zero. At the present time, all of the silver consumed during any given year is silver that came out of the ground that year, with a decreasing contribution from stockpiles.

With silver, it does make sense to look at net private sales from stockpiles as filling a deficit between supply and demand. Why is this true for silver and not for gold? For the most part, demand for silver is consumption demand, and most consumption demand is destructive, meaning that the silver ends up in a form where it cannot easily be reclaimed and brought back into the market.

Therefore, the deficit of mine supply relative to destructive demand implies a necessary sale out of stockpiles. These finite stockpiles cannot continue to supply the world with 100Moz of silver for consumption annually. At some point, they must be exhausted and higher prices will then be required in order to bring supply and demand into balance on an annual basis.

To the extent that the silver is held for investment purposes, then everything I have said about gold applies to silver. The same would be true for photographic demand for silver because most silver used in photography is reclaimed. Silver is partly held for investment purposes and partly consumed, so its price behavior will result from a combination of the two models.

Conclusion

Does the non-existence of a supply shortage theory make the case for gold weaker? I say no. At the beginning of this article, I stated that there is a bullish case for gold. If not the mythical shortage of mined supply, then what is it?

Analysts including Frank Veneroso, Reginald Howe, Robert Landis, John Embry, and others affiliated with the GATA organization have shown in a series of research reports published over the last five years that central banks have created what amounts to a large naked short position in the gold market using paper derivatives. The accumulation of shorts without any offsetting longs has been a negative for the gold price, especially during the late 90s.

But the ultimate bullish case for gold is none other than the bearish case for fiat money, the dollar, and central banking. Gold is money and while central banks have the ability to debase fiat money up to a point, they are in the end limited by the acceptability of their paper as money.



The end game of the paper monetary system is collapse and its replacement by the natural monetary order of gold.

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