THE GOLD MARKET

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Abstract

A review of the gold market from a microeconomic and a macroeconomic point of view. Gold is a special item of goods. Gold showing signs of normal goods and investment commodity at the same time. Supply and demand for gold responds to the expectations of investors. In the short terms the gold price varies with the credibility to the basic investment instruments and the reserve currencies. In the long term the world gold price depends on the true money supply of dominant reserve currency and the total volume of gold.

Key words: gold, expectations

JEL Code: D00, B84

Introduction

The subject attracts me because in 2011 year the price of gold reached $1900 per troy ounce, a historical peak. At this time, central banks of the developed countries keeping key rates at the historically lowest level to maintain a low aggregate demand caused by the crisis. In light of these developments, it is logical to expect higher inflation; however, inflation is kept within reasonable limits for a long period, but the price of gold increases. This caused a desire to explore the market for a specific commodity - the gold market, which has an important place in the question of present interest, the issue of financial stability.

The gold market in scientific publications is found in connection with the identification of such consistent patterns as changes in gold prices during the day (MA, WONG, & MABERLY, 1989) or depending on the day of the week (HERBST & MABERLY, 1988). Dependence on changes in the price of gold futures and market players' fears (Qadan & Yagil, 2012). Dependence on the price of oil and gold, as well as the development of the USD exchange rates against other currencies and gold parity (Pukthuanthong & Roll, 2011). Dependence on high daily price fluctuations and shocks from the official statements and published reports on the development of the economy (Cai, Cheung, & Wong, 2001). A number of papers devoted to the study of gold as a safe haven from the stock upheavals (Baur & McDermott, 2010) and hedge against inflation (Wang, Lee, & Thi, 2011), as well as by the

side of the possibilities of other tools such as real estate or gold stocks (LARSEN & MCQUEEN, 1995).

1 The World's Gold Stock

By calculations of the organization World Gold Council in the history of mankind, about 168 300 tons of gold has been extracted and saved by 2010 year. According to the World Gold Council obtained world gold shared as follows:

Fig. 1: Distribution of mined gold according to the World Gold Council, the 2010

Ton	Share	Sector
84100	50.0%	Jewellery
31500	18.7%	Private Investment
29000	17.2%	Official holdings
20200	12.0%	Other fabrication
3500	2.1%	Unaccounted

Source: World Gold Council (2011). Liquidity in the global gold market.

According to the World Gold Council, the volume of gold production was constantly growing in the past. For example since 1945 was produced approximately 2/3 of all gold and now volumes of gold production fluctuate at the level of 2700 tons per year.

So, after 2010, mankind has approximately:

168 300 tons of gold = 5 410 970 648 troy ounces of gold

2 Gold Markets

It's clear from the table form of distribution of mined gold that more than a half of the world's gold people consumed as primary materials for goods. But the state reserves of central banks and official holders of investment gold are putting together a "financial" gold market, which has mobilized approximately 36% of the gold that was ever mined. All the gold, what is nearly 60 500 tons, is stored in the vaults of central banks, in the official repositories, and in the vaults of corporations and individuals. This gold is not involved in the consumption; the goal of keeping it is a saving of wealth.

A significant portion of gold the humanity keeps as bar of gold in the vaults under the control of State organizations, which gold is not traded on broker's board, although central banks can use in their reports to assess the market prices of their assets.

Transactions between central banks may occur at lower prices than the market prices. To evaluate the gold assets IWF uses in its internal accounting an inner price which is next lower order than the market price. But it is important to us that:

There are two separate gold markets: The closed market of central banks gold assets in different countries and open gold market. Moreover, central banks may engage in both market, but other entities can trade only on the open market.

Most of the volume of gold on the open market, trading on commodity exchanges, as a rule, the prices of the major exchanges at the same time, in U.S. dollar terms do not differ, due to possible arbitration. One of the most famous and gold-capacious exchange is the London Metal Exchange (LME). Therefore, as a common denominator, we use the average price for one troy ounce of pure gold in U.S. dollar terms in the LME[1].

The price of gold = gold price on the LME

3 Open Gold Market Players

Now I would like to highlight and examine some of the key players of the open gold market. Players in the open gold market call those who sell and buy gold; such subjects are divided into several groups.

Producers – manufacturers of the jewelry industry and manufacturers of electronic components and other equipment, where gold is used as raw materials, on the side of demand. And on the supply side there are gold mining companies and recyclers.

Investors – buy and sell gold in order to maintain and increase their capital.

Traders, in other words, stock speculators – those who buy and sell on the gold market, in order to get profit from the game in the short-term changes in gold prices.

Central banks, holders of reserves, may act on a side of demand as well as on supply side. The accumulation of gold reserves is a long historical process, that's why it's shared by CB into two groups:

The central banks of developed countries on the supply side. Central bank of the developed countries for the period from 1964 till today got rid of about 10 000 tons of gold

[1] Such statistics provide various Internet services, such as KITKO.com (on-line: http://www.kitco.com/charts/historicalgold.html).

(WBC, 2009). Realizing the impact on the price of gold that has a sale of gold reserves, the Heads of central banks have reached an agreement CBGA, the goal of which is the mutual coordination and limiting of the total amount of gold that will be sold from the reserve banks to open markets. Under the agreement CBGA3 dated September 27, 2009, IWF and the central banks that have accepted the agreement, cannot sell more than 400 tons per year in the aggregate, so as not to influence the market.

Earlier, gold sales were in decline and by 2008 the pace of sales fell sharply. There is a tendency now that central banks in aggregate buy more gold than selling, on account of engrossment of gold by central banks of developing countries (WBC, 2012).

The central banks of developing countries are on the demand side. Group, which currently forming the demand are the central banks in developing countries, they are interested to buy gold in large quantities and to confiscate the gold out of circulation. Thus, central banks in the aggregate are able to influence the market price of gold, raise it. Perhaps in the past 10 years, this is one of the reasons for the bullish trend in gold. According to the World Gold Council (2009) in 2008 and 2009, the central bank of Sri Lanka, Mauritius, Tajikistan, China, India, Philippines and Venezuela have built up their reserves partly by gold that was bought from the International Monetary Fund, in part due to the open market. Central banks in developing countries (outside of the Agreement CBGA) are in a position of net buyers since 2006.

Buying gold on the open market by central banks of some countries, non-reinforcement respective sales of gold by central banks of other states, making the pressure to increasing world price of gold!

“The crowd” is a separate **specific** group that has the ability to affect the price of gold. Crowd can be called amateur speculators in the gold market, who in order to rescue their savings, or with a blind desire for easy and quick enrichment, starting at a certain point buying gold.

There, appearing an excitement that could be called **“Gold Rush”**. Such a mass phenomenon causes a sharp rise of gold price, as a result arises a “price bubble” that sooner or later burst and the gold market plunges into a depression. The reason for the formation of such bubbles is the irrational behavior of crowds. The emotional state caused by depression in the market of investment gold, harms to other markets as well.

For example, "Gold Rush" in the gold market could lead to a literal "Gold Rush" when the new gold fields will start an avalanche of new investment inflows. These extra investments are able to harm the gold mining industry in whole (Beaudry, Collard, & Portier, 2011).

4 Players Expectations

Keynes (1970) in his work "The General Theory of Employment, Interest and Money" divided the expectations of market participants that can affect their behavior in three groups:

Short-term expectations – suite the expectations of future demand for enterprise output in the current capital. This group of expectation affects the decision of companies' management to start manufacturing, and affects the selling price for future shipments. In this work we associate these expectations to the group of **producers** and we will call them **Short-term**.

Long-term expectations – suite the expectations of future demand for the company's products, the investment for the entire period of increased supporting of capital. This group of expectation influences on the decision of industrials who investing in the future production of goods.

In this work we put this type of expectations to a group of **investors**, and we call them **long-term**. With one difference, the decision of investors to buy or sell gold are not connected with the production, but on the holding of liquid asset, which is stable in the long run, increases in the price.

"Untitled" Expectations – Mr. Keynes hasn't mentioned in his work a name of the third group, but describing that the group contains expectations of future profits and losses of the shareholders. Also it consists of data movement in interest rates and economic activity of these enterprises. By its nature, this group of expectation is usual for speculators on financial markets. In our classification, this can be attributed to **traders** and could be called as a group of **ultra-short expectations**, linking it with the volatility price of a financial instrument.

Can also be attributed to **investors** and connect the group with **short-term expectations**, connected with the ability of gold to hedge the risks associated with inflation and confidence in the reserve currencies, for example, due to the high sovereign debt.

The expectations of the other two specific groups of central banks and a crowd I will phrase myself. **Central banks** decision about buying or selling gold is based on the strategy of monetary policy. Long-term strategy shows a position of CB - a buyer or a seller of gold -

in relation to the open market. The volume of selling gold may be limited by Interbank Agreements (CBGA), the volume of procurement opportunities of the central bank, and the expectations can be associated with the choice of a right date of purchase/sale of gold on the open market, by nature they can relate to a group of **short-term expectations**. In case of central banks who have impressive research capabilities in the formation of monetary policy on gold reserves, we can talk about **long-term rational expectations**, which are based on the forecasts of good quality.

“The crowd”, as I stated this group, takes the gold market in anticipation of abnormal profits, and having panic fear to lose their savings because of distrust reserve currencies. “The crowd”, for the most part, is guided by **short-term adaptive expectations**. At the moment of shock when an something extraordinary happens, some event that are globally discussed in media, “the crowd” get a **signal**, and it becomes a cause of spontaneous irrational behavior of “the crowd”. The signal can be a sharp rise in gold prices, for any reason, or possible collapse of the financial system, most often not real and just presumable, but possible from the perspective of the initiators of the agiotage. This signal makes the crowds buy gold and creates a price spiral: greater increase in prices attracts larger crowd. Like that happens **“Gold Rush”**, and the gold market become a gamble, a pyramid scheme. As consequence a price bubble grows as long as financial capacity of “the crowd” becomes exhausted, and the expectations that gold prices will be growing changes overnight with optimistic to depressive. “Gold Rush” with a similar script occurred in 1980 and 2011.

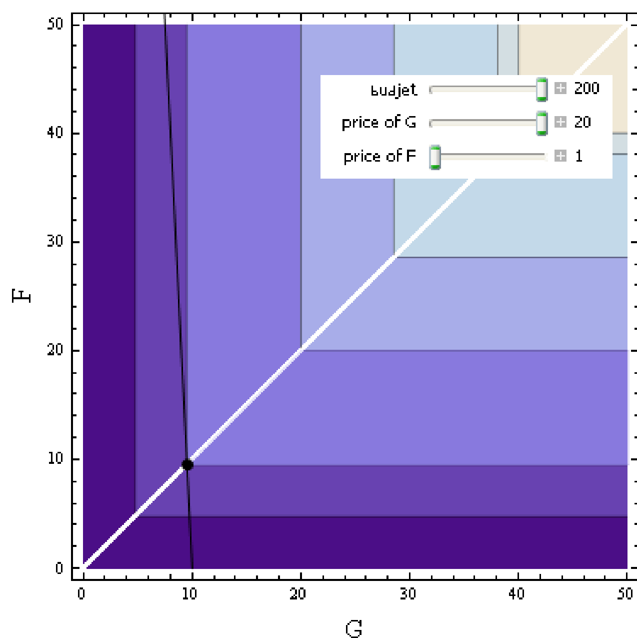
5 Players’ Preferences – Reasons of Changes in Demand for gold

Producers – manufacturers’ preferences procuring gold as a raw material can be reduced to the phrase "no substitute for gold," because where it can be replaced by a less valuable commodity, it has been already replaced for reasons of cost savings. In fact, it’s possible to talk about **production technology** without mentioning the term preference.

From the above, gold, as a factor of production, can be regarded as **perfect complements** to other factors of production, where on one side is a unit of gold, and on the other side are other materials required to manufacture of one unit of product.

From this it follows that the volume of purchased gold as a raw material may affect either the production technology (less), or demands for the products of manufacturers (the more).

Fig. 2: The preferences of producers



Iso-lines analysis factors of production. The graph number 2 is shown how a producer at a price of raw materials - gold (G) $20, price of other production factors (F) $1, and a limited budget of $200, is forced to purchase 9 units of gold and a total of 9 units of other factors to produce the maximum number (9 units) of the goods, because gold content in the goods are given by the production technology and/or market demands. From all this we conclude that a portion of the demand for gold is formed by the producers affected by the factors listed in table number 3.

Fig. 3: The preferences of producers and the demand for gold

Preferences are based on the manufacturer's technology and consumer preferences	
Technology and the market allows to replace gold for a cheap substitute	**=> demand for gold is falling**
Demand is growing for products of manufacturers	**=> demand for gold is rising**

Traders – if the market breathes, moves, then it is possible to earn. If there is a stock exchange infrastructure, if the market behaves predictably, its volatility makes it a certain risk to play with credit leverage and benefit from profits comparable risk, then this market will play the speculators, the so-called traders.

Preferences relative to other financial products can be displayed as a relationship between the price movements in the gold market. If the price is rising then speculators buy gold. If the price is falling then the speculators sell gold. Moreover they can play a lowering of the market, take a duffel loans, sell gold and then buy it at a lower price, if they are lucky, and so close its loan. If you simplify the behavior of traders to a minimum, the speculators have come to the gold market, if it is sufficiently mobile. The volume of transactions will depend on the attractiveness of the market in terms of opportunities to play on it and make money for the rest of other exchanges.

Speculators' preferences are directly dependent on the activity of the gold exchange, on the movement of prices. The price of gold rising => buying. The price of gold falling => selling. Volatility is higher => higher risk => lower transaction volume => lower influence of speculators on the price

Speculators can temporarily affect the market, because trade with leverage (from 1:2 to 1:200) and it allows using a huge amount of gold, which undoubtedly influences the development of the price of gold. A typical for traders is to conclude transactions in a short time measured in seconds, minutes or days, which leads to the fact that traders affect the market for **ultra short period**. Traders are guided by formulated above **ultra short expectations**, which they make based on technical analysis although they may use fundamental analysis which allows building long-term forecasts.

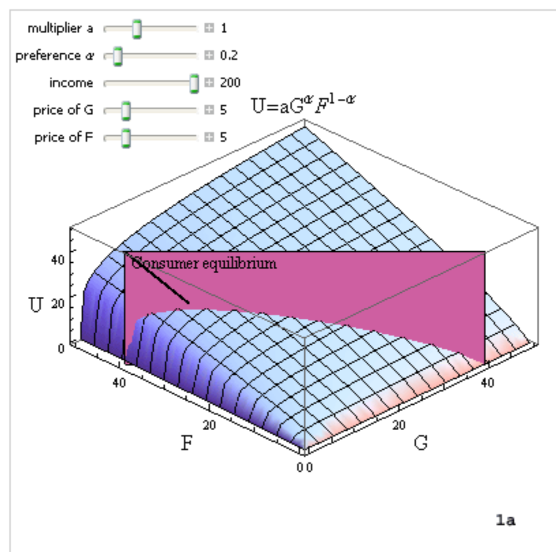
Investors – as manufacturers are the players who form the market, as opposed to speculators who played on a finished market and buy or sell in a short period of time. Investors are private individuals or funds, they are the ones who care about what will happen in the financial markets in the long term, because their task is to keep against inflation and, if possible, multiply their capitals and capitals entrusted to them with a minimum of risk. This category of players has large financial resources, they consider gold as a real asset that can be trusted, in terms of preservation of its value. This view prevailed historically, as gold, historically, before the formation of modern international monetary system was the main means of payment. In favor of the monetary function of gold is the fact that there is gold in reserves of central banks.

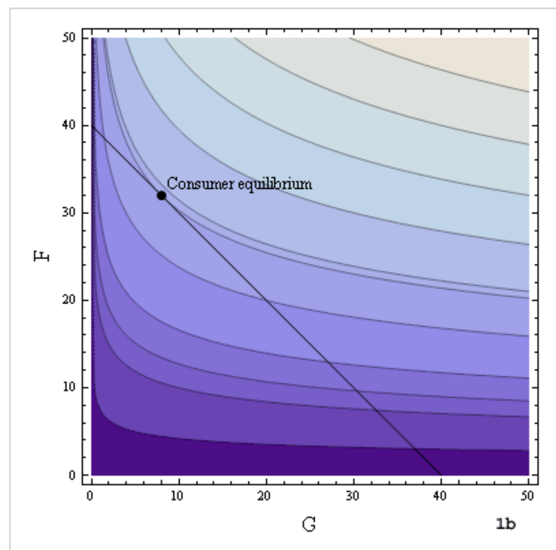
Let us consider what affects the preferences of investors.

The credibility of reserve currencies – a portion of their capital investors hold in money for transactional, speculative reasons and motives of precaution, they have the ability to change the structure of the currency portfolio by transferring their savings from one currency to another. At present reserve currencies are the U.S. dollar, Euro, British pound, Swiss franc, and Japanese yen. Investors can buy also other currencies. As a rule, the forecast for currency stability, investors are directly associated with the stability of the economy of the certain country. Therefore, foreign exchange markets do not always attract investors.

What to do if the confidence in the currency or other instruments is lost because of the economic problems that are available to invest in this currency (bonds, equities, derivatives, investments, direct investments in assets in that country).

Fig. 4: The preferences of investors to buy gold (α) depends on its profitability and credibility of other financial instruments





Investors' see decision that some of their money will be invested (park) in gold, and thereby avoid (hedge) the risk of collapse of the monetary system and the depreciation of capital due to high inflation. Hoarding happens because gold is a credible means of payment, proven by the history of mankind, its emission is limited by the nature, and his property does not deteriorate, is a guarantee of durability of this the means of payment.

Gold as a profitable asset - when the gold price starts going up and investors see this as a long-term trend, they begin to invest in gold for a second reason, they consider gold as a profitable asset, then the preferences of investors and their capital are deployed to gold and this is even more supports the trend of growth.

Fig. 5: The preferences of investors and gold demand.

Investors' preferences depend directly on the credibility of reserve currencies and long-term price trend	
Credibility of the dollar falling (big debt, crisis, inflation)	**=> demand for gold rises => price of gold rises**
Trend of growth of gold => investors invest in gold	**=> demand for gold rises => price of gold rises**

"The crowd" - her preferences are identical to those which are guided by investors. But there is a significant difference; "the crowd" does not consist of the professionals of gold market. Their expectations and conclusions are based on lack of experience, and more guided by emotions than by reasons. In order to attract crowds for gold is needed a signal which I mentioned earlier. Now I will describe a mechanism to execute the **"Gold Rush"**. This

happens when the price of gold is growing visibly, and new speculators come on the market to get easy money, and the price rises even more. If the growth of gold price crushes the settled ceiling prices, i.e. produces shock, and becomes a visible signal, in this case “the crowd” began to buy up gold, and the **“Gold Rush”** begins.

Conclusions

The aim of my research is to analyze the supply and demand in the short and long terms. The scope of this publication does not allow sharing with all obtained results of my observations in a long period unfortunately. In the long term period there is a relationship between the following:

World price of gold, true money supply (TMS) of the dominant reserve currency and total amount of mined gold. This is my next article.

In this article, I analyzed the gold market from the viewpoint of an economic - theorist. The aim of this study is categorization of the main points and search for causal relationships and regularities between large groups. As a result the links have been established, these links are summarized in the table below.

Fig. 5: Relationship of changes in demand and changes of prices for gold in different groups of buyers, including examples of specific situations

Group of players	Type of expectations	Case	Impact
Producers	short	Technology of production allows to replace gold for a cheap substitute	Demand falls
		Demand for products which contain gold are growing	Demand is growing, price increases
Investors	short	The credibility of the reserve currencies fall	Demand is growing, price increases
	long	Gold is going up for a long time	Demand is growing, the price increases
Traders	ultra short	Price increases	Demand is growing
		Price falls	Demand is falling
		Variation in the price is high and less predictable	Demand is falling
Central banks	long, rational	Central banks are buying gold more than sell	Demand is growing, price increases
	short (timing of a transaction)	The Central bank wants to buy gold and waiting for lower price, then the price falls.	Demand is growing, price increases
“The Crowd”	short, adaptable	The sharp rise in gold prices caused by the announcement by the Government of the United States about possible defaulted => “Gold Rush”	Demand is growing rapidly, price increases at times

The co-relations that were found by me in this article let to make a forecast of the price of gold, using the table and real events, for example news from economic media.

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