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AMERICA'S RARE COIN & PRECIOUS METALS FIRM®

Gold Market Lending

An inside look at one of the most opaque Central Bank activities, its impact on the gold market and how IMF policy can change the market to benefit all participants

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Situation Analysis

Central banks are the largest holders of gold reserves in the world. Those central banks provide the public with regular reports of their gold purchases and sales. However, they do not publish any statistics that would enable market participants to track an even larger source of supply, gold loaned and swapped into the market by central banks. There is no question that the levels of gold loaned and swapped into the market by central banks exert a significant influence on the gold price. However, since the loans and swaps are not reliably accounted for, only a few, powerful insiders know their extent, duration, and terms. The International Monetary Fund (IMF) has the ability to change this accounting treatment by implementing new regulations on central bank reporting of gold reserves. Blanchard and Company, Inc. believes that, as the IMF begins implementing changes to gold reserve accounting regulations, the gold market will become more accessible and transparent for all market participants.

The gold price has increased from a low of $270 per ounce in 2001 to over $600 per ounce today without a completely transparent market. As more and more transparent governance is implemented in the market, gold prices will experience exponential growth because they will become a reflection of a fair and equitable market for all participants.

We believe that the gold lending and swap market is a very misunderstood and often, overlooked aspect of our market that has a great deal more influence on prices than participants in the market publicly credit. This paper hopes to explain not only the lending market, but also its impact on prices and how transparency moving forward will contribute to rising prices. The creation of the Washington Agreement in 1999 (now referred to as the Central Bank Gold Agreement) was the beginning of a more transparent gold market; publicizing lending information is the logical extension of that agreement. Blanchard and Company, Inc. believes strongly in the financial benefits of gold ownership as a diversification and believes that the financial benefits of gold ownership can only be enhanced as the gold market becomes more transparent.

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> "A related aspect of this residual monetary characteristic has been and remains the confidential or secretive nature of most stocks and trade in gold, both absolutely and in comparison with trade and trading in other commodities, from coal to copper. This secretiveness pervades not only the reporting of selling and buying, for investment, speculation and official sector activity, but also for parts of the jewellery or consumer sector of the market, where the metal or the product is not infrequently smuggled between different tax regimes and sales are impossible to record. **The gold business would be a stronger and more effective sector for the future if flows and stocks of the business could be more transparently reported**, and there were more commonsense consensus or understanding of the business, which in turn might curb the propensity for conspiracy theories in this market."

LBMA Biennial Dinner 2 November 2006
Toast to The London Bullion Market Association
Kelvin Williams
Former Executive Director, AngloGold Ashanti Limited

This Paper Will Examine

- Who Has the Gold to Lend?
- Gold Carry Trade
- Gold Holdings vs. Loans and Swaps
- What's the Difference Between Gold Swaps and Gold Loans?
- Compare Supply/Demand Statistics with Estimated Loaned Gold Levels
- Do Central Banks Manage and Track Their Gold Loans?
- Is Central Bank Lending a Transparent Function in the Gold Market?
- Who Knows the Accurate Levels of Loaned Gold in the Market?
- Are Gold Loans Increasing or Decreasing?
- Bullion Banks: Smarter Than the Rest of Us or Just More Informed?
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- IMF Accounting for Gold Reserves: Issue Paper
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- When Will the Market Get Loaned Gold Information?
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Background information available:

- Appendices I, II & III

Who Has the Gold to Lend?

Very few groups around the globe other than central banks hold gold in large quantities. Due to the costs associated with holding, securing and insuring gold, only large institutions or countries can typically handle large quantities. It is currently estimated that there are more than 150,000 tonnes of gold in existence (4.82 billion ounces). Of this total, roughly 30,000 tonnes (970 million ounces) are held in the vaults of central banks.*

Since gold is a commodity that is not consumed (like gasoline for cars or copper for wiring) the global gold supply stays at a fairly constant level, with steady additions each year from new mine supply. Central banks are far and away the largest holders of gold bullion on the planet, making up roughly 18 percent of the available stock. The remaining stock of gold in the market is utilized for jewelry, held by private investors, or used for coinage, electronics and dentistry.

> "In order to earn some income on the stock and compensate for 'book losses' caused by its revaluation, a number of central banks have started to place a part of the reserves into deposits with commercial institutions (leasing operations). Data available to me suggest that these banks deposited about 1,000 tonnes in 1991 and ten years later the volume of the deposits reached 4,800 tonnes. Naturally, the central banks' activity increased market liquidity and thus also put downward pressure on the gold price."
>
> **The LBMA Bullion Market Forum - Moscow 2004**
> **Oleg V. Mozhaiskov**
> **Deputy Chairman, Bank of Russia**
> http://www.lbma.org.uk/forums/1b.mozhaiskov_LBMAMoscow2004.pdf

* - World Gold Council: http://www.gold.org/value/markets/supply_demand/central_banks.html

<u>Gold Carry Trade</u>

The gold carry trade was developed in the 1980s. It enabled central banks to begin earning money on an otherwise static asset class in their reserves and induced bullion banks and gold mining producers to profit from the spread between gold lease rates and dollar interest rates. Nearly all of the gold carry trade is transacted on the London Bullion Market (See Appendix I for LBMA information). This transaction takes place on the London market because it is an Over-The-Counter (OTC) market.

> "**The other advantage of the OTC market is its confidentiality and lack of transparency: business can be conducted privately, sheltered from the attention of other market participants, competitors, regulators and, of course, analysts!** Gauging what is happening on the OTC market is more of an art than a science…Nevertheless, it seems that the following basic assumption holds good: under normal circumstances, the impact of the OTC market on physical supply and demand for gold bullion remains greater than that of the world futures exchanges."
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> - **Gold Fields Mineral Services (GFMS) Gold Survey 1996**

The transaction typically goes as follows:

- A central bank loans a bullion bank some amount of gold with a lease rate and length of loan term attached to the contract.
- The gold loans were initially for 1, 3 or 6 month terms (currently, loan terms can stretch out as far as five and ten years).
- The bullion bank immediately sells the gold into the market and invests the profit of the sale in securities with a higher rate of return, such as government long-term bonds.
- The carry return is the return on the bonds minus the gold lease rate. However, this trade is risky because the bullion bank has effectively sold the gold short. If the loan is called by the Central Bank and if gold has risen in value, the bullion bank will have to go into the market and purchase higher priced gold. Indeed, if many banks are short, the unwinding of the gold carry trade could drive the gold price even higher.

Gold Holdings vs. Loans and Swaps

Central banks have their purchases and sales of gold tallied by the IMF International Reserves and Foreign Currency Liquidity Statistics Department and updated roughly every three months by the World Gold Council (WGC).* According to the WGC, some central banks report with a lag of 3-9 months, making statistics in these reports stale. There are also numerous market analysts who believe that some governments obscure their gold purchases in the market and use various entities to dodge reporting the increase of official gold reserves. We could not officially confirm or deny this activity in the market.

> "Net official sector sales over the first six months of 2006 are estimated to have reached 167 tonnes, down by 60% or 245 tonnes year-on-year. Our estimates are based on official IMF statistics, publicly available data released by individual central banks, as well as information on unpublished sales GFMS collect through field research. Due to the lag that often exists between official sector activity taking place and its identification, future revisions to our estimates are possible."
>
> - **GFMS Gold Survey 2006 Update 1**

While central banks report sales and purchases to the IMF, they do not report their levels of holdings out on loan. There are some exceptions, most notably the Bank of Portugal and the Swiss National Bank, who update loaned gold levels once a year in annual reports, but not on a monthly or quarterly basis.

Gold Fields Minerals Service (GFMS), estimates loaned gold levels in their annual gold survey, but no official statistics exist on how much loaned central bank gold is actually in the marketplace. GFMS bases their figures on informal surveys of 30 central banks (over 115 central banks hold gold in reserves). The banks surveyed are not identified and numbers used in GFMS estimates are not audited numbers. GFMS stands by their loan estimate figures, despite the inability to back them up with any hard, audited data. This data is also a once annual "snapshot" of loans from their surveys. Gold is loaned in and out of the London market on a daily basis. GFMS does not include loaned gold data in their official supply/demand summary of the gold market (See Appendix II).

> "The quantity of gold lent to the market by the official sector fell last year for the first time since 1993. Although we are certain there was a substantial fall, establishing the exact scale of the decline has proved to be a difficult task. **As even the most casual observer of the gold market will know, only a handful of central banks have ever published gold lending statistics.** Nevertheless, over the years, GFMS have built up what we believe is a fairly robust picture of central bank lending."
>
> - **GFMS Gold Survey 2002**

Blanchard asks; how can we rely on a set of data with no underlying backup material supporting that data?

* - http://www.imf.org/external/np/sta/ir/colist.htm
  http://www.gold.org/value/stats/statistics/archive/index.php

What's the Difference Between Gold Swaps and Gold Loans?

In reality, there isn't much of a difference between the two, aside from the accounting treatment and parties transacting the swap or loan. Gold loans typically, but not always, take place between a central bank and a bullion bank. Gold swaps are more often transacted between central banks for currency. Gold swaps are forms of repurchase agreements commonly undertaken between central banks or between a central bank and other types of financial institutions. They occur when gold is exchanged for foreign exchange at a specified price with a commitment to repurchase the gold at a fixed price on a specified future date so that the original party remains exposed to the gold market.

> "Although the *Operational Guidelines* give the choice to the authorities as how to record gold swaps (but seek consistency between this treatment and that used by the authorities for repos and reverse repos), **typically both parties will treat the transaction as a collateralized loan. That is to say, the party providing the foreign exchange, and receiving the gold, will not typically record the gold on its balance sheet; while the party providing the gold will not typically remove it from its balance sheet.** Instead the party receiving gold will usually record a reduction in foreign exchange and a loan receivable. The party receiving foreign exchange will record an increase in loans payable, and an increase in currency and deposits, thereby increasing gross reserve assets. However, as noted in the footnote to paragraph 100 in the *Operational Guidelines*, in paragraph 434 of *BPM5* gold swaps should be regarded as transactions in gold, in which case, they would have no net impact on total reserves but would change each monetary authority's reserve assets' composition."

http://www.imf.org/external/pubs/ft/bop/2001/01-16.pdf

Follow this link for an additional explanation:
http://unstats.un.org/unsd/nationalaccount/AEG/papers/m2repurchase.pdf

As evidenced by the above quote, swapped gold hits the market and neither party has to make changes to accounting, despite the fact that the asset in question has been moved into the market. One thing that is certain, gold loans and swaps are made from the same source of gold that is held in reserve by central banks. We believe that gold swaps between banks have just as large an impact on the market as gold loans, and even less is known about them in the marketplace.

Bundesbank's Weber Comments on Central Bank Gold Reserves
2006-10-05 By Simon Kennedy
Oct. 5 (Bloomberg) -- Bundesbank President Axel Weber comments on the central bank's plans for its gold reserves. Weber, who didn't comment on monetary policy, was speaking to reporters in Paris. ``We are not envisaging gold sales for the third year'' of the current agreement with other central banks, Weber said. ``**We have been asked to negotiate with other central banks'' about potential swap deals involving gold**. He refused to discuss which central banks may be interested.

Compare Supply and Demand Statistics with Estimated Loaned Gold Levels

According to the GFMS Gold Survey 2005 on levels of central bank loans in the gold market:

> "Since official lending peaked in 1999, when according to our estimates it exceeded 4,700 tonnes, the quantity provided to the market from central banks' swaps and deposits has fallen sharply. Indeed, we calculate that in 2005 official lending fell by a further 470 tonnes, with the outstanding total no more than 2,970 tonnes by year end."

To put these levels of estimated gold loans in perspective, compare the numbers of 4,700 tonnes* (151 million ounces of gold) and 2,970 tonnes (95 million oz.) with other figures used by GFMS in calculating totals in the gold market:

- Jewelry demand in 2005 was 2,700 tonnes (87 million oz.)
- Annual mine production has averaged roughly 2,500 tonnes in the last decade (80 million oz.)
- Net world investment in 2005 was 736 tonnes (23 million oz.)
- Official central bank sales in 2005 totaled 656 tonnes (21 million oz.)

In other words, there is more loaned gold estimated to be in the market throughout the year than comes from annual mine production, investment demand, or jewelry demand, yet the market does not reflect its impact because it is not accurately or completely reported. Also, GFMS is using a snapshot approach to explaining a gold loan market that changes on a daily basis. GFMS estimates loan levels at one specific point in the year, then state that the target is a "constantly moving" one, essentially wiping out the usefulness of their own work in estimating loaned gold levels.

> **"Measuring on a scientific basis and to any great degree of accuracy the net contribution to demand from investor activity in the OTC market is a Herculean task for at least two reasons. First, the virtually complete lack of transparency in the OTC market. And, second, the fact that one is dealing with a constantly moving target**."
>
> **- GFMS Gold Survey 2004**

* 1 tonne = 32,150 ounces of gold

Do Central Banks Manage and Track Their Gold Loans?

Yes, actively and daily.

> "Like many other central banks, whether or not they have the reserves on their own balance sheet, our day-to-day management of the gold holdings in the reserves is aimed at achieving a return on them, by lending a portion to the market. As is increasingly common amongst central banks, we have a strategic benchmark for this gold lending portfolio, in our case set by the Treasury. The Bank is able, subject to market and credit risk limits, to adjust the maturity distribution of the actual portfolio, relative to that of the benchmark, in search of additional returns. The return on the actual portfolio relative to the benchmark measures the value that the Bank has been able to add by this 'active management'."
>
> **London Bullion Market Assoc. Conference 2003**
> **Graham Young**
> **Senior Manager, Foreign Exchange Division, Bank of England**

> "The strategy of managing the portfolio of the total gold and exchange currency reserves of the National Bank was aimed at increasing the activity in gold reserves management and extending the range of operations with gold both in domestic and international markets, as well as increasing profitability of those operations. The total amount of gold within the foreign reserves of the Bank is the equivalent of more than USD 600 mln. (53 tonnes); 70% of the reserves are allocated abroad as fixed-period deposits, being the main gold operating instrument of the National Bank."
>
> **London Bullion Market Assoc. Conference 2003**
> **Grigori A Marchenko**
> **Governor, National Bank of the Republic of Kazakhstan**
> http://www.lbma.org.uk/conf2003/2003proceedings.html

Additionally, The Bank of England has played a role in the gold market as a recognized International Monetary Fund (IMF) depository. It holds gold on behalf of many nations and often acts on their behalf in gold transactions. Because of its unique experience with gold among central banks, it has done much to develop the leasing and swap market, which is centered primarily in London. The Bank of England also lends out to the market the UK's own gold reserves.

Many central banks have come to rely on the Bank in introducing them to these gold market activities, which has resulted in even more foreign gold reserves moved to the bank's vaults. And from the first steps of the lending market, they have often entrusted the bank to execute other operations, whether in derivatives or outright sales. Thus, the Bank of England has been at the core of widening central bank involvement in gold. By allocating the management of their gold to the Bank of England, some countries might not even be aware of their own loan market activity on a monthly or quarterly basis. If the Bank of England supplies those countries with a breakout of their account lending activity, how much harder is it to publicize that activity to the general public?

Is Central Bank Lending a Transparent Function in the Gold Market?

Q & A section with Jan Lamers of the Netherlands Central Bank at the London Bullion Market Assoc. Conference 2002

> ***"Jan, on the topic of transparency, you indicated that you were not happy with the transparency of the market. The LBMA has been very keen to create more information over the years. What other information would you like to see in the public domain?***
>
> When I said I was not happy, I may have been too strong; I was just discussing what I see. As a central banker, you very often hear that something is going on in the market and certain names are mentioned, but whenever they speak to you they do not know anything, or they do not want to share the information. This may be for very obvious reasons because it is a small market.
>
> ***Jan, how many central banks have cut back their lending in the last year?***
>
> They do not tell me. Perhaps you should invite some other central banks to speak up here next year."
>
> **LBMA Conference 2002**
> **Jan Lamers, Financial Markets Department**
> **De Nederlandsche Bank**

Even the Bank for International Settlements (The Central Bank for all central banks) does not have a clear picture of the gold lending market, which by their own admission, is one dominated by Central Bank activity.

> "The second way central banks can have an influence on gold is through the lending of some of their gold in the lease market. Central banks have expanded their leasing activities over the recent years, seeking an improvement in the return on their holdings. Actually, central banks are the dominant players in this relatively narrow market. **The size of this market is very difficult to evaluate.** Around the year 2000, most market participants mentioned the figure 5,000-5,500 tonnes."
>
> **LBMA Conference 2004**
> **Jean-François Rigaudy**
> **Head of Treasury, Bank for International Settlements**
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> http://www.lbma.org.uk/conf2002/3Bc.lamersLBMA2002.pdf
> http://www.lbma.org.uk/conf2004/2b.rigaudy_LBMAConf2004.pdf

Who Knows the Accurate Levels of Loaned Gold in the Market?

No one has a 100 percent accurate count on levels of loaned gold in the market, as confirmed in interviews of George Milling-Stanley, gold market analyst for the World Gold Council. In 1997, he stated in an interview that "3,000 tons and maybe even 10,000 tonnes" have been borrowed from central banks and sold into the market. In 2003 he remarked, "The central banks are under no obligation to report what they lend into the market, what they place on deposit and what they do with their swaps, so there's a conventional-wisdom view, and a couple of different bodies have done some fairly serious research in[to] this and have come up with a figure [of] around 4,500 to 5,000 tonnes."

First are industry groups such as Gold Fields Minerals Services, a gold market analyst service.* GFMS conducts informal polling of Central Banks and uses this information to create their estimated levels of central bank lending in the gold market each year. The problem with their statistics is that they do not use audited numbers, and their survey is published only once a year. Central bank lending is a constant process that could potentially change each and every day. A once annual snapshot of "estimated" loans from figures that are not audited does not give an accurate picture to market participants of the impact loaned gold has on the marketplace.

Another gold market analyst group, Virtual Metals, makes the estimate of 3,276 tonnes of loaned gold in the market from central banks currently. This is a difference of over 10 million ounces from the GFMS estimate of gold in the market from lending operations. Again, there is no basis of audited numbers for Virtual Metals' estimates and, like GFMS, Virtual Metals estimates loan levels in the market, but does not include the loan data in their supply demand statistics.

http://www.virtualmetals.co.uk/PDF/YellowBook_October06_final.pdf

Bullion banks, the conduit for mobilizing central bank gold into the market, are perhaps the most informed on the actual levels of loaned gold in the market at any given time, simply because they're doing the borrowing of the gold. There are only a dozen or so bullion banks active in the gold market, a number down sharply over the last decade as major consolidation in the banking market and a move away from physical commodity brokering has reduced active participants in the market. The active bullion banks remaining in the market are listed at:

http://www.lbma.org.uk/members_list.html

* - As a side note, Blanchard and Company, Inc. uses GFMS statistics and reports, but we also believe that their failure to include gold lending statistics in their overall supply/demand work seriously undermines the usefulness of the work. Unfortunately, as we will note later in this paper, while GFMS has expressed confidence in their annual gold loan estimates, they do not include those estimates in their regular supply/demand statistical analysis of the gold market. Even including estimates in with other data supported supply/demand analysis would be a vast improvement over leaving such influential market data out altogether.

Are Gold Loans Increasing or Decreasing?

GFMS states in their estimates included in their annual Gold Survey in the last four years that they believe that gold loans have decreased significantly since the lending highs in 1999. Transaction levels and the number of transactions on the LBMA have spiked considerably in the last year, while central bank sales have slowed. As central bank sales have slowed, mine production has also been flat to slumping in the past few years. Investment demand and fund activity in the gold market, according to the WGC, has increased some over the past year, while the monthly average of ounces transferred on a daily basis on the LBMA has increased enormously in 2006 when compared to the same monthly averages in 2003, 2004, & 2005.

http://www.lbma.org.uk/clearing_table.htm

Yet, in the last year as evidenced by LBMA clearing statistics in the link above, and during a period of time when central bank sales have slowed and mine production has stagnated, levels of transferred gold and the number of transactions in the market have increased markedly. The chart linked above shows that the amount of gold transferred in the market has increased nearly 30 percent in the last year as well as the numbers of transactions. So while some of this increase can certainly be attributed to private, non-bank parties and fund involvement in the market, no one but central banks have the level of gold to transact and increase levels of activity in the market by 30 percent in a single year-over-year period.

Currently, GFMS attributes their lower estimated levels of loaned gold into the market to low lease rate levels. They did not share the same sentiment a decade ago when lease rates were at a similar low level.

> **"Contrary to expectations, the low level of gold leasing rates during the past year has not led to many central banks withdrawing from the market. If anything, the bullion banks have successfully persuaded new entrants to lend their gold…**The growing central bank participation in gold swaps and deposits has complicated the analysis of the net impact of the official sector on the market."
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> **- GFMS Gold Survey 1992**

Lease levels haven't stopped the increase of official sector gold loan activity in the past. Who's to say, with 100% certainty, that it isn't also the case currently? Without audited, confirmed loan information, no one can. Blanchard and Company, Inc. firmly believes that, despite near all-time low lease rates being earned by central banks on their gold, the leasing of their gold is one of the only potential sources of supply that could possibly be having this large an impact on transaction levels.

Bullion Banks: Smarter than the Rest of Us or Just More Informed?

Bullion banks are the conduits for central bank gold being loaned into the market. As the gold market has shrunk in the last decade in terms of daily volumes and market participant numbers (http://www.lbma.org.uk/clearing_table.htm), the reduction in the number of bullion banks involved in the market means central bank loans are handled by an increasingly smaller numbers of banks. There are currently only six clearing banks on the LBMA handling gold loan transactions.
The six clearing banks are:
Barclays Bank PLC, ScotiaMocatta, Deutsche Bank AG, HSBC Bank, JPMorgan Chase Bank & UBS AG

Hypothesize the following bullion market situation:

Bullion Bank A wants to borrow 100 tonnes of gold to sell into the market. Bullion Bank A then contacts Central Banks X, Y and Z to borrow that gold, and begins negotiating term lengths and lending rates. Bullion Bank A selects Central Bank X's terms, securing 100 tonnes of gold through the loan and subsequently sells it into the market. By completing just one transaction with one central bank, Bullion Bank A now knows that 100 tonnes of gold listed in Central Bank X's IMF gold reserves is actually out on loan, and being the conduit for that gold reaching the market, they know the time and date that gold was sold into the market and length of those loans. Bullion Bank A also knows what amount of gold, lease rates and loan lengths Central Banks Y and Z are willing to accommodate even if they did not complete a transaction with those banks.

Now extrapolate that one transaction over hundreds of transactions annually between Bullion Bank A and dozens of central banks. Bullion Bank A knows gold loan amounts in the market from their own transactions, when those loans were made, and also which central banks are willing to loan what amounts of gold and at what contract term lengths. But bullion banks do not publish their borrowing activity.

The information that one bullion bank now has from its own market activity far exceeds information publicly available to any other market participants outside of other bullion banks. This "inside" information puts the bullion banks at a significant advantage to any other market participant because they are the only beneficiaries of this proprietary market information regarding timing and loan (supply) levels.

Now hypothesize another situation:

Bullion Bank A has gold desk operations in every gold market in the world, Dubai, New York, Sydney, Hong Kong and London. If Bullion Bank A knows that when the London market opens, they will be selling 100 tonnes of loaned gold into the market that has the potential to impact prices, what's stopping them from front running those trades in other markets beforehand? Nothing. Being the sole beneficiary of their own market activity, Bullion Bank A now has the ability to place their bets in each gold market around the globe with the knowledge that when the London market opens, a certain level of gold that they control will be sold into the market.

Market Impact of Gold Loans and Swaps

As a point of reference, GFMS estimates that the gold lending market is currently about 2,970 tonnes and has been as high as 4,700 tonnes in the last few years.
What type of market impact would 4,000 tonnes have? Huge.

> "The basic problem with the People's Bank of China increasing its gold reserves to 10 percent or 15 percent, which a lot of people talk about, is that it's just too much gold. To get to 15 percent would take 4,000 tonnes of gold. There's no way in the world they could come into the market and buy that amount of gold without dramatically moving the price."
>
> **Kamal Naqvi**
> **Precious Metals Analyst, Barclays Capital& Chairman, LBMA Public Affairs Committee; London Bullion Market Assoc. Conference Sept. 2004**

GFMS makes their beliefs quite apparent in the opening paragraphs of their Gold Survey 1998:

> "The apparently inexorable decline in the gold price during 1997 was the clearest sign of an oversupplied market…Turning now to the supply components that really did the damage last year, these can be summed up in one word – **liquidity.** The front cover of this survey attempts to represent the cardinal role played by a massive increase in market liquidity in determining the course of the gold price last year. **Simply expressed, liquidity refers to the pool of gold available to the market for borrowing and lending purposes and which, in the case of gold, is largely associated with the trading of gold on a loco-London basis and the presence in London of substantial official sector gold holdings owned by many different central banks**…In more concrete terms, the lending of gold to the market, in most cases by a central bank in order to generate a return on its gold holdings, results in a physical sale, either directly by the borrower, or after a series of interconnected transactions."

Analysts who disagree with our assessment of the impact of lending and swaps on price will make the case that each of those activities has a net zero impact on the price over time. In it's simplest explanation that is how loans and swaps ***should*** work. The gold is sold into the market and then when the loan term ends, the gold comes back off the market. In reality, this is not the case.

1. Gold loan terms are usually for 3, 6, and 12 month terms. Some central banks have publicly stated that they have made gold loans with term lengths as long as five years. When gold is sold into the market in year 1, the buy back of gold from the market won't take place for five years. In other words, the net zero effect of that trade is so far off in the future that the loan will impact supply side pricing without a corresponding demand increase for quite a long term.

2. Even a loan of one year can significantly impact prices if put on at certain points of the year when there are seasonally either huge influxes of supply or large deficits of supply. In a market that has as many seasonal supply/demand trends as gold, making the net zero impact is a hollow argument. For example, a 100 tonne sale made in the fall when there is traditionally a great deal of demand for gold from fabricators and from seasonal influences such as the Chinese new year or Indian wedding season will have little impact on the price when compared to a traditionally thin market over the summer period from

June to August. The market has the depth in the fall to easily absorb the 100 tonne sale. During the summer months, it's entirely possible that the 100 tonne sale could have a significantly larger impact on prices. The same principles apply when gold loans are being closed out on the market. Without knowing when loans and swaps are being put on the market and removed in central bank reports, even a correct guesstimate as to the annual levels of lending information is limited in it's usefulness without the corresponding timing information.

3. Bullion banks and central banks roll some loans forward on a continual basis. So a loan of three months could actually be rolled forward on a regular basis, in essence extending the length of time the gold supply stays on the market.

4. Finally, a certain number of gold loans are settled out via cash transactions and due to the vague accounting allowed on loans and swaps by the IMF for gold reserves, the cash settlement becomes the call on the loan instead of the return of the gold to reserves…while at the same time staying on the books as gold in reserve.

Confusing isn't it? It's about time some of the confusion left the marketplace.

If this is the case, who has the ability to change how central banks report to the public ending confusion on gold lending and swaps? The International Monetary Fund.

IMF Accounting of Gold Reserves: Issue Paper

An IMF position paper prepared by Hidetoshi Takeda of the organization's statistics department in April 2006 recommends that swapped and loaned gold be excluded from Central Bank reserve total reports, and the recommendation will be considered at the IMF's meeting in late 2006.

TREATMENT OF GOLD SWAPS AND GOLD DEPOSITS (LOANS)
Prepared by Hidetoshi Takeda, IMF Statistics Department, April 2006*

Currently, the IMF recommends, but does not require that swapped and loaned gold be excluded from reported reserve totals.

The conclusions of the IMF paper:

> 13. The new *Manual* should include a clearer description of the treatments of gold swaps and gold deposits/loans
>
> 14. Swapped gold should be excluded from both reserve assets and IIP (demonetization). This is a logical consequence, and overstating of reserve assets can be avoided. On the other hand, this results in a decrease in the financial assets of the monetary authorities.
>
> 15. Regarding the statistical treatment of gold deposits/loans, keeping the *status quo* is suggested. That is, if the deposited/loaned gold is available upon demand to the monetary authorities, it can be included in reserve assets as monetary gold (paragraph 99 of the *Guidelines*). However, if the gold is not available upon demand, it should be removed from reserve assets, and also from IIP (demonetization).
>
> 16. Regarding the statistical treatment of double counting, this issue would be resolved if the treatment in paragraphs 14 and 15 are adopted, except when the gold is available upon demand under gold deposits/loans.

*The full paper can be viewed by visiting

http://www.imf.org/external/np/sta/bop/pdf/resteg11.pdf

IMF Accounting of Gold Reserves: Committee Recommendation*

The IMF Committee on Reserve Assets considered Mr. Takeda's paper and this is the summary of their findings. A clearer description of the treatment of gold swaps and loans is needed; by defining what types of gold loans were involved (is the gold in allocated or unallocated accounts?). The discussion concluded that most swaps and loans involved unallocated gold, and if the gold is not available upon demand, it should be removed from reserve assets. With unallocated gold, the account holder does not hold title to physical gold but instead holds an unsecured claim against the account provider, in effect a deposit with the account provider.**

OUTCOME PAPER (RESTEG) # 11 TREATMENT OF GOLD SWAPS AND GOLD DEPOSITS (LOANS)
Prepared by Hidetoshi Takeda, IMF Statistics Department, July 2006

Outcome of the Discussions:

(i) **RESTEG agreed to include a clearer description of the treatment of gold swaps and gold deposits/loans** drawing as appropriate on the relevant text in the *Guidelines*.

(ii) RESTEG considered that the statistical treatment of gold swaps and gold deposits needed to be addressed from the viewpoint of whether allocated or unallocated gold was involved.

(iii) For instance, one member noted that treatment of gold deposits set out in paragraphs 98 and 99 of the *Guidelines* needed to be reviewed, as treatments differ depending on whether unallocated gold and allocated gold is involved.

(iv) RESTEG agreed that the statistical treatment of gold deposits/loans of allocated gold should be status quo. That is, if the deposited/loaned gold is available upon demand to the monetary authorities, it can be included in reserve assets as monetary gold (paragraph 99 of the *Guidelines*). **However, if the gold is not available upon demand, it should be removed from reserve assets.**

(v) **The meeting was informed that gold swaps primarily involve unallocated gold.**

Rejected Alternatives: None.

Actions: *It was agreed that the secretariat would investigate further. The work would include appropriate bilateral discussions to discover practices on gold swaps and deposits/loans among central banks, especially those via unallocated gold, and prepare proposals on their statistical treatments for RESTEG discussion through correspondence prior to IMF Committee on Balance of Payments Statistics (BOPCOM) meeting.*

The full paper can be viewed at the link below.
*   http://www.imf.org/external/np/sta/bop/pdf/resout11.pdf
**   http://unstats.un.org/unsd/nationalaccount/AEG/papers/m4Gold.pdf

<u>IMF Follow Up Paper: Treatment of Allocated/Unallocated Gold Held as Reserve Assets</u>

http://www.imf.org/external/np/sta/bop/pdf/fu111.pdf
Below is further research on the confusing aspects of current accounting treatments for gold loans and how they should be changed. Here are some selected notes from the follow up paper.

Prepared by Hidetoshi Takeda, IMF Statistics Department : August 2006
I. CURRENT INTERNATIONAL STANDARDS FOR THE STATISTICAL TREATMENT OF THE ISSUE

3. **Current macroeconomic statistics manuals are silent on the statistical treatment of allocated and unallocated gold.** There are no explanations of the treatment of gold swaps/deposits that involve unallocated gold.

6. In many cases, similar to deposits, an account holder of unallocated gold account deposits its physical gold to its account provided by, for instance, a bullion bank. Then, the account holder undertakes gold transactions (outright purchase/sale, gold swaps, and gold deposits) via the account. But specific gold bars are not ascribed to the holder unless the holder takes delivery of the gold. **The bullion bank can use the deposited physical gold for its own trading purpose and so does not necessarily have 100 percent backing in physical gold for the unallocated gold accounts.**

15. Unallocated gold held by the monetary authorities that does not meet the criteria of reserve assets **would be treated as deposits,** i.e., other investment of the monetary authorities in the balance of payments and IIP if a claim is on a nonresident, otherwise as a claim on a resident bank.

19. As the *Guidelines* describe, monetary authorities may undertake gold swaps (paragraph 100). So, assume that a central bank (A) holds an unallocated gold account in bullion bank (B) with a position of 100, and undertakes a gold swap of 100 with a financial institution (C) (perhaps by asking B to undertake the transaction on its behalf). **If the statistical treatment is that the ownership of the underlying asset is assumed not to change hands under a gold swap, central bank A continues to report, a holding of unallocated gold (100) as reserve assets or other investment and C does not record, a holding of unallocated gold (100). On the other hand, bullion bank B has legal liability of 100 to C and may record deposit as from C. So, both A and C may record a gold holding (A may keep recording on a claim on B, while C may record its claim on B).**

20. **If market practice is for B to record that C not A has ownership then de facto it places in question whether gold swaps with unallocated gold should be treated like repos, although the economic ownership argument may be equally as valid. So, in order to determine appropriate treatment, practices of market and accounting of banks on gold swaps need to be taken into consideration.**

For a more comprehensive understanding of this paper, please visit the IMF link at the top of the page. These are just some of the selected quotes from the paper.

What is the Answer?

While the IMF papers referenced previously are not completely clear on how to correctly change the accounting for gold reserves, one thing is clear: there needs to be a change. With the amount of confusion surrounding central bank gold lending in the market (*The World Gold Council uses GFMS for their market supply and demand statistics, yet both often quote different figures for gold loans. Another often-used set of statistics from Virtual Metals uses different loan figures*), as well as the recent IMF presentations stating that accounting for loaned gold by central banks is not done appropriately, the question then becomes what to do about this situation?

The answer is simple – Blanchard and Company, Inc. believes it is imperative that central banks follow IMF suggestions and implement line item accounting for their gold reserves activity on a quarterly basis, if not monthly basis, and do so immediately. Level the playing field for all market participants, bring an end to proprietary information within the market for an exclusive few, and allow the bullion market to function in a fair and equitable manner, ridding itself of conspiracy theories that diminish its relevance and stability. By ending opaque transactions and accounting procedures, the gold market then becomes accessible to all participants and ends the "clubhouse" attitude that governs the London Exchange. The gold market has made great advances in the past few years not only in terms of price increases, but also in the availability of gold to purchase for all market participants and the transparency of information. It is time to continue those advances and make the last few steps to having a truly open and free marketplace for all those involved.

When Will the Market Obtain Loaned Gold Information?

Absent some nefarious explanation, the reason the market has never been supplied loaned gold information is pretty simple. Central Banks have never been required to report it. It's not that they don't have the information. Blanchard is willing to venture that any central bank that manages it's gold reserves knows on a daily basis down to the ounce where that gold is located, either in storage or out on loan.

By making this simple accounting change recommended by IMF statisticians, the gold market becomes more transparent and gets rid of the rationale behind conspiracy theories on price manipulation. All participants better understand the market and major supply side portions of the market will no longer be subject to estimates on potential price impacts.

The **IMF Committee on Balance of Payments Statistics,** or **BOPCOM,** publicizes its decision in late November 2006. BOPCOM will be presented with the IMF papers detailing incorrect accounting procedures for gold reserve swap and loan accounting treatments. At this meeting it will be up to the members of BOPCOM to decide if accounting for gold loans by central banks will be changed or allowed to continue under the current system. This is not the final decision on how to completely change IMF accounting regulations, but it's a start. This IMF committee decision isn't an end-all for completing market transparency, but it is an important starting point.

As evidenced in both the issue paper and committee recommendations on gold loans, IMF statisticians believe, without exception, that standards of accounting currently in place should be changed. The IMF has informed Blanchard that, if implemented, the accounting changes would take place "possibly" by year-end 2008. Typically, individual countries take several years to begin complying with IMF reserve reporting changes. Along with the signing of the Washinton Agreement in 1999 and the legalization of gold ownership by Chinese citizens in 2004, this is a potentially watershed event for the gold market that does not appear on many analyst radars at present.

If the IMF does not require this change or central banks and bullion banks fight potential accounting treatment changes, then additional questions should be raised as to why they would delay additional transparency in the gold market.

In Summary

This report has reached the conclusions that:

- Central Bank gold loaned into the market is a major source of supply.

- No statistics providing accurate levels of loaned and swapped central bank gold are publicly published by countries or the IMF, but instead "estimated" loan levels and impact are done by outside sources and those "estimated" levels vary from source to source.

- The levels of gold loaned in the market can significantly impact the price.

- Central banks actively manage their gold loans, but do not supply the market with this information.

- Bullion banks have significant advantages over the investing public in understanding the market impact of gold lending.

- Countries supply accurate (but not timely) information on gold sales and purchases.

- IMF reviews have shown that central bank accounting for gold reserves is inadequate.

- IMF reviews have suggested, but not yet acted upon, recommendations for changing the accounting treatment of gold reserves. If adopted, IMF accounting changes are the beginning to a new, transparent gold market.

- Finally, for the market to be transparent for all, central bank loaned gold levels need to be reported to ALL market participants on a quarterly, if not monthly basis. Loan information is available to be published; it is simply not required to be published. The IMF has the ability to make this requirement and change the gold market for the better for all participants. Blanchard and Company believes that this simple change to our market will allow all market participants to begin to realize not only greater gains in their gold investments, but the ability to make smarter decisions on when and how to invest. Gold has made incredible gains in the past few years in a market that is still not completely transparent; this change has the ability to increase those gains immeasurably.

Blanchard and Company, Inc. Thoughts

Should Countries Be Allowed to Loan Gold?

Of course! The gold held by each central bank around the globe on behalf of their nation is the asset of that nation. It is the individual country's prerogative to buy, sell, loan, or swap that gold in any form or fashion it sees fit. We don't believe in constraining the ability of any country to receive a return on one of their assets. What we are flummoxed by is why this information isn't made public. Citizens of each country should be given the ability to see what their country is doing with their own reserves. Is 100% of the gold in their listed reserves actually out on loan?

Why Aren't Gold Loans Made Public?

Good question. There is no reason (save the argument made by some that Central Banks are using gold loans to manipulate the gold price) Blanchard's research has been able to unearth that explains why gold lending information is not made public, except for the unconscionable advantage it gives to bullion banks. Central banks report gold sales and purchases to the market, but no lending information is made available to the public. The simple answer is that the banks are not required to report the information, regardless of how helpful it would be to the market. If central banks fight the right for market participants to receive information on their gold lending activity, then additional questions need to be posed as to why.

Will Publicizing Gold Loan Information Increase the Price of Gold?

We believe, unequivocally, 100% yes. If for no reason other than that the market becomes a more fair and equitable one. Gold has made a credible climb from the late 1990s when the Washington Agreement was put into place by central banks to curb out-of-control sales into the gold market. That was just the beginning to new market transparency for the gold market. Publishing loan information is the logical extension to that Agreement.

Assuming the IMF Does Not Make the Change to Accounting Procedures for Gold Loans, How Much Longer Can the Lack of Lending Information Affect the Market?

Even if the IMF decides against clearing up the accounting issues for gold loans, the level of gold held by central banks in their vaults has fallen so considerably in the last decade that the lending market is becoming a smaller price influence on the market. This is not to say we don't believe that gold lending isn't a significant price influence currently, just that dwindling supply of gold in central banks and the complete disfavor of hedging in the market has already begun to marginalize the price impacts of gold loans.

Who is Hurt or Helped By Publicizing Loan Information?

The market as a whole will become more transparent and accessible if loan information is publicized, so it's hard to argue that any market participant would be hurt by this information entering the public domain. Any global market dominated by massive physical activity from one OTC segment of the market is not a totally healthy market. The argument can be made that bullion banks will no longer control a segment of information in the market and that could harm their proprietary or client trading accounts that trade using non-public, gold loan information. But is that a bad thing? Of course it isn't. If loan activity is publicized, certain countries could also suffer some financial ramifications because of credit ratings or bond issues tied directly to gold reserves.

Do Countries Have Credit Ratings and Loans Secured By Their Gold Holdings?

It is entirely possible that some credit ratings are secured by gold reserves, which means that IMF accounting treatments breaking out individual countries gold holdings into allocated account gold and gold out on loan would directly impact the potential credit ratings. A number of countries around the globe have some form or fashion of gold bonds offered for investment. If gold that is securing a bond rating for a country is actually out on loan into the gold market, counterparties to that bond rating might wish to change that rating. There could also be a problem if there is a large influx of redemptions received for gold linked bonds and that gold is not actually available to complete the redemptions. The IMF has stated to Blanchard that they do not look at actual gold holdings vs. gold that is loaned out in securing credit ratings. It is entirely possible that the IMF might change this policy if levels of actual gold holdings vs. gold out on loan are made public.

Do Bullion Banks have a Public Position on Publicizing Gold Loan Information?

We have been able to find no public position by any bullion bank in favor of publicizing central bank gold loan information. That doesn't mean it isn't out there somewhere, but we have been able to find no such statement by a bullion bank in favor of publicizing gold loan information.

Do Central Banks Have a Public Position on Publicizing Gold Loan Information?

Two Central Banks update gold lending information on a line item basis in their reserves reporting, the Swiss National Bank and Bank of Portugal. The Bank of England has a once annual update of year-end loan information and so does the Bank of Russia. No other banks break out their gold lending information on a line item basis. We have been able to find no public position from other central banks in favor of publicizing gold loan information.

Does the IMF Have a Public Position on Publicizing Gold Loan Information?

By completing a position paper and committee recommendations that the accounting for gold lending needs to change with no exceptions, the IMF has essentially stated that they believe that the market should receive correct accounting on loan information. The final test will be the implementation of the new accounting rules.

Does the Market Need Liquidity From Gold Loans?

The main focus of liquidity for the gold market has been so that bullion banks, producers and funds could accomplish various derivative and lending transactions in the market. Yes, Central Banks were able to begin earning money on a static asset class, but without the growth of the gold derivative business and gold carry trade there would have otherwise been no market in which to lend that gold. Does the market need the liquidity to transact these massive derivative positions? Yes, otherwise the prices on gold available before central banks began ramping up gold lending in the 1990s would have been pushed considerably higher.

> "Before we get too far along, let's define what we mean by liquidity and why it's important. **Gold market liquidity is best described as the ability to transact in the gold market without significantly affecting the gold price.** The liquidity of the market is important, since liquid markets are better at facilitating large capital flows. Furthermore, a less liquid gold market will generally be associated with more volatility in the gold price, all else being equal. Increased gold price volatility can potentially result in higher spreads as market participants seek compensation for the greater uncertainty, or "liquidity risk", associated with transacting in the gold market."
>
> **Liquidity: A User's Perspective, LBMA 2002 Conference, San Francisco**
> **Stephen J. Smith**
> **Vice-President & Treasurer**
> **Placer Dome Inc**. (Placer Dome has since been acquired)

Do Gold Loans Providing Liquidity Constrain Price Increases?

GFMS certainly believes so and so do we! (see earlier quote from GFMS Gold Survey 1998 in Market Impact of Gold Loans segment)

Does the US Treasury Loan Gold?

Yes, the US Treasury has been allowed to monetize United States gold stocks. The total gold reserve holdings by the US Treasury are listed at over 8,100 tonnes of gold (+260 million ounces of gold). Of that total, the US Mint website lists that over 4,500 tonnes are held in Fort Knox, leaving potentially 3,550 tonnes of gold in the US reserves available to the lending market.

From the Federal Reserve:

Monetary gold is the U.S. government gold stock held by the Department of the Treasury. It excludes gold in other, non-monetary forms such as ore, bullion, coins and medallions, jewelry, and dental supplies (exports and imports of gold in these forms are, however, included in balance of payments statistics for merchandise trade). Monetary gold also excludes gold owned by foreign official institutions that is stored at the Federal Reserve Bank of New York. At present, all U.S. monetary gold is ''monetized''; when gold is monetized, the Treasury issues a gold certificate equal to the value of the gold to the Federal Reserve System, which increases the value of the Treasury's deposit account by the same amount. In the flow of funds accounts, monetized gold is an asset of the monetary authority—the Federal Reserve Banks and certain Treasury monetary accounts (these accounts are not included in the federal government sector). In the past, amounts of unmonetized, monetary gold have been held by the Exchange Stabilization Fund, an entity within the Treasury Department.

http://www.federalreserve.gov/releases/Z1/fofguide.pdf

Do Mining Companies Have an Opinion on Publicizing Central Bank Gold Loans?

There are thousands of gold companies around the globe. We are quite confident that a number of gold mining companies would like to see gold lending information made public.

Does the World Gold Council Have an Opinion on Publicizing Central Bank Gold Loans?

The WGC has responded to Blanchard and Company, Inc. that the lending subject is a separate matter for each individual institution involved in the market. The WGC does not have a stance on the publication of gold lending.

Does Gold Fields Minerals Service Have an Opinion on Publicizing Central Bank Gold Loans?

GFMS is an analyst group for the gold market and has stated to Blanchard that having a public opinion on the potential impact of the publication of gold lending in the market would affect their ability to be impartial market observers. However, GFMS has recently put out releases stating that decreasing central bank gold sales will be positive for gold prices moving forward.

Does Virtual Metals Have an Opinion on Publicizing Central Bank Gold Loan Information?

Virtual Metals did not reply to our requests for comment.

Appendix I

Trading Gold & Silver In London On The LBMA

An OTC Market
Members of the London bullion market typically trade with each other and with their clients on a principal-to-principal basis. All risks, including those of credit, are between the two parties to a transaction. This is known as an "Over the Counter" (OTC) market, as opposed to an exchange-traded environment. Unlike a futures exchange, where trading is based around standard contract units, settlement dates and delivery specifications, the OTC market allows flexibility. It also provides confidentiality, as transactions are conducted solely between the two principals involved.

Allocated Accounts
These accounts are opened when a customer requires metal to be physically segregated and needs a detailed list of weights and assays. The client has full title to the metal in the account, with the dealer holding it on the client's behalf as a custodian.

Unallocated Accounts
An account where specific bars are not set aside and the customer has a general entitlement to the metal. It is the most convenient, cheapest and most commonly used method of holding metal. The units of these accounts are one fine ounce of gold and one ounce of silver based upon a .995 LGD (London Good Delivery) gold bar and a .999 fine LGD silver bar respectively. Transactions may be settled by credits or debits to the account while the balance represents the indebtedness between the two parties.
www.lbma.org.uk

The LBMA is a small market in terms of transacting participants, but since it operates as an OTC market, the transaction levels on the LBMA dwarf those of any other physical gold market in the world. Note the IMF statement earlier that nearly all loans and swaps involve unallocated gold (i.e. not audited).

Appendix II

Below is a quarterly supply/demand chart prepared for and disseminated by the World Gold Council by GFMS on 8/16/06. Note there is no information incorporated into the data for central bank gold lending levels. All figures, unless noted are in tonnes (1 tonne = 32,150 oz of gold).

Where are 2,970 tonnes of estimated loans? Even with estimated numbers, that is a huge supply side of the equation that does not get included in a Supply/Demand equation.

Gold supply and demand (WGC presentation)

	2004	2005	Q1'05	Q2'05	Q3'05	Q4'05	Q1'06	Q2'06[1]	*% ch Q2'06 vs Q2'05*	*% ch H1'06 vs H1'05*
Supply										
Mine production	2,469	2,520	579	611	654	677	582	625	2	2
Net producer hedging	-427	-113	-22	-75	-21	4	-142	-157	...	...
Total Mine supply	2,042	2,407	557	536	633	681	440	468	-13	-17
Official sector sales[2]	470	661	268	144	86	163	98	53	-63	-63
Old gold scrap	849	886	204	198	210	274	271	310	57	45
Total Supply	3,361	3,953	1,029	877	929	1,118	810	832	-5	-14
Demand										
Fabrication										
Jewellery	2,613	2,709	707	774	659	569	532	541	-30	-28
Industrial & dental	410	420	100	111	106	104	108	109	-2	3
Sub-total above fabrication	3,023	3,130	807	885	765	672	641	650	-27	-24
Bar & coin retail investment[3]	397	412	130	120	93	69	84	101	-15	-26
Other retail investment	-57	-22	-10	-9	-8	4	5	-11	...	...
ETFs & similar	133	208	89	-2	38	84	109	39	...	70
Total Demand	3,496	3,727	1,016	995	888	828	838	780	-22	-20
Balance[4]	-134	226	13	-117	41	289	-28	52	...	...
London PM fix (US$/oz)	409.17	444.45	427.35	427.39	439.72	484.20	554.07	627.71	47	38

Data in this table are consistent with those published by GFMS but adapted to the WGC's presentation and take account of the additional demand data now available. The "balance" figure differs from the "implied net (dis)investment" figure in GFMS' supply and demand table as it excludes "ETFs and similar" and "other retail investment". Note that jewellery data refer to fabrication and quarterly data differ from those for consumption in tables 1 and 2. 1. Provisional. 2. Excluding any delta hedging of central bank options. 3. Equal to the sum of the first three rows in Table 1. 4. This is the residual from combining all the other data in the table. It includes institutional investment other than ETFs & similar, stock movements and other elements as well as any residual error.

Appendix III

Virtual Metals is another industry analyst group has put together annual market supply and demand statistics. Again, there is no inclusion of estimated loaned gold in their market supply/demand statistics, despite Virtual Metals' willingness to estimate those levels of loaned gold in the market. Virtual Metals estimates, as of October 2006, that over 3,270 tonnes (+105 million ounces) of gold has been loaned into the market. This is a difference of over 10 million ounces when compared with GFMS loan estimates.

World total - 2006 (tonnes)

	March F'cast	Oct F'cast	Change
Supply			
Mine supply	2,364	2,361	(3)
Scrap recycling	998	1,015	17
Hedging	64	83	19
Central Bank sales	547	499	(48)
Total Supply	**3,973**	**3,958**	**(15)**
Demand			
Jewellery fabrication	2,341	2,310	(31)
Jewellery consumption	2,341	2,310	(31)
Legal tender coins	104	103	(1)
Electronics	372	372	0
Other end uses	281	315	34
ETFs	173	209	36
Central Bank purchases	0	100	100
Dehedging	280	486	206
Total demand	**3,551**	**3,894**	**343**
Residual (supply less demand)	**422**	**64**	**(358)**

Source: Virtual Metals *Notes: Global totals do not include jewellery fabrication*