BofA SECURITIES

Global Metals Weekly

Gold Trading (mini) Primer

Focus is on spot, but forwards/futures matter too

We have been bullish gold for the best part of two years and first published our $3,000/oz price target in June 2024. So far, gold has rallied mostly on the back of exceptional purchases by the official sector. Worried about the US fiscal deficit, trade disputes, wars, sanctions, and asset freezes, central banks and other investors have pushed spot gold prices to a record. Our supply and demand model shows gold can average $3,000/oz this year if investment demand increases by just 1%. For it to hit $3,500/oz, investment demand would need to rise 10%. That's a lot, but not impossible. For starters, China's initiative to let insurers invest in gold could create 300t of additional demand, equivalent to 6.5% of the annual global market.

Physical market: OTC and futures, gold lease rates

Beyond the moves in linear prices, other segments of the gold market, including forwards, futures and price differentials have also received significant attention. The London OTC market remains the largest venue to exchange gold by a long shot. Beyond setting spot prices, its forwards are a key reference point. Meanwhile, the difference between the two, i.e. USD interest rates and gold forward rates determine lease rates, i.e. the cost of borrowing gold. Borrowing the metal can be popular, e.g. with gold refiners, because it helps manage liquidity.

Beyond physical: derivatives exchanges, EFPs

Outside London's physical market, derivatives exchanges like CME, with their standardised futures contracts, have also become more important. Exchange for physicals, which trade both spot and future dates, have grown popular with banks and funds. In these transactions, a market participant takes a long (or short) position in the future and an offsetting short (or long) position in physical gold, a potentially profitable transaction that effectively takes a view on the spread between the two prices.

EFP/lease rate blow-out – a rare event

Gold forwards and futures curves are usually in contango because most of the gold ever mined is still around in some shape or form, so shortages that would flatten curves are quite rare. That said, they do happen, e.g. during the Great Financial Crisis and also COVID. This time around, a collapse in gold forwards has led to a spike in lease rates in London. Why? The CME's futures contracts trade duty-inclusive and concerns over tariffs have pushed up prices. This meant that EFPs rallied, exacerbated by a squeeze in the short futures leg of the EFPs. In response, market participants moved gold to New York, reducing liquidity in London.

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Commodities
Global

Global Commodity Research
BofA Europe (Madrid)

Michael Widmer
Commodity Strategist
MLI (UK)
+44 20 7996 0694
michael.widmer@bofa.com

Danica Averion
Commodity Strategist
MLI (UK)
danica_ana.averion@bofa.com

Francisco Blanch
Commodity & Deriv Strategist
BofA Europe (Madrid)
+34 91 514 3070
francisco.blanch@bofa.com

Rachel Wiser
Commodity Strategist
BofAS
rachel.wiser@bofa.com

Warren Russell, CFA
Commodity Strategist
BofAS
warren.russell@bofa.com

Equity Research
Jason Fairclough >>
Research Analyst
MLI (UK)
jason.fairclough@bofa.com

Caio Ribeiro >>
Research Analyst
Merrill Lynch (Brazil)
caio.ribeiro@bofa.com

Matty Zhao >>
Research Analyst
Merrill Lynch (Hong Kong)
matty.zhao@bofa.com

Lawson Winder, CFA >>
Research Analyst
Merrill Lynch (Canada)
lawson.winder@bofa.com

See Team Page for List of Analysts

OTC - Over the counter

GLR – Gold Lease Rate

EFP- Exchange for Physical

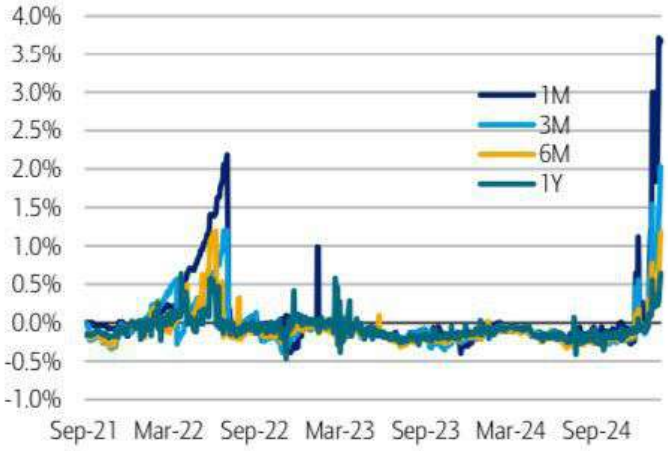
Gold Trading (mini) Primer

Gold heads for $3,000/oz, as market dislocations intensify

Gold lease rates and exchange for physicals have spiked

We have been bullish gold for the best part of two years and first published our $3,000/oz price target in June 2024 (see Global Metals Weekly: Treasury frictions add to gold demand). Since then, gold has posted a series of record highs and we reiterate our constructive outlook. That said, the action has not been just in flat prices; other segments of the market have also seen significant volatility. This is reflected in Exhibit 1 and Exhibit 2, which show sharp increases in lease rates and exchange for physicals. What have those moves been about? Let's dive in.

Exhibit 1: Gold lease rates
Lease rates have spiked



Source: Bloomberg, BofA Global Research

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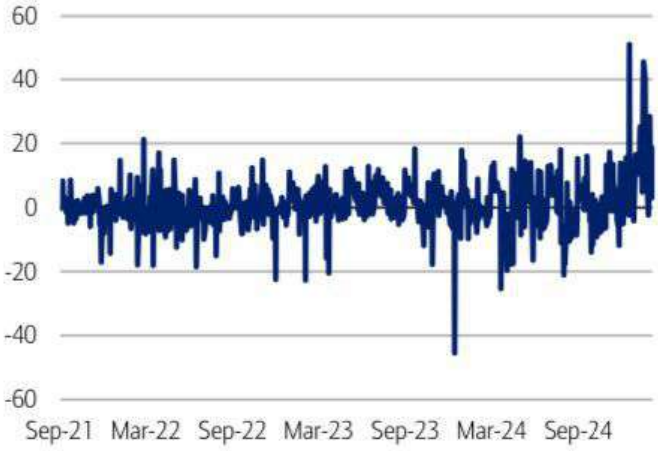
Exhibit 2: Exchange for Physicals (EFPs)
EFPs have moved higher



Source: Bloomberg, BofA Global Research

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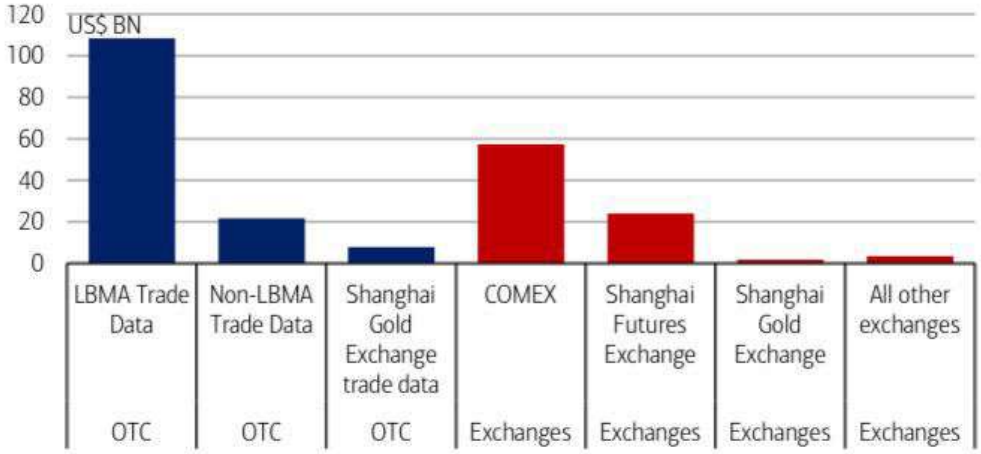
Gold trades at different venues

Gold is traded at different venues and the London over-the-counter market is usually the main marketplace (Exhibit 3), although there are also derivatives exchanges and secondary marketplaces.

Exhibit 3: Daily average trading volumes in 2024
The London Bullion Market remains the largest gold trading venue



Source: Non-LBMA Trade Data is OTC estimates representing trading volumes not captured by the LBMA Trade Data data set. This figure is intended to account for trading by non-LBMA members or by the platforms not included in the report. **Shanghai Gold Exchange OTC trade data** includes trading volumes of all gold spot contracts, forwards, swaps, leasing contracts and gold options traded on the exchange's OTC market. All other exchanges includes gold contracts traded on: London Metal Exchange, Dubai Gold & Commodities Exchange, ICE Futures, US Metals, Borsa Istanbul, Bursa Malaysia, Moscow Exchange - RTSX, Tokyo Commodity Exchange
Source: World Gold Council, BofA Global Research

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- The **London OTC market** has long been the centre of gold trading and today comprises approximately 70% of global notional trading volume, according to the World Gold Council. The London market is regulated by the London Bullion Market Association and trades 400 ounce "Good Delivery" bars, which are stored in member vaults of the London Precious Metals Clearing Limited (LPMCL) and the Bank of England. Beyond setting spot reference prices, London also makes a forward market, with the London Bullion Market Association in the past publishing gold forward rates (GOFO), although that was suspended in 2015. Interbank forward gold swap rates (more on this below) have taken over the GOFO function.

- The decision to stop publishing GOFO was accompanied by the evolution of derivatives exchanges. Indeed, the **CME's COMEX division** has become an increasingly important venue in the price discovery process. Trading activity on COMEX is primarily concentrated on the 'active month' (nearest dated) contract, which acts as a proxy for the spot price. It's worth noting that even if the CME's contracts are physically settled, only a small number make it to maturity, accompanied by physical delivery or removal of bars into and out of COMEX vaults.

- In China, **Shanghai Gold Exchange** and **Shanghai Futures Exchange** have become important. Shanghai Gold Exchange, established in 2002 under oversight of the People's Bank of China, is a spot and deferred contracts trading venue, which is complemented by futures trading on Shanghai Futures Exchange.

Beyond that, the World Gold Council also notes[1] a range of secondary trading centres in Dubai, India, Japan, Singapore and Hong Kong. Exchanges in all these markets offer a range of spot trading facilities or listed contracts but they have not attracted the liquidity seen on the market's primary venues. Nonetheless, these markets play an important role to varying degrees in serving local demand or acting as regional trading hubs.

Trading opportunities as gold is quoted at different OTC and exchange venues

While spot gold prices remain the market focus, the different venues and tenors/ maturities of contracts mean that trading the yellow metal is multi-faceted.

Gold forward offered rate, swaps and the futures curve

Gold forwards work essentially like futures, the main difference being that they are not traded in organized markets, so they are over-the-counter (OTC). Hence, forwards carry a credit risk but, in turn, they are not standardized contracts, and are customized to meet investors' particular needs. This also means that forwards often command a premium for the privilege of customization. Therefore, a gold forward contract is a transaction in which two parties bilaterally agree on the purchase and sale of gold at a future date. The majority of gold forwards are traded in the London gold market.

Taking gold forwards a step further, **swaps** are OTC contracts that exchange financial instruments. Swaps involve cash flows based on a notional principal amount. In the precious metals space, they are effectively a gold-collateralised loan, i.e. gold is borrowed (lent) against a currency, so in these transactions gold is exchanged for USD: market participants purchase bullion at spot, while selling the metal forward (from the borrower's perspective), or they sell the metal at spot and buy the bullion forward (from the lender's perspective). Gold forward swap rates can be thought of as gold-to-US dollar exchange rate.

Meanwhile, the **CME gold futures** curve plots gold prices across different maturities. The contracts are standardised to 100oz and physically settled.

[1] https://www.gold.org/gold-market-structure/global-gold-market

Exhibit 4 and Exhibit 5 pick up on this, showing the OTC gold forward swap rates and exchange-traded CME gold futures. Notably, OTC forward swap rates have collapsed, while gold futures remain in a relatively steady contango.

Exhibit 4: Gold forward swap rates
Gold forward offered rates have fallen sharply...

Source: Bloomberg, BofA Global Research

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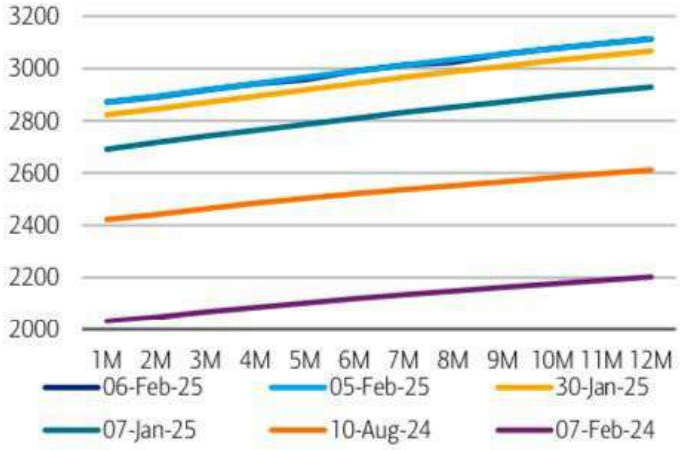
Exhibit 5: CME gold futures curve
... as CME futures curves have remained in contango



Source: Bloomberg, BofA Global Research

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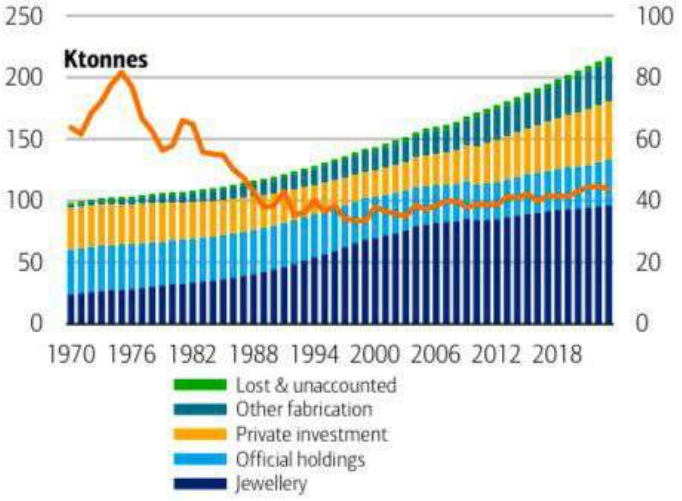
Sticking with the shape of the forward/futures pricing curves, backwardations[2] in the gold market are rare because gold is usually not lost, i.e. most of the gold that has historically been mined still sits somewhere in above-ground stocks. That said, curve shapes can shift, as the collapse in the forwards highlights (we will discuss that later).

Exhibit 6: Gold, above-ground stocks
There is a lot of gold sitting in above-ground stocks



Source: World Gold Council, BofA Global Research

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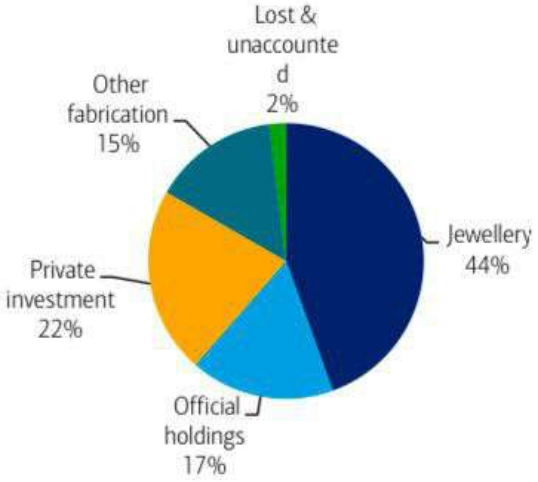
Exhibit 7: Gold, breakdown of above-ground stocks
Old gold is held in jewellery, private investment and by central banks



Source: World Gold Council, BofA Global Research

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Gold lease rate

The **gold lease rate** (GLR) is the cost to **borrow** gold, expressed as an interest rate. The lease rate can be thought of as a transaction where a gold owner sells the gold and

[2] Forward prices can be calculated through a cost-of-carry model, i.e. the cash price is the starting point, and holding costs (such as expenses for storage in warehouses or interest) are added. Holding benefits (e.g. from lending a metal) are deducted. Forward curves are normally in contango, i.e. future prices are higher than the cash price. However, future prices can fall below cash prices when markets are extremely tight. In such a situation, metal consumers are prepared to pay a convenience yield, i.e. spend more to have metal available immediately and the curve is in backwardation

simultaneously buys it back further out. The proceeds can then be invested in USD, so they earn interest, and Secured Overnight Financing Rate (SOFR) is typically the reference. Hence, in keeping with an arbitrage-free market, the lease rate is the difference between SOFR and the OTC gold forward swap rate. A higher GLR suggests increased demand for borrowing gold or reduced supply from lenders.

Exchange for physicals (EFP)

An exchange for physical transaction is a financial mechanism used to switch positions between gold futures contracts and physical gold. In other words, it allows market participants to exchange a futures contract position for the physical commodity or an equivalent OTC position (and vice versa). More concretely, in a gold EFP, two counterparties agree to simultaneously 1) sell (buy) gold futures contracts on a recognized exchange (like COMEX) and 2) buy (sell) an equivalent amount of physical gold or enter an OTC gold swap.

Typical market participants in leasing and EFPs

Leasing

Gold refineries are large users of borrowed gold. Typically, they must pay for feedstock shortly after it is delivered to the refinery, but they only get paid themselves when the gold has been refined, fabricated into bars or other forms, and sold. When demand for refined products increases rapidly, refineries can decide to increase gold borrowing to fund their larger work in progress.

EFPs

Exchange for physicals are used by a range of market traders. The market quotes two types of EFPs:

- **Spot EFPs** are transactions where a market participant, typically a bank, sells the futures contracts and receives physical gold, which then needs to be stored. This can be beneficial, if the futures price is higher than the cost-of-carry (see footnote 2) for banks. That can materialise if, for instance, the funding costs for financial institutions are lower than what the futures price in.

- In **Forward EFPs** a trader sells a future contract and enters into a long physical position with the same maturity. As futures curves are usually upward-sloping, these transactions have a positive spread. Just before maturity, the forward EFP is usually closed. These transactions tend to be popular with funds because they can generate income, but there is no need to store the physical metal.

Gold market tightness is rare, but does occur

Rising lease rates = falling gold forward swap rates

Forward and futures curves flatten and can flip into backwardation when the forward price of gold falls relative to the spot price. As noted, this is unusual, but it occurs.

So what are the causes of a flatter forward curve or even a backwardation? Usually, it is linked to physical shortages, i.e. strong demand for immediate physical delivery of gold. This can happen when markets are in stress, i.e. through financial crises or geopolitical events that increase demand for safe-haven physical gold. There are several examples of backwardation in the gold market:

- **2008 Global Financial Crisis**. The collapse of Lehman Brothers and liquidity shortages meant that traders were on the look-out for safe-haven assets. Yet, banks were reluctant to lend gold, and investors wanted immediate physical delivery on concerns about the health of financial instruments. As a result, gold lease rates spiked and GOFO fell sharply, eventually turning negative.

- **2013 gold market turbulence**. After gold had risen to US$1900/oz just a couple of years prior, prices fell below US$1300/oz in June 2013, prompting a sharp

increase of demand from Asian buyers. Seeking to capitalise on this demand, dealers started to draw on inventories in COMEX warehouses and recast the 100oz bars into LBMA specifications or kilobars popular with Asian retail investors. The lease rate then rose because the additional refining and fabrication pushed up gold borrowing.

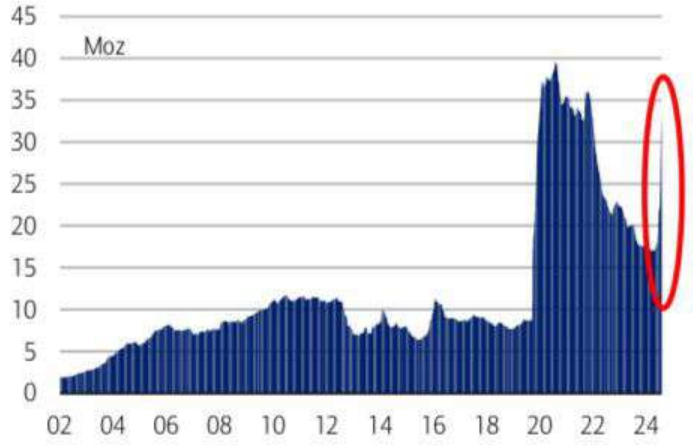
- **2020 COVID-19 pandemic**. COVID caused significant disruptions in gold logistics and supply chains; as refinery closures and restrictions on gold shipments created physical shortages. Futures curves flipped into backwardation as traders were willing to pay a "convenience yield", i.e. immediate delivery became more valuable than future contracts. CME and LBMA then sat together and eased contract specifications, which meant that for a period of time even LBMA's 400oz bars were accepted by CME, which helped to ease liquidity.

EFPs and lease rates have spiked again

As noted, spot and forward EFPs have been a popular strategy with banks and funds. When President Trump took office and discussions around the implementation of tariffs gathered steam, EFPs became an issue. Indeed, the physical spot leg and the lease rates were priced in London, but the futures leg was priced on CME in New York, whose contract trades inclusive of duties. This became an issue when the US administration floated the implementation of tariffs on Canada and Mexico, before announcing levies of 25% from 1st February (these have been suspended for now). In a first step, the futures repriced quickly, squeezing the short legs in the EFPs.

There were then concerns that trade restrictions would sustainably lift futures prices, while also making shipping gold into the US more expensive. Hence, banks started to send gold ounces to New York pre-emptively, with Exhibit 8 showing that inventories in CME warehouses have increased sharply in recent months. While this is not reflected in LBMA vaulting data yet (Exhibit 9; the last data point is November), this meant that the London market tightened materially. The result? Gold swap and lease rates spiked. Commenting on that, Ruth Crowell, chief executive of the London Bullion Market Association confirmed that "There are challenges when the US is operating at this kind of premium (e.g. on the futures market), but it is something that the market is managing well".

Exhibit 8: Gold inventories on CME
Gold inventories have spiked



Source: Bloomberg, BofA Global Research

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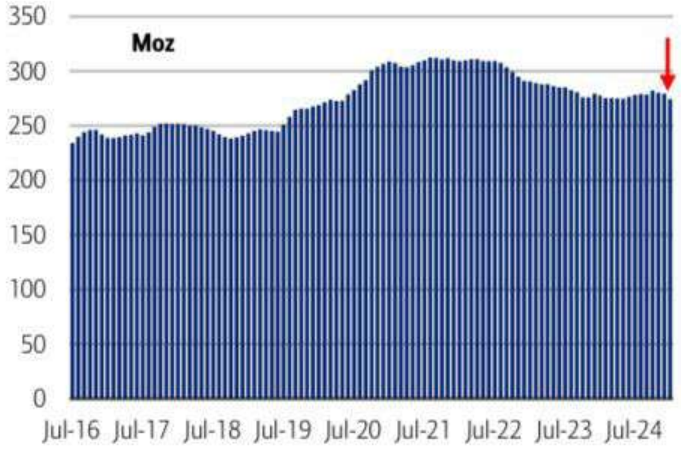
Exhibit 9: LBMA vault holdings
Vault holdings have fallen



Source: LBMA, Bloomberg, BofA Global Research

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We remain constructive gold

Macro remains supportive

We reiterate our constructive gold view with a $3,000/oz target, as the macro backdrop remains very constructive. Indeed, fiscal imbalances in the US and other countries make

the yellow metal an attractive asset to own for central banks. Persistent uncertainty over the policies of the US administration, alongside apprehension over trade disputes, also make gold attractive.

Interestingly, the gold market entertains sometimes "extremist" theories that are often hard to fully reconcile. To that point, for a long time, gold bugs have often thought that "Governments and banks have a vested interest in keeping gold prices low. High gold prices are often seen as a signal of weak confidence in fiat currencies. If gold were allowed to rise freely, it would expose the true extent of currency devaluation and the risks associated with excessive money printing". But then late last week, the FT ran a much-read story that the "unimaginable becomes imaginable" and there is speculation "about a revaluation of America's gold stocks. Currently, these are valued at just $42 an ounce in national accounts. But knowledgeable observers reckon that if these were marked at current values — $2,800 an ounce — this could inject $800bn into the Treasury General Account, via a repurchase agreement. That might reduce the need to issue quite so many Treasury bonds this year". On the second argument, not reprinted in full, we agree that the US fiscal picture is not the strongest and that has been key to our bullish gold call, but the argumentation of the transmission was very different, see Global Metals Weekly: Treasury frictions add to gold demand 24 June 2024 and Global Metals Weekly: Is gold a safer investment than Treasuries? 16 October 2024.

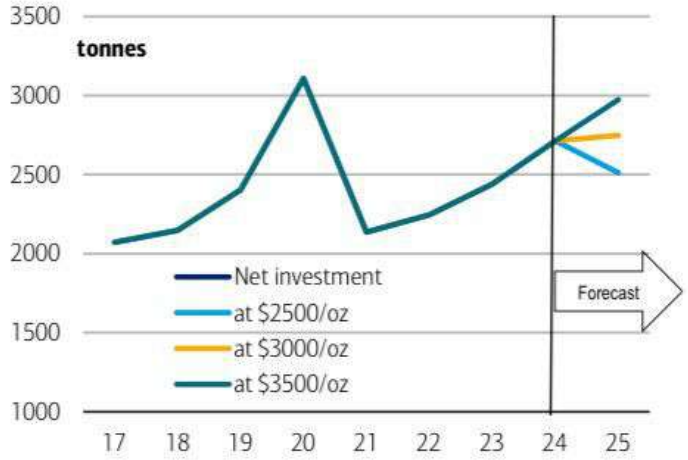
So while we are somewhat suspect of both theories above, we agree that the gold market is pricing in increased policy tensions. To pick just one, tariffs should at least initially put upwards pressure on USD (full currency view, see World at a Glance: Tariff talk 22 January 2025), but then, there is a view among US policymakers that USD is too strong anyway. Accompanying this, the call for a weaker USD is also discussed along with a push to rebalance external accounts: on balance, and all else equal, lower current account deficits are a drag on capital inflows, but there are calls for USD to retain its reserve status (with central banks de-dollarising into gold).

Gold investment demand +10% = gold at $3,500/oz

Looking into flows, Exhibit 10 shows our gold supply and demand model. We model gold on a series of assumptions, including **mine output**, **scrap supply** and gold **fabrication/jewellery demand**.

Exhibit 10: Gold investment demand required in 2025 to achieve different price levels

Gold investment demand needs to increase by 10% for gold to average £$3,500/oz



Source: World Gold Council, Bloomberg, BofA Global Research

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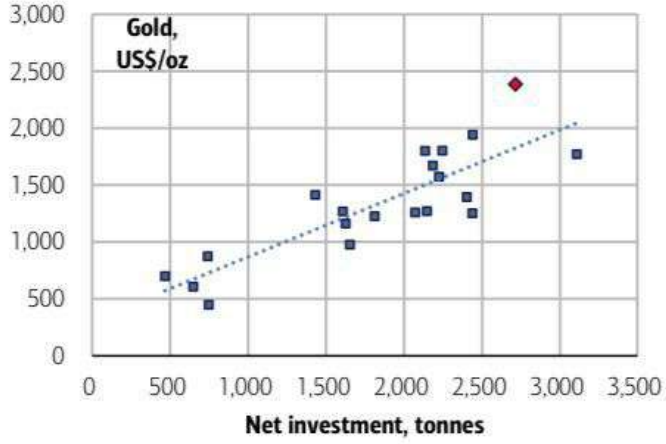
Exhibit 11: Gold investment demand and prices

An increase in gold investment demand has been accompanied by rising prices



Source: World Gold Council, Bloomberg, BofA Global Research

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Given that scrap and jewellery demand in particular are influenced by prices, it is difficult to estimate a definite market balance without also setting a price level. To get around

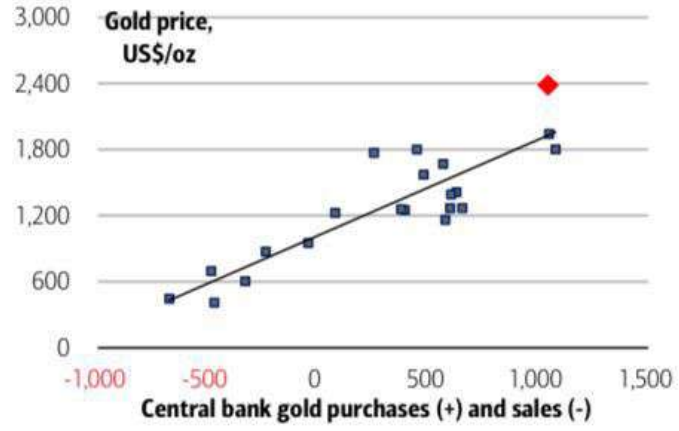
this problem, we ask how high investment demand, the marginal consumption driver, needs to be at different gold prices to balance the market. The bottom line: to get gold to an average of $3,000/oz this year, investment demand needs to increase by just 1%. For gold to hit $3,500/oz, investment demand needs to rise by 10%. That's a lot, but not impossible. Indeed, to pick just one supportive dynamic, China's Financial Supervision Administration has decided to launch a pilot program for insurance funds to invest in gold spot contracts, gold spot deferred delivery contracts, Shanghai gold centralized pricing contracts, gold price inquiry spot contracts, gold price inquiry swap contracts and gold leasing business listed or traded on the main board of the Shanghai Gold Exchange.

Our China insurance team estimates that China's insurers have invested a total of RMB32tn, or USD4.4tn, so in keeping with the pilot's outline (investment in gold shall not exceed 1% of the company's total assets at the end of the previous quarter), the potential inflows into gold could be in the region of RMB180-200bn, or USD25-28bn. Our colleagues also expect that companies will purchase gold actively and use their allowance within a year because insurers face declining investment returns in a low interest rate environment, while gold is regarded as a good long-term asset to hold. Putting concrete numbers behind this, the purchases could generate around 300 tonnes of gold purchases or 6.5% of the annual physical market. Hence, this initiative could go a long way in carrying over last year's support from physical investment.

Record gold demand last year

Indeed, the World Gold Council highlights in its gold demand trends for CY2024 that "Total gold demand (including OTC investment) rose 1% y/y in Q4 to reach a new quarterly high and contribute to a record annual total of 4,974t. Central banks continued to hoover up gold at an eye-watering pace: buying exceeded 1,000t for the third year in a row, accelerating sharply in Q4 to 333t (Exhibit 12). Annual investment reached a four-year high of 1,180t (+25%). Gold ETFs had a sizable impact: 2024 marked the first year since 2020 in which holdings were essentially unchanged, in contrast to the heavy outflows of the prior three years", see Exhibit 13.

Exhibit 12: Gold prices and central bank purchases
The gold price rally has been accompanied by rising central bank gold purchases



Source: World Gold Council, Bloomberg, BofA Global Research

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Exhibit 13: Breakdown of investment demand
Central banks remain key gold market participants

Source: World Gold Council, Bloomberg, BofA Global Research

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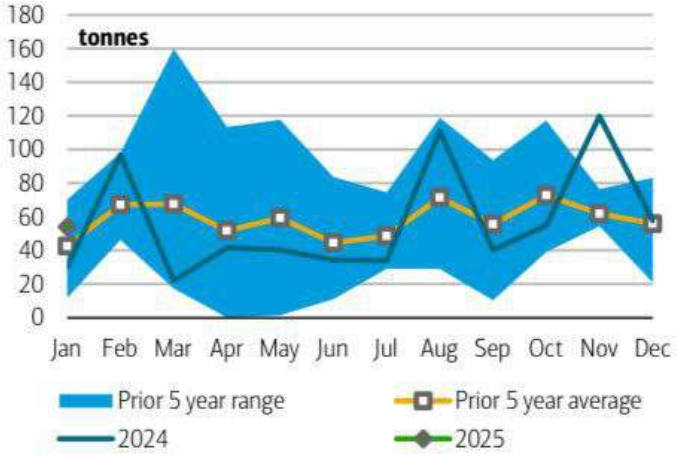
Looking closer into investment demand, the World Gold Council estimates it to have grown by "25%, the strongest annual growth rate since 2020. This was concentrated in the second half of the year as rate cuts, geopolitical uncertainty and gold's price performance attracted inflows into gold ETFs. Bar and coin demand was unchanged at 1,186t, while the value of this investment surged 23% to a record US$91bn. OTC investment held firm throughout much of the year. This category, as well as being a statistical residual from the balance of other categories of demand and supply, captures flows in the over-the-counter market, which has been increasingly reflective of demand

from HNW investors seeking to hedge geopolitical and economic risks. The recent price performance has added fuel to these flows".

Exhibit 14: India, gold imports
India's gold purchases have held up



Source: Bloomberg, Bloomberg, BofA Global Research

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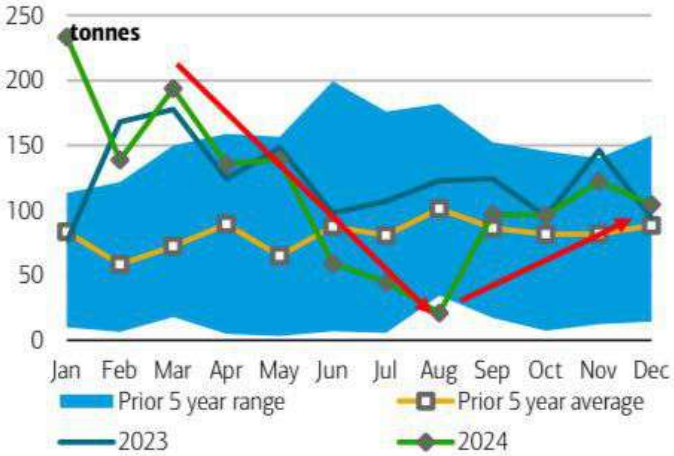
Exhibit 15: China, gold imports
China's gold imports bottomed out last summer



Source: Bloomberg, Bloomberg, BofA Global Research

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The World Gold Council also notes some resilience in jewelry demand. Speaking to India, traditionally one of the largest physical markets and where buyers are often price-sensitive, the survey outlines that "The fact that annual demand only shrank by 2% during a year in which the gold price reached multiple record highs is testament to the resilience of gold jewellery demand [...], highlighting both the strength of the response to the July duty cut and the country's relatively healthy economic growth. [...] Demand reached exceptional values in 2024: annual demand was valued at INR3.6tn with around 70% of that occurring in the second half of the year. Demand in the fourth quarter was concentrated between late October – peak Diwali festival-buying season – and November, when the gold price saw a notable correction coinciding with the onset of the wedding season".