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The cover of *GFMS Gold Survey 2014* features Japan's Fujiyama covered with Gold Grain and Switzerland's Matterhorn covered with Valcambi CombiBars and on the back cover a 1 ounce round Valcambi minted Gold bar and a 50 gramme minted Tanaka Gold bar.

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# GFMS GOLD SURVEY 2014

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## FORTHCOMING PUBLICATIONS

- |  |                           |
|--|---------------------------|
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| • GFMS GOLD SURVEY 2014 - UPDATE 1:      | September 2014            |
| • GFMS COPPER SURVEY 2014 - UPDATE:      | October 2014              |
| • GFMS GOLD SURVEY 2014 - UPDATE 2:      | January 2015              |

## ACKNOWLEDGEMENTS

The estimates shown in *GFMS Gold Survey* for the main components of mine production, scrap, fabrication and investment demand are calculated on the basis of a detailed supply/demand analysis for each of the markets listed in the main tables. In the vast majority of cases, the information used in these analyses has been derived from visits to the countries concerned and discussions with local traders, producers, refiners, fabricators and central bankers. Although we also make use of public domain data where this is relevant, it is the information provided by our contacts which ultimately makes *GFMS Gold Survey* unique. We are grateful to all of them.

# NOTES

## UNITS USED

<b>troy ounce (oz) =</b>	31.1035 grammes
<b>tonne =</b>	1 metric tonne, 32,151 troy ounces
<b>carat =</b>	gold purity in parts per 24

- Unless otherwise stated, US dollar prices and their equivalents are for the PM fix of the London Bullion Market.
- Unless otherwise stated, all statistics on gold supply and demand are expressed in terms of fine gold content.
- Throughout the tables, totals may not add due to independent rounding.

## TERMINOLOGY

<b>“-”</b>	Not available or not applicable.
<b>“0.0”</b>	Zero or less than 0.05.
<b>“dollar”, “\$”</b>	US dollar unless otherwise stated.
<b>“Identifiable Investment”</b>	The sum of physical bar investment and all coin fabrication, plus the net change in Exchange Traded Fund (ETF) holdings.
<b>“Jewellery Consumption”</b>	Fine gold content of all <i>new</i> jewellery (i.e. does not include exchanged or second-hand pieces) sold at the retail level. It is calculated as being equal to jewellery fabrication, plus imports less exports (i.e. the net inflow of jewellery). An adjustment is also made for retail stock movements.
<b>“Physical Surplus/ Deficit”</b>	The difference between the supply of new and secondary gold to the market in a calendar year and measurable demand for physical gold. This excludes opaque Over the Counter (OTC) investment in gold and commercial bank transactions.
<b>“Net Balance”</b>	The physical surplus or deficit of gold with the addition of highly visible ETF and exchange stock inventory changes.
<b>“Retail Investment”</b>	Identifiable net investment in physical gold in bar and coin form. The bars may or may not conform to ‘London Good Delivery’ status but will be in a form that is commonly traded in the country of origin. Coins include all official and unofficial coins and medallions, with and without a face value.

# 1. SUMMARY AND PRICE OUTLOOK

The 29% intra-year price drop, spurred by an exodus of institutional investment, saw physical demand for gold reach new all-time highs at 4,957 tonnes, an increase of 15% year-on-year and some 703 tonnes higher than the supply of new and scrap gold to the market in 2013.

The year was characterised by two major changes in sentiment that will impact upon the gold price for years to come. The first was a move by institutional investors out of non-yielding asset classes as equity markets reached new highs and the possibility of an end to quantitative easing saw treasury yields recover. This investor flight saw ETF holdings peak on 1st January 2013 at 2,698 tonnes before falling by 880 tonnes over the course of the year, the first decline since their establishment in 2003. It also helped cause a series of sharp downward moves in the gold price that elicited the second major change in sentiment – a resurgence of retail demand.

When it comes to the price sensitive markets of China, India, South East Asia, Turkey and the Middle East, buying shot higher in the second quarter of 2013 and

remained strong over the northern hemisphere summer. Demand was in the form of high carat jewellery, for both investment and adornment purposes, and also physical bar and coin investment. Indeed, purchasing gold bars as an investment increased by 45% in China to 360 tonnes over 2013 as the metal increasingly solidifies its position as both a key saving tool and a financial instability hedge in East Asian markets.

The rise of Eastern demand and the withdrawal of Western institutional investors also witnessed a large increase in the amount of bullion shipped around the world, up by 25% in value terms to a new record of \$234 bn. This voracious appetite saw gold futures pushed into a small backwardation in the latter part of 2013 as China snapped up all the material that the western investment fraternity could throw at it. The amount of satisfied demand was only constrained by refinery capacity as London Good Delivery Bars (large bars of ~400 ounces) were re-refined into smaller retail investment products. This caused lead times to expand and also meant 2013 was characterised by spikes in physical premia in many markets.

## WORLD GOLD SUPPLY AND DEMAND

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Supply</b>										
Mine production	2,504	2,561	2,496	2,499	2,430	2,613	2,741	2,839	2,861	3,022
Scrap	881	902	1,132	1,005	1,350	1,726	1,711	1,659	1,634	1,280
Net Hedging Supply	-438	-92	-434	-432	-357	-234	-106	11	-40	-48
<b>Total Supply</b>	<b>2,948</b>	<b>3,371</b>	<b>3,194</b>	<b>3,071</b>	<b>3,424</b>	<b>4,104</b>	<b>4,346</b>	<b>4,509</b>	<b>4,455</b>	<b>4,254</b>
<b>Demand</b>										
Jewellery	2,619	2,721	2,302	2,425	2,306	1,817	2,034	2,029	1,998	2,361
Industrial Fabrication	418	440	471	477	464	414	469	458	415	409
...of which Electronics	266	286	316	322	311	275	326	320	284	279
...of which Dental & Medical	68	62	61	58	56	53	48	43	39	36
...of which Other Industrial	85	92	95	98	97	87	95	95	92	93
Net Official Sector	-479	-663	-365	-484	-235	-34	77	457	544	409
Retail Investment	361	412	427	442	915	825	1,229	1,569	1,357	1,778
...of which Bars	215	263	238	238	654	536	935	1,242	1,036	1,377
...of which Coins	146	148	189	204	261	289	295	327	321	401
<b>Physical Demand</b>	<b>2,920</b>	<b>2,909</b>	<b>2,835</b>	<b>2,861</b>	<b>3,450</b>	<b>3,023</b>	<b>3,809</b>	<b>4,512</b>	<b>4,315</b>	<b>4,957</b>
<b>Physical Surplus/Deficit</b>	<b>28</b>	<b>462</b>	<b>359</b>	<b>210</b>	<b>-26</b>	<b>1,081</b>	<b>536</b>	<b>-3</b>	<b>140</b>	<b>-703</b>
ETF Inventory Build	133	208	260	253	321	623	382	185	279	-880
Exchange Inventory Build	83	29	32	-10	34	39	54	-6	-10	-99
<b>Net Balance</b>	<b>-188</b>	<b>225</b>	<b>67</b>	<b>-33</b>	<b>-381</b>	<b>418</b>	<b>100</b>	<b>-182</b>	<b>-129</b>	<b>277</b>
<b>Gold Price (London PM, US\$/oz)</b>	<b>409.17</b>	<b>444.45</b>	<b>603.77</b>	<b>695.39</b>	<b>871.96</b>	<b>972.35</b>	<b>1,224.52</b>	<b>1,571.52</b>	<b>1,668.98</b>	<b>1,411.23</b>

Source: GFMS, Thomson Reuters

Totals may not add due to independent rounding. Net producer hedging is the change in the physical market impact of mining companies' gold loans, forwards and options positions.



## GOLD SURVEY 2014: SUPPLY-DEMAND METHODOLOGY

Physical surpluses and deficits in the gold market are less relevant than those in the industrial metals, owing to the level of above ground gold stocks available to the market. We calculate that at end-2013 stocks were close to 35 years of current consumption levels. Over 35% of this abundance of above-ground stock (see Chapter 4) is held by central banks and private investors and can often be lent by those entities into the market. This of course is backed up by the amount of “investment-grade jewellery” or investment products, held in private hands, which can also return to the market with speed in times of price extremes, or indeed, financial distress. This ample liquidity (most of the time) is why, like most currencies, gold usually trades at full carry.

It is useful, however, to consider the supply of gold to the market and the changing features of demand for physical gold that make up our supply and demand balance to the level of physical surplus and deficit. The existence of large volumes of Over the Counter (OTC) trade and near-to-market inventory means that the physical surplus or deficit in the market may not directly impact the price. It will, however, impact upon lead times, premia and margins across the value chain. The addition of a physical surplus / deficit in this year’s GFMS Gold Survey allows us to remove the previous residual balancing line item of net-implied investment / net-implied disinvestment.

OTC trade can have a large impact upon the gold market and in 2013 volumes of gold transferred, as reported by London Bullion Market Association clearing members, totalled approximately 171,000 tonnes, with a value of \$7.8 trillion. Even this figure does not represent the total value of gold transactions that happen globally. As a rule of thumb, the net transfers are roughly one-third of the total loco London market volume, which in turn is approximately 90% of the total going through the market. In 2013, therefore, total volume was of the order of 570,000 tonnes with a value of approximately \$26 trillion; this is equivalent to approximately 189 times 2013 gold mine production. So while, by comparison with the bond market, the gold market is very small, it is deep and highly liquid.

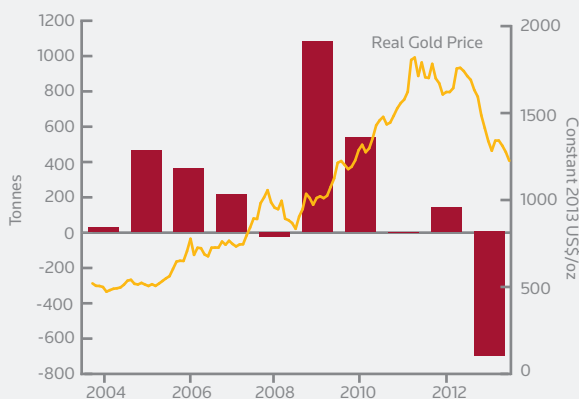
Changes in known stock levels are also included in the supply-demand balance in order to account for the highly visible moves in Exchange Traded Fund (ETF) holdings and published inventory changes at gold futures

exchanges. It is important to note that the resulting Net Balance does not include changes in OTC investment or dis-investment, our assessment of which is given on page 26. Changes in ETF holdings are a helpful guide to investment trends in gold, but ultimately only make up a small part of the market.

Thomson Reuters’ supply and demand data are collected and collated by our team of research analysts based in Australia, China, Europe, India and the USA within an extensive field research programme which involves interviewing stakeholders across the supply chain in every market and utilising the unique data sets available to us after researching the market continuously since 1967. In order to build up a picture of supply and demand in the gold market Thomson Reuters maintains individual demand databases for over 90 countries globally and for over 110 countries on the supply-side. Via primary research analysts collect information on jewellery fabrication and consumption; coin fabrication and sales; bar investment; industrial; electronic and medical uses; scrap entering the market and the proportion of this that is used to manufacture jewellery (in order to calculate jewellery’s net-pull on the gold market). Information is also collated on a mine-by-mine basis in order to model gold production at over 800 mines and projects. In addition to this, on a global basis, Thomson Reuters also collects net central bank sales and purchases information and collates producer hedging and de-hedging data.

All of this information, including mine cost profiles, analysts’ “views from the field”, disaggregated supply and demand data back to 2000, as well as base case and two alternative scenarios underpin price forecasts for one, three and ten year periods and are now available on Thomson Reuters Eikon.

### PHYSICAL SURPLUS / DEFICIT OF GOLD



Source: GFMS, Thomson Reuters

## SUPPLY IN 2013

- **Mine production increased by 6% last year to post a record high of 3,022 tonnes.**
- **All-in Costs rose 27% to \$1,620/oz, owing to impairment charges in the non-cash component of All-in Costs. Excluding writedowns, All-in Costs averaged \$1,205/oz.**
- **Global scrap supply slumped 22% in 2013 to a six-year low of 1,280 tonnes, chiefly as a result of a sizeable drop in the dollar gold price.**

Global **mine production** posted strong growth in 2013, increasing by almost 6% year-on-year to a new all time high of 3,022 tonnes. Eight countries posted gains of over ten tonnes, with increases in China, Canada and the Dominican Republic each greater than 20 tonnes last year. Major additions from projects entering production or ramping up operations included Pueblo Viejo (Dominican Republic), Bissa-Zandkom (Burkina Faso), Martabe (Indonesia), Detour Lake (Canada) and Tucano-Amapari (Brazil) adding more than five tonnes apiece. The outcome of such a robust gain may seem surprising in the face of the sharp falls in the gold price through the year. However, the delivery of projects in, or close to, their commissioning phase has progressed. It has been a common theme for producers, where flexibility has allowed, to maximise throughput rates, optimise processing plants in pursuit of improved recovery rates, and in a handful of cases increase processed grades in attempts to reduce unit costs, with only a small number of assets marked for closure.

This clear agenda of asset optimisation by producers to counter escalating costs and preserve margins under the lower pricing environment developed in the middle of the year. This has seen capital project budgets, exploration

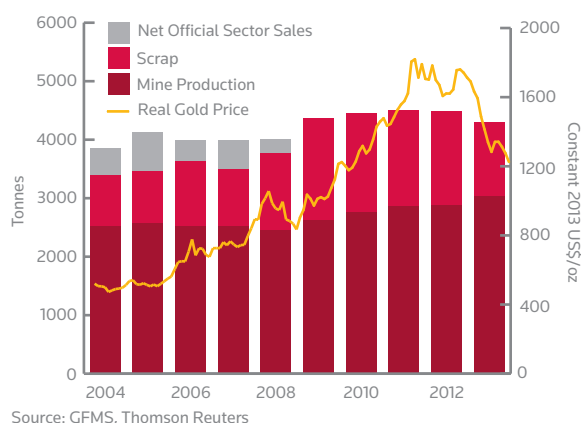
plans and head office costs drastically reined in. Coupled with many producers' currencies having declined against the dollar, this led to global average Total Cash Costs remaining essentially flat in 2013, at \$767/oz.

Projects in the construction phase and earlier have been deferred and projects and operating mines alike have seen asset carrying values impaired in recognition of lower commodity prices, a theme that weighed heavily across the industry. Largely as a consequence of these accounting adjustments, which added an estimated \$414/oz last year, average global All-in Costs expanded by over a quarter to \$1,620/oz.

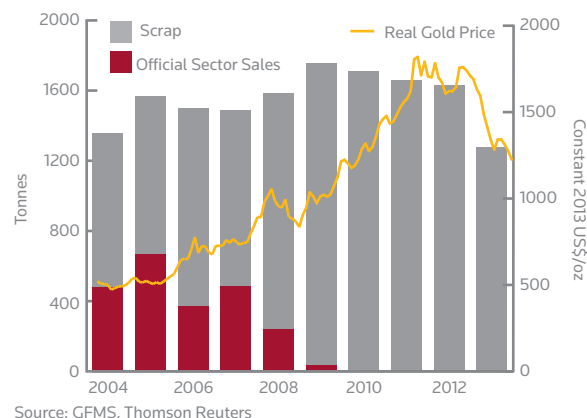
Last year global **scrap** supply declined for the fourth year in succession, slumping 22% year-on-year to an estimated 1,280 tonnes, a level last seen in 2007. Last year's 15% drop in the average annual dollar gold price was the chief architect for the fall with all major regions registering sizeable declines. In the developing world scrap supply slipped 17% in 2013, as sizeable falls across much of East Asia and the Middle East were partially offset by China (which recorded the only increase globally) and a modest 11% drop in Indian recycling (following the prior year's 93% increase). In India, a 45% slump in the first half was followed by a strong recovery in the final six months of the year as a weaker rupee pushed gold in domestic terms to record levels.

Turning to the industrialised world, supply was weaker across the board with price, not surprisingly, the main culprit though an improving economic environment also limited liquidations. Scrap supply from North America declined by 24% last year while recycling in Europe is estimated have fallen by 29% year-on-year. There were also continued closures of "cash for gold" business that had built up post financial crisis in both markets.

## WORLD GOLD SUPPLY



## SUPPLY FROM ABOVE-GROUND STOCKS



## DEMAND IN 2013

- *Total physical demand rose by 15% last year, as higher jewellery offtake and retail investment countered the drop in industrial demand and was bolstered by net official sector buying.*
- *Jewellery demand grew by a notable 18% in 2013, to a six-year high of 2,361 tonnes, boosted by the lower gold price environment.*
- *Industrial fabrication fell by a modest 2%, due to continued thrifting in the electronics sector.*
- *Physical bar investment jumped by 33% to a fresh record of 1,377 tonnes, driven by a surge in demand in key Asian markets, in particular China and India.*
- *Official coin fabrication posted strong growth, reaching a record high of 297 tonnes. By contrast, medals and imitation coin demand declined, led by weaker demand in India.*
- *Net official sector purchases fell 25% year-on-year, although they remained elevated by historical standards.*
- *Producer de-hedging generated 48 tonnes of net demand.*

Total fabrication in 2013 rose by 16%, chiefly thanks to strong growth in **jewellery demand**, which saw an 18% year-on-year increase. When **excluding scrap**, the increase for full year global demand was more robust at 34%, reflecting a surge in demand and a notable fall in scrap supply. Last year's strong outcome should not come as a great surprise given the significant drop in the average gold price, which boosted demand for jewellery in many key consuming markets.

Jewellery fabrication in East Asia rose by an impressive 40%, led by strong gains in China, where production soared by 46%, to a new record high of 871 tonnes,

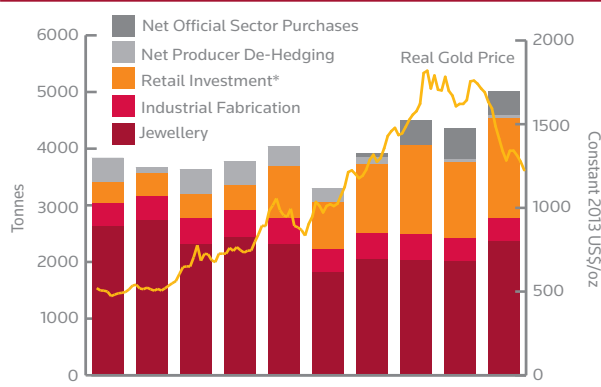
surpassing India to become the world's largest jewellery manufacturer.

Gains were widespread in the Middle East, where most countries in the region posted strong growth in response to lower gold prices. Jewellery fabrication in Turkey, for instance, saw the largest percentage increase, of 18%, since the 2008/09 financial crisis, with the price fall singled out as the chief driver. By sharp contrast, Indian jewellery fabrication fell by 2% last year, as a result of government policies that created supply constraints, further undermined by record high prices in rupee terms.

The lower price environment along with improving economic conditions pushed US jewellery fabrication up by 14%, to a three-year high of 61 tonnes. Turning to Europe, last year saw a near 4% rise. However, it is important to note that we have amended our regional definition, which now includes Turkey and Russia, both of which saw robust demand in 2013. Excluding these two countries from the regional total reveals that jewellery production fell by 3%. This was due to the continued structural weakness in key European economies, which countered price-led gains in other countries.

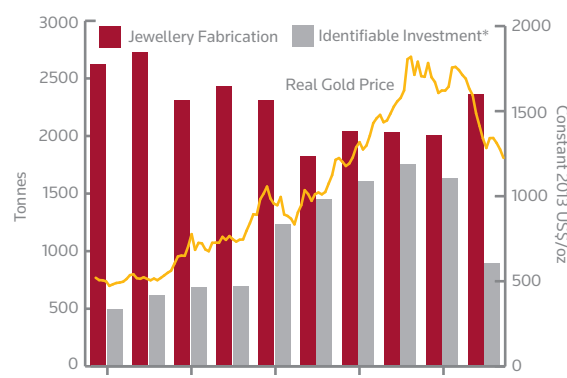
Industrial fabrication fell by 2% in 2013, as losses in electronics and dental offtake outweighed a modest recovery in other industrial & decorative demand. Despite an improved economic backdrop, gold used in **electronic applications** slipped 2% last year, due to the continued decline in fine gold used for the production of bonding wires, primarily as a result of substitution losses to copper. Similarly, **dental and medical** demand continued its substitution-led slide, falling by 6% to its lowest level of 36 tonnes in 2013. **Other industrial & decorative** demand, however, was marginally higher last year, driven by a price-led recovery in China and India.

## WORLD GOLD DEMAND



\* Retail Investment refers to physical bar and coin investment

## JEWELLERY FABRICATION AND IDENTIFIABLE INVESTMENT



\*Identifiable Investment is the sum of physical bar investment, official coins, medals & imitation coins and net ETF inventory build.

Investment demand remained weak last year. Total Identifiable Investment, which includes physical bar investment, all coins and ETF inventory build, fell by 45% to just below 900 tonnes, its lowest level in six years. The 29% drop in the gold price (on an intra-year basis) led to an even more material decline in investment demand in value terms, from \$88 billion in 2012 to \$41 billion last year.

Key to this lacklustre investment demand was investors' increasingly bearish sentiment towards gold, following weak price performance in late 2012, and growing expectations of the Fed's QE-tapering. An improving economic outlook in the second half of 2013 and the shift in US monetary policy from its highly accommodative stance towards tapering, and a gradual normalisation of policy, continued to weigh on investor sentiment for the remainder of the year.

Looking at different components of Identifiable Investment, retail investment in bars and coins jumped by 31% last year. This was largely due to strong growth in **physical bar investment**, which rose by 33% year-on-year, to the highest level since our records began.

**Official coin** minting posted a 43% increase, also taking global offtake to a fresh record last year, thanks to strong gains in Turkey and other countries in light of the dramatic price decline. Demand for **medals & imitation coins**, however, was down 8% year-on-year, although last year's offtake, at 104 tonnes, remained high by historical standards.

In stark contrast, last year marked the first year of negative outflows from **ETFs** since the launch of the first major gold ETF in 2003 and their subsequent expansion as a way to invest in gold. Twelve consecutive months of selling pushed combined holdings down by 880 tonnes, to 1,811 tonnes by year-end, a level last seen

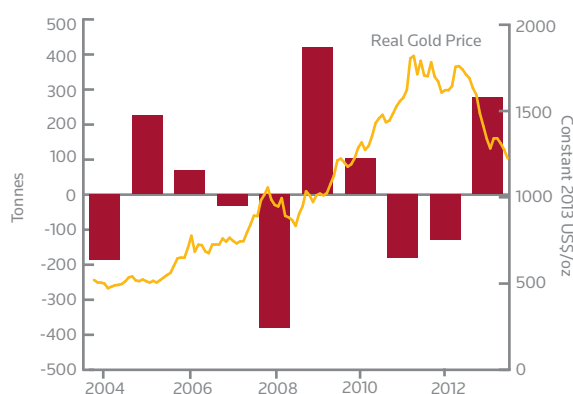
in October 2009. Last year was also characterised by aggressive selling in the futures market, particularly in the first half of the year, while the OTC market saw substantial net inflows in 2013 as a whole, boosted by lower prices.

Net **official sector** purchases fell by a quarter in 2013. However, at 409 tonnes this still represents an elevated level compared to historic norms and was largely unaffected by the price slump. Critical to the sustained high volume of purchases was acquisitions by Asian and CIS countries, with Russia being the largest reported acquirer again last year at 77 tonnes.

Underpinning much of this central bank buying is a continued desire to diversify emerging economies growing foreign exchange reserves. This is combined with the fact that gold reserves in these economies are usually only a fraction of the typical percentage in advanced economies. Meanwhile, the high net purchase figure was supported for the third successive year by a dearth of major sales from signatories to the Central Bank Gold Agreement (CBGA). In early 2014, the possibility of an end to the CBGA is engaging many market participants.

**Producer de-hedging** amounted to 48 tonnes last year, a reduction to the outstanding hedge book of some 39% versus the position at end-2012. In spite of the dramatic falls in the gold price, few companies moved to hedge production, and in some cases the price fall elicited the opportunistic removal of what had been burdensome hedge cover, in some cases for a net gain. In general, investors remain opposed to primary gold producers hedging production.

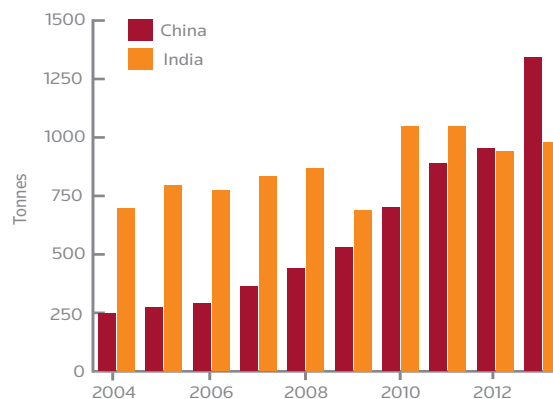
#### NET BALANCE\*



Source: GFMS, Thomson Reuters

\*Net balance is the residual surplus/deficit after ETF and Exchange inventory changes have been netted against physical market balance

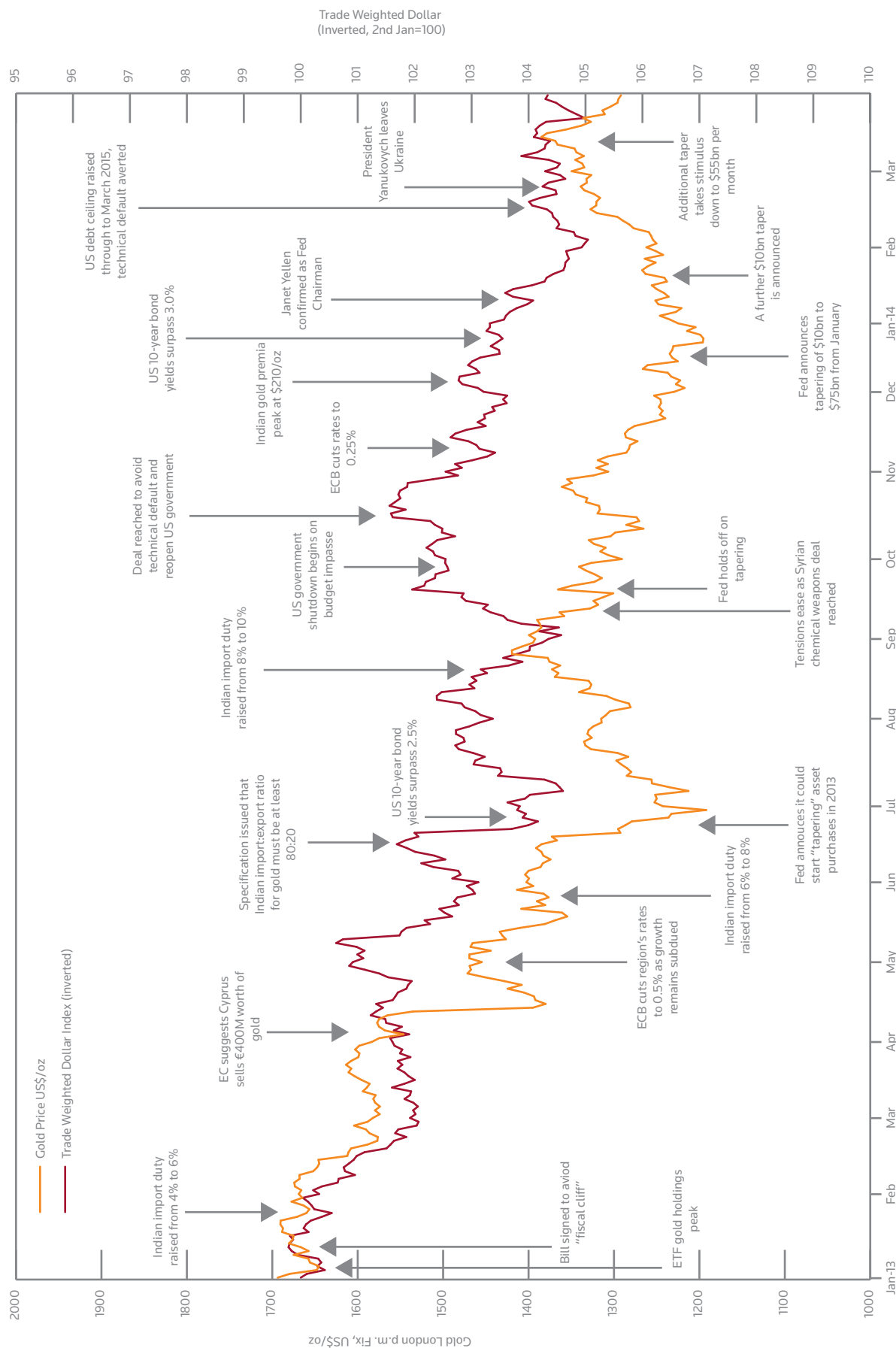
#### CHINA SURPASSES INDIA AS WORLD'S LARGEST CONSUMER



Source: GFMS, Thomson Reuters

\*Demand consists of jewellery fabrication, industrial fabrication and retail investment

## GOLD PRICE &amp; TRADE-WEIGHTED DOLLAR (INVERTED) - DAILY



Source: GFMS, Thomson Reuters

## PRICE OUTLOOK

In the first quarter of 2014 a gold price rally was driven by some weak US economic data releases coupled with a rise in safe-haven buying as emerging market risk increased and several currencies depreciated sharply. These price developments have largely been business-as-usual with gold's core price drivers little changed since the beginning of the global financial crisis.

Following this narrative, consensus opinion would have the gold price declining over the coming months and years. Driven by a continued economic recovery that would see tapering of the Federal Reserve's massive quantitative easing program continue, increases in US treasury yields and equity markets and a stronger dollar, all of which are negative for gold, or make the metal look less attractive as an asset class. This has seen some forecasters predict that, based upon recent correlations, gold will fall below \$1,000/oz for a sustained period.

Gold rarely sticks to the script for long, however, and our base case view is that as western investor support continues to fall away from gold physical buying will see prices supported. The flight to gold as a safe-haven asset over the past five years led to significant amounts of physical demand destruction and, as we saw in Q2 2013, demand from much of the world is highly price elastic.

The lessons of 2013 tell us that there are major increases in investment-grade jewellery demand, coin and bar purchases around the \$1,200/oz level. What remains to be seen is whether this was a one-off surge of pent-up demand and pipeline stock build in China, or if these levels of demand (which led to temporary physical shortages of gold as revealed by record local premia and gold moving into a small backwardation) are sustainable.

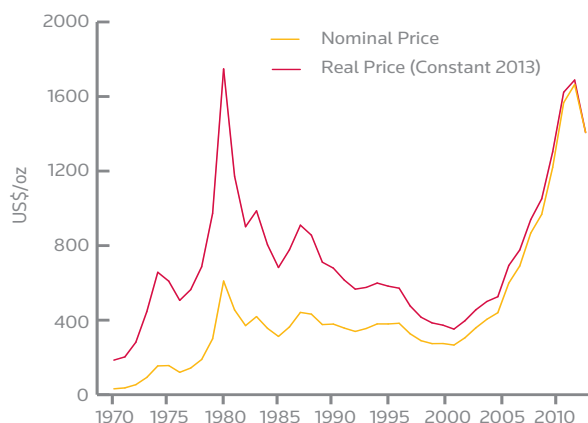
Assuming physical demand does support prices then we would expect a trading range in the \$1,100-1,400/oz region. The first quarter of 2014 has already shown that physical demand currently drops off above \$1,300/oz, although this is somewhat distorted by the weakening of several emerging market currencies in early 2014 and by Indian import restrictions. The market is yet to adjust to physical demand as a key driver, however, and this could still lead gold to overshoot on the downside.

Weighing up all the factors impacting upon the market then 2014 looks set to be a second year of price decline for gold, and we continue to forecast an annual average of \$1,225/oz. Indeed, it would need a substantial shock to world markets for gold to see a strong return toward the price levels of 2011 and 2012. This would either imply a substantial flight to gold as a safe-haven asset or the undermining of confidence in the US dollar. While we cannot write off political and economic shocks to the global economy it seems the dollar has already weathered its most pressing test in the debt ceiling crisis.

There are two other supports for the gold price that are worth mentioning. First is Indian demand, which has been undermined by a series of tax rises and import restrictions imposed in order to help control the country's current account deficit and to support the rupee. There is evidence that imports are beginning to increase again. Local premia are falling and it is reasonable to expect strong buying support on any rupee denominated price dips (see chart).

The second, more psychological, support is from average primary gold production costs, which, excluding impairment charges, we estimate at \$1,205/oz in 2013. While there is ample above-ground stock in the gold market the incentive to liquidate holdings is still reduced should new supply to the market be uneconomical.

### REAL AND NOMINAL GOLD PRICES



### INDEX OF GOLD PRICE IN MAJOR CURRENCIES





## 2. INVESTMENT

- **Total Identifiable Investment, which includes physical bar investment, all coins and ETF inventory build, fell by 45% in 2013 to a six-year low of 898 tonnes.**
- **In indicative value terms, the decline was even more material, with an approximate fall of 54% to an estimated \$41 billion.**
- **Central to this hefty decline in Identifiable Investment was substantial ETF selling throughout the year, particularly in the second quarter, which saw the largest quarterly redemption of over 400 tonnes since the launch of the first gold ETF. While the pace of outflows moderated in the second half, selling continued for the rest of the year, with total outflows amounting to 880 tonnes. This saw combined holdings fall to 1,811 tonnes by end-December, a level last recorded in October 2009.**
- **In sharp contrast to most other areas of investment, retail purchases of bars and coins rose strongly in 2013, chiefly thanks to a 33% increase in physical bar investment, driven by a buoyant demand in emerging markets in response to the sharp price corrections in the first half of the year. Global bar investment surged to 1,377 tonnes, the highest level since our records began.**
- **Official coin demand saw 43% growth last year, to reach a record-high of 297 tonnes, as opportunistic buying activity surged in the wake of the two price declines in mid-April and June 2013.**
- **Medals and imitation coin demand declined by 8% to 104 tonnes, led by weaker offtake in India. The 2013 figure was still very high by historical standards.**
- **The OTC market saw substantial net inflows in 2013 as a whole, helped in large part by lower gold prices. In**

**contrast, investors were net sellers in the futures market in 2013, mainly as a result of hefty long liquidation and a rapid expansion in short positions in the first half of the year.**

- **The first quarter of 2014 saw a rebound in investor interest, in part due to escalating geopolitical tensions in Ukraine and renewed concerns about global economic weakness, which sent the gold price (on a pm fixing basis) to a near six-month high of \$1,385.00/oz in March.**

### OVERVIEW

The bear trend of the fourth quarter of 2012 accelerated in 2013, resulting in a 29% loss in gold's dollar price in the course of the year. The major negative element in the market, which remained key to market sentiment throughout the whole year, was the outlook for monetary policy in the United States. The better-than-expected economic recovery prompted fears that the US Federal Reserve would become more hawkish and move away from a highly accommodative stance towards tapering and a gradual normalisation of policy. The gold price came under pressure a number of times in 2013, with sharp price corrections seen in mid-April and June, each triggered by government policy.

The market was characterised by disinvestment from the Exchange Traded Funds and hefty selling in the futures market. ETF investors redeemed 880 tonnes over the twelve-month period, marking the first year of negative outflows since the launch of the first gold ETF in 2003. Non-commercial and non-reportable net positions in COMEX futures at end-year were down by nearly 485 tonnes from the end-2012 figure. In stark contrast, physical bar investment surged to its record high level, driven by an explosion of demand, particularly in China and India in the first half of the year.

#### IDENTIFIABLE INVESTMENT\*

(tonnes)	2009	2010	2011	2012	2013
Retail Investment	825	1,229	1,569	1,357	1,778
of which Bars	536	935	1,242	1,036	1,377
of which Coins**	289	295	327	321	401
ETF Inventory Build	623	382	185	279	-880
<b>Total Identifiable Investment</b>	<b>1,448</b>	<b>1,611</b>	<b>1,754</b>	<b>1,636</b>	<b>898</b>
<b>Indicative Value US\$ (bn)***</b>	<b>45</b>	<b>63</b>	<b>89</b>	<b>88</b>	<b>41</b>

\*Excludes investment activity in the futures and OTC markets.

\*\*Official Coins and Medals & Imitation Coins.

\*\*\*Indicative value calculated on an annual basis using annual average gold prices.

Source: GFMS, Thomson Reuters

After a fairly weak start to the year, gold continued its bear market for the remainder of the first quarter, apart from a brief uptick in early March. Investors became increasingly cautious towards gold, after a period of disappointing price performance in the latter parts of 2012. The fact that gold failed to rally in December, when US debt-ceiling negotiations escalated, helped to inform negative market sentiment. In addition, growing disagreements in the Federal Open Market Committee (FOMC) about the effectiveness of quantitative easing and over how and when to implement the withdrawal raised fears that the Fed was becoming more hawkish, putting additional pressure on gold. This was mostly felt in the previously booming ETF arena, with holdings of these products falling by over 175 tonnes in the first three months of 2013, marking the biggest quarterly decline at that time. Over the same period, net investor positions in COMEX futures were down by nearly 95 tonnes.

Gold's bear trend accelerated in the second quarter, after the price dropped by 9% to \$1,395/oz on the 15th April (the lowest level since February 2011), representing the biggest one-day percentage drop in more than 30 years. The sharp drop in the gold price came after the European Commission suggested that the central bank of Cyprus should sell €400 million of its official gold reserves to help finance part of its bailout. This news raised fears that a central bank's independence from political influence was coming under threat, triggering heavy selling and pushing the gold price to its lowest level in more than two years. The improving economic outlook in the United States and a comment from a member of the FOMC that QE-tapering could start earlier than expected certainly added to a negative investor attitude.

The yellow metal suffered another sharp correction in mid-June as comments from Dr. Bernanke, following the FOMC meeting then, signalled that tapering could begin in September and be concluded during 2014. This

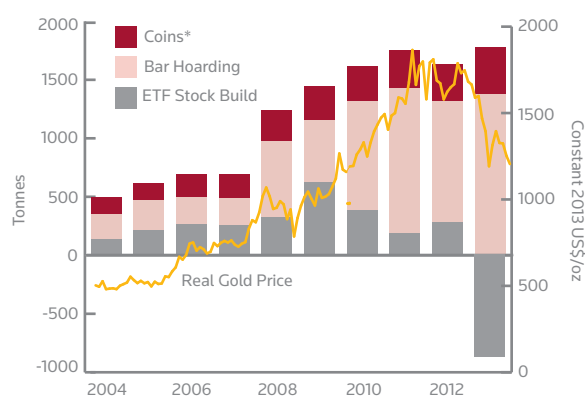
took the gold price from approximately \$1,390/oz at the middle of the month to an intra-day low of \$1,181/oz by end-June, a level last seen in August 2010.

Improving sentiment towards the US economy, supported by upbeat employment data, contributed to a rise in the US dollar and equities, luring investors away from safe haven assets. This waning of demand was especially evident in the attrition in the gold ETFs. After redemptions of 177 tonnes in the first three months of 2013, the pace of sales accelerated in the second quarter, to reach approximately 400 tonnes. Total holdings of these products, at 2,112 tonnes at end-June, were at their lowest level since June 2010.

The return of risk appetite in the markets and an associated rebound in the US dollar significantly reduced the level of speculative interest in gold - as evidenced by the mood change and a shift in investors' positions on COMEX. In the April to June period, net speculative positions were down by nearly 385 tonnes, to its lowest since August 2002. The move was primarily driven by a large increase in short positions, accompanied by a much smaller degree of long liquidation. The short-side component of the speculative gold position reached a record of 524 tonnes by end-June, an increase of over 220 tonnes in three months and a rise of 288 tonnes since the start of the year. The long-side speculative position was at 634 tonnes at end-June, a decline of 161 tonnes over the three-month period.

While some professional investors turned away from gold, there was good support at the retail level. World bar investment reached a record of nearly 850 tonnes in the first six months of 2013, an increase of 68% from a year earlier, with the bulk of gains concentrated in the April to June period. The price drop in the second quarter saw investment demand explode in the majority of gold-buying regions, with local premia surging in many

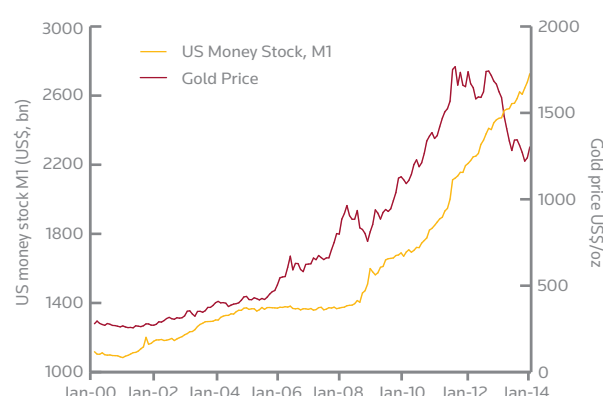
#### IDENTIFIABLE INVESTMENT



Source: GFMS, Thomson Reuters

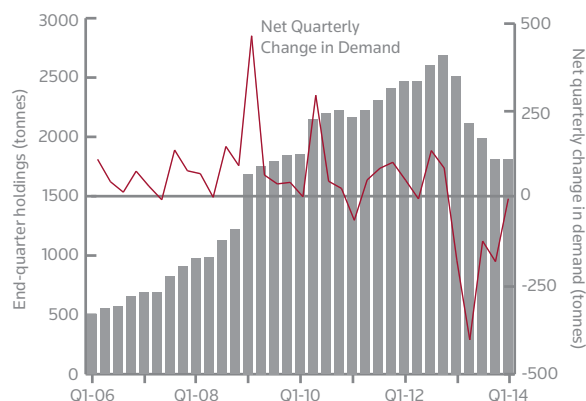
\*Official coins and medals & imitation coins

#### GOLD AND US MONEY STOCK M1



Source: GFMS, Thomson Reuters, US Federal Reserve

## ETF HOLDINGS AND NET CHANGE IN DEMAND



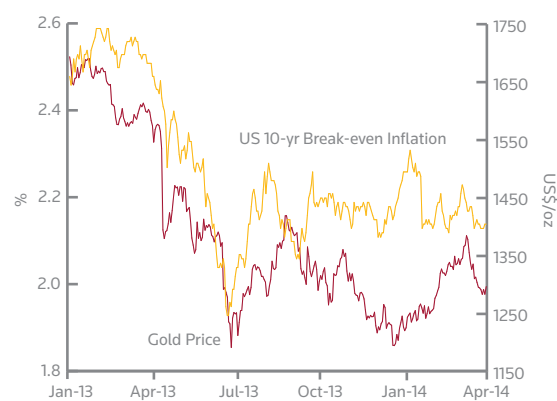
Source: GFMS, Thomson Reuters, respective issuers

markets. On the Shanghai Gold Exchange (SGE), for instance, daily physical volume averaged 17.5 tonnes in the first half of 2013 and 25.2 tonnes in April, compared to a daily average turnover of 7.8 tonnes over the whole of 2012. Along with a significant increase in trading volumes, there was a sharp rise in daily premia, which hit an all-time high of \$56/oz on 13th May. The average SGE premium over London between mid-April and end-June was 2.1%, notably higher than 0.4% over the previous twelve months. A marked decline in the Indian rupee gold price from previous highs sparked a new run on physical gold. Bar investment more than doubled in the January-June period, to reach 182 tonnes.

The tentative recovery that followed in the July to August period pushed the gold price through the \$1,400/oz mark again. The comments from Dr. Bernanke, in his bi-annual testimony to Congress, which sought to reassure markets that the highly accommodative stance of monetary policy would remain in place for the foreseeable future and that the tapering would not happen until the US economy was on a solid footing, pushed gold prices steadily higher. Additional support came from increased geopolitical tensions in Syria. During this period, the selling from gold ETFs continued, albeit at a much slower pace. July saw outflows of some 70 tonnes, while total holdings in August fell by just 18 tonnes, representing the slowest monthly drop since January. The moderation during this period can be explained by a slight improvement in investor sentiment towards gold, as the bulk of hefty selling related to tapering and improved economic outlook had already been done in the previous quarter.

On COMEX, meanwhile, the short-side speculative position reached a record of 556 tonnes in the first week of July. This pushed investors' net long positions to just below 60 tonnes, a massive drop of some 496 tonnes from the start of the year. Thereafter, a short-covering

## GOLD AND US INFLATION EXPECTATIONS



Source: GFMS, Thomson Reuters

rally took the net investor long towards 273 tonnes by end-August, an increase of 213 tonnes from the early-July low. Physical bar investment from key Asian markets, meanwhile, began to cool off. After the brief uptick in the July-August period, the yellow metal came under pressure again in the first two weeks of September as investors became increasingly cautious ahead of the FOMC meeting. ETF and COMEX investors were moving in tandem as net sellers of gold during this period.

Turning to the latter parts of 2013, despite a short rally in mid-September in response to the surprise outcome of the FOMC meeting, where the US Federal Reserve decided to hold off tapering, and another brief recovery in mid-October on the US government's partial shutdown, gold's price performance remained disappointing for the rest of the year. Gold's failure to rally during the US debt ceiling negotiations added further to investors bearish mood. Pressures continued to mount after Dr. Bernanke announced at the FOMC December meeting that the US Federal Reserve planned to reduce its monthly asset purchases by \$10 billion. This saw the gold price plunge below the \$1,200/oz mark towards year-end.

Investor interest in gold continued to wane in the final months of the year. The sustained attrition of ETF holdings, as well as the shift in COMEX investor positions, provided a good indication of cooling investor interest in gold over that period. ETF investors reduced their gold holdings by nearly 181 tonnes in the final quarter of 2013. Overall, twelve consecutive months of negative outflows took combined ETF holdings towards 1,811 tonnes by the end of the year, the level last seen in October 2009.

The net COMEX investor positions dropped to just 69 tonnes in the last week of November, due to another large increase in short positions and a smaller degree of long liquidation. The gross short position, at 466 tonnes, was up by 206 tonnes from the end-October level, sitting

## INVESTMENT IN COMMODITIES

Investment in commodities, as illustrated by Commodity Futures and Trading Commission (CFTC) data, was lacklustre in 2013. A look at 22 commodities showed investment slumped in the second quarter of 2013 to \$41 billion before regaining some lost ground and ending the year at \$60 billion in the final quarter. From a gold-specific view, net-long positions took a huge plunge by the end of the second quarter of 2013, to only \$4.5 billion. Even though there was a small rebound by the end of the third quarter, the total net-long positions fell again at the fourth quarter to less than \$4 billion, the lowest level since 2004.

Despite the Federal Open Market Committee (FOMC) increasing the amount of purchases from \$40 billion to \$85 billion per month beginning in January 2013, commodities in general did not gain strength following the commencement of QE3, unlike QE1 and QE2. In spite of patchy economic data and corporate earnings for most of the year, investors remained confident in the US recovery. Bullish technical signals pushed the US stock markets to new highs, thus making the commodities complex even less attractive as investment instruments.

Commodity prices dramatically deteriorated in the second quarter of 2013, as the market speculated over the Fed's tapering timetable. Moreover, market worries about a slowdown in China's economic growth also hampered investment interest in the commodities sector. The metals markets were among the most affected, with the value of gold and silver net positions plunging to levels not seen for many years. Gold dropped below \$1,500 without resistance in April. Despite aggressive physical buying from China, the gold price did not regain this level.

Investors continued to build large positions in the energy sector, as the US economic recovery gained traction, along with an extraordinarily cold winter in North America that spurred gas usage. Geopolitical concerns lingering in the Middle East and Africa saw Brent crude trading at a premium to WTI for most of the year. Concerns over North Korea, as well as the increasing

tension amongst Asian countries over sovereign rights in the South China Sea, also helped oil to outperform its other commodity peers.

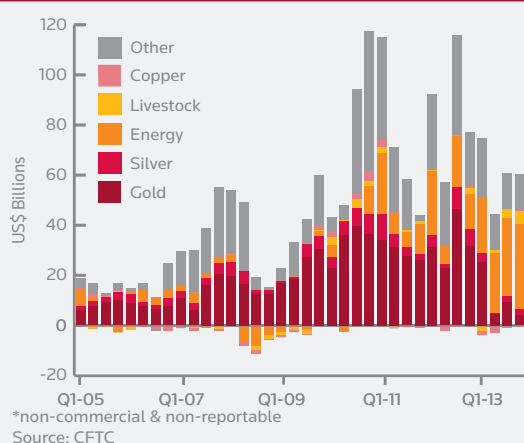
Elsewhere, investor interest among the soft commodities was mixed last year. While the price of cocoa rose by 26% year on year, corn and wheat fell dramatically, as supply recovered following the drought-related woes of 2012. Market interest in livestock grew in 2013, with the net investor long position gradually picking up over the course of the year, rising to \$5 billion in the fourth quarter.

Looking ahead, investors will continue to be wary of the commodities market, as emerging markets, particularly China, are likely to grow at a slower pace this year compared to the past decade. Concerns on the shadow banking and potential loan defaults in China will continue to hamper market confidence in China's growth story. The Chinese government is now addressing structural issues in its domestic economy. However, this will require the Chinese to bite the bullet and sacrifice short-term GDP growth for a longer-term prosperity potential. Consequently, China's demand for raw materials, particularly industrial metals and energy, may be negatively affected during this reform period.

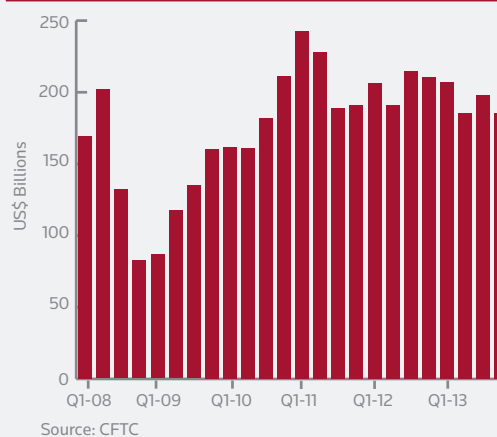
Henceforth, without strong economic growth from the emerging markets, particularly China, interest in commodities may continue to wane this year. Gold and silver are also likely to be less popular and continue to lose their "safe haven" appeal, as advanced economies continue to recover.

The changing of the US monetary policy will also act as a deterrent, and this will have a spill-over effect weighing down growth in emerging markets, potentially resulting in currency depreciation and credit starvation. However, it remains to be seen whether the US can continue to build on the economic recovery, in light of weak data in the opening months of 2014, and successfully to implement its exit strategy as planned.

### VALUE OF SPECULATIVE POSITIONS IN 22 COMMODITY FUTURES



### GLOBAL COMMODITY INDEX INVESTMENTS



at 84% of the record. During the same period, the long-side speculative position, at 536 tonnes, was down by 10%. While net investor long positions somewhat recovered towards the end of the year, the move was primarily driven by short-covering ahead of year-end rather than fresh investor interest; by end-December, they remained at historically low levels.

At the retail level, bullion bar investment was somewhat subdued, following a period of stellar demand in the first half of 2013. World bar investment totalled 528 tonnes in the second half, down by 38% from the previous six months, albeit just 1% lower year-on-year. Demand in China subsided due to limited purchasing power, following a period of booming investment earlier in the year, and a lack of confidence in the gold price. Indian investment demand was restrained by the government's gold import restrictions and lower price expectations.

The first quarter of 2014 saw a positive shift in investor sentiment towards gold. Prices gained over 10% in the first two months and broke through the \$1,380/oz mark in mid-March, the highest since September 2013. Investors' renewed interest in gold was especially evident in a steady increase in net investor positions on COMEX. The net investor long recovered to 454 tonnes in the third week of March, the highest level since March 2013 and an increase of 351 tonnes from the end-2013 level. The move was largely driven by short-covering and a substantial increase in long speculative positions, thus reversing the trading patterns of the latter part of 2013. The long-side speculative position rose to a near ten-month high of 696 tonnes, up by 152 tonnes since end-2013. The outright short dropped by 180 tonnes since the start of the year, to 242 tonnes by 18th March, the lowest since January 2013. The trend was reversed again in the final week of the month, as investors liquidated 57 tonnes.

Recent months have seen ETF holdings stabilise. In February, ETF investors added some twelve tonnes of gold to their holdings, marking the first month to register positive inflows in more than a year, with another twelve tonnes added in March.

This increase in investor interest was driven by fresh concerns that the US economic recovery may be losing momentum, following a series of disappointing economic data. Concerns about China's slowing economic growth and increased fears over financial stability in emerging markets, after the recent shift in the US monetary policy outlook resulted in increased capital flow volatility and tighter financial conditions, boosted gold's safe haven appeal. In addition, the escalation of geopolitical tensions in Ukraine prompted a return of risk aversion in the markets, pushing investors back to safe haven assets.

Physical offtake in China slowed in February, following a period of strong demand during the Chinese New Year sales period. This was largely a reflection of a slowing economic activity and the recent weakening of the Chinese yuan. Demand in India remained at subdued levels, as the existing stringent policy measures continued to weigh on the gold industry.

Looking ahead, we believe that gold's recent gains are unlikely to be sustained in the medium term, as the overall macroeconomic backdrop will remain less supportive for gold investment. The recent shift in US monetary policy from the highly accommodative stance towards tapering and a gradual normalisation of policy on improving economic outlook will continue to weigh on investor sentiment towards gold. Overall, as the market uncertainties disappear and the world economy continues to recover, this will prompt a return of risk appetite and push investors away from gold towards riskier, but higher-yielding, assets like equities.

## A REVIEW OF PRICE VOLATILITY IN 2013

Quarterly gold price volatility declined for the third consecutive period in the first three months of 2013, as investors remained uncertain about the future of gold prices; surged to 29.8% in the April-June quarter, and eased through the second half of 2013, as prices trended lower. Monthly volatility rose to a multi-year high of 37.5% in April. This was the highest monthly volatility rate since the fourth quarter of 2008, when prices were collapsing amid the financial crisis. The sharp \$141 drop on 15th April from the previous trading day obviously triggered increased volatility that month while also spurring double-digit increases in physical demand in Asia and rapid sales of gold holdings in the Western world.

In general, increased volatility is negative for jewellery demand. In the second quarter of 2013, however, this increase in volatility, a direct result of the drop in gold prices, was seen as a buying opportunity in Asia, where gold jewellery is typically purchased for its value and as a form of savings and investment. The volatility witnessed in the second quarter gave way to a surge in physical offtake, in the forms of both jewellery and retail investment bars, throughout the remainder of the year.

### QUARTERLY PRICE VOLATILITY

	Q1	Q2	Q3	Q4
2012	20.0%	19.8%	14.3%	11.7%
2013	11.1%	29.8%	22.5%	19.5%

Source: GFMS, Thomson Reuters

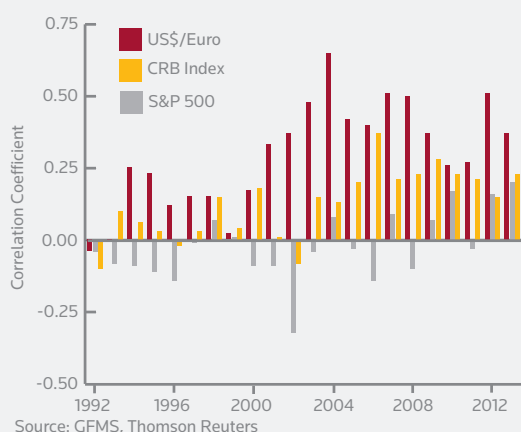
## GOLD PRICE CORRELATIONS

The GFMS team at Thomson Reuters believes the study of correlation coefficients to be useful, not only as an indication of underlying themes that may influence the market, but also to confirm economic theory with empirical evidence. It must be noted, however, that the existence of either positive or inverse correlation between two assets is not sufficient in itself to establish direct causality.

The table to the right illustrates daily-log return correlations between gold and a number of asset classes. The correlation between gold and silver during 2013 remained the strongest among other assets under scrutiny, which should not be too surprising, given the historical link between the two metals. The gold:silver relationship was particularly strong in the second quarter of the year, when both metals suffered sharp price falls in mid-April and June, each related to government policy. This relationship weakened somewhat in the second half of the year, as concerns that the US Federal Reserve would bring an imminent end to its highly accommodative monetary policy continued to weigh on gold, while silver was supported by the world's improved economic outlook.

The dollar:euro correlation fell markedly during the first quarter of 2013. The collapse in the link was largely a result of gold's disappointing price performance at the start of the year despite dollar weakness against the euro. This was, in part, attributed to a less dovish tone in the minutes of the December FOMC meeting, which sparked fears that the Federal Reserve could unwind its stimulus programme at a faster pace than previously expected. In addition, softer safe-haven demand in light of the easing sovereign debt crisis in the Eurozone, lack of inflationary concerns and gold import restrictions in India helped to explain the weakness in the gold price. Gold remained under pressure as the US economic recovery continued to fuel expectations of QE-tapering. This saw the correlation regain its strength in the following quarters.

### CORRELATIONS WITH THE GOLD PRICE



### GOLD PRICE CORRELATIONS

Quarterly	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4
Euro/US\$ Rate	0.53	0.21	0.09	0.37	0.44	0.62
US\$/Yen Rate	-0.07	0.19	0.27	0.14	0.07	0.38
Silver	0.69	0.50	0.51	0.78	0.63	0.54
Oil (WTI)	0.24	0.26	0.25	0.40	-0.05	0.02
GSCI	0.32	0.36	0.37	0.48	0.18	0.11
CRB Index	0.12	0.18	0.12	0.47	0.22	-0.03
S&P 500	0.27	0.11	0.11	0.31	0.16	0.05

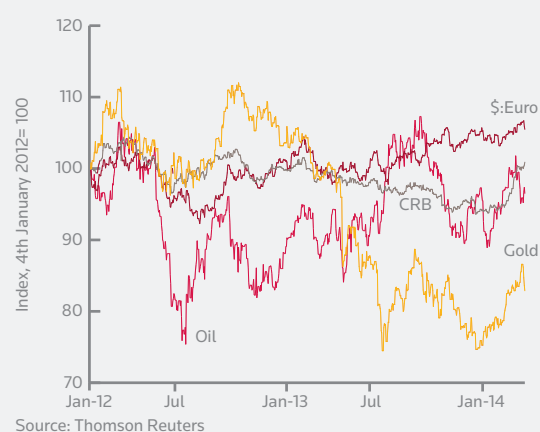
Annual	2008	2009	2010	2011	2012	2013
Euro/US\$ Rate	0.50	0.37	0.26	0.27	0.51	0.37
US\$/Yen Rate	0.21	0.25	0.16	0.14	0.12	0.16
Silver	0.60	0.63	0.58	0.63	0.60	0.68
Oil (WTI)	0.21	0.20	0.32	0.13	0.30	0.17
GSCI	0.25	0.22	0.40	0.20	0.36	0.32
CRB Index	0.23	0.28	0.23	0.21	0.15	0.23
S&P 500	-0.10	0.07	0.17	-0.03	0.16	0.20

Source: GFMS, Thomson Reuters

The correlation between gold and oil prices came under significant pressure in the second half of the year, particularly in the third quarter, when it entered negative territory, as deflationary concerns increased significantly, while oil prices in early September reached the highest level in more than two years on renewed geopolitical tensions in Syria. Gold's relationship with other commodities weakened in the latter part of the year. Improving economic conditions in the second half of the year helped to support investor interest in commodity basket products, while the shift in the US monetary policy, including the announcement of the first round of tapering at the FOMC's December meeting, kept gold under pressure.

The correlation between gold and the S&P 500 fell considerably in the final months of 2013. Improving economic outlook for the US economy prompted investors to flee from safe-haven assets towards more conventional, higher-yielding assets like equities, sending the S&P 500 to record high levels at year-end.

### GOLD, THE CRB, OIL AND THE DOLLAR:EURO RATE





## EXCHANGE TRADED FUNDS

— *The year 2013 saw large redemptions in exchange traded funds (ETFs), particularly in the second quarter.*

Combined holdings of ETFs fell by 880 tonnes, or 33% in 2013, falling from a record high of 2,698 tonnes at the start of the year, to their lowest levels since October 2009. In value terms, the net dollar outflow, calculated on a daily basis, reached \$73 bn over the year. Among individual funds' performances, the greatest outflows naturally took place in the established entities; with the largest fund, SPDR Gold Shares, posting the biggest decline, 553 tonnes or 41% over the year, responsible for 63% of the total outflows for the period. Meanwhile, iShares COMEX Gold Trust, ZKB Gold, ETF Securities, Julius Baer and BGS LSE each saw losses of between 40-60 tonnes.

Demand for gold ETFs declined significantly in early 2013, with the first quarter posting outflows of 177 tonnes, to reach 2,515 tonnes, a 7% decline. However, the bulk of the first half's drop was concentrated in the second quarter, which saw the largest quarterly redemption, of over 400 tonnes, since the launch of the first gold ETF in early 2003. The key driver behind the investor sell off was growing speculation that the Federal Reserve (Fed), might end its asset purchase programme sooner than expected as the US economy continued to show signs of improvement, reducing gold's safe haven appeal. By the second quarter, the fall was exacerbated further by

politicians' suggestions in mid-April that Cyprus should sell some of its gold reserves to help its fiscal situation, which translated into heavy ETF outflows of some 176 tonnes during the month. Whilst the pace of selling then somewhat abated over the next two months, investors remained firmly on the sell side driving total ETF holdings to a multi-year low of 2,112 tonnes at end-June. SPDR Gold Shares registered outflows accounting for almost 60% of the losses during this period.

Between July and September the pace of investor selloffs continued to fall, particularly during August where total monthly redemptions recorded 18 tonnes. This in part was supported by rising concerns over Syria's alleged use of chemical weapons. Despite this declining pace, by end-August ETFs had reached their lowest level since 2009. Thereafter, as expectations of US tapering increased (following the Fed unexpectedly announcing the continuation of QE in September), ETF outflows once again gained momentum resulting in end-2013 total ETF holdings of 1,811 tonnes.

Meanwhile, 2013 also saw the introduction of four new gold backed funds. China's Guotai Asset Management Co. and HuaAn Asset Management Co. simultaneously launched their Guotai Gold ETF and HuaAn Gold ETF in July on the Shanghai exchange, while E Fund Management Co Ltd launched E Fund Gold ETF in December on the Shenzhen exchange, establishing themselves as China's first three physically gold backed instruments. FinEx Group and the Moscow exchange introduced Russia's first gold-backed ETF, FinEx Physically Held Gold ETF in October. However, since the

## GOLD ETFS & OTHER SIMILAR PRODUCTS

(tonnes)	end-2012	end-2013	change	% share of total change
SPDR Gold Shares	1,350.8	798.2	-552.6	62.8%
ZKB Gold ETF	235.7	176.1	-59.5	6.8%
iShares COMEX Gold Trust	217.7	162.4	-55.3	6.3%
ETF Securities	161.3	108.3	-53.0	6.0%
GBS LSE	139.2	97.3	-41.9	4.8%
Julius Baer	111.7	66.0	-45.7	5.2%
Xetra Gold	51.0	44.5	-6.5	0.7%
Sprott Physical Gold	50.3	48.5	-1.8	0.2%
NewGold Gold Debentures	45.2	41.3	-3.9	0.4%
Central Fund of Canada	52.7	52.7	0.0	0.0%
Source Physical Gold ETC	73.5	38.5	-35.0	4.0%
Others	202.1	177.3	-24.8	2.8%
<b>Total</b>	<b>2,691.1</b>	<b>1,811.1</b>	<b>-880.0</b>	<b>100.0%</b>

\*Other includes DB Euro Hedged, GBS ASX, Royal Canadian Mint, DB Physical Gold ETC (EUR), ETFS - Swiss Gold, iShares Gold Bullion Fund, Mitsubishi Tokyo, DB Physical Gold ETC, ETFS Precious Metals Basket Trust, Goldist, ETFS Asian Gold Trust, iShares Gold Bullion ETF, ETFS NYSE, DB Physical Gold CHF Hedged, Claymore Gold Bullion ETF, Dubai DGX, DB Physical Gold SGD Hedged ETC, DB Physical Gold GBP Hedged ETC, Central Gold Trust, HuaAn Gold ETF, Guotai Gold ETF, Yifangda Gold ETF, FinEx Physically Held Gold ETF, Indian ETFS; Source: Respective issuers

## GLOBAL ETF HOLDINGS

(end-period)	Tonnes	US\$bn	Tonnes	US\$bn	Tonnes	US\$bn	Tonnes	US\$bn
11.Q1	2,166	100.22	11.Q2	2,220	107.47	11.Q3	2,308	120.19
12.Q1	2,465	131.77	12.Q2	2,465	126.70	12.Q3	2,603	148.63
13.Q1	2,515	129.21	13.Q2	2,112	80.95	13.Q3	1,992	84.96
							13.Q4	1,811
								118.73
								143.41
								70.14

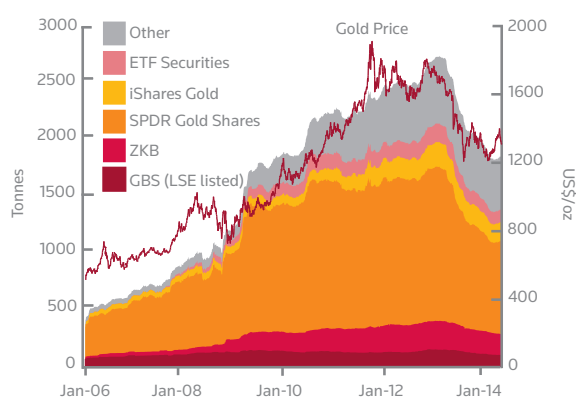
Source: Respective issuers

opening of these four new ETFs, interest had been muted at best adding just 3.4 tonnes. On a separate note, Deutsche Bank liquidated its DB SGD Hedged ETC fund in September.

The ETF story was broadly unchanged in January, with outflows of some 24 tonnes as investor expectations leaned towards a positive outlook for global recovery, while a careful eye was also kept on the Fed. However, by February rising geopolitical tension, weaker than expected US data and a looming emerging market currency crisis prompted a reversal in sentiment. February was the first month to record inflows since December 2012, posting an increase of twelve tonnes, to a month end figure of 1,799 tonnes. The flight by investors to safe haven assets over February was similarly reflected in the gold price which gained over US\$100/oz since the start of the year.

ETF holdings continued to rise in the first three weeks of March bringing total ETF holdings to 1,817 tonnes, their highest levels since the beginning of 2014. The chief reason behind the continued increase in holdings was growing concern over the developing stress arising between Russia and Ukraine. However, in the last week of the month, news of easing tensions, in addition to expectations towards the Fed raising interest rates in 2015, saw ETF outflows of some 6.3 tonnes. As a result, by the end of the month ETF holdings remained broadly unchanged from the start of the year.

## GOLD ETFS AND OTHER SIMILAR PRODUCTS



Source: GFMS, Thomson Reuters, collated from respective ETF issuers' data

## ACTIVITY ON COMMODITY EXCHANGES

- Major commodity exchanges posted strong growth last year.
- Chinese exchanges, especially the Shanghai Futures Exchange registered tremendous growth.

## COMEX

Following falls in turnover in 2012, the total volume of gold futures traded on COMEX increased by 8% in 2013, to 47.3 million contracts. This was equivalent to a nominal 147,093 tonnes and to an average daily turnover of 584 tonnes. Open interest stood at 379,550 contracts at end-2013, corresponding to 1,181 tonnes, down a moderate 11% from the previous year's level. The rise in turnover in 2013 can in part be attributed to heightened investor activity during the first six months of the year, particularly in the second quarter, with the daily trading volume averaging 223,059 contracts, far in excess of the annual daily average of 187,665 contracts. Total volumes during this period rose by 27% year-on-year, to 14.3 million contracts or nearly 44,480 tonnes. Investor activity in COMEX options followed suit, with a 37% year-on-year rise in the April-June period, to 3.1 million contracts. The year-end open position in options was 1,358,338 contracts or 4,225 tonnes, up by 40% from the end-2012 level.

CFTC reports on non-commercial and non-reportable net positions in COMEX futures can be used as a proxy for investor activity on the exchange. The first half of 2013 saw aggressive long liquidation, as well as a swift expansion in short positions. By end-June, net positions fell by over 80% since end-2012, to under 110 tonnes (the level last seen in September 2002) which was a key driver for the striking fall in gold prices in the first half of the year. It should, however, be noted that CFTC reports are an imperfect gauge of investor/speculator activity, as there can be a degree of investment hidden within the commercial side and vice-versa.

As illustrated in the accompanying graph, net positions in COMEX futures generally followed (and arguably, often

## NET INVESTOR' POSITIONS ON COMEX

(end-period)	2008	2009	2010	2011	2012	2013
<b>Futures contracts</b>	142,773	278,942	259,770	163,932	188,659	33,021
equivalent in tonnes	444	868	808	510	587	103
value US\$ (bn)	12.4	30.6	36.5	26.1	31.6	4.0
<b>Options contracts</b>	14,056	14,510	24,426	5,635	7,123	25,888
equivalent in tonnes	44	45	76	18	22	81
value US\$ (bn)	1.2	1.6	3.4	0.9	1.2	3.1

Source: CFTC (Non-Commercial and Non-Reportable Net Positions)

drove) movements in the gold price, with non-reportable positions entering negative territory at several points between April and July. At end-2013, net positions stood at 33,021 contracts, down by a significant 82% from the end-2012 level.

The year started on a broadly steady note, but sentiment started to falter on the US sequester and then deteriorated dramatically in April, as discussed above. From 178,472 contracts at the start of the year, the net investor long dropped by a dramatic 42%, to 104,388 by mid-April, exacerbating the drastic fall in the gold price over that period. The net long continued to contract thereafter, reaching 19,041 contracts in early July, representing a startling 89% drop since the beginning of the year.

The middle of 2013, however, saw a short-covering rally, with short positions falling 38% from the start of August to the end of October, and by end-month they were at their lowest levels since early February. This was, in part, a response to the outcome of the FOMC September meeting, where the US Fed surprised markets by postponing tapering, and the two-week US government shutdown. However, for the rest of 2013, the improved outlook for the US economy and the looming reduction of US monetary easing, which was announced on 18th December, prompted investors to turn away from

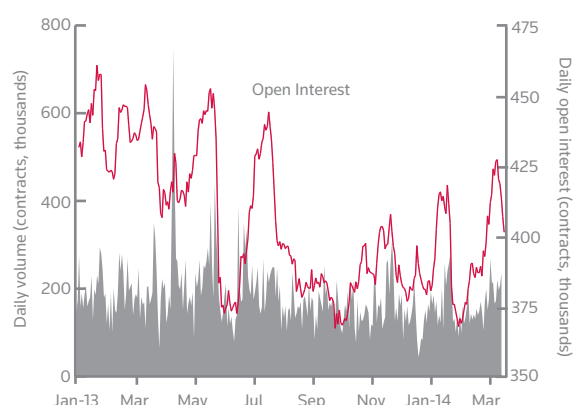
gold towards riskier asset classes, driving short positions to record levels. This took the net investor position towards 103 tonnes by end-2013, 82% below where it began the year.

The first quarter of 2014 saw an advance on the investor position, up to 454 tonnes in the second week of March, back to levels last seen before the steep decline of the gold price in April 2013.

## CHINESE EXCHANGES

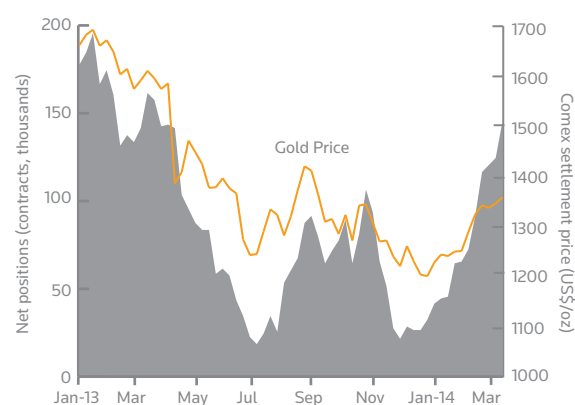
In recent years there has been greater investor participation in gold futures trading outside the traditional commodity exchanges, none more so than in China. The **Shanghai Futures Exchange (SHFE)** first launched a one kilogramme gold contract on 9th January 2008, which was designed to meet the rising demand for hedging and domestic needs. In terms of trading volumes, the SHFE became the fourth most traded exchange market within two years of setting up. In 2013, trading volumes were up by more than 240% year-on-year, to a nominal equivalent of 40,176 tonnes, making it second only to COMEX in size. Total volumes first jumped up in mid-April, from a year start of 64 tonnes to 206 tonnes, representing a 224% increase in daily volume. Looking at the SHFE chart, one can clearly see an even more dramatic rise in volumes traded in July and

## COMEX VOLUME &amp; OPEN INTEREST



Source: Thomson Reuters

## NON-COMMERCIAL &amp; NON-REPORTABLE NET POSITIONS IN COMEX FUTURES



Source: CFTC

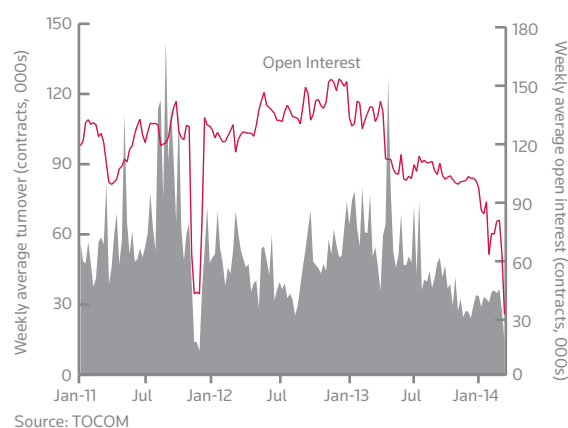
August. Apart from the fall in the gold price, another reason behind this tremendous rise was the introduction of night-time trading in July 2013, which added an extra five and a half hours to the trading day.

China's only legal source of VAT free gold and platinum, the **Shanghai Gold Exchange (SGE)** saw combined trading volumes of gold spot contracts (AU9999 and Au9995) more than double last year, to reach 4,007 tonnes or 16.8 tonnes per day. The key driver behind this was the dramatic fall in gold prices in the first half, which drove physical demand for gold to record levels. The premium of the SGE price over the London am fix, which can be taken as a proxy for supply demand tightness in the Chinese market, reached \$50/gramme for a number of days in May and June 2013, while the local market was starved of metal - largely due to a refinery bottleneck. That time saw a 20-day period where the market suffered from a drought of bullion supply.

June 2013 saw the SGE liberalise its policy on bullion imports, allowing LBMA London Good Delivery (large) bars to be imported directly for the first time. This, as well as the granting of the bullion import certificates to three more banks, including for the first time two foreign banks, was partly aimed at solving the bullion supply shortage problems in May and June 2013. The exchange is also planning to launch in 2014 a new foreign exchange board based in the Shanghai Free Trade Zone. This will enable international players to trade gold in RMB terms, conceivably attracting offshore RMB to flow back to China.

Turning to the SGE's Au(T+D) futures contracts; total volume for the year recorded 6,695 tonnes in 2013, up by a significant 58% year-on-year. At the end of 2013, open interest stood at 169 tonnes, up from 145 tonnes at the end of the previous year.

#### TOCOM VOLUME & OPEN INTEREST



#### GOLD TRADED ON COMMODITY EXCHANGES

	(total volume in nominal tonne equivalents)			Change y-o-y
	2011	2012	2013	
Comex	152,939	136,522	147,093	8%
SHFE	14,444	11,834	40,176	240%
Tocom	15,194	11,895	12,225	3%
SGE Au(T+D)	5,354	4,226	6,695	58%
SGE Spot	1,881	1,901	4,007	111%
MCX	15,382	12,604	10,579	-16%
NYSE Liffe*	2,318	1,126	1,114	-1%
DGCX	389	552	448	-19%
Borsa Istanbul	227	312	438	40%

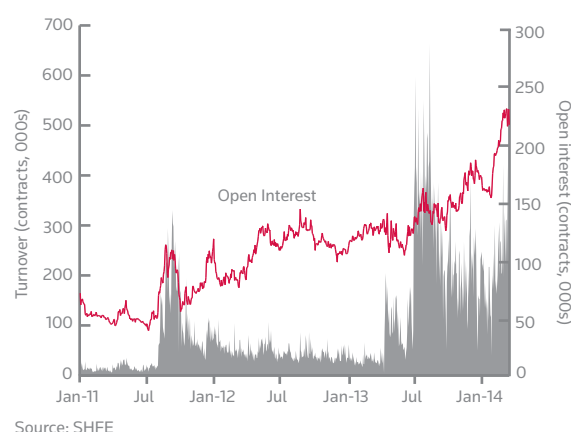
\*Includes the 100-ounce and 33.2-ounce contracts

Source: Thomson Reuters, relevant exchanges

#### TOCOM

The Tokyo based exchange offers one kilogramme and one hundred gramme gold futures and options contracts, for which the price is quoted in yen. Following a poor performance in 2012, trading volumes posted a slight improvement in 2013, with the full year total rising to above twelve million contracts (equivalent to a nominal 12,225 tonnes), up by a modest 3% year-on-year. In part, this was due to high investment activity in the second quarter, with the daily trading volume from April through to June averaging 63,389 contracts, up from 44,029 contracts in the same period in 2012. This can be attributed to the depreciation of the Japanese currency against the US dollar over that period that limited losses in the yen denominated price. The period of low investment traditionally associated with the summer lull continued into December, so that trading volumes on the TOCOM ended the year at 25,922 contracts, down by 73% on the end-year figure in 2012. Open interest in gold futures ended the year at 90,135 contracts, down by 38% on the end-2012 figure.

#### SHFE VOLUME & OPEN INTEREST



Net investor positions on TOCOM futures can be used as a proxy for speculative activity on the exchange. After starting the year at 19,322 contracts, net long positions rose steadily until early April, driven by the announcement by the Bank of Japan that it was to implement bond buying operations. The speculative long dropped through to mid-June, when the Bank of Japan Governor declined to take any further action, which raised doubts over the government's aggressive pro-growth policies. The remainder of the year saw a continued declining trend in net positions, albeit at a slower rate, with the year-end net long of around 37,000 contracts, albeit nearly double that of the start of 2013. Mid-February 2014 saw a heavy fall, with the net position turning short. This was, in part, due to the strength of the Japanese currency against the US dollar that month, which moderated any gains in the gold price in yen terms.

## OTHER EXCHANGES

A number of relatively new commodity exchanges around the world, launched in previous years in response to market liberalisation and growing investor interest in commodities, have expanded their activity, overtaking some traditional exchanges.

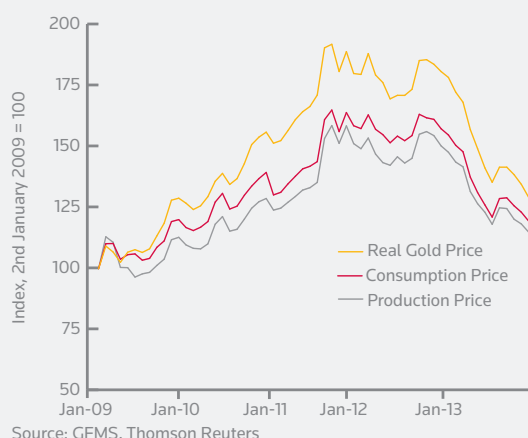
There are currently a number of commodity exchanges in India that offer gold futures contracts, of which the leader is the **Multi Commodity Exchange (MCX)**. MCX has remained the dominant exchange for trading gold in India through 2013, although total volumes fell sharply in 2013, from an average daily volume of 46,270 contracts in the first half of the year to 25,146 contracts in the second half. Over the course of 2013, total turnover reached 10,579 tonnes, down by 16% year-on-year. The key driver behind this decline was a series of new regulations and import tax increases introduced by the Indian government, in particular the 80:20 principle,

which weighed heavily on the gold market. The effect of this was particularly acute when one considers the sharp decline in the gold price in 2013, which saw demand in China surge. The highest delivery month was February 2014, which saw a delivery of 1.4 tonnes, which was far higher than any other month since April 2013.

Turnover on the **NYSE Liffe** platform continued to decline over 2013, but at a far slower rate than in 2012, with trading volumes, at a nominal 1,114 tonnes, down 1% year-on-year. Meanwhile, end-year open interest, at a nominal two tonnes, was down 60% on the 2012 level. The almost complete lack of interest for the exchange's 100-ounce contracts, especially marked in the last quarter of 2013, remained chiefly responsible for the muted investor activity last year. In 2013, total volume of 100-ounce futures continued its sharp drop, falling by 65% year-on-year, to 5,734 contracts, which was equivalent to a nominal total of only 18 tonnes. Open interest also declined last year, reaching 146 contracts, less than half a tonne, by end-December, 81% below the end-2012 figure. By contrast, the total volume of 33.2-ounce "mini-gold" contracts rose slightly by 2% year-on-year, to 1.1 million contracts or a nominal 1,096 tonnes. End-year open interest stood at 1,800 contracts, down sharply by 57% on the end-year figure of 2012.

Since the launch of the exchange in November 2005, gold futures have also been available on the **Dubai Gold and Commodity Exchange (DGCX)**. After strong growth in 2012, the total volume in gold futures listed on the DGCX dropped by 19% in 2013 to 448 tonnes. In spite of the strategic location and organisation of the exchange (its backers include the Dubai Multi Commodities Centre and the MCX, and offers contracts priced in US dollars), investment activity on the exchange remained very confined over the past few years. It is of note that DGCX

## PRODUCTION AND CONSUMPTION-WEIGHTED GOLD PRICES



The production and consumption-weighted gold price indices depicted in this chart represent gold prices adjusted by market size-weighted consumer and producer price inflation indices. The real gold price is the nominal price of gold adjusted for US CPI, the generally accepted convention as international gold prices are quoted in US dollars. This real price, however, ignores inflation and currency fluctuations in countries where domestic gold prices may be telling a drastically different story. Real gold US dollar prices declined 29% in 2013. Consumption and production gold prices, fell 24% and 23%, respectively, however. These lower price declines reflect the ease in inflation rates and slower currency devaluation last year relative to 2012 in various countries.

is planning to launch a spot gold contract in June 2014 as part of its strategy to expand its gold product portfolio.

The Istanbul Gold Exchange, opened in 1995, merged with the Istanbul Stock Exchange in April 2013, creating the **Borsa Istanbul**. The 92 members of the exchange are the only companies allowed to trade gold through Turkey and this must come via the exchange with at least one trade. In addition, all domestic production must also come through the exchange. Total volumes on the Borsa Istanbul rose significantly last year, to a nominal 438 tonnes, up 40% of the 2012 figure. This is despite the halt to the gold for gas trade with Iran, which had boosted volumes in 2011 and 2012. Unique to the Borsa Istanbul is the T+0 (same day) spot delivery. It is also of note that there is continuous trading every day, including weekends and holidays in the precious metals markets.

## OTC MARKET

*— In stark contrast to ETFs, the OTC market saw substantial net buying in 2013, sparked in large part by lower prices causing opportunistic buying.*

Over the Counter (OTC) market trades a variety of products linked to the gold price, including spot and forward products, metal accounts, as well as vanilla options and other derivatives, which can be tailor-made to suit particular investment purposes. The OTC market tends to be populated largely by institutional investors, who are attracted to the flexibility inherent in products traded therein, the relatively low transaction costs and discreet nature of operations. The high entry level costs inherent in the market tend to make it inaccessible to retail players (with the exception of high net worth individuals).

On a net basis there was significant investment in the OTC market in 2013. This may surprise readers who are aware that investor selling was a key element in the price decline, even more so if we consider that institutional investors, who dominate the OTC market, were a major factor in sparking the second quarter price drop. However, this is far from representative of all OTC activity across the year.

Even in the first half of 2013 when heavy investor selling was underway, the OTC market as a whole was a net buyer of gold. This was despite some institutional investors being among the first to take the view that the US monetary policy cycle was set to change direction sooner rather than later and hence that this dented the prospects for gold. The ensuing price decline was key to sparking interest from some investors who saw this as

## LONDON BULLION MARKET (LBM) AND COMEX TURNOVER\*

	LBM Number of Transfers	LBM Transfers** Tonnes	Comex Turnover Tonnes	LBM/ Comex Ratio
2009	1,674	636	434	1.5:1
2010	1,737	571	552	1.0:1
2011	2,296	644	607	1.1:1
2012	2,678	616	542	1.1:1
2013	4,464	683	584	1.2:1

\*daily averages, \*\*represent the net volume of loco London gold transfers settled between clearing members of the LBMA

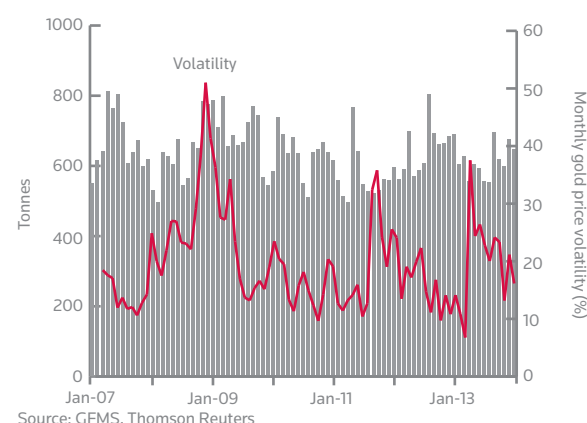
Source: LBMA and Thomson Reuters

an opportune time to make purchases. Indeed, LBMA turnover surged higher in the second quarter and June saw the highest turnover since February 2000. The price decline in the second quarter also led to a substantial shift in gold bullion movements. This saw large gold bars, often from redemptions of ETFs, being shipped to Switzerland for converting into small bars for the Asian and Middle East markets. While this activity peaked in the second quarter it remained a major theme of OTC transactions throughout the year.

Indeed this is also symptomatic of an eastward shift in the investment arena. Even though western players continued to dominate the OTC market, the last few years have seen growing participation by financial institutions and high net worth investors from East Asia and the Middle East. In part, this has been driven by a general rise in investor interest in gold investment in these markets, and the process has also been facilitated by rapid market liberalisation. For instance, in China, gold trading volumes grew rapidly last year, partially boosted by longer trading hours.

The shift from unallocated to allocated metal accounts, which had been encouraged by the global financial crisis, has hit the buffers. This is not due to a change in

## TURNOVER ON THE LONDON BULLION MARKET





underlying investor interest, but instead from increasing attempts by banks to meet tightening balance sheet requirements, especially in Europe. This has led to many banks raising the fees for allocated accounts, sometimes to levels in excess of those charged on ETF holdings. It is also interesting to note that despite the increased activity in the OTC market and a lessening in the aftershocks of the global financial crisis, demand for structured products remains pitifully weak.

In early 2014, there have been bouts of buying, encouraged by rising gold prices initially and subsequently by the rising geopolitical tensions sparked by events in Ukraine. Despite these bouts, the over-the-counter market has been generally quiet in the first quarter of the year, as shown by LBMA transfer numbers hitting a three and a half year low in February. This is partly a function of many institutional players who exited the market in 2013, while buy side interest appears muted in this arena in anticipation of the shift in US monetary policy, following the price's significant recovery from recent lows.

## PHYSICAL BAR INVESTMENT

- *Demand for bullion bars surged by 33% to a new record high of 1,377 tonnes last year.*
- *This higher figure was primarily driven by a sharp increase in investment demand in Asian markets, led by China and India.*
- *Physical demand in North America posted double-digit growth in 2013, with substantial gains in the United States.*
- *By contrast, demand for bars in Europe was marginally lower year-on-year.*

Physical bar investment enjoyed remarkable growth last year, with total volumes rising by nearly a third year-on-year, to a fresh high of 1,377 tonnes. This strong growth was almost exclusively driven by impressive demand in emerging markets, after the sharp price correction in the second quarter of 2013 triggered a new run on physical gold. In China, demand in the April to June period posted an extraordinary 176% increase, to reach record high levels. Similarly, a marked decline in the rupee gold price in April sparked fresh investor demand in India, taking volumes to all-time highs.

After three consecutive years of decline, demand for bars in North America soared by 30% in 2013, to nearly 41 tonnes. Investor demand picked up in the second quarter of the year and remained at elevated levels thereafter. While almost all the major regions enjoyed

gains, European bar investment continued to decline, falling to a three-year low last year.

## EUROPE

After reaching a peak of 337 tonnes in 2011, physical bar investment in Europe has fallen for two consecutive years, reaching 240 tonnes in 2013. It is of note, however, that despite a 3% year-on-year decline, last year's figure was still the third highest level in more than a decade. This was largely the result of the continued investor interest in physical gold bullion products last year, in light of ongoing uncertainty over the financial stability and economic health of the European countries.

It is important to point out that our definition of Europe now includes **Russia** and **Turkey**, which both posted growth last year. Excluding these two countries from the regional total shows that last year's decline in bar investment was slightly steeper, at 4%. The dramatic price correction in the second quarter and the weak price performance for the remainder of the year led to increasingly bearish investor sentiment towards the yellow metal. A lack of confidence in the gold price prompted many investors to postpone their purchases or even, in some cases, turn away from gold. Our recent field research indicates that investors in some countries became more sceptical about the metal's ability to recover from its recent lows.

The price response varied considerably within the region. Demand for bars in **France** and the **United Kingdom**, for instance, posted double-digit declines, as disappointed investors substantially reduced their gold assets in light of lower price expectations. By contrast, physical bar demand in **Germany**, the largest market, was up 11% year-on-year, as bargain hunters took an opportunity and rushed to build their gold stocks, following the significant price dip in mid-April. Similarly, demand for gold bars in **Italy** was marginally higher year-on-year.

## NORTH AMERICA

After declining by over 50% in three years, physical bar demand in North America surged 30% to 41 tonnes in 2013. North America, which includes the United States, Canada, and Mexico, accounted for 3% of global retail bar demand in 2013. The decline in price throughout 2013 spurred greater interest among smaller individual investors, who are more price-sensitive and who also often purchase gold as a long-term investment. These types of investors began reducing their gold bar purchases in 2010, when prices averaged \$1,225. Any

time prices headed toward this level in 2013, demand rose materially as bargain hunters appeared to see prices between \$1,180 and \$1,230 as a buying opportunity. These investors continue to be wary of fiat currencies and critical of the US government amid fiscal debt problems, as evidenced by the proliferation of the bitcoin in recent years and the resumption of physical gold accumulation last year.

## INDIAN SUB-CONTINENT

**Indian** investment demand surged 29% to 266 tonnes last year. However, India's share of the global total fell to 19% from a five year average of 24%. This was primarily due to a fall in the demand during the second half following the surge in premia. To quantify this, the first half grew by 144% year-on-year, while the second half declined by 36% from the same period last year.

Customs duty at 10% and premia adding at least another 10% served not only to discourage conventional domestic investors but also the non resident Indians (NRIs). For NRIs gold has been one of the safest instruments to protect their savings from inflation, currency depreciation and also as an asset that can easily be liquidated to meet family emergencies during their absence.

As prices surged to fresh records, professional investors sold heavily and the metal was primarily absorbed by jewellery fabricators who were short of stock. Discussion with wealth managers reveals that professional investors liquidated gold holdings and ploughed it back into equity markets from late August to November. This eventually cut down the volume of purchases in bigger denomination bars to the extent that during the festival of laxmi pooja and diwali we heard only of time-honoured buying rather than anything of note.

In the small bar sector, a better winter crop in 2013 and a decline in prices towards retail investment picked up pace from March largely in the 5, 8, 10 and 20 gramme bars. Demand was very solid from the last week of April to the second week of May, to an extent that the day of Akshaya Tritiya, which is second only to the Diwali festival for retail gold purchase, didn't see much fan fare. A strong distribution network of banks and India Post facilitated sales till May. However, the ban on imports of retail investment bars and coins stalled sales. While this ban helped increase sales through the jewellery network, its growth hinged on cash based transactions, specifically amongst jewellers in the informal space, given the penetration of unofficial gold. This revived growth in tola bars more specifically in the tier three and tier four cities.

Bar investment in **Bangladesh** and **Nepal** increased by 21% and 35% respectively in the expectation of higher prices, although high customs duties meant that a large proportion of investment bars were imported unofficially. Political instability in Bangladesh was also a key reason for increase in retail activity there.

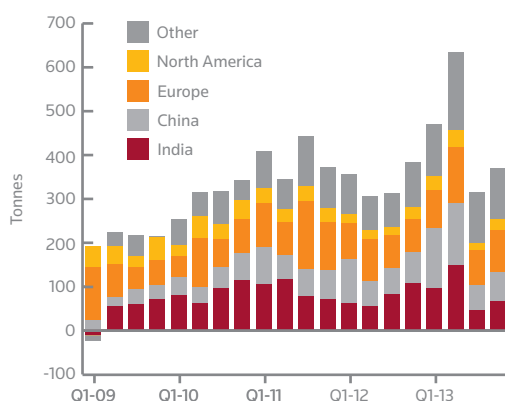
## EAST ASIA

Bar investment demand in **China** last year reached 360 tonnes, representing a 45% year-on-year increase. The exceptional rise was primarily due to the lower price environment for the first half of 2013, especially during the significant price correction in April, which triggered a rush of bargain hunting. Demand for gold bars exploded by 176% year-on-year in the second quarter. In order to meet the demand frenzy, banks also increased their product lines in gold bars and the availability at their branches in order to improve public access.

However, demand for gold bars took a huge drop in the second half of 2013, declining 9% year-on-year and by over 60% compared to the first half. In the second half of the year, new policies targeting corruption and the gifting culture were rolled out by the Chinese government, hence the demand for gold bars dived substantially. We expect this anti-gifting policy to continue to be implemented, at least for the foreseeable future.

After declining by over a quarter in 2012 as a result of strenuous government regulations on gold ownership, **Vietnam's** investment demand rebounded 29% last year to an estimated 84 tonnes. While the government decree (No. 24), which essentially placed bar production, import and export of gold, and trading of gold bars in the hands of state-appointed companies remained

## RETAIL INVESTMENT



Source: GFMS, Thomson Reuters

## PHYSICAL BAR INVESTMENT

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Germany	-1.4	9.3	22.3	30.3	109.1	128.7	121.7	154.5	104.1	115.7
Switzerland	1.2	9.2	10.5	12.5	88.9	97.1	92.4	115.9	80.2	64.8
Belgium	-1.2	-1.2	-4.3	-2.0	-0.1	12.2	18.7	23.8	19.2	21.0
Turkey	1.9	1.5	3.2	4.4	4.0	0.9	4.9	14.0	8.5	11.6
Other Countries	-35.3	-30.6	-32.9	-40.3	-1.0	-20.4	-10.2	28.4	35.2	27.1
<b>Total Europe</b>	<b>-34.9</b>	<b>-11.9</b>	<b>-1.2</b>	<b>4.8</b>	<b>200.9</b>	<b>218.4</b>	<b>227.5</b>	<b>336.5</b>	<b>247.1</b>	<b>240.2</b>
<b>North America</b>										
United States	0.9	12.4	4.9	-2.5	51.4	63.5	62.0	47.5	25.9	33.4
Canada	2.0	1.4	4.0	1.4	5.2	7.4	3.4	5.1	2.6	5.0
Mexico	0.7	0.7	0.8	1.8	5.3	3.3	2.8	2.9	2.8	2.4
<b>Total North America</b>	<b>3.6</b>	<b>14.5</b>	<b>9.7</b>	<b>0.8</b>	<b>61.9</b>	<b>74.3</b>	<b>68.3</b>	<b>55.5</b>	<b>31.3</b>	<b>40.7</b>
<b>South America</b>										
Venezuela	0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.6
Other Countries	-0.9	-4.3	-3.6	-2.0	-0.6	0.6	0.3	0.5	0.5	1.3
<b>Total South America</b>	<b>-0.9</b>	<b>-4.3</b>	<b>-3.6</b>	<b>-2.0</b>	<b>-0.6</b>	<b>2.6</b>	<b>2.3</b>	<b>2.5</b>	<b>2.5</b>	<b>3.9</b>
<b>Asia</b>										
China	6.7	9.0	10.1	21.0	60.8	102.3	178.6	250.3	249.3	360.3
India	76.2	102.8	139.8	148.6	159.9	117.5	266.3	288.0	205.9	265.8
Thailand	11.7	28.0	15.9	4.6	42.6	-10.1	63.0	103.6	101.9	157.9
Vietnam	39.2	34.0	69.5	56.1	96.2	58.2	67.0	87.8	65.4	84.3
Iran	12.8	11.9	12.0	20.2	30.6	15.8	33.8	40.4	44.2	50.4
Indonesia	5.0	3.0	-1.0	0.3	2.9	-6.0	15.3	24.8	22.1	34.1
Pakistan	3.1	3.4	2.1	2.6	-4.4	-19.4	7.0	14.6	12.3	23.9
Saudi Arabia	5.2	7.3	8.0	9.0	13.5	10.9	14.5	17.4	16.3	17.2
UAE	6.9	10.3	8.6	7.9	10.0	6.4	8.1	11.1	9.9	11.5
Malaysia	0.7	0.7	0.1	0.1	1.2	4.4	5.6	12.3	8.8	11.0
Other Countries	78.3	53.0	-33.4	-38.1	-25.0	-44.2	-34.1	-18.7	3.8	43.3
<b>Total Asia</b>	<b>245.8</b>	<b>263.3</b>	<b>231.6</b>	<b>232.3</b>	<b>388.4</b>	<b>235.8</b>	<b>625.1</b>	<b>831.6</b>	<b>739.9</b>	<b>1,059.7</b>
<b>Oceania &amp; Other</b>										
Australia	1.4	0.7	0.8	1.0	2.9	4.4	10.2	15.5	14.8	17.6
Egypt	0.5	0.9	0.6	0.7	0.4	0.7	1.2	0.7	0.8	15.2
<b>Total Oceania &amp; Other</b>	<b>1.9</b>	<b>1.6</b>	<b>1.4</b>	<b>1.7</b>	<b>3.3</b>	<b>5.1</b>	<b>11.4</b>	<b>16.2</b>	<b>15.6</b>	<b>32.8</b>
<b>World Total</b>	<b>215.4</b>	<b>263.3</b>	<b>237.9</b>	<b>237.6</b>	<b>653.8</b>	<b>536.2</b>	<b>934.5</b>	<b>1,242.2</b>	<b>1,036.4</b>	<b>1,377.3</b>
...of which:-										
Middle East*	33.6	37.8	36.6	46.8	63.0	36.5	66.0	93.2	73.1	113.5
East Asia*	133.6	119.7	55.2	37.4	172.0	100.9	290.3	448.0	454.9	679.5
CIS*	8.2	3.3	3.6	4.2	4.4	4.9	3.1	2.8	2.7	2.7
Indian Sub-Continent*	81.7	108.1	143.0	152.3	156.6	98.5	273.6	304.4	220.8	293.0

Source: GFMS, Thomson Reuters; \*The key regional bullion markets

firmly in place, such was the appetite for gold that consumers found ways to purchase investment products when prices collapsed in the first half of the year. Such was the frenzy for fine gold products during this period that the premium between the domestic price and the international price reached an all-time high of more than \$210 per ounce and remained well above \$150 more most of the year. While access to investment products fabricated locally was tightly controlled and released into the market occasionally in an attempt to reduce the premia the shortfall was again made up from

sizeable unofficial imports that entered Vietnam from neighbouring countries.

**Thailand's** bar hoarding rose sharply last year, jumping 55% to an estimated 158 tonnes. Following a modest fall in 2012 investment demand soared to a new record in 2013 as both professional speculators and the general public raced to rebuild gold assets in the lower price environment. During periods of extreme demand (in mid-April and again in late June) Chinatown showrooms were cleared of all stocks and such was the demand for

gold that consumers waited for hours to place an order at the perceived discounted rate as gold in domestic terms fell below baht 19,000 per baht bar (weighing 15.244 grammes) for the first time since early 2011. The third quarter saw a rise in liquidations as some investors took profits as prices pushed back above baht 22,000 per baht bar in late August. However, as prices again declined in the final quarter bargain hunters returned, and while investment demand remained at historically high levels offtake was well below the frenzy witnessed in the first half of the year.

Last year, bar investment demand in **Japan** was net positive for the first time in seven years, reaching an estimated 3.3 tonnes. In recent years the Japanese market has seen significant net-divestment as consumers have liquidated gold assets to take profits as gold has tracked higher. Trade was again dominated by sellers in the first quarter last year before the sharp drop in the gold price in the second quarter stimulated a surge in buy-side activity as consumers replenished previously sold stocks at the perceived discounted price. Thereafter, profit taking returned in the third quarter as gold in domestic terms breached 4,400 yen per gramme in August, before net demand returned in the final quarter of the year on a declining price trend. In addition to the gold price impact, the planned introduction of a higher consumption tax rate in April this year may have also encouraged purchases ahead of the scheduled change.

## MIDDLE EAST

Following a drop of over a fifth in 2012, investment demand across the Middle East surged almost 55% last year to a record level of 114 tonnes. The significant rise was fuelled primarily by the acute fall in the dollar gold price in the second quarter that saw consumers rush to rebuild gold assets that may have been liquidated previously during periods of elevated gold prices. **Iran**

accounted for the bulk of offtake across the region (at over 40% of the regional total), increasing 14% to an estimated 50 tonnes on account of a rise in safe haven purchases as the country struggled to reign in spiralling inflation and support its domestic currency in an environment of economic sanctions. It was a familiar pattern across much of the region as speculators took advantage of the lower price environment to add physical gold to their portfolio, with offtake in **Saudi Arabia** increasing by 6% and **Turkey** jumping 37% to over 11.5 tonnes. Elsewhere, demand from the **UAE** rose an estimated 17%, while the remainder of the GCC region also saw impressive gains albeit from a low base.

## OFFICIAL COINS

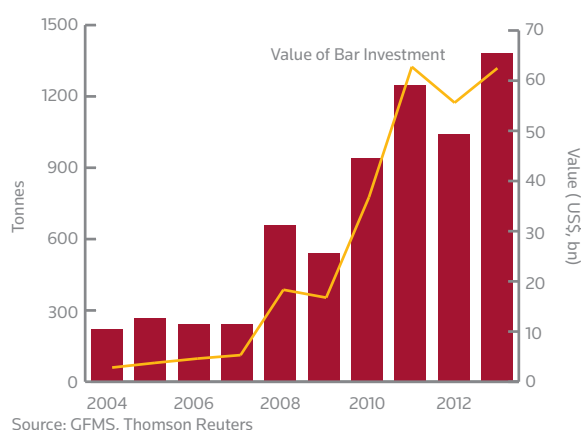
— *Global official coin minting surged by 43% year-on-year in 2013, driven by explosive growth in production in Turkey (127% year-on-year growth). Bargain hunting in the wake of gold price capitulation also spurred robust offtake in other countries.*

After an 13% year-on-year contraction in 2012, official coin fabrication surged by a whopping 43% in 2013, bringing total coin fabrication to 297 tonnes, the highest level of production ever recorded. Putting these numbers in context, official coins fabrication averaged 229 tonnes between 2008 and 2013 (the former reflecting official coin demand starting to rise in earnest in response to the global economic meltdown), and averaged 187 tonnes in the past ten years. In value terms, total investment in official coins comfortably exceeded last year's \$11.1 billion to reach \$13.5 billion, a 21% year-on-year increase. This growth rate, however, was half that of coin fabrication as the fall in the gold price over 2013 partially negated the effect of rising coin fabrication.

The strong increase in fabrication took place primarily in the first half of the year, on the back of strong retail investors' demand as the gold price plunged by 28%, creating a perfect buying opportunity for those who were priced out of the market in previous years. Analysing our estimates on a region-by-region perspective, the region with the strongest growth in official coin fabrication last year was Europe (+77% year-on-year), followed by Oceania (+55% year-on-year). Meanwhile, other regions observed robust double digit growth rates, with North America, South America, Asia and Africa growing by 32%, 36%, 11% and 12% respectively.

The chief contributor to the tremendous growth in Europe was **Turkey**. Official coin fabrication rose by an eye-

## WORLD PHYSICAL BAR INVESTMENT



## OFFICIAL COINS (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Turkey	47.0	52.0	56.7	56.7	53.1	30.9	35.6	58.9	39.9	90.6
China	5.3	3.6	6.9	11.2	7.9	10.7	12.7	20.1	34.3	37.9
United States	18.0	14.0	27.5	19.0	31.8	50.9	44.5	36.5	27.5	34.1
Canada	8.8	10.2	8.3	9.0	27.6	38.2	34.1	35.8	23.9	33.6
South Africa	3.5	1.5	2.4	6.8	8.7	23.2	20.0	23.8	23.7	26.6
Austria	8.0	7.2	4.4	5.3	24.9	33.4	17.9	21.1	12.4	18.5
Australia	5.2	4.4	5.3	5.6	9.6	11.0	8.4	10.6	10.0	15.5
Iran	4.6	4.2	4.0	4.5	5.3	7.6	9.4	9.6	9.2	10.3
United Kingdom	3.2	3.3	3.5	3.4	4.3	4.7	4.4	5.8	6.8	7.3
Germany	6.2	5.5	5.5	5.5	5.5	5.0	5.0	4.7	5.5	7.0
Russia	1.4	0.9	1.6	4.3	5.7	6.5	5.4	4.6	6.4	4.2
Sweden	0.1	0.1	0.1	0.1	1.1	1.8	1.8	2.0	2.0	2.0
Other Countries	5.0	4.7	3.7	4.5	6.4	6.5	7.2	5.3	5.9	9.7
<b>World Total</b>	<b>116.1</b>	<b>111.5</b>	<b>130.0</b>	<b>135.8</b>	<b>191.8</b>	<b>230.4</b>	<b>206.3</b>	<b>238.8</b>	<b>207.5</b>	<b>297.3</b>

Source: GFMS, Thomson Reuters

popping 127% over the year to achieve total official coin production of 91 tonnes, a record-high and more than two times its production in 2012. In fact, coin fabrication in Turkey alone exceeded total fabrication in the Americas and Asian regions respectively. Much of this was driven by bargain hunting on the back of the gold price decline in Q2. Coin fabrication ground to a halt in the third quarter when the local gold price recovered to TRY 2,900. Fabrication activity resumed again when the price crumbled in Q4. Elsewhere in Europe, coin production grew by 48% in **Austria** to 18 tonnes. Similarly, offtake centred around Q2 when demand from bargain hunters exploded, but subsequent quarters also showed a higher than average uptake. Despite fresh interest amongst bargain hunters, the level of coin fabrication was only half of the levels recorded in 2009 when Europe was initially hit by the Great Financial Crisis, reflecting satiation amongst existing investors amid improved Eurozone economic sentiment and therefore, limited conviction to expand their holdings.

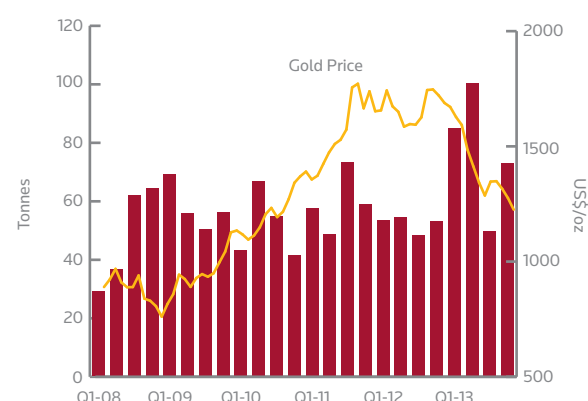
Oceania also observed robust coin fabrication growth in 2013. Coin fabrication reached 16 tonnes, a year-on-year increase of 55%, a record-high. While part of this fabrication growth was in response to an uptick in demand from bargain hunters, mints in the region have actively expanded their marketing activities abroad, resulting in strong sales globally, well in excess of sales in 2009. Meanwhile, **China** was the main driver of coin fabrication growth in Asia as it expanded the mintage of its official Panda Coin programme. While bargain hunting has been the main impetus behind gold coin uptake in China, efforts to enhance retail buyers' access to bullion coins via specially designated ATMs have

further boosted sales. We estimate China fabricated approximately 38 tonnes of gold coins in 2013.

Coin fabrication in North America also saw a rebound in 2013 after a sharp decline in 2012. The **USA** and **Canada** both produced 34 tonnes of gold bullion coins respectively. The rebound, however, failed to surpass record fabrication levels achieved in 2009. We believe the surge in fresh buying interest may have been negated by an increase in secondary market coin supplies, and the size of demand from bargain hunters in 2013 is much smaller than demand from investors looking for a safe haven when the financial crisis first hit in 2008/2009. Furthermore, as discussed above, aggressive marketing campaigns by mints from other regions have resulted in North American mints ceding some of their market share.

Ranking of producers by country showed that Turkey continues to occupy the top of the list. Meanwhile, we have revised our coin fabrication estimates for China upwards since our last Gold Survey. This puts China in

## OFFICIAL BULLION COIN SALES



## MEDALS AND IMITATION COINS (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
India	24.3	32.8	55.8	64.7	63.5	53.5	82.6	80.0	106.3	96.3
Other Countries	5.2	4.2	3.6	3.7	6.2	5.4	5.7	7.8	7.1	7.5
<b>World Total</b>	<b>29.5</b>	<b>37.0</b>	<b>59.4</b>	<b>68.4</b>	<b>69.7</b>	<b>58.9</b>	<b>88.3</b>	<b>87.8</b>	<b>113.4</b>	<b>103.8</b>

Source: GFMS, Thomson Reuters

second spot. Rankings for the remainder of the list are largely unchanged.

Entering 2014, coin sales in the first two months of the year in North America have rebounded from Q4 2013. Much of this is purely seasonal as January is traditionally the strongest month for mint sales in the USA as distributors take up allocations. On a year-on-year basis however, sales have declined markedly – almost half the level of a year earlier.

Similarly, official coin fabrication has been relatively weak in Turkey in the beginning of the year, as there has been considerable selling activity amongst Turkish holders of gold back into the local market, to take advantage of both a higher dollar gold price and a weaker lira. While it is too early to conclude that buying interest has waned in 2014, a strong gold price performance since the beginning of the year will nevertheless impede buying activity amongst bargain hunters and the improved gold price will entice coin investors to take profits, both negative developments for coin fabrication. The situation will be more pronounced in emerging markets where the local gold price has risen at a higher rate due to the weakening of their currencies against the US dollar. Unless the gold price tumbles in a similar fashion as in 2013, we expect a relatively reticent market in official coins fabrication this year.

## MEDALS AND IMITATION COINS

*— Indian offtake reduced to 96 tonnes, as distribution channels freeze their sales and as higher premia discouraged investors.*

Demand for medallions and imitation coins in **India**, which constitutes the bulk of global demand, slipped by 9% to 96.3 tonnes last year. The intensity of the decline however, was higher during the second half, declining 48% year-on-year in contrast to the 42% rise in the first six months of the year. A decline of such a magnitude was the first time in recent history that this has occurred and is attributed to policy shifts that banned import of gold coins into India since 13th May 2013. To illustrate,

India imported about 17.5 tonnes in 2011 and 19 tonnes in 2012, whereas in 2013 it was only 1.5 tonnes and since May 2013 no coins have been imported officially.

Comprehending the underlying reasons for this ban, banks and India Post refrained from selling domestically minted coins. This eventually shut the large distribution network through which coins were being sold. However, sales continued through most of the jewellery retailers, while some restrained voluntarily. Additionally, regulations that became effective from 27th May 2013, restricted advances against gold coins weighing more than 50 grammes. Thus, it was natural for consumers to refrain from buying gold coins as it would not help as a collateral at time of emergency. Also, a ban on selling coins and bars against credit limited the purchases through credit cards.

Despite these curbs, investor interest was resilient in a few categories such as sovereign and commemorative coins. The pace at which the first tranche of Royal Mint coins was absorbed showed consumers willingness to pay a premium for quality. Also, we noticed consumers' sovereign coins with the fake stamp of an LBMA approved refiner, reminiscent of pre-2003 era. This was largely a consequence of a ban on coin imports, just as these coins were getting more popular. That said, a large part of it emerged from unofficial supply.

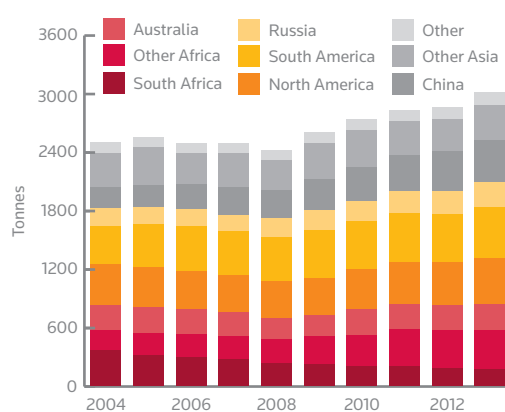
Looking ahead, demand in the first half of 2014 is expected to be lower by 58% year-on-year, as lower supplies and parliamentary elections restrict cash based transactions.



### 3. MINE SUPPLY

- In 2013 global mine supply reached a new record total of 3,022 tonnes, a 5.6% year-on-year increase.
- Continued strong growth was seen from China, which remains the world's largest gold producer. Canada, the Dominican Republic, Russia and Brazil also saw substantial increases in mine supply.
- New mines continued to support global production, and many miners increased production in a drive to both boost output and lower unit costs.
- Total cash costs rose by only \$1/oz in 2013, reflecting industry-wide efforts by producers to tackle cost escalation.
- The main upward pressure on cash costs came from labour. Depreciating local currencies countered this upward pressure, benefitting producers' costs expressed in dollars, particularly in South Africa.
- Global All-in Costs, which include cash and non-cash costs, sustaining capital expenditure, indirect costs and overheads, increased by 27% to \$1,620/oz.
- The increase in All-in Costs reflected the large number of write-downs reported during 2013, as producers re-evaluated reserves using lower gold price assumptions, and revised mine plans to improve near-term cash flow.
- Producer de-hedging totalled 48 tonnes during 2013, with few reports of producers entering into new hedge positions.
- We expect production to remain strong in 2014 on continued support from new mine supply, and as producers continue to optimise operating mines.

#### GLOBAL GOLD PRODUCTION



#### TOP 20 GOLD MINING COUNTRIES

Rank			Production (t)	
2013	2012		2012	2013
1	1	China	413.1	438.2
2	2	Australia	251.4	266.1
3	4	Russia	229.7	248.8
4	3	United States	231.3	228.9
5	5	Peru	180.4	181.6
6	6	South Africa	177.3	174.2
7	7	Canada	108.0	133.1
8	9	Ghana	95.8	107.9
9	8	Mexico	102.8	103.8
10	10	Indonesia	89.0	99.2
11	12	Brazil	67.3	79.9
12	11	Uzbekistan	73.3	77.4
13	13	Papua New Guinea	57.2	63.3
14	14	Argentina	54.6	50.1
15	17	Chile	48.6	48.6
16	15	Mali	50.3	47.1
17	16	Tanzania	49.1	46.6
18	19	Kazakhstan	40.0	42.4
19	18	Philippines	41.0	40.6
20	20	Colombia	39.1	40.4
Rest of World			461.7	504.0
World Total			2,860.9	3,022.1

Source: GFMS, Thomson Reuters

### MINE PRODUCTION

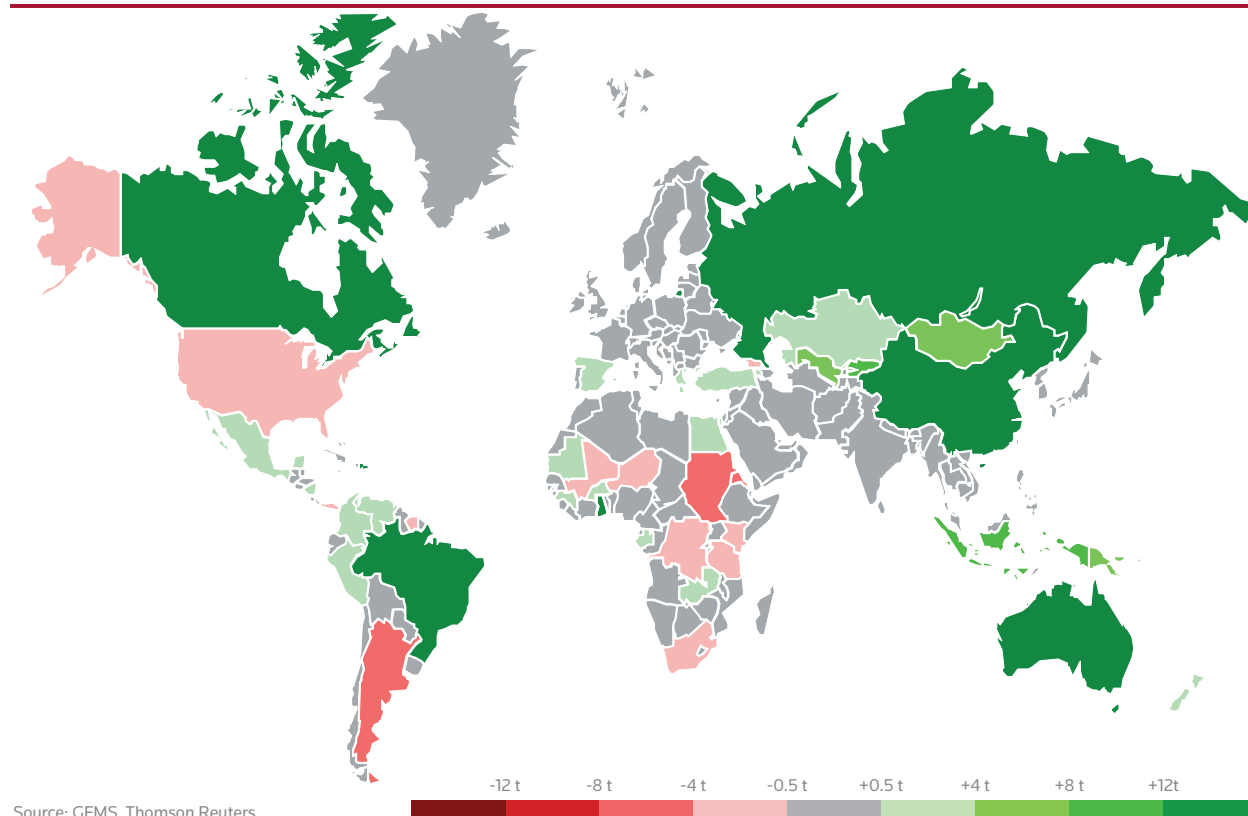
#### INTRODUCTION

Global mine production grew by 5.6% in 2013, following a year of relatively modest growth in 2012. Total production last year was 3,022 tonnes, another successive record high. The trend of growth in Chinese output continued, with significant increases also seen in Russia, Canada and South America, largely thanks to new supply from Pueblo Viejo in the Dominican Republic.

This large increase in global output may seem counterintuitive at a time when the industry is under increasing pressure from falling gold prices and increasing costs, but can be explained by a combination of different factors. Firstly, a number of significant new operations commenced production over the past couple of years and the ramp-up in output from these has provided a significant continued boost to global supply. The largest of these new mines is Pueblo Viejo in the Dominican Republic, with others including Detour Lake, Canadian Malartic and Young-Davidson, all of which contributed towards the large (25 tonne) gain in output from Canada last year. Late 2013 saw additional new supply from Tropicana, Kibali and Akyem, all of



## MINE PRODUCTION WINNERS AND LOSERS, 2013 VERSUS 2012



which began commissioning towards the end of the year. Secondly, output from many producers either hit the top end of, or exceeded, guidance for 2013. With a persistent focus on maximising efficiency during the year, higher throughput, combined in some cases with processing higher grades, has provided further support to global production. Understandably, maximising output is one way for producers to preserve margins when gold prices are comparatively depressed.

In 2013 we saw a return to higher production levels for a number of significant operations that had produced relatively little in 2012, chiefly Grasberg and Kumtor. In the case of the former, mine sequencing led to large variations in output, which in 2012 was combined with the effects of labour unrest to depress output. At the latter, output was hit by both geotechnical problems and local political issues. These falls in supply were reversed in 2013, with both operations seeing significant gains in output, much of which came towards the end of the year.

Additionally, the industry did not see a repeat of the violent labour unrest that led to significant losses during 2012, particularly in South Africa. Consequently, the decline in supply from South Africa was rather less precipitous than that seen in 2012, at just 2% compared to 12% the preceding year. The relative calm in the industry comes on the back of multi-year wage

agreements made in 2012, but may not necessarily reflect a growing awareness that the sustained fall in the gold price has placed producers under genuine pressure.

Similarly, the threat of increased government taxes and royalty rates has receded in some jurisdictions, with Ghana recently putting plans for a mining windfall tax on hold in the light of falling gold prices, and Mongolia proposing a reduction in mining tax rates in order to boost investment in the country. However, Mexico has approved a new 7.5% mining tax, and in Indonesia copper concentrate export restrictions potentially threaten gold output from major copper-gold producers such as Grasberg and Batu Hijau.

The prevailing theme for gold producers during 2013 was cost containment. We mentioned this shift in focus a year ago in *GFMS Gold Survey 2013*; however, the subsequent 12 months saw this expand into an industry-wide effort to tackle cost escalation. Nonessential capital spending has been the main target of many cost-cutting programs, with a number of producers now placing an emphasis on organic, brownfield growth rather than the aggressive expansion and expensive acquisitions that characterised the previous few years. This has resulted in a number of high-profile casualties; for example, Barrick Gold placed Pascua Lama on care and maintenance last year and Anglo American and Rio Tinto have both

made the decision to walk away from the Pebble joint venture project. Throughout the industry, M&A activity was subdued in 2013, with an aggregate value over 30% lower than that of 2012 which was, in turn, far lower than the totals seen in the preceding couple of years. Instead, there was a shift in emphasis towards portfolio rationalisation, with divestitures of higher-cost assets, for example several of Barrick Gold's Australian operations. These industry-wide cuts in development are already having serious consequences for the project pipeline, with the large Nataalka project delayed by a year, in addition to the postponement of Pascua Lama, and the continuing squeeze on exploration funding in the junior sector.

Efforts to protect margins have gone beyond cuts to capital spending, with mine site costs also being targeted. In 2013, we saw total cash costs increase by only \$1/oz, compared to a \$100/oz increase in 2012. This supports the idea that there is scope for the industry to continue operating at lower gold prices, and partially explains why we have seen relatively few mine closures or suspensions to date, and that these have generally been limited to small, marginal operations. That producers have succeeded, at least by some measures, in reining-in cost escalation may also partially explain why there has been no uplift in interest in producer hedging as a means of protecting margins. The global producer hedge book continued to contract during 2013, with net de-hedging of 48 tonnes, a similar trend to that observed during 2012, with few reports of new hedging activity.

A further consequence of the falling gold price is that most producers have recalculated reserves and resources using lower gold price assumptions, and have in some cases significantly revised mine plans. Last year therefore saw widespread impairments reported by the gold miners, which are reflected in the All-in Cost of production (a proprietary Thomson Reuters metric designed to fully reflect the long-term costs of sustaining gold mining activities). The All-in Cost ballooned by 27% year-on-year in 2013 to \$1,620/oz. This increase is almost entirely attributable to a large number of substantial write-downs during 2013.

During 2013, we have seen that producers have the flexibility to reduce their operating costs, although the sustained decline in the gold price ensured that margins remained under serious pressure. When non-cash items such as write-downs are considered, the 2013 results for many gold producers were grim. Given that the gold price has remained relatively low during early 2014, there has, as yet, been no respite for gold miners. We therefore expect the emphasis for most producers to remain on

cost-cutting and efficiency, with little appetite at present on the part of either management or shareholders for a return to large-scale capital projects.

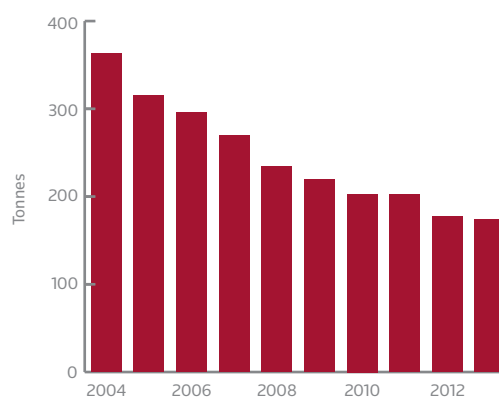
## AFRICA

African output was flat year-on-year, producing 580 tonnes of gold. The region's output was characterised by strong gains in the north and western parts of the continent being offset by lower production in the eastern and southern sections of the continent.

**South Africa**, which has seen its gold mining industry contract over the past four decades, continued this trend of falling output, albeit at a slower rate last year, with a 1.7% or three tonne year-on-year fall in output. Unlike 2012, when strikes marred the industry and contributed to significant output declines, 2013 saw a number of the major producers securing two-year wage agreements and strike action was comparatively modest.

Following Gold Fields' unbundling of the KDC and Beatrix assets, Sibanye Gold implemented operational changes that led to standout performances at these mines, with combined gains of over six tonnes. Elsewhere, higher throughput and processed ore grades, particularly in the fourth quarter of 2013, led to over five tonnes of collective gains at Moab Khotso, TauTona, Bambanani and South Deep. However, primarily due to deteriorating project economics and working capital requirements, mine closures at Blyvooruitzicht, Buffelsfontein and Burnstone led to output falls. Additionally, large losses were seen at Kusaalethu where nine weeks of strike action that began in 2012 and lasted into early 2013 affected the first quarter of production significantly. The subsequent start of mining and ramp up period resulted in a two tonne year-on-year drop in output. Elsewhere, falling grades and lower throughput resulted in a combined two tonne loss at Mponeng and Tshepong.

### SOUTH AFRICAN MINE PRODUCTION



## WORLD GOLD MINE PRODUCTION

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Russia	181.6	175.4	172.8	169.3	188.7	205.2	203.4	215.6	229.7	248.8
Turkey	5.0	5.1	8.1	10.1	11.4	14.5	16.6	24.1	29.6	33.5
Finland	1.3	1.2	1.1	1.5	1.7	3.8	5.6	6.4	8.9	8.5
Sweden	6.6	6.1	6.7	5.0	4.9	5.5	6.3	5.9	6.0	6.4
Bulgaria	2.4	2.3	2.8	2.9	2.8	3.3	2.5	3.4	4.3	4.6
Spain	4.0	1.4	2.2	0.5	0.0	0.0	0.0	0.4	1.5	2.1
Other	4.6	4.0	3.8	4.0	4.1	3.7	3.1	2.4	2.4	3.7
<b>Total Europe</b>	<b>205.5</b>	<b>195.5</b>	<b>197.6</b>	<b>193.4</b>	<b>213.6</b>	<b>235.9</b>	<b>237.5</b>	<b>258.3</b>	<b>282.3</b>	<b>307.7</b>
<b>North America</b>										
United States	260.3	262.3	251.8	238.0	233.6	221.4	229.7	233.0	231.3	228.9
Canada	128.5	119.5	103.5	102.2	95.0	96.0	103.5	107.8	108.0	133.1
Mexico	21.8	30.6	39.0	43.7	50.8	62.4	79.4	88.6	102.8	103.8
<b>Total North America</b>	<b>410.6</b>	<b>412.5</b>	<b>394.3</b>	<b>383.9</b>	<b>379.4</b>	<b>379.9</b>	<b>412.5</b>	<b>429.4</b>	<b>442.1</b>	<b>465.8</b>
<b>South America</b>										
Peru	181.2	217.8	213.5	183.6	195.5	201.4	184.8	187.6	180.4	181.6
Brazil	42.9	44.5	49.2	58.1	58.7	64.7	67.5	67.3	67.3	79.9
Argentina	28.5	27.8	43.4	42.5	40.3	48.8	63.5	59.1	54.6	50.1
Chile	40.0	39.6	40.4	41.5	39.2	40.8	38.4	44.5	48.6	48.6
Colombia	23.6	24.8	26.0	26.0	26.0	27.0	33.5	37.5	39.1	40.4
Dominican Republic	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.5	4.1	26.5
Venezuela	20.5	21.1	26.5	24.3	24.3	24.8	24.9	25.5	21.8	22.9
Suriname	16.3	18.2	16.9	16.1	17.9	20.4	20.5	20.2	20.1	18.6
Ecuador	10.8	11.9	14.0	14.0	14.0	14.0	17.2	17.6	17.6	17.7
Guyana	15.2	10.1	8.4	9.7	10.5	11.9	12.8	14.4	14.4	14.4
Nicaragua	4.5	3.9	2.9	3.1	2.9	2.6	4.9	6.3	6.9	8.7
Guatemala	0.0	0.7	5.2	7.7	8.0	9.0	9.4	12.1	6.6	6.5
Bolivia	4.8	8.0	9.6	8.8	8.4	7.2	6.4	6.5	6.4	6.1
Honduras	5.7	4.4	3.9	3.1	1.9	2.6	2.4	1.9	1.9	2.0
Panama	0.1	0.1	0.1	0.1	0.1	0.9	1.8	2.1	2.3	1.3
Other	5.2	6.8	8.0	8.1	6.4	6.0	5.6	5.7	5.9	6.0
<b>Total South America</b>	<b>399.2</b>	<b>439.6</b>	<b>468.1</b>	<b>446.9</b>	<b>454.2</b>	<b>482.5</b>	<b>494.2</b>	<b>508.8</b>	<b>497.9</b>	<b>531.4</b>
<b>Asia</b>										
China	217.3	229.8	247.2	280.5	292.0	324.0	350.9	371.0	413.1	438.2
Indonesia	114.2	167.0	114.1	149.5	95.9	160.5	140.1	120.1	89.0	99.2
Uzbekistan	83.7	75.5	74.1	72.9	72.2	70.5	71.0	71.4	73.3	77.4
Kazakhstan	15.0	19.2	21.8	22.6	22.0	22.5	29.9	36.7	40.0	42.4
Philippines	31.7	33.3	36.1	38.8	35.6	37.0	40.8	37.1	41.0	40.6
Kyrgyzstan	22.1	16.6	10.6	10.5	18.4	17.0	18.5	19.7	11.3	20.2
Mongolia	19.2	18.4	18.9	18.4	16.5	14.1	13.9	12.4	12.8	17.8
Laos	4.4	6.7	6.5	4.5	4.7	5.4	5.5	4.4	6.7	7.0
Japan	8.3	8.3	8.9	8.9	6.9	7.7	8.5	8.7	6.7	6.4
North Korea	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
Thailand	5.3	5.2	4.3	3.3	2.5	5.4	4.2	3.2	5.2	5.3
Malaysia	5.2	5.7	4.9	4.3	3.8	4.2	5.2	5.0	5.3	5.1
Saudi Arabia	8.2	7.5	5.2	4.5	4.0	5.1	4.5	4.6	4.7	5.0
Vietnam	2.3	2.4	2.5	2.7	2.7	3.1	3.4	3.7	3.9	4.1
Tajikistan	3.9	2.4	2.3	2.3	2.9	2.6	3.2	3.4	3.4	3.8
Armenia	2.1	1.6	1.1	0.4	0.5	1.4	1.6	2.1	2.1	3.5
India	3.5	3.0	2.5	2.9	2.6	2.1	2.8	2.3	1.7	2.0
Georgia	2.1	1.6	1.5	1.2	1.1	0.8	3.6	3.2	3.5	2.0
Other	5.3	4.8	4.3	4.3	4.3	5.0	6.7	6.4	6.2	6.2
<b>Total Asia</b>	<b>560.2</b>	<b>615.3</b>	<b>573.2</b>	<b>638.9</b>	<b>594.9</b>	<b>694.7</b>	<b>720.7</b>	<b>721.6</b>	<b>736.2</b>	<b>792.3</b>

## WORLD GOLD MINE PRODUCTION

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Africa</b>										
South Africa	363.3	315.1	295.7	269.9	233.8	219.8	202.9	202.0	177.3	174.2
Ghana	57.6	62.8	69.9	77.3	80.4	90.3	92.4	91.0	95.8	107.9
Mali	39.6	46.7	56.9	51.9	47.0	49.1	43.9	43.5	50.3	47.1
Tanzania	47.9	49.3	44.8	40.1	35.6	40.9	44.6	49.6	49.1	46.6
Burkina Faso	1.6	1.7	2.1	2.9	6.9	13.8	25.3	34.1	31.3	35.1
Dem. Rep. of the Congo	5.1	5.3	5.6	6.5	7.2	10.0	17.0	22.0	26.1	25.3
Sudan	4.7	5.6	3.6	3.1	2.7	4.0	10.1	22.5	27.9	23.4
Zimbabwe	24.3	19.5	17.2	13.5	8.9	9.8	16.3	19.0	19.5	19.9
Guinea	13.4	14.3	16.6	18.0	23.9	22.5	20.4	19.7	18.4	19.0
Ivory Coast	2.5	3.0	3.0	3.0	5.3	8.6	7.3	13.4	14.0	13.8
Ethiopia	4.6	3.8	4.0	3.9	3.8	5.5	6.6	11.5	12.0	12.0
Egypt	0.0	0.0	0.0	0.0	0.0	0.0	4.7	6.3	8.2	11.1
Mauritania	0.5	0.5	0.6	1.9	6.8	8.4	9.1	8.7	8.2	10.0
Senegal	0.1	0.1	0.1	0.1	0.1	5.2	4.5	4.3	6.8	6.5
Zambia	0.1	0.5	1.0	1.3	1.9	3.1	3.4	3.5	4.2	5.2
Eritrea	0.5	0.5	0.5	0.5	0.5	0.5	0.5	12.8	10.2	3.4
Other	12.7	20.6	18.3	19.8	21.4	18.6	20.7	20.3	20.4	19.2
<b>Total Africa</b>	<b>578.4</b>	<b>549.5</b>	<b>539.9</b>	<b>513.6</b>	<b>486.2</b>	<b>509.9</b>	<b>529.8</b>	<b>584.1</b>	<b>579.8</b>	<b>579.8</b>
<b>Oceania &amp; Other</b>										
Australia	258.1	262.2	246.8	247.4	215.2	223.5	260.8	258.6	251.4	266.1
PNG	76.1	70.9	61.7	61.7	70.3	70.6	69.7	63.5	57.2	63.3
New Zealand	10.2	10.6	10.6	10.6	13.4	13.4	13.7	11.6	10.2	12.4
Solomon Islands	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.7	2.0	2.0
Fiji	4.0	2.9	1.5	0.1	1.1	1.1	2.1	1.6	1.6	1.4
Other	1.6	2.5	2.7	1.8	1.7	0.9	0.0	0.1	0.1	0.0
<b>Total Oceania &amp; Other</b>	<b>350.0</b>	<b>349.1</b>	<b>323.4</b>	<b>321.8</b>	<b>301.8</b>	<b>309.7</b>	<b>346.4</b>	<b>337.1</b>	<b>322.5</b>	<b>345.1</b>
<b>World Total</b>	<b>2504.0</b>	<b>2561.5</b>	<b>2496.4</b>	<b>2498.5</b>	<b>2430.1</b>	<b>2612.6</b>	<b>2741.2</b>	<b>2839.3</b>	<b>2860.9</b>	<b>3022.1</b>

Source: GFMS, Thomson Reuters

Combined output from the three major West African producing countries, Ghana, Mali, and Burkina Faso, rose by 13 tonnes. Leading the growth, output in **Ghana** rose sharply to 108 tonnes, or 13% year-on-year. A significant driver of the increase from the formal mining sector came from the successful commissioning of Akyem, and higher processed grade and throughput at Iduapriem and Wassa, which led to a combined gain of six tonnes. The country's largest producing mines, Ahafo and Tarkwa, saw mixed performances, as the former benefited from slightly improved recoveries, while Tarkwa saw a drop in production due to the phasing out of its uneconomical South and North heap leach pads in order to focus exclusively on the carbon-in-leach operation. Output at Obuasi fell by over one tonne year-on-year as a technical failure of a shaft led to unscheduled mining of lower grade ore. Elsewhere, output at Bogoso/Prestea and Chirano fell by a combined one tonne. Helping the overall rise, anecdotal evidence suggests that continued growth of the informal mining sector contributed significantly to the country's total output for the year.

In **Burkina Faso**, production also rose strongly, by 12%, to 35 tonnes. With the majority of the country's operations seeing lower output year-on-year, the country's growth was led almost exclusively by the successful commissioning and ramp up at Bissa-Zandkom, which added eight tonnes. The country's largest producing operation, Essakane, saw output fall by over two tonnes as scheduled processing of normal plant throughput was impeded while an upgrade to process harder ore was commissioned. Moving forward, the plant expansion and improvements should see production at Essakane rise by 25% in 2014. Elsewhere across the country, output at Taparko-Bouroum, Inata and Mana fell, as throughput and processed ore grades were generally lower.

Partially offsetting some of the west African growth, **Mali** saw production fall by 6%, to 47 tonnes. Underlying this, a combined four tonne fall in output occurred at Sadiola and Morila as a result of lower processed grades and throughput. Further losses were seen at Yatela, as mining ceased in the third quarter and operations were confined to residual leaching prior to closure. Elsewhere,

Syama and Tabakoto saw small output increases with the latter benefiting from the completion of a mill expansion which reached design capacity in June.

Among the small producing countries in west Africa, **Guinea** reversed a four year run of production losses and increased output by 3% to 19 tonnes, as Siguiri processed higher grade ore and continued to exceed throughput targets. However, output at Lefa fell as the mine dealt with a week long partial plant closure for mill relining. In addition, metallurgical issues were encountered as processed sulphide ore from the Banko pit affected recoveries. Mauritania saw a substantial, 22% output increase to total ten tonnes. Behind this growth, Tasiast continued to ramp up to nameplate capacity and processed higher grade ore, delivering a two tonne annual increase in production. In **Côte d'Ivoire**, output was marginally down in 2013, at 14 tonnes. The country's largest operation, Tongon, saw production increase by a tonne, but gains are thought to have been offset by an estimated fall in output from the informal sector. **Senegalese** output fell 3% to just under seven tonnes. This fall in output was driven by scheduled mining and processing of a lower grade bench at Sabodala.

Turning to the southern and central portions of the continent, **Tanzanian** output fell by 5% to 47 tonnes. The country's largest operation, Geita, saw output fall by over two tonnes as a planned replacement of the SAG mill significantly impacted throughput in the first quarter. Output at Bulyanhulu decreased by one tonne as reduced equipment availability and staff shortages impacted mill throughput. Golden Pride continued to process lower grade stock piles until end-December, contributing to output losses of over a tonne as the mine was placed on care and maintenance. Similarly, Tulawaka ceased production in the second quarter and was placed on care and maintenance, which contributed to further losses. On a more positive note, output at North Mara rose by

two tonnes as an amended mine plan was put in place to bolster the mine's ability to withstand lower gold prices in the second half of the year. This resulted in the processing of higher grade ore. Further gains were seen at the newly commissioned New Luika operation, which added two tonnes.

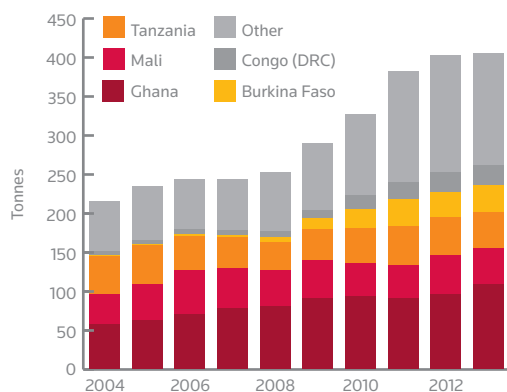
We estimate that artisanal and small-scale gold mining activity decreased across several African countries, including the **Democratic Republic of Congo** (DRC) and **Sudan**. Within the DRC formal sector, the gold mining industry has begun to grow, with the successful commissioning of Kibali, which added three tonnes of new supply. Further growth in the country was driven by the ramping up of Twangiza which added almost half a tonne. Namoya also began commissioning toward the end of the year. In **Egypt**, output rose by 36% to 11 tonnes. This growth came on the back of a three tonne increase in output at Sukari, which continues to ramp up to nameplate capacity. **Gabon** has joined the list of formal producing African countries and produced just over one tonne in 2013. Underlying this was the newly commissioned Bakoudou-Magnima operation. The biggest drop in African output came from **Eritrea**, where a seven tonne, or 67%, fall in output occurred. This was driven almost entirely by a reduction at Bisha, where mining of the gold enriched oxide cap was exhausted. The life of mine plan is now targeting the supergene enriched portion of the deposit, followed by the primary hypogene ore at depth. Given that these areas of the deposit are not strongly enriched in gold, future production from Bisha will be predominantly copper and zinc.

## NORTH AMERICA

North American gold production registered its largest positive year-on-year change since 2010, adding 24 tonnes in 2013. The outcome was led by fresh supply from Canada on the back of a ramp up at four operating mines and one recently commissioned operation. Output from the other two countries combined was broadly flat, with a slight increase in Mexico compensating for losses in the United States. Readers should note that country groupings have been changed, with North America now incorporating Mexico.

Gold production in **Canada** rose by 23% or 25 tonnes. The largest contribution was witnessed at Detour Lake where the first gold bar was poured in February 2013. The operation entered commercial production in August and, despite unplanned shutdowns at the processing plant, produced a total of seven tonnes last

### OTHER AFRICAN MINE PRODUCTION



Source: GFMS, Thomson Reuters

year. Further gains were seen at Meadowbank, Canadian Malartic, Doyon Division, and Young-Davidson, where combined output rose by eleven tonnes. At Meadowbank improvements in mill throughput due to improved maintenance and equipment availability brought production up by two tonnes. Similarly, the optimisation of processing operations at Canadian Malartic increased output by almost three tonnes, where higher throughput was facilitated by two cone crushers and an additional pebble crusher. In addition to this, production at Young-Davidson rose as a result of the commissioning of a shaft hoisting system, which increased ore treatment by 30% per day as set by the previous haulage ramp.

Production in **Mexico** grew by one tonne, or 1% year-on-year, to total 104 tonnes. The slight growth in the country was led by the ramp up at Noche Buena, which commenced in 2012, adding one tonne year-on-year. Additional gains were registered at San Dimas and San Francisco, which collectively added nearly two tonnes, driven by higher ore grades. Aggregate output at Soledad-Dipolos and La Herradura fell by three tonnes due to a slower leaching process and the temporary suspension of their explosive permits. At Los Filos and Peñasquito, combined production fell by nearly half a tonne due to lower recoveries as a result from higher carbon content ore and severe weather conditions, respectively. Elsewhere, output at Pinos Altos' satellite operation, Creston Mascota, fell by one tonne due to the temporary suspension of the heap leach facility.

Mine supply in the **United States** fell by 1%, or two tonnes, led by a significant contraction at Goldstrike. Over the first half of 2013 a stripping phase gave access to higher open pit grades, but planned modifications to the autoclaves resulted in a decrease in run-of-mine throughput. Partially mitigating the reduction in feeds from Goldstrike the plant undertook toll treatment of third parties' ore. In total, production fell by nine tonnes

year-on-year. Further losses were registered at Round Mountain, Bald Mountain and Cortez, where aggregated production fell by nearly five tonnes. At Round Mountain, a lower amount of ore placed on the leach pads caused a 16% decrease in output. Similarly, production at Bald Mountain fell by almost two tonnes, primarily due to lower throughput as a result of a significant development phase. Meanwhile, at Cortez, output fell by 2% due to lower grades, partially offset by an increase in total tonnes mined following the commissioning of new trucks into the mining fleet.

Elsewhere in the country, small gains partially countered these losses, with Fort Knox and Hycroft making the largest contribution with a combined increase in output of four tonnes. At Fort Knox, higher grades and the commissioning of the second carbon-in-column plant brought production up by almost two tonnes. Hycroft registered a significant increase in leach pad capacity which, coupled with the expansion of its mining fleet and processing plant, yielded a 39% increase in production. The largest gold producing complex in the United States, Newmont Nevada, added less than one tonne for its third consecutive year due to higher ore processed offset by lower grades and recovery.

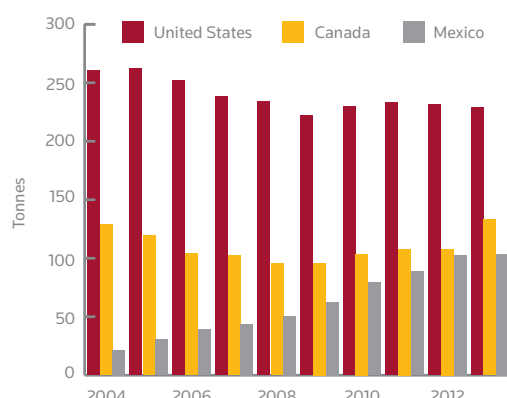
## SOUTH AMERICA

Gold production from South America registered its highest year-on-year increase in eight years, to a total of 531 tonnes. The ramp-up in production at new mines and recently commissioned operations offset losses elsewhere, adding 33 tonnes by year-end.

In the **Dominican Republic**, gold production rose by 22 tonnes, led by the continued ramp-up to capacity at Pueblo Viejo. The higher output achieved over the second half of the year was due, in part, to the completion of modifications carried out on the autoclaves as well as the commissioning of a 215 megawatt power plant. The Las Lagunas operation underwent adjustments as well, producing one tonne despite ongoing reliability issues in its agitators.

**Brazilian** production rose by 19%, or 13 tonnes, driven by a full year of operations from two new mines, Tucano-Amapari and Salobo. The highest growth was registered at Tucano-Amapari, which following the construction and development of the project in 2012, reached nameplate capacity backed by the contribution from existing stockpiles and high grade ore from the Duckhead deposit. Tucano-Amapari and Salobo collectively added nine tonnes between them. A continued ramp up was

## NORTH AMERICAN MINE PRODUCTION



seen at Pau-a-Pique and Pilar, offsetting losses at Jacobina where output fell by one tonne due to lower throughput and feed grade. Depreciation of the Brazilian real meant that local gold prices remained at elevated levels last year which kept the informal (Garimpeiro) sector buoyant.

Elsewhere in the region, gold production remained almost unchanged. In **Peru**, South America's largest gold producer, mine supply increased by one tonne last year, to 182 tonnes. The largest gain was registered at Breapampa, where operations commenced in November 2012, adding over two tonnes year-on-year. However, a significant drop was registered at Yanacocha, where production fell by ten tonnes as current laybacks mined lower grade ore. At Orcopampa production fell by one tonne due to lower ore grades and a 16-day strike which disrupted operations over the fourth quarter. A marginal contraction was also seen at La Arena and Cerro Corona, caused by changes in the mine sequence resulting in lower head grade and recoveries.

Mine supply from **Argentina** fell for a third consecutive year, by four tonnes, or 8%. Two of the largest gold producing operations in the country, Veladero and Alumbrera, were the main driving force behind the year-end result. At the former, production fell by four tonnes, due to lower head grades and permit restrictions which capped the amount of leach solution used. Similarly, output at Alumbrera fell by one tonne due to lower head grades and lower tonnage processed. Increases in production elsewhere in Argentina partially offset these losses, with the recently commissioned Lomado de Leiva, and operating mines Cerro Vanguardia and Manantial Espejo adding a combined two tonnes.

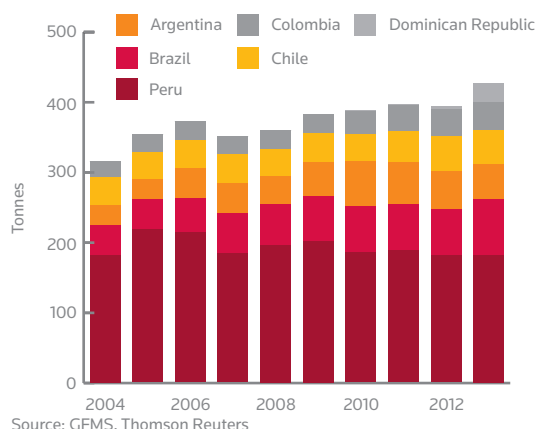
Total mine production in **Chile** was largely unchanged year-on-year as gains at El Peñon were offset by losses at Esperanza. A more pronounced change was witnessed

at Maricunga, where output fell by two tonnes from a scheduled drop in grade and throughput.

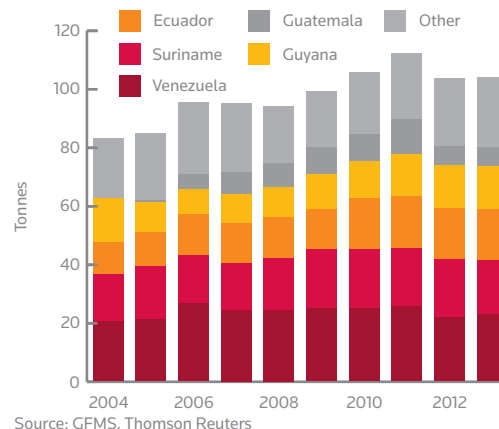
We estimate that output rose by one tonne in **Venezuela** as illegal gold production increased. As the gap between the official and parallel exchange rate widened over 2013, the gold price in bolivares appreciated significantly. We believe that the unofficial mining activity has flourished, encouraged by gold's convertibility to dollars. This activity likely more than compensated for losses from the formal mining industry that has withered under two years of nationalisation and continued exchange controls. Similarly, we estimate **Colombian** gold production to have increased by one tonne, or 3%, to 40 tonnes. Despite a slowdown in growth witnessed at Gran Colombia and Marmato, informal operations remained resilient, accounting for the majority of production in the country despite the depreciation of the Colombian peso gold price relative to 2012.

Gold production from **Suriname** continued to decline in 2013, falling by 7% to 19 tonnes, mostly due to lower throughput and grades at Rosebel. Despite efforts to improve productivity via an aggressive dewatering process, harder rock and longer hauling distances contributed to the drop in output. Production also fell in **Panama** due to lower production at Molejón, caused by a shortage of mining equipment. Additionally, the significant ramp up of throughput rates via the commissioning of the fourth ball mill did not lead to gains, as mining and crushing equipment was shared between the production of gold and aggregates. The start of the aggregates business in 2013 marks Petaquilla Minerals' first efforts to transition to a business model with multiple sources of revenue.

#### MAJOR SOUTH AMERICAN PRODUCTION



#### REST OF SOUTH AMERICAN PRODUCTION





## ASIA

**Chinese** mine production rose by 6%, or 25 tonnes in 2013, a fourteenth successive annual increase, to reach 438 tonnes. This increase was largely attributable to a 35 tonne gain in toll smelter production, as output from the country's integrated mining and refining industry fell back slightly in 2013. Of the toll production, both general non-ferrous and gold smelters increased their output by approximately 17 tonnes each in 2013.

As a consequence, integrated miner/refiners now account for approximately 43% of Chinese gold production, compared to almost 50% in 2011 and 2012. Results were mixed for the listed Chinese gold miners during 2013, with gains in 'mine-produced' gold offset by losses in smelter production, or vice-versa. Zhaojin Mining increased its gold output by over 4%, to 29 tonnes, of which the increase stemmed from higher mine-produced output, compensating for a 9% fall in smelter production, on a drop in third-party feeds. Conversely, Lingbao Gold Mining saw a fall in production from its mines, although mine-produced output was relatively minor compared to production from the smelter business, which rose by 8% in 2013. Zijin also increased output by over 30% at its smelting business, benefiting from a full year of output from the Luoning Zijin smelter. Production from Zijin's domestic mines fell year-on-year as output at Zijinshan was affected by a decrease in grade, together with a delay in the commissioning of a third processing plant.

The first half of 2013 saw difficult operating conditions for Real Gold. Output from the Shirengou-Nantaizi processing plant fell by 75% compared to the same period in 2012, largely due to an electricity outage between October 2012 and June 2013. Feed quality was also an issue, with higher ore dilution and lower in-situ grade, coupled with lower recoveries. In addition, the Luotuochang mine saw a 45% decrease in gold production over this period, due both to lower grades and lower recoveries. Falling grades were also responsible for reduced output in at Eldorado Gold's Tanjianshan and White Mountain. However, output rose by 14% at Jinfeng following the completion of the open-pit cutback. China Gold International's CSH 217 mine also increased production during 2013, with higher throughput contributing to a 12% increase in supply from the mine.

The Chinese gold smelters specialise in toll-treating ore produced by China's many smaller gold miners; this sector of the industry continued to grow in 2013, with annual output now at 151 tonnes. Shandong Gold Group

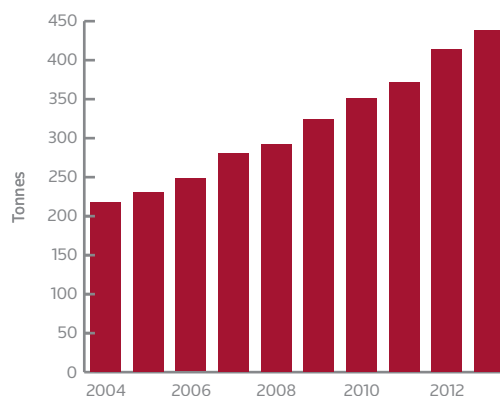
saw particularly strong growth in smelter output, more than doubling production compared to 2012 levels, with three smelters in operation by the end of 2013. Production from China National Gold Group's smelters also increased in 2013, by approximately 11%, while output from Shandong Zhaojin was essentially flat year-on-year.

Output from nonferrous metal smelters also saw growth in 2013, with total gold production now close to 90 tonnes. Notably strong performers in 2013 included Daye Nonferrous Metals Co., as well as Tongling Nonferrous Metals Co., and Jiangxi Hefeng Copper, each of which increased output by around 20% in 2013. This offset losses from elsewhere in the nonferrous smelting industry, such as from Yunnan Copper Industry Group Co., which saw a two tonne, or 29% fall in gold production during 2013.

Looking individually at the Chinese provinces, Shandong remains the largest gold producer by some margin, although output was slightly down in 2013. Inner Mongolia saw a strong gain of three tonnes, or 17%, as did Hunan and Xinjiang provinces, with gains of 24% and 27% respectively, adding a combined eight tonnes to Chinese output. Meanwhile, Fujian Province saw a six tonne, or 34% fall in output during 2013.

As is the case for gold miners elsewhere in the world, producers in China sought to contain costs through reductions in nonessential capex, as well as controlling mine site costs where possible, for example by reducing employee numbers. Zhaojin Mining is amongst those to postpone some development projects, together with streamlining and improving the efficiency of existing operations. Chinese miners are also increasingly seeking to implement comparatively niche technologies, such as biological oxidation of refractory ore, in order to improve performance and protect margins.

### CHINESE MINE PRODUCTION



Source: GFMS, Thomson Reuters, China Gold Association

Outside of China, Asian mine supply increased by 10%, or 31 tonnes, with output particularly strong during the second half of 2013. This is due in part to a recovery from the relatively low 2012 production totals from a number of Asia's largest mines, particularly Grasberg and Kumtor.

**Indonesia**, the region's second-largest producer after China, saw a 10 tonne, or 11%, increase in its gold output during 2013. This was largely the result of two major stories in the country; the ramp-up in output from Martabe, which was commissioned in 2012, and a return to higher output levels at Grasberg, which had produced at relatively modest levels during 2012. However, at 99 tonnes Indonesian mine production remains significantly lower than the 160 tonnes seen in 2009. At Grasberg, output increased by almost nine tonnes from 2012, when it was impacted by mine sequencing, geotechnical issues and the effects of labour disruptions. During 2013, higher throughput, grades and recoveries saw production increase significantly. Meanwhile, Martabe exceeded guidance for 2013, producing nearly nine tonnes of gold.

These gains were more than adequate to compensate for lower output from Batu Hijau and Gosowong, for which lower grades were largely responsible. At Batu Hijau, a higher proportion of processed ore came from lower grade stockpiles, resulting in a 30% fall in gold production. Meanwhile at Gosowong, restricted access to high grade stopes earlier in the year required increased processing of lower grade ore from the open pits, contributing to reduced output in 2013. Additionally, the second half of 2013 saw scheduled mining of lower grade stopes.

Production from the **Philippines** remained flat year-on-year, with an additional two tonnes from Didipio, commissioned late in 2012, offsetting losses from other operations such as Masbate, where output was impacted

by a temporary suspension of activities to replace a broken pipeline. Artisanal production is believed to have eased lower during 2013, with pressure from factors such as rising consumables prices, including mercury, as well as the fall in the international gold price, which far outweighed the benefits gleaned from the depreciating Philippine peso.

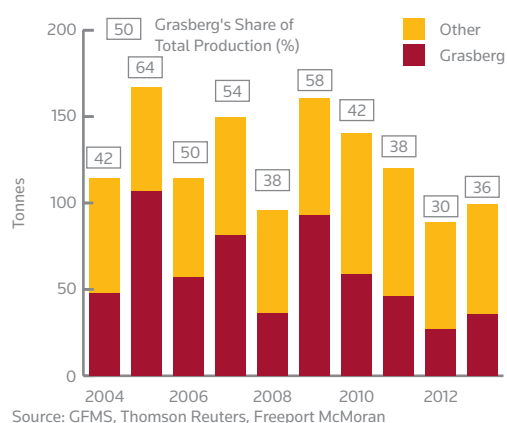
**Thailand, Vietnam and Laos** each saw modest increases in their production during 2013. These gains largely reflect the benefits of recent plant expansions at Chatree in Thailand and Phu Kham in Laos, together with the ramp-up of production at Ban Houayxai, which commenced operating in 2012 and produced over three tonnes in 2013.

In **Mongolia**, 2013 gold production is estimated to have risen by five tonnes, or 40%, most of which is attributable to the ramp-up in production at Oyu Tolgoi. Commercial production was declared during the third quarter of 2013, and the mine produced approximately five tonnes of gold during the year. The other major gold operation in the country, Boroo, modestly increased its output compared to 2012 levels, producing over two tonnes.

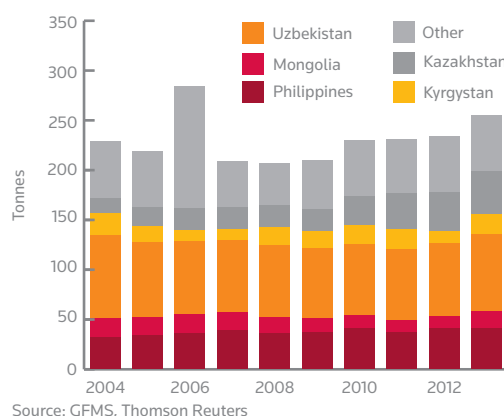
Output from **Uzbekistan** is estimated to have increased by four tonnes, or 6%, in 2013. While accurate gold production volumes remain a state secret, we believe that output from Muruntau increased modestly last year thanks to the commissioning of a BLOX® plant for the processing of refractory ores during 2012. A further contribution is thought to have come from the ramp-up of production at Zarmitan.

In **Kyrgyzstan**, production increased by nine tonnes, or 78%, as Kumtor reversed the contraction in output seen during 2012, when the mine was beset with geotechnical issues caused by ice and waste movement in the pit wall, which necessitated a revision of the mine plan. Output

#### INDONESIAN MINE PRODUCTION



#### OTHER ASIAN MINE PRODUCTION



from Kumtor increased by 90%, from ten tonnes in 2012 to 19 tonnes in 2013, with 58% of the mine's production during the fourth quarter; a consequence of high-grade ore processing during the last three months of the year.

Mine supply from **Kazakhstan** increased further on 2012's record total, reaching over 42 tonnes, a 6% year-on-year increase. Once again, Kazzinc saw strong growth in gold production in 2013, with output up by 22% year-on-year (although this was partly through acquisitions). This gain was also attributable to improvements in productivity at Vasilovskoye, together with a contribution from mines acquired in the first half of 2013, Komarovskoye and Raigorodok. This three tonne increase countered falls in output from other producers, such as Kazakhmys, which reported a fall in production during 2013, due to a temporary suspension of operations at the Abyz mine while waste stripping was undertaken, together with lower grades at Artemyevsky. Production from Aksu, Bestobe and Zholymbet, sold by Polyus to private investors in February 2013, is estimated to have been flat year-on-year, following a 7% fall in 2012.

## EUROPE

European output grew strongly, by 25 tonnes, or 9% year-on-year, to 308 tonnes. Underlying this, the region's largest producer, Russia, and to a lesser extent Turkey, contributed to the bulk of this growth.

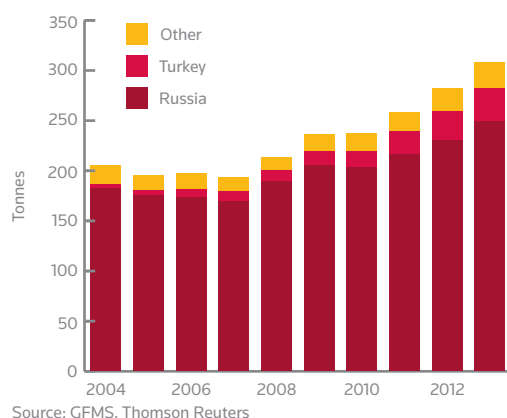
**Russian** production rose by 19 tonnes, or 8%, year-on-year, to 249 tonnes. Behind this, a number of ramp-ups and operational efficiency gains at more established mines led the production growth. In Russia's Far East region, the Amursk-Albazino processing hub and the newly commissioned Mayskoye operation added six tonnes. Notably, the development of the Amursk pressure oxidation plant in Khabarovsk, the first of its kind in Russia, allowed for the processing of refractory

ores like those found at Albazino and shipped by sea from as far afield as Mayskoye in Chukotka. This development has expanded the exploration potential across the region to include areas where complex mineralisation containing gold locked within sulphides can now be liberated more readily. Elsewhere, production at Verninskoye almost doubled to three tonnes on the back of higher throughput, processed grade and plant recoveries. At Albyn, lower processed grades were offset by a doubling of material milled, which led to gains of over one tonne. Russia's largest operating mine, Olimpiada, benefited from higher processed grades and plant recoveries for gains of over one tonne. Amongst other major Russian mines, production at both Kupol and Pioneer was flat year-on-year. No significant losses were recorded across the country, with minor falls in output observed at Malomir, Kubaka, Pokrovskiy and the operations at Buryatzoloto.

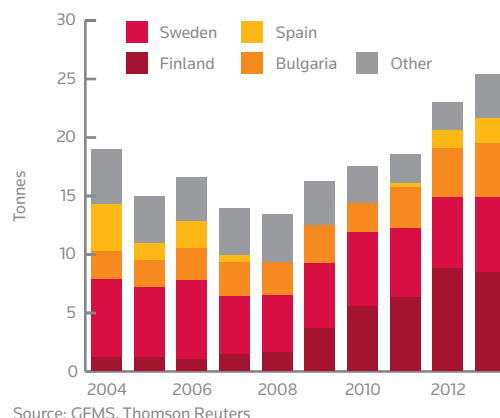
**Turkish** production rose 13% to 34 tonnes. This growth was concentrated at three of the country's already operating mines, Çöpler, Efemçukuru and Kışladağ. Çöpler saw nearly three tonnes of output growth with a significant rise in processed grades and plant recoveries. At Efemçukuru, improvements at both the tailings processing and paste fill systems led to year-on-year gains of one tonne. Output at Kışladağ rose 6% as more oxide ore was placed on the heap leach pads compared to 2012.

Turning to the smaller producing European countries, **Bulgarian** output rose 8% to near 5 tonnes where the country's lone formal operation, Chelopech, benefited from greater throughput. Production in **Spain** increased by one-third to over two tonnes, principally from gains at the EVBC mines thanks to higher mining rates on the back of increased underground development and an improved backfill regime.

### RUSSIAN, TURKISH AND OTHER EUROPEAN MINE PRODUCTION



### OTHER EUROPEAN MINE PRODUCTION



**Greece** began contributing to the region's production once again, with output of one tonne from commissioning production at Olympias. Coupling this ramp up and the advanced construction of Skouries, Greece is set to become a source of growth within the region. In the Nordic region of Europe, **Swedish** output rose 7% to just over six tonnes where the bulk of the growth came due to higher processed grades within the Boliden Area operations. The only country to see falling production was **Finland**, which broke a six year growth trend and saw output fall 4% to fewer than nine tonnes. Behind this, output at Kittila fell by one tonne largely due to a maintenance shutdown of the plant in the second quarter. Elsewhere within the country, combined output was broadly steady year-on-year.

## OCEANIA & OTHER

Output in Oceania rose by 23 tonnes, or 7%, to total 345 tonnes, led by a significant growth in Australia and Papua New Guinea. In **Australia**, the region's largest gold producer, output increased by 15 tonnes driven by contributions from the recently commissioned Tropicana, Murchison Goldfield, Mount Carlton, Garden Well and Andy Well properties. These five operations added a combined total of ten tonnes. Elsewhere, output among established operating mines grew significantly as well, with Tanami and Ridgeway posting the highest year-on-year increases. At Tanami, gold production increased by four tonnes, primarily due to higher mill throughput coupled with higher grades. At Telfer, production rebounded by nearly two tonnes due to higher throughput, despite disruptions in the underground hoisting system. The largest gold producer in Australia, Kalgoorlie Super Pit, was almost unchanged as higher ore processed was offset by lower feed grades.

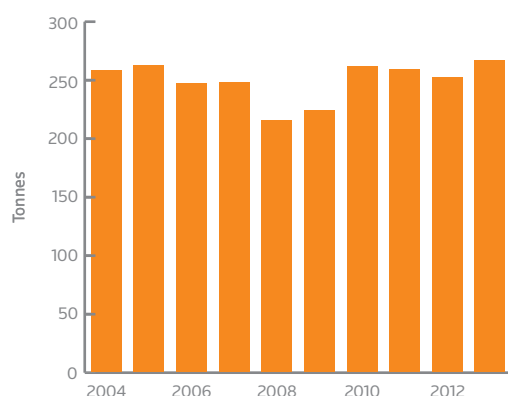
On a less positive note, the combined operations at Boddington, St Ives, and Jundee registered a combined

four tonne drop in output. At Boddington, gold production dropped by nearly one tonne primarily due to lower throughput and feed grade, partially offset by higher recovery. A similar drop was witnessed at St. Ives, where output fell due to a maintenance closure of the mill and lower grades in accordance to the mining schedule. Adding to the decrease, a suite of smaller properties were put on care & maintenance, such as Wiluna, Coyote, Laverton, Bronzewing, and Southern Cross. In October 2013, Gold Fields finalised the acquisition of Darlot, Granny Smith, and Lawlers (collectively Yilgarn South) assets, from Barrick. Production at Yilgarn South was slightly up year-on-year.

**Papua New Guinea** reversed a trend of contracting gold production seen over the past three years, rising by 11%, or six tonnes, bringing the total to over 63 tonnes. The country's two largest operations, Porgera and Lihir, both increased output last year, and collectively added almost seven tonnes year-on-year, with an additional one tonne of supply from Hidden Valley. Higher throughput was a factor at all three operations, with infrastructure improvements facilitating higher production from both Lihir and Hidden Valley. At Lihir, a phased plant expansion was completed in June, while at Hidden Valley an overland conveyor was completed during the second quarter, with recoveries also showing improvement during the year. At Porgera, higher processed grades also contributed to an 10% increase in production.

Gold production in **New Zealand** rebounded by two tonnes, putting an end to a three-year trend of falling production. This increase was attributable to higher grades at Macraes, and higher throughput at Reefton. Elsewhere, production in **Fiji** fell due to a slight contraction at Vatukoula caused by limited underground equipment availability, while in the **Solomon Islands** output was flat year-on-year.

## AUSTRALIAN MINE PRODUCTION



Source: GFMS, Thomson Reuters, BREE

## CORPORATE ACTIVITY IN 2013

Last year saw the gold price fall by 29%, the biggest intra-year drop since 1980. Unsurprisingly, this price shock drove rapid changes in strategy across the gold mining and exploration sector. At the forefront, a number of the major gold miners recorded multi-billion dollar asset impairments and losses, often writing down the high levels of accounting goodwill that had been accumulated through gold's bull run and, in some cases, the aggressive and high priced 'blockbuster deals' of 2010-12. The value of merger and acquisition (M&A) activity was down more than one-third against 2012, and dwarfed by the activity during 2010 and 2011. Based on data from Thomson ONE, aggregate activity was relatively modest last year, amounting to \$9.3 billion.

Last year was characterised by an industry implementing change to contain escalating costs amidst mounting losses and strained balanced sheets. As a result, many of the transactions reflected strategies of portfolio restructuring through divestment rather than aggressive high priced takeovers like those seen in 2010-11. The largest deal to take place last year included the sale of one-third of Polyus Gold International's equity, owned by Onexim Group and valued at \$3.6 billion, to a private shareholder. Barrick Gold Corp, which recorded the largest impairments in the industry, raised \$3.0 billion in a bought equity deal and used the proceeds to shore up its balance sheet and term out shortly maturing debt. In further restructuring moves, Barrick Gold divested its energy division and six non-core assets for an aggregate consideration of approximately \$1.0 billion. Included in these asset divestments, Yilgarn South (comprising Granny Smith, Lawlers and Darlot) was sold to Gold Fields for approximately \$300 million. Strategically, this made sense as these assets formed a relatively small, high-cost component of Barrick's portfolio and consumed management resources. Whereas for Gold Fields, which had unbundled much of its South African asset base (KDC

## 2013 TOP 10 GOLD PRODUCERS

Rank			Output (t)	
	2013	2012	2012	2013
1	1	Barrick Gold	230.8	222.9
2	2	Newmont Mining	154.8	157.5
3	3	AngloGold Ashanti	122.6	127.7
4	6	Goldcorp	74.5	82.9
5	5	Kinross Gold <sup>1</sup>	75.3	77.7
6	8	Newcrest Mining	64.5	73.5
7	7	Navoi MMC <sup>1</sup>	68.0	70.5
8	4	Gold Fields	95.9	58.1
9	9	Polyus Gold	52.2	51.3
10	n/a	Sibanye Gold	n/a	44.5

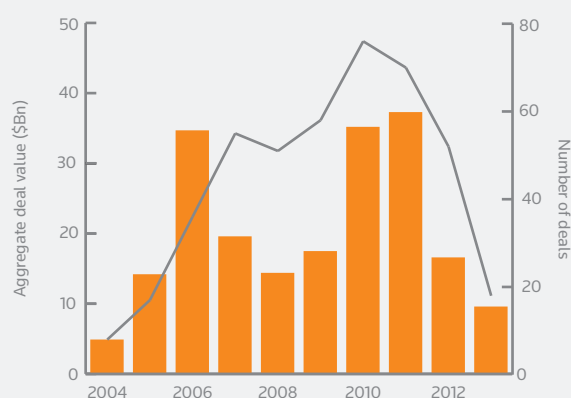
<sup>1</sup> Estimate

Source: Company Reports, GFMS, Thomson Reuters

and Beatrix) into the newly listed Sibanye Gold in a deal valued at \$1.1 billion, this purchase offered an opportunity to diversify geographically. In addition, the Yilgarn South mines occupied a comparatively lower quartile position on Gold Fields' cost curve and created an obvious synergy between its existing Agnew asset and the newly acquired Lawlers. Other large deals in the past year included B2Gold's acquisition of CGA, via a stock swap that valued CGA at \$1.1 billion and Hecla Mining's acquisition of Aurizon Mines, in a deal of over \$750 million.

Few companies exhibited an appetite to grow through M&A, and the industry generally took an approach of portfolio restructuring and a sharp scaling back of capital spending and corporate overheads. Those that were in the market to buy and grow through acquisitions tended to be smaller companies. Selected deals of this type, coming in at between \$200-300 million included New Gold's acquisition of Rainy River Resources for just under \$300 million, Primero Mining Corp's all-share acquisition of Brigus Gold Corp for around \$260 million, and Troy Resources Ltd's A\$200 million purchase of Azimuth Resources Ltd. Instead, this year evidence suggests producers are, in general, following a divestment and portfolio restructuring strategy as illustrated by Barrick Gold's sale of a 10% equity stake in African Barrick for proceeds of almost \$200 million, and the \$66 million sale of its Kanowna asset to Northern Star Resources Ltd. Similarly, Goldcorp completed the sale of its remaining 19.8% stake in Primero Mining via a secondary offering for total proceeds of \$200 million. Aside from these deals, little M&A activity has emerged as yet. The principal outlier to this assertion has been Goldcorp's recent \$2.6 billion hostile bid for Osisko Mining for its Canadian Malartic asset, which was rejected at the first approach. With only a minor sweetener from Goldcorp's initial offer, news of Yamana Gold planning to buy a 50% non-controlling has come to light, valuing Osisko at C\$7.65 per share; a 22% premium to the Goldcorp bid.

## GOLD M&A PLUS INITIAL PUBLIC OFFERINGS



Source: GFMS, Thomson Reuters

## PRODUCTION COSTS

- **Global Total Cash Costs increased by just \$1/oz in 2013, reaching \$767/oz, as producers made concerted efforts to cut costs.**
- **Labour costs were the most significant factor pushing cash costs upwards, but this was largely outweighed by the benefits gained from lower royalty payments and weakening local currencies.**
- **The average total cash margin fell by 29%, to \$644/oz, as the average gold price decreased by 15% year-on-year.**
- **Total Production Costs (including depreciated capital expenditure) increased by just 2%, to \$989/oz.**
- **All-in Costs, which include all cash and non-cash costs, sustaining capital expenditures, indirect costs and overheads rose by 27% in 2013, reaching \$1,620/oz.**
- **The increase in the All-in Cost reflected a significant number of impairments reported during the year, as producers recalculated reserves using lower gold prices, revised mine plans, and continued to write-down goodwill associated with acquisitions made in previous years.**

## PRODUCTION COST REPORTING

Total cash costs and total production costs, as referred to in this report, conform to the Gold Institute standard for cost reporting. Where data reported by miners do not conform, adjustments, and in some cases, estimates were made. Readers should note that cost analysis undertaken in *GFMS Gold Survey 2014* draws on annual data within our Gold Mine Economics service, and incorporates both data for primary gold mines and significant gold producing by-product gold producers (costed on a co-product accounting basis). Earlier data have been restated to reflect this change, from analysis that in the past has been presented for primary gold mines only.

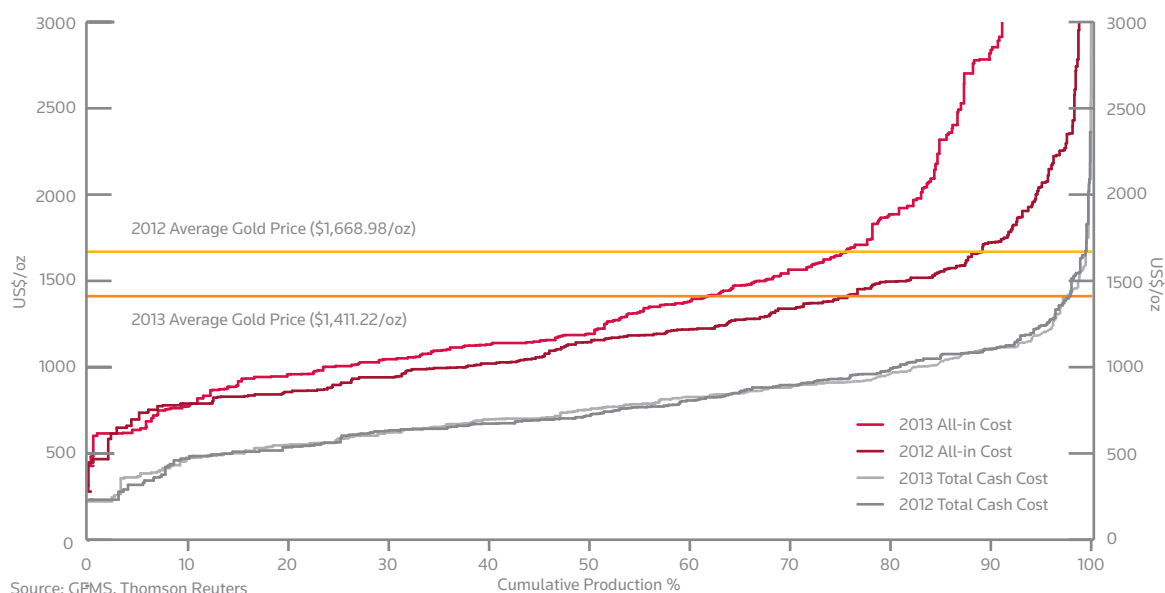
Co-product costs are derived by multiplying the total cash cost by the percentage revenue contribution from gold. This is in contrast to by-product costing, whereby non gold revenue is netted off as a credit against the total cash cost. The co-product analysis method has been employed where gold represents 65% or less of a mine's revenue.

**Total Cash Cost** comprises mine site cash expenses (mining, ore processing, on-site general and administrative costs), refining charges, royalties and production taxes, net of by-product credits.

**Total Production Cost** is Total Cash Costs, plus depreciation, amortisation and reclamation cost provisions.

**All-in Cost** is a proprietary Thomson Reuters GFMS cost parameter, designed to reflect the full marginal cost of gold mining. In addition to Total Production Costs, it includes ongoing capital expenditure, indirect costs and overheads.

## WORLD TOTAL CASH AND ALL IN COST CURVES



## GOLD PRODUCERS' CURRENCIES AGAINST THE US\$



## YEAR-ON-YEAR COST CHANGES

Concerted efforts on the part of producers to contain costs resulted in a sharp reduction in the rate of increase in Total Cash Costs for 2013. This measure, which includes mine site cash costs and realisation costs, net of by-product credits, including royalties, increased by only \$1/oz, to \$767/oz, compared to a \$100/oz increase in 2012. Labour cost inflation was the most important upward driver of mine site costs, although this was countered to a large extent by other factors, such as the benefits of various currencies depreciating against the dollar.

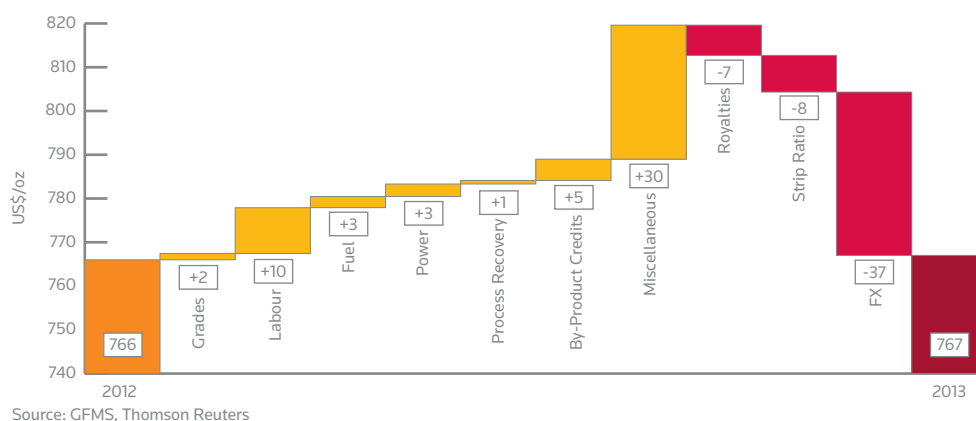
Based on the detailed mine-by-mine analysis in Thomson Reuters Gold Mine Economics database, the main drivers of year-on-year changes in \$/oz mine production costs can be isolated and estimates quantified, in the form of a year-on-year variance analysis.

The first step in the variance analysis process is to quantify the effects of **exchange rate** changes, by calculating the extent to which mine site production costs would have changed from one year to the next in dollar terms, were exchange rates the only driving

factor. The net effect of exchange rate changes during 2013 was an estimated \$37/oz decrease in Total Cash Costs. The South African rand weakened by 18% relative to the dollar, although double-digit depreciation was also seen in the average exchange rates for the Brazilian real, the Ghanaian cedi, the Indonesian rupiah, and the Philippine peso. The Canadian dollar and Chilean peso, both important currencies for gold miners, also weakened slightly against the dollar, albeit by only 3% and 4% respectively. Given the widespread weakening in the local currencies of a number of major gold-producing countries, it is unsurprising that global producer cash costs saw an overall benefit when expressed on a US dollar per ounce basis.

There has been a trend of decreasing processed ore grades for several years, and this has traditionally been a major contributor towards increasing producer costs. However, 2013 saw the average **grade of ore processed** stabilise. Consequently, the contribution made by this factor to Total Cash Costs in 2013 was only an additional \$2/oz; an almost negligible change. This break in trend reflects a move by some producers towards processing higher grades in order to maximise unit production without additional capital outlay. The average **process**

## TOTAL CASH COST VARIANCE, 2013 VERSUS 2012





**plant (mill and heap) gold recovery** was essentially flat year-on-year. Consequently, process recovery added less than \$1/oz to producer costs last year.

The principal factor pushing producer costs upwards in 2013 was **labour**, which accounted for around one third of mine site cash costs based on our analysis. This contributed upward pressure of approximately \$10/oz in 2013, less than half of the increase in 2012, reflecting the staff cuts instigated by some mining companies as part of their efforts to reduce costs. Staff reductions were made by many miners, including AngloGold Ashanti, African Barrick and Gold Fields.

The average WTI crude oil price rose by 4% in 2013, to almost \$98/bbl. This translated to an estimated \$3/oz increase in Total Cash Costs attributable to **fuel**, with fuel comprising around 11% of mine site cash costs in 2013, a similar percentage to 2012. The increase in Total Cash Costs attributable to **power** (electricity) was approximately \$3/oz in 2013, in line with the previous two years. Fuel and power are major expenses for miners, and correspondingly, in this area, producers are making efforts to minimise cost increases. Gold Fields, for example, has instigated an energy-efficiency program, which resulted in energy savings of 6.5% at South Deep during 2013.

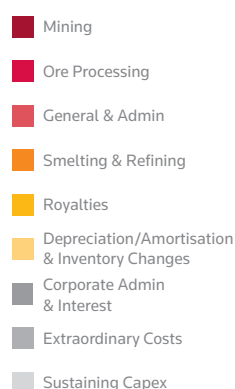
As the average gold price decreased by \$258/oz, or 15%, in 2013, **royalty payments**, which are generally linked to the gold price, decreased on average from \$51/oz in 2012 to \$44/oz in 2013. The net effect on the average total cash cost was an estimated \$7/oz decrease. Similarly to royalties, by-product credits suffered from changes in metal prices. During 2013, all of the principal **by-product metals** associated with gold production saw decreases in their average prices; particularly silver, the average price of which decreased by over \$7/oz, or 24%. Copper,

lead and zinc all saw smaller decreases and the overall effect across the suite of metals was upward pressure on producer cash costs of approximately \$5/oz.

The global average **strip ratio** fell by approximately 3% in 2013, providing a downwards adjustment to the total cash cost of around \$8/oz. The falling gold price has required some miners to revise mine plans, as deeper mineralisation or new satellite deposits may have been re-evaluated as resource from reserve under lower gold price assumptions. Barrick Gold, for example, has decided not to develop additional pits at Bald Mountain as they were not considered economically viable in the current price environment.

The **miscellaneous** costs category represents the balance of the difference between Total Cash Costs year-on-year, and amounts to approximately \$30/oz of upward pressure. This category covers various cost drivers that cannot satisfactorily be stripped out and includes items such as reagents, other mine site consumables, and maintenance costs. The cost inflation in the miscellaneous category indicates that, while producers may be able to improve site efficiency and process productivity, and constrain labour costs to some extent, they have less control over external suppliers. Furthermore, increasing production through improved performance and efficiency is likely to mean higher maintenance costs, in order to minimise equipment down-time. Indeed, third-party contracts are amongst the items highlighted by AngloGold Ashanti as targets for further cost reduction, and although African Barrick achieved an overall reduction in operating costs during 2013, it was noted in their year-end results that the savings were partially offset by increased contracted service costs, maintenance and consumables usage, due to the increase in activity at the mines.

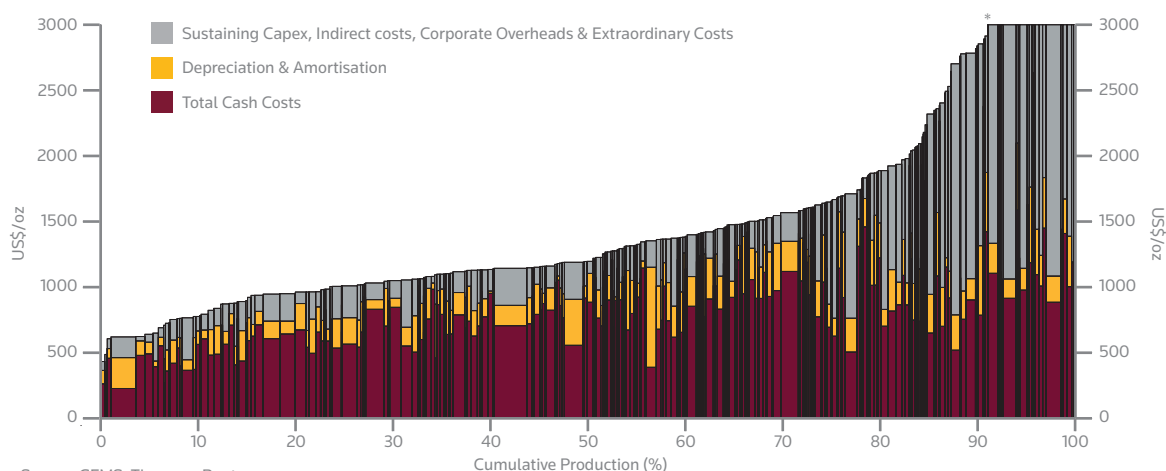
#### 2013 GLOBAL AVERAGE ALL IN COST BREAKDOWN



Source: GFMS, Thomson Reuters

	\$/oz Au
Mining	353
Ore Processing	249
General & Administration	129
<b>Mine Site Cash Cost</b>	<b>731</b>
Smelting and Refining	15
By-Product Credits	-23
Royalties	44
<b>Total Cash Cost</b>	<b>767</b>
Depreciation/Amortisation, Inventory Change	222
<b>Total Production Cost</b>	<b>989</b>
Corporate Administration, Interest	94
Extraordinary Costs	414
Sustaining Capital Expenditure	123
<b>All in Cost</b>	<b>1,620</b>

## 2013 ALL-IN COST CURVE



## GOLD MINE PROFITABILITY: KEY ISSUES

Although Total Cash Cost is a useful gauge of competitiveness at the mine-by-mine level, it does not account for a substantial portion of the cost required to develop and sustain gold mining operations. Therefore, its utility as a measure of 'real' industry margins, or the long term gold price required to incentivise gold mine production growth is limited. With this in mind, Thomson Reuters GFMS developed its 'All-in Cost' parameter. In addition to total production costs, All-in Cost includes corporate administrative costs (head office overheads), interest charges, exploration expense, extraordinary charges (such as retrenchment costs, asset carrying value write-downs), plus sustaining/on-going capital expenditure. This 'stay-in-business' capital cost is that expenditure necessary to maintain current production rates. The global average All-in Cost for 2013 was \$1,620/oz, a sharp rise of \$347/oz, or 27%, versus 2012.

This large increase in the All-in Cost of production is almost entirely attributable to the proliferation of substantial write-downs reported during the year. Due to the fall in the average gold price during 2013, producers have been obliged to recalculate reserves and resource estimates using lower gold price assumptions. This has necessitated write-downs of the carrying value of many mines. In addition, there have been further impairments associated with some of the costly acquisitions made over the past few years. We estimate that in 2013 extraordinary non-cash items, chiefly write-downs, contributed approximately \$414/oz towards the All-in Cost, compared to \$91/oz in 2012. Most of the major gold producers reported impairments to the carrying value of their assets during 2013. Examples include \$2.1

billion for Newmont's Boddington mine, \$808 million for Eldorado Gold's Chinese assets Jinfeng and Eastern Dragon, \$2.3 billion for Kinross, much of which was associated with Tasiast, and A\$6.2 billion for Newcrest, a large proportion of which was a write-down of accounting goodwill associated with the acquisition of Lihir in 2010.

In some cases, operators have made significant revisions to mine plans in order to improve near term cash flow, and this has sometimes required a reduction to the carrying value of the asset in question. Barrick recorded a \$595 million impairment on Porgera, as a consequence of revising the mine plan to focus on higher grade underground ore. African Barrick revised the mine plans for Buzwagi and North Mara, resulting in reductions to the carrying values of \$253 million and \$96 million respectively, while Goldcorp reported a \$2 billion impairment for Peñasquito, following major changes to the mine plan, in combination with a lower metal pricing environment. Write-downs have been reported for around 70 mines in the Mine Economics database last year, adding significantly to All-in Costs for 2013.

The average gold price during 2013 was \$1,411/oz, and of the population of gold mines covered by the GFMS Mine Economics team at Thomson Reuters, 147 mines, representing 62% of production, have All-in Costs lower than this. Mines at the lower end of the cost curve include consistently strong performers such as Cortez (\$616/oz), Kisladag (\$645/oz) and Lagunas Norte (\$762/oz). The relatively new operations Pueblo Viejo (\$1,006), Martabe (\$1,057) and Canadian Malartic (\$1,157/oz), all significant gold producers, also have All-in Costs well below the average gold price for 2013.

## REGIONAL TRENDS

North American average Total Cash Costs, at \$680/oz, rose by 6% in 2013. There were considerable regional variations, with costs in the United States and Mexico increasing by 4% and 13% respectively, whereas those in Canada actually fell by 1%. Mexican gold is often produced in association with other metals, particularly silver, and the 24% decrease in the silver price during 2013 had a significant effect on producer costs in the country. Peñasquito was particularly affected by decreases in lead, zinc and copper prices.

In the United States, many of the major gold operations are mature, and costs have a tendency to increase as miners reach less accessible parts of the ore body and have to transport the ore greater distances for processing. Lower output had a correspondingly negative effect on unit production costs at a number of Barrick's North American operations, including Goldstrike. By contrast, output from Canada increased significantly in 2013, lowering unit costs at some mines. In some cases cost savings were also made by reducing headcount, better maintenance, and energy management optimisation, for example at Porcupine. Furthermore, costs are falling at some of the country's new mines, as they ramp up to full capacity.

The average Total Cash Cost in South America rose by 4% in 2013. South American producers are relatively sensitive to falling by-product metal prices, as a significant amount of gold production is associated with other metals. Peru's Cerro Corona and Yanacocha, for example, had higher costs in 2013 partly as a consequence of lower metal credits.

Although South Africa remains a high-cost country when expressed in US dollars, with a 2013 average Total Cash

## GOLD PRODUCTION COSTS

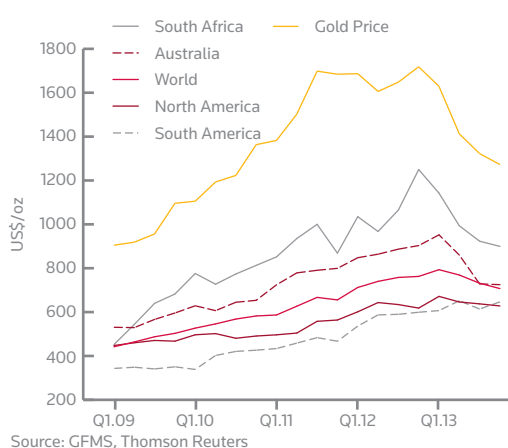
(US\$/oz)		2012	2013
<b>North America</b>	Total Cash Costs	642	680
	Total Production Costs	841	895
	All-in Costs	1,095	1,333
<b>South America</b>	Total Cash Costs	640	664
	Total Production Costs	852	923
	All-in Costs	1,028	1,455
<b>Australia</b>	Total Cash Costs	933	898
	Total Production Costs	1,191	1,145
	All-in Costs	1,375	1,803
<b>South Africa</b>	Total Cash Costs	1,062	1,048
	Total Production Costs	1,255	1,253
	All-in Costs	1,539	1,562
<b>Other</b>	Total Cash Costs	764	753
	Total Production Costs	948	959
	All-in Costs	1,390	1,821
<b>World</b>	<b>Total Cash Costs</b>	<b>766</b>	<b>767</b>
	<b>Total Production Costs</b>	<b>970</b>	<b>989</b>
	<b>All-in Costs</b>	<b>1,272</b>	<b>1,620</b>

Source: GFMS, Thomson Reuters

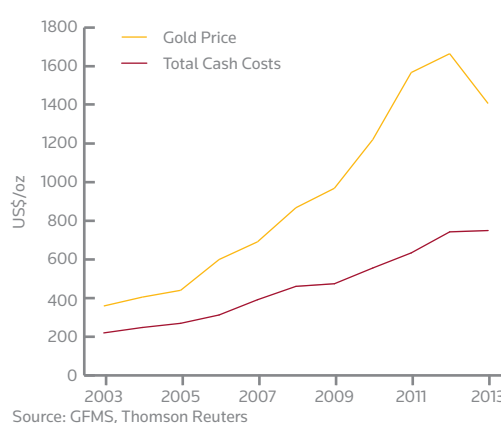
Cost of \$1,048/oz, this represents a slight decrease on the average cost for the previous year. However, much of this is attributable to benefits gained from exchange rates, namely the weakening of the rand versus the dollar. Last year the South African miners also avoided being hit by costs associated with prolonged strike action that impacted the industry in 2012.

Australia, also generally viewed as an expensive jurisdiction for miners, saw Total Cash Costs fall by 4% in 2013. As part of a drive to reduce costs, Gold Fields ceased marginal mining operations at Agnew, as well as closing the heap leach facility at St. Ives. Consolidation of Agnew into a single operation with the newly-acquired Lawlers should also bring cost benefits from operational synergies, though these were not recognised in 2013.

## COMPANY REPORTED QUARTERLY TOTAL CASH COSTS



## COMPANY REPORTED ANNUAL TOTAL CASH COSTS



## COMPOSITION OF THE DELTA-ADJUSTED HEDGE BOOK

(tonnes, end-period)	Q4.12	Q1.13	Q2.13	Q3.13	Q4.13	2013 yoy
Fwd. Sales & Gold Loans	101	100	75	77	61	-39%
Options	22	13	23	15	14	-39%
<b>Total</b>	<b>123</b>	<b>112</b>	<b>97</b>	<b>91</b>	<b>75</b>	<b>-39%</b>

Source: GFMS, Thomson Reuters

## PRODUCER HEDGING

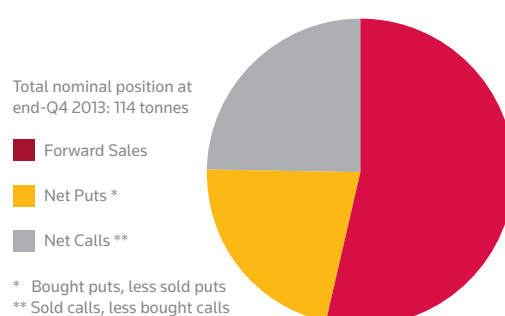
- **The outstanding delta-adjusted hedge book fell by 48 tonnes in 2013, a similar reduction to that seen in 2012.**

During 2013 producers continued to reduce hedge cover further, removing 48 tonnes or 39% of the hedge book when compared against end-2012. This reduction left the outstanding delta-adjusted hedge book volume at only 75 tonnes, or just over two percent of one year of annual global mine production.

Despite increased chatter among media and commentators about the possibility of widespread hedging returning as the gold price fell severely in the second quarter, the reality was that producers were still reluctant to add hedges; data GFMS collected show that during the second quarter mining companies reduced their outstanding positions by a net 15 tonnes. The reason for this was that when prices fell so sharply, a few companies, such as Crocodile Gold and Alkane Resources, took advantage of price levels to close out contracts for a much reduced liability, or in some cases a net gain. However, the volume of fresh hedging entered into was also limited and, in total, over the twelve months to end-December only ten companies added to their positions on a net basis, while 36 companies saw reductions to their hedge cover.

Along with the year-on-year reduction in the gold price, the aggregate marked-to-market value of the producer

## NOMINAL COMPOSITION OF THE PRODUCER HEDGE BOOK



Source: GFMS, Thomson Reuters

## WEIGHTED AVERAGE STRIKE PRICES OF HEDGE CONTRACTS

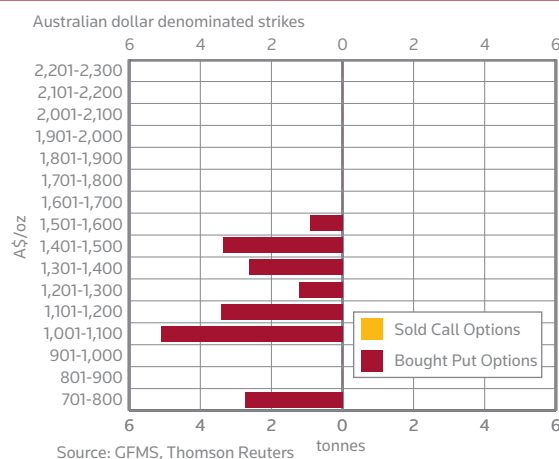
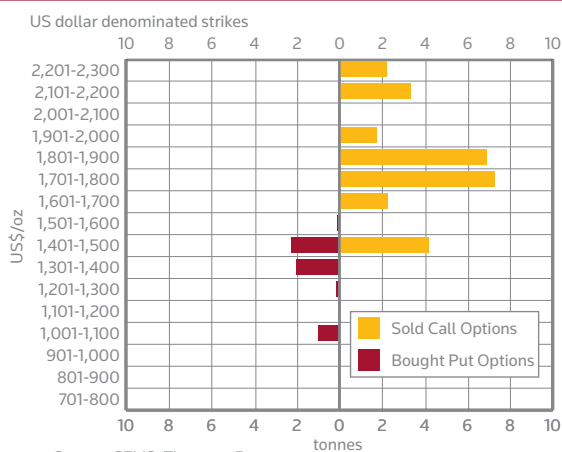
(weighted by number of contracts, end-2013)	USD	AUD
Bought Puts	\$1,302	\$1,142
Sold Calls	\$1,811	n/a
Forward Sales	\$1,355	\$1,549

Source: GFMS, Thomson Reuters

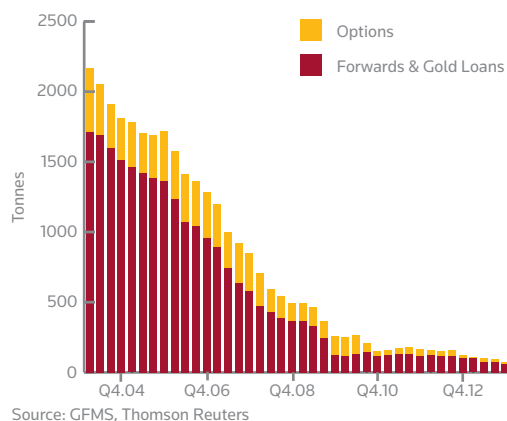
hedge book, at end-December 2013, improved by an estimated \$1.2 billion. For the first time since GFMS began analysing these data, the aggregate value of the producer hedge book swung from a net liability to a net asset in the second quarter, and grew in value again by end-year, to \$359 million. Behind this development, as existing hedge books have contracted in size through deliveries and option maturity, older hedges with lower strike prices have been removed from the book, lowering producers' unrealised liabilities. In addition, Australian dollar-denominated forward sale contracts, which for the most part were entered into at higher strike prices than US dollar denominated contracts, have mostly moved into-the-money as the gold price fell below most contract strikes by end-year.

Looking at company activity in more detail, Crocodile Gold's de-hedge was the most significant cut made to the hedge book, at a net reduction for the year of nine tonnes.

## DISTRIBUTION OF OPTION HEDGE COVER BY STRIKE PRICE



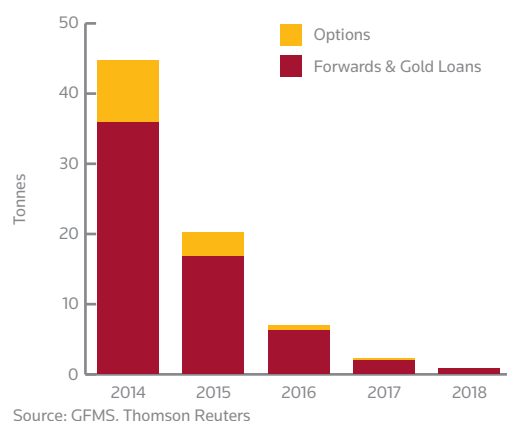
## EVOLUTION OF THE GLOBAL HEDGE BOOK



The company took advantage of sharply falling gold prices in April to close out the remainder of its forward sales contracts ahead of schedule, and in so doing realised net proceeds of A\$43 million. Including the company's deliveries, this amounted to a net reduction of nine tonnes. NewGold and Alkane Resources also took the opportunity to close out hedge contracts prematurely in the second quarter. NewGold closed out its hedge, a legacy of the Mesquite acquisition, amounting to a four tonne reduction in 2013, while Alkane Resources removed three tonnes of forward sales.

Elsewhere, Minera Frisco was another significant de-hedger, and saw its hedge position decline over the twelve months, by seven tonnes, through a combination of option maturities and the closure of its outstanding forward sales. Avocet Mining closed out the remainder of its forward sale positions in the fourth quarter of 2013, amounting to three tonnes. Over the full year the company was responsible for six tonnes of de-hedging including deliveries. Additionally, through a combination of a reduction in the amount of gold delta-hedged against its sold calls, and maturing option positions, Sumitomo Metal Mining saw its position fall by five tonnes. Other companies to remove hedge cover

## DELIVERY PROFILE AS AT END-2013



## TOP HEDGING ACTIVITY IN 2013

(delta-hedging) Company	% of Gross Hedging	Change (tonnes)
Petropavlovsk	40%	9
B2 Gold Corp	21%	4
Dundee Precious Metals	11%	2
OceanaGold	10%	2

Company	% of Gross De-hedging	(tonnes)
Crocodile Gold	12%	-9
Minera Frisco	10%	-7
Avocet Mining	8%	-6
Sumitomo Metal Mining	7%	-5

Note: Delta-adjusted volumes are calculated on the basis of published company data. As such disclosures are not exhaustive, the Thomson Reuters GFMS calculated position may not exactly correspond to the delta position reported by the company. In addition, Thomson Reuters GFMS values the contracts on a spot delta basis, whereas some companies report positions on a forward delta basis. This can lead to minor discrepancies between the calculated and reported delta-adjusted volumes. Where published data was unavailable, an estimate based on the scheduled expiry of contracts has been made.

Source: GFMS, Thomson Reuters

completely during 2013 were Teranga Gold, Mutiny Gold, Dragon Mining, Reed Resources and Nordic Gold Mines among others. In total, 20 companies became unhedged over 2013, leaving 26 hedged producers at end-year; down from 40 at the end of 2012.

During 2013 Petropavlovsk was the only producer that hedged a significant amount. The company added several tranches of forward sales throughout the year, resulting in a net increase of nine tonnes by year-end. The contracts had a weighted average strike price of \$1,429/oz at year-end and are due for delivery in 2014. B2Gold Corp entered into a combination of forward sale and collar option structures during the year which covered a portion of future production out to 2017. These amounted to an addition of four tonnes when adjusted for option delta. Other small hedges were recorded by Dundee Precious Metals, which hedged revenue from its pyrite concentrates, and OceanaGold.

Looking to 2014, little hedging activity has been outlined by producers since year-end, with the exception of a six tonne hedge by OceanaGold. However, given that the hedge book has fallen to such limited levels, we believe that there is every chance that a couple of project finance hedges, combined with one or two opportunistic hedge moves, could end-up outweighing the ongoing delivery profile. As such, we believe we could see net hedging prevail in 2014, albeit at limited levels historically, such that the market impact of this would be inconsequential in terms of supply and demand.

## 4. SUPPLY FROM ABOVE-GROUND STOCKS

- During 2013, total above-ground stocks, by definition cumulative historical mine production\*, increased by 1.7% to 176,000 tonnes.

- The stock of fabricated products (excluding coins) reached 107,530 tonnes by end-2013, a net gain of 1,489 tonnes on a net basis. This was equivalent to 61% of total above-ground stocks.

- Taking up the bulk of the stock of fabricated products, jewellery rose by a net 1,080 tonnes. At year-end, jewellery stocks amounted to 85,900 tonnes, or 49% of total above-ground stocks.

- Official and private bullion holdings ended 2013 at 64,900 tonnes, equal to 37% of total above-ground stocks. Just over half of that was held by private bullion holders.

- Official stocks rose by 457 tonnes in 2013, resulting from net official sector purchases of 409 tonnes and 48 tonnes of de-hedging by producers.

- At 34,400 tonnes, and valued at \$1,290 billion at end-2013, privately-held bullion stocks were up by 1,656 tonnes from their end-2012 level.

- If we include the sales of ETF holdings, then the visible supply of gold to the market from above-ground stocks was 2,160 tonnes, equivalent to 42% of total demand in 2013. The figure comprised 1,280 tonnes of scrapped fabricated products and 880 tonnes of sales from ETF stockpiles.

### OVERVIEW

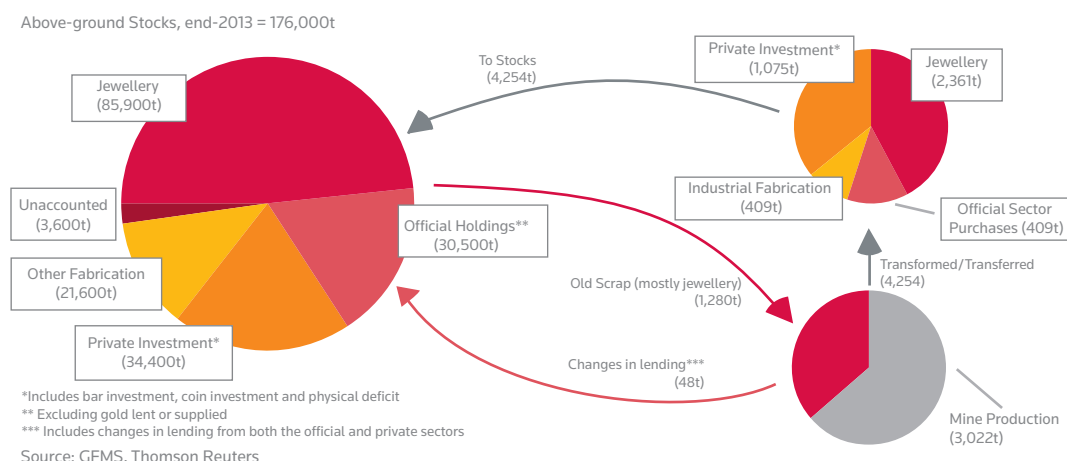
Supply of gold into the market can be sourced either from new mine production or from the recycling or mobilisation of the existing, and substantial, above-ground stocks of metal. The former (as well as producers' hedging activities) is discussed in detail in Chapter 3 of this *Gold Survey*, while the latter topics are covered in this chapter. At present, the official sector is a source of significant net demand in the gold market and is accordingly not detailed in this chapter but instead in a separate short chapter that follows.

We examine the recycling of scrapped fabricated products in this chapter. Another possible source of supply from above-ground stocks of gold, namely bullion held by private individuals and non-official institutions, is discussed in more detail in Chapter 2. And in contrast to previous years some areas of the investor side of the market were a source of supply last year with substantial ETF sales.

The table on the next page provides a summary of annual supply to the market from mine production and above-ground stocks over the 2011-2013 period. Also, we have incorporated the supply of metal from ETF sales, which for the first year in their history were a source of supply to the market. As illustrated in this table, overall visible supply from above-ground stocks rose in 2013 by 526 tonnes year-on-year, alongside an increase of 161 tonnes in mine production.

\* Some material has been lost from the market over time; the estimate for this is carried as "unaccounted" in the chart below.

### GOLD TRANSFERS (NET) TO AND FROM GLOBAL ABOVE-GROUND STOCKS, 2013





The increased supply from above-ground stocks has occurred despite a sharp decline in supply from scrap. This was the fourth year in a row of declining scrap supply. However, it would be wrong to represent this as merely the continuation of the earlier trend as the pace of the fall accelerated dramatically, if unsurprisingly, in the second quarter of last year.

Central to this drop, and its timing, was the price slump in April and further falls later in the second quarter. In many countries, scrap supply, especially from the jewellery market, dried up on this development and has not recovered. Indeed, in many countries even when the gold price temporarily recovered a bit in the second half of 2013 there was a very muted response, particularly in developed economies. This highlights the fact that scrap supply from many markets is not likely to recover fully on slightly higher prices reflecting a decline in the availability of near market stocks. It also emphasises that in some countries, particularly in Europe, that as their economies have started to recover the urgency of distress sales of gold has largely abated.

Longstanding readers of the *GFMS Gold Survey* will also note the absence of official sector supply from the above table. This is a function of the shift to net purchases from central banks earlier this decade and its subsequent persistence on that side of the market as the tiny level of sales remains dwarfed by purchases from emerging markets, as discussed in detail in the next chapter.

In a similar vein, the absence of supply from hedging was notable for the second successive year in 2013. This was partly a function of the greatly reduced size of the outstanding hedgebook coupled with continued anti-hedging sentiment among mining companies. Our

#### VISIBLE SUPPLY OF GOLD TO THE MARKET

	2011		2012		2013	
	tonnes	share	tonnes	share	tonnes	share
Mine Production	2,839	63%	2,861	64%	3,022	58%
Above-Ground Stocks	1,670	37%	1,634	36%	2,160	42%
- Scrap	1,659	-	1,634	-	1,280	-
- Hedging Supply	11	-	-	-	-	-
- ETF Inventory Drawdown	-	-	-	-	880	-
<b>Total</b>	<b>4,509</b>		<b>4,495</b>		<b>5,182</b>	

Source: GFMS, Thomson Reuters

Note: This is "visible supply" and therefore for the purposes of this table, the withdrawal of metal via ETF growth or via de-hedging has been treated as zero.

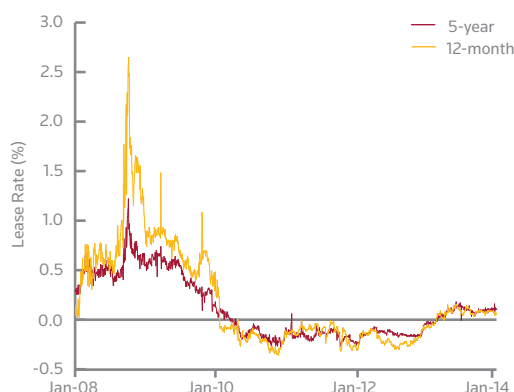
estimate shows that net producer de-hedging amounted to 48 tonnes last year.

Turning to this year, total supply from above-ground stocks is set to fall significantly. Critical to this is likely to be the much lower level of sales from ETFs. We do expect fresh selling of ETF holdings in 2014 on a net basis, especially as prices drop back as tapering is completed and the prospect of US interest rate rises gets closer. However, in tonnage terms sales of ETF holdings are highly unlikely to match the level last year, not least as this would represent a far higher percentage of the remaining total than it did a year ago.

Another contributory factor to the likely decline in visible supply is that scrap supply may well drop again this year, although less spectacularly than in 2013. This is partly a function of the fact that the scrap supply in the first quarter of 2013 is unlikely to be matched at any point this year and the weakness we expect in the gold price in the next few months will also drag scrap flows lower from key price sensitive markets.

Meanwhile, we expect that the official sector will continue to be a net purchaser and while producers may return to hedging the volumes concerned will be overshadowed by the movements in scrap and ETF flows. Finally, while the supply of metal to be bought from above-ground stocks may well fall, there may also be an increased desire for gold leasing. When this is coupled with the expected tightening of US monetary policy this may finally spark a more sustained upturn in gold leasing rates from their protracted period of ultra-low levels.

#### LEASING RATES



#### AVERAGE GOLD LEASING RATES

	1-mth	3-mth	6-mth	12-mth
<b>2011</b>	-0.15%	-0.07%	0.06%	0.32%
<b>2012</b>	-0.15%	-0.02%	0.17%	0.45%
<b>2013</b>	0.10%	0.15%	0.24%	0.44%

Source: GFMS, Thomson Reuters



## SCRAP SUPPLY

— **Global scrap supply declined 22% last year to a four-year low of 1,280 tonnes as a result of a weaker price environment and depletion of close to market stocks.**

Last year, global scrap supply declined for the fourth year in succession, retreating 22% or 354 tonnes to an estimated 1,280 tonnes, the lowest level recorded since 2007. While recent annual falls have appeared to be slightly counter intuitive as gold prices have been rising each year, the decline in 2013 is easier to explain since the average dollar gold price retreated almost 16% last year. Not surprisingly, the weaker price motivated both consumers and the supply chain to retain remaining gold assets in the hope of a return to higher price levels.

In contrast to 2012 findings, scrap volumes declined across all key regions with the fall across the Middle East, Europe, and Oceania particularly pronounced, with the former falling by well over a fifth to a level not seen since 2001. Following the 93% surge in scrap supply in India in 2012, Thomson Reuters estimates scrap volumes retreated 11% year-on-year to almost 101 tonnes. After slumping 45% year-on-year in the first half of the year as gold prices plummeted consumers were enticed back to the market in the third quarter as gold in rupee terms tested new record levels. While prices eased and settled around Rs. 30,000/10g in the final quarter the tightness in the supply market pushed premia higher, generating impressive returns for those willing to sell.

Elsewhere in the developing world, scrap supply in South East Asia also saw a sizeable fall, sliding to a six-year low. If we exclude China's contribution the fall was indeed more pronounced, recording a 23% drop. It should be noted that China was the only country to register a rise in scrap flows last year, albeit only at the margin. Moreover, after a first half decline there was a notable rise in liquidation in the third quarter as gold in

domestic terms pushed back above 275 rmb per gramme after retreating to as low as 237 rmb per gramme in late June, enticing some consumers to take profits and liquidate earlier purchases.

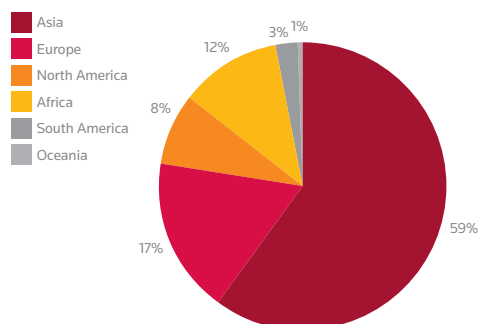
In the industrialised world, it was again the lower price and the improving economic backdrop that accounted primarily for the decline in scrap supply. North American scrap declined 24%. In Europe, a broadly similar outcome emerged with scrap flows sold back to market slumping almost 30% year-on-year, partly due to a decline in distress selling as the economy finally started to recover.

## EUROPE

Scrap supply in Europe, in which we now include Russia and Turkey, slumped by nearly 30% to 346.4 tonnes last year, its lowest level in six years. If we exclude these two countries, scrap supply from other countries in this region posted a similar percentage decline, falling to a four-year low of 271.5 tonnes, representing the largest percentage drop among major regions. Despite this outcome, Europe's share of global scrap supply remained elevated, at 27% compared to 17% a decade earlier.

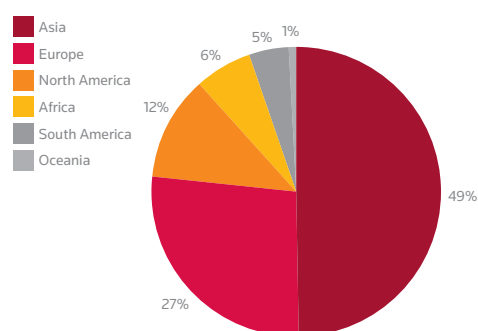
While Europe's jewellery market is normally less price sensitive than in most other markets, the gold price played a critical role last year. The significant correction in the second quarter and the continued weakness for the remainder of the year prompted individuals and those in the collecting business to refrain from selling back old pieces. The importance of the price factor was clearly illustrated by the steep decline of almost 35% in scrap supply in the second half of 2013, when the price averaged €31.2/g, compared with a more modest fall of 24% in the first half, which saw the average gold price of €37.3/g. In addition to notably lower gold prices, improving economic conditions significantly reduced distress selling, helping to explain last year's sharp falls.

ABOVE-GROUND SCRAP STOCKS BY REGION 2003



Source: GFMS, Thomson Reuters

ABOVE-GROUND SCRAP STOCKS BY REGION 2013



Source: GFMS, Thomson Reuters

The tonnages supplied in 2013 have been revised substantially lower from the preliminary estimates in January's *Gold Survey 2013 Update 2*. This has primarily come about as fresh information emerging from this spring's extensive field research throughout the region has revealed a stronger response to lower prices, with most countries seeing very considerable losses. This did not come as a great surprise given the dynamism of this area and it is quite possible we are still being conservative in some instances.

While dominated by jewellery, and in contrast to recent trends, there was also a decline in electronics scrap supply last year. Over and above the impact of the price decline, large amounts of old equipment continued to be shipped to emerging markets where yields are much lower and the re-use of components is more common. In addition, the quantity of gold per item of electronics is also falling. There were several in the industry who also mentioned the near-market stock exhaustion as another factor that pushed scrap supply lower last year. It should be noted that Europe's jewellery consumption accounted for a proportionately higher share of the global total in the past, compared with its share of global consumption today. While this means that its pool of dated jewellery pieces was quite large, record high levels of scrap supply seen in recent years significantly reduced the volumes of old pieces available for selling back.

Moreover, individuals who were willing to sell their old-fashioned and inherited pieces had already done so in the previous years when the gold price was at record highs. Nonetheless, there were also those who had not sold in the past, but chose to postpone selling last year until the price moved notably higher.

Within Europe, **Italy's** scrap remained the highest, although the gap with other countries in the region narrowed greatly, as supplies from the former slumped

by 30% due to a marked decline in old jewellery scrap volumes and a lower contribution from non-jewellery sources. The drop in the volumes of scrapped material from the **United Kingdom**, which is now the third largest supplier in the region, was even more pronounced. Faster economic recovery than in other core European countries, in addition to lower gold prices, substantially reduced the volume of distress selling. Scrap supply in **Germany** was down by 'just' 23%. This was related to the fact that a larger portion of the total scrap is coming from non-jewellery sources, which tend to be less price-sensitive than jewellery scrap.

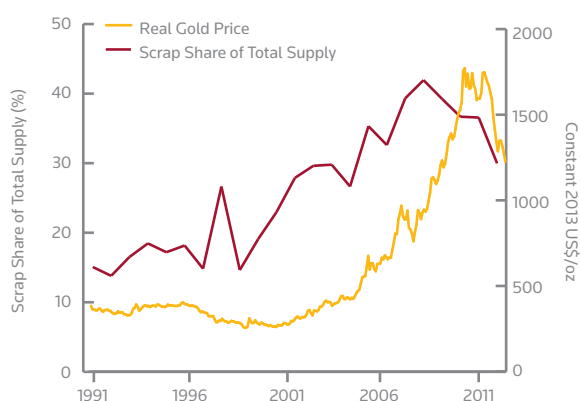
As noted earlier, we have amended our regional definition of Europe, which now includes Turkey and Russia. **Turkey** is now the second largest supplier in the region, which also falls into our Middle East regional bullion market. We therefore talk about Turkish scrap supply in greater detail in our Middle East section below. Jewellery scrap in **Russia** saw a double-digit percentage decline last year, which should not come as a great surprise given that the gold price in rouble terms dropped at a similar rate to dollar prices.

## NORTH AMERICA

Old scrap supply generated in North America is estimated to have dropped 24% to 149 tonnes. This was the steepest decline in over a decade and marked the second consecutive annual decline in this source of supply. Recyclers and refiners reported upwards of 40% declines in old jewellery scrap volumes last year. The decline in total scrap, however, was curbed slightly by the continued growth of gold-bearing electronic scrap feedstock volumes.

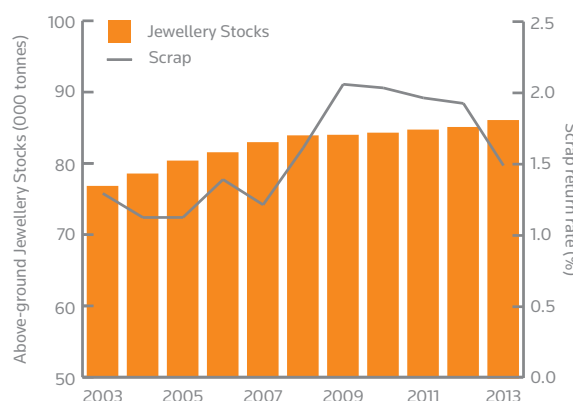
The combination of declining gold jewellery demand over the past decade (which has significantly reduced the above-ground stock of potential jewellery scrap available

### SCRAP SHARE OF TOTAL SUPPLY



Source: GFMS, Thomson Reuters

### ABOVE-GROUND JEWELLERY STOCKS & % RETURN OF SCRAP



Source: GFMS, Thomson Reuters

for gold recovery), lower gold prices, and a decline in the unemployment rate and household disposable incomes have materially weighed on scrap supply over the past two years. Total scrap is 32%, or 69 tonnes, below its 2011 peak. As evidenced by Cash4Gold's bankruptcy filing in July 2012 gold jewellery owners have been increasingly holding back on old jewellery scrap sales in the past two years. Old jewellery makes up around 50% to 80% of most recyclers' and refiners' feedstock from domestic sources in North America. With this high exposure to just one source of scrap, the industry has suffered fourfold; from lower feedstock volumes, idled capacity, lower gold prices, and perpetually declining gold concentrations in feedstock materials.

US refiners have been increasingly focusing on mined material (primarily doré) from Latin America in recent years, in an effort to replace volumes lost from domestic scrap sources. So, while refined output has declined at a lesser rate, the composition of refined material among US refiners has been shifting towards imported doré and away from domestic scrap. For example, the US imported 130% more doré from Peru and 46% more doré from Ecuador in 2013 than in 2012.

Scrap from dental sources continued to decline, in line with the deterioration of demand for gold crowns and consequently the dwindling stock of potential dental scrap supply. Scrap from old coins also fell as the lower gold price actually encouraged double-digit percentage growth in bullion coin purchases while deferring the sale of old coins among the portion of gold coin holders that would be potential sellers.

Electronic scrap, mostly from printed circuit boards, has been growing in terms of gross weight of feedstock volumes over the past few years. Electronics recycling has been advancing technologically, which has improved efficiencies and recyclers' profitability, over the past decade or so. While gold contained in feedstock volumes had been increasing with feedstock volume growth, thrifting in the electronics industry, has meant that refined gold output from electronics recycling was broadly flat to slightly higher in the US last year.

The US accounts for 72% of North American scrap. Scrap generated within the US dropped to 107 tonnes in 2013, down 28% from the previous year. Scrap is 33% lower than its 2011 peak within the country. Scrap generated in Mexico totalled 36 tonnes, down 4% from 2012. Overall, scrap volumes are expected to decline further in 2014 across North America, albeit at a single-digit rate.

## MIDDLE EAST

In **Turkey** an end to high prices, predictably, saw a decline in scrap entering the system in 2013 with a 22% drop that saw total secondary supply at 56.3 tonnes, from 72.3 tonnes a year earlier. The fall was less than it might have been, however, due to the prolonged period of high prices and the fact that 2009-2012 had already seen a 145 tonne decline when prices remained near peak levels.

Prices within the country were at relatively high levels at the beginning of 2013, with little indication in the market of the dramatic price fall that was about to be witnessed. While prices did not breach the 100 lira/gramme level that has seen scrap flow increase in recent times, prices were above 90 lira/gramme for sustained periods in the first quarter and also in August. The second quarter, characterised by the coupling of price declines and high seasonal demand, saw scrap entering the system fall to its lowest level in years however, before rebounding in the fourth quarter.

With the decline in the lira seen in early 2014, and the rise in dollar prices, we have seen a push by many to liquidate scrap early in 2014 – often booking a healthy margin on material purchased as recently as the second quarter of 2013. Indeed this recent increase has seen a record gold premia fall to a discount in the local market over the first quarter. As such scrap supply in Turkey may well have reached its nadir in 2013.

To some extent 2013 also saw Turkey's stocks of gold available for scrap replenished after several years of drawdowns. Price dips in the gold price are also highly likely to see increased price sensitive buying in Turkey over the coming year as the population looks to hedge against possible further lira weakness in the run-up to elections in 2014 and 2015. As such secondary supply is likely to remain highly volatile going forward with periods of high supply seeing gold being sourced at a discount, and a premia developing when demand for new gold is high, which bodes well for margins within the industry.

In **Egypt**, scrap volumes declined at a slightly lower rate than the regional average, slipping 19% to a five-year low of around 43 tonnes. A weaker domestic currency – a function of the political uncertainty and impact of this on the local economy, limited the gold price decline in local terms to just 4% year-on-year. Scrap recycling in the first quarter was actually robust, returning modest growth as gold traded above EGP 350 per gramme for the first time in several months, encouraging liquidation. However,

## SUPPLY OF GOLD FROM FABRICATED OLD GOLD SCRAP

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Italy	38.1	46.7	53.5	57.1	61.0	78.0	98.0	116.5	122.6	85.5
Turkey	62.0	67.7	82.5	71.5	199.0	217.2	122.0	78.0	72.3	56.3
United Kingdom	4.2	4.5	10.7	11.7	38.7	59.4	69.8	76.0	69.0	41.0
Germany	5.9	7.6	11.4	18.8	24.4	32.7	44.1	45.5	40.3	31.1
France	8.6	12.1	18.6	16.8	21.2	24.9	29.2	40.3	33.5	26.7
Spain	4.1	3.7	6.1	5.8	10.6	20.1	31.9	32.7	35.9	23.5
Russia	18.1	18.9	19.3	20.7	21.4	28.7	26.4	23.5	24.2	18.6
Portugal	0.6	0.6	1.0	0.9	1.1	1.5	8.6	15.5	16.0	11.2
Belgium	1.5	1.3	2.7	2.6	3.7	6.1	8.2	9.1	8.6	7.8
Austria	3.6	3.4	3.9	3.7	4.7	6.4	7.9	8.0	7.6	6.7
Poland	2.8	2.6	3.2	2.9	3.0	3.8	4.4	7.9	7.7	5.1
Sweden	1.0	2.0	4.1	4.6	4.7	6.4	6.6	6.7	6.4	4.5
Switzerland	3.9	3.8	4.8	4.8	5.3	6.5	6.3	6.5	6.2	4.3
Finland	0.2	0.3	2.2	1.8	2.1	2.6	6.0	6.1	5.8	3.6
Other Countries	11.2	11.2	14.3	13.4	14.8	21.0	26.5	30.4	29.6	20.6
<b>Total Europe</b>	<b>165.8</b>	<b>186.3</b>	<b>238.3</b>	<b>237.0</b>	<b>415.6</b>	<b>515.2</b>	<b>495.8</b>	<b>502.7</b>	<b>485.7</b>	<b>346.4</b>
<b>North America</b>										
United States	62.2	60.4	81.0	84.5	93.5	124.0	143.0	159.9	149.4	107.0
Mexico	5.7	7.2	12.0	17.6	28.1	40.8	45.6	47.6	37.1	35.5
Canada	5.4	5.0	7.5	6.3	6.9	9.2	11.1	10.8	9.8	6.6
<b>Total North America</b>	<b>73.3</b>	<b>72.6</b>	<b>100.5</b>	<b>108.4</b>	<b>128.5</b>	<b>173.95</b>	<b>199.7</b>	<b>218.25</b>	<b>196.3</b>	<b>149.1</b>
<b>South America</b>										
Brazil	6.6	4.3	6.8	6.4	7.5	11.4	16.1	22.2	24.6	14.4
Colombia	3.7	3.8	4.1	4.3	5.1	6.6	8.1	8.7	9.5	9.3
Venezuela	3.3	3.7	4.3	5.7	6.0	7.1	8.3	8.7	8.1	8.2
Dominican Republic	4.0	4.0	4.2	4.2	4.3	4.2	5.0	5.9	6.1	6.3
Argentina	5.0	3.6	5.1	4.4	4.4	5.9	5.6	5.8	6.1	0.5
Other Countries	4.1	4.6	6.1	7.9	9.2	16.1	21.9	20.7	20.4	20.6
<b>Total South America</b>	<b>26.6</b>	<b>24.0</b>	<b>30.6</b>	<b>32.9</b>	<b>36.5</b>	<b>51.2</b>	<b>65.0</b>	<b>72.0</b>	<b>74.8</b>	<b>59.2</b>
<b>Asia</b>										
China	34.7	41.7	44.6	41.6	70.3	116.3	133.2	130.6	141.6	144.7
India	107.0	94.0	80.0	73.0	89.5	115.5	81.0	58.5	113.0	100.8
UAE	12.9	28.2	34.0	43.8	59.4	70.6	110.0	71.4	73.4	57.0
Pakistan	32.5	30.9	33.4	31.7	35.5	53.9	50.4	42.7	47.2	37.2
Indonesia	63.8	67.0	71.9	68.0	72.5	79.9	64.9	58.3	49.0	36.2
Japan	28.6	24.5	27.0	25.9	53.6	35.3	43.9	55.1	42.2	36.2
Thailand	19.0	12.4	19.1	37.4	51.7	66.0	44.7	52.4	43.6	30.9
Vietnam	5.9	7.8	8.3	9.0	12.2	51.5	49.8	41.1	36.4	28.2
Iran	13.4	16.1	21.9	23.1	26.0	32.2	32.7	32.4	32.9	24.3
Saudi Arabia	84.0	92.5	133.7	56.4	69.4	57.3	44.1	37.1	33.5	23.8
Syria	7.5	10.1	17.4	13.6	14.5	15.3	17.7	19.0	17.8	14.5
Malaysia	11.5	11.0	19.1	16.4	18.4	19.3	22.2	19.2	16.7	13.3
Taiwan	16.1	13.0	18.4	18.5	33.6	34.9	27.5	19.5	15.4	12.0
Iraq	4.0	4.3	6.5	5.4	7.4	20.3	19.1	17.1	15.3	10.8
Lebanon	6.0	6.6	9.9	4.9	6.2	15.1	19.7	14.9	12.7	9.6
S Korea	26.2	17.5	30.7	13.7	20.5	21.3	18.1	17.4	13.9	9.5
Jordan	5.5	4.6	8.7	7.0	5.6	9.2	12.7	10.8	9.7	7.2
Hong Kong	7.8	6.5	7.1	7.5	8.0	8.4	8.0	7.3	6.8	6.0
Kuwait	11.9	12.4	21.8	9.8	10.2	10.4	8.5	7.7	6.2	5.0
Singapore	3.5	3.3	4.2	5.0	5.4	6.1	5.8	8.9	7.4	4.8
Israel	7.1	5.2	11.4	5.0	6.1	6.6	8.3	7.0	5.6	4.4
Bahrain	1.9	1.8	3.8	3.8	3.8	4.7	4.5	4.0	3.5	2.6
Oman	1.5	2.2	3.8	3.1	3.8	4.5	4.4	3.4	3.1	2.4

## SUPPLY OF GOLD FROM FABRICATED OLD GOLD SCRAP

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Bangladesh	2.1	2.1	2.5	2.5	2.7	3.0	2.7	2.6	2.7	2.3
Qatar	0.8	0.9	2.3	2.6	2.5	2.8	2.4	2.0	1.8	1.5
Philippines	1.2	1.1	1.1	1.1	1.4	2.2	1.9	1.7	1.5	1.1
Other Countries	9.3	9.5	11.0	11.4	12.4	13.7	13.8	13.6	13.0	11.4
<b>Total Asia</b>	<b>525.7</b>	<b>527.2</b>	<b>653.6</b>	<b>541.0</b>	<b>702.5</b>	<b>876.2</b>	<b>851.7</b>	<b>755.6</b>	<b>765.7</b>	<b>637.5</b>
<b>Africa</b>										
Egypt	71.3	72.7	77.5	56.5	35.8	65.0	48.0	47.6	53.6	43.2
Morocco	5.3	5.9	6.3	6.3	6.4	9.7	9.3	12.0	11.3	9.4
Libya	4.0	4.6	9.7	9.5	10.4	13.4	15.8	16.6	14.4	8.8
Algeria	2.5	2.7	2.8	3.4	3.6	5.8	6.1	7.9	7.6	6.8
Other Countries	4.5	4.5	11.0	8.5	8.9	12.2	12.7	14.7	14.2	12.2
<b>Total Africa</b>	<b>87.6</b>	<b>90.4</b>	<b>107.3</b>	<b>84.1</b>	<b>65.0</b>	<b>106.1</b>	<b>91.8</b>	<b>98.8</b>	<b>101.0</b>	<b>80.4</b>
<b>Oceania</b>										
Australia	2.4	1.9	1.5	1.5	2.0	3.1	6.8	12.0	10.2	7.3
<b>Total Oceania</b>	<b>2.4</b>	<b>1.9</b>	<b>1.5</b>	<b>1.5</b>	<b>2.0</b>	<b>3.1</b>	<b>6.8</b>	<b>12.0</b>	<b>10.2</b>	<b>7.3</b>
<b>World Total</b>	<b>881.3</b>	<b>902.4</b>	<b>1,131.8</b>	<b>1,004.9</b>	<b>1,350.1</b>	<b>1,725.7</b>	<b>1,710.8</b>	<b>1,659.3</b>	<b>1,633.7</b>	<b>1,279.9</b>
...of which:-										
Middle East*	289.8	325.3	435.2	306.3	449.8	531.1	453.8	352.3	341.4	262.5
East Asia*	221.7	209.6	256.2	249.1	352.8	446.4	425.6	416.7	379.0	326.8
CIS*	22.7	23.5	24.0	25.4	26.7	35.3	32.8	30.1	31.2	25.0
Indian Sub-Continent*	144.6	129.8	119.8	111.7	132.5	176.9	138.3	107.7	166.5	143.3

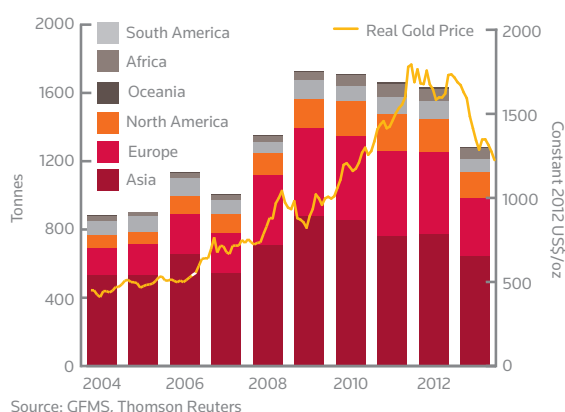
Source: GFMS, Thomson Reuters \* The key regional bullion markets

as gold prices collapsed in the second quarter so too did scrap flows as consumers were prepared to wait for an opportunity to sell or update jewellery items, with supply estimated to have slumped by more than a third during this period. Despite a rising price in the third quarter this period coincided with the height of the political unrest and many consumers preferred to retain gold in uncertain times rather than to be holding the domestic currency.

**Saudi Arabian** scrap supply fell for the fifth consecutive year to a twenty-four year low. Indeed the 2013 level of 23.8 tonnes (a year-on-year decline of 29%), is over 80% or 110 tonnes below the peak witnessed in 2006. Moreover, in just the last five years alone scrap receipts

have retreated at an average of 19% per annum. The sharp correction in the dollar gold price in the second quarter saw scrap recycling slow to a trickle as most consumers waited for a return to a higher price level before liquidating assets. Thomson Reuters estimates that scrap supply in the first half slumped by almost 24% year-on-year. Supply did pick up in the second half as gold briefly surpassed \$1,400 in late August though this was short lived as supply evaporated as gold prices again eased. In a clear indication of the lack of available supply in the market scrap exports to foreign refineries were insignificant last year, with the vast majority of available recycled material used in domestic jewellery fabrication.

## WORLD SCRAP SUPPLY



## LARGEST SUPPLIERS OF GOLD SCRAP



## INDIAN SUB-CONTINENT

Indian scrap supply declined last year to just shy of 101 tonnes that is 11% lower than the record level in 2012, but this fall was still only half the decline in the global total. As a result, India's share of global scrap return rose from a five year average of 6% to 8%. The motive to sell was particularly high in the third quarter, when more than 50% of the year's supply was returned. That was visible from the long queues at jewellery stores and at scrap buyers (albeit smaller than those seen in 2012) when the gold price crossed the previous record high. So strong was the bearish sentiment, that when the price touched a new record high (Rs. 33,590/10 grammes) sellers were accepting a discounted rate. However, as the price in rupee terms fell by more than 10%, selling interest waned. Subsequently, the price strengthened but then rising prices built higher price expectations resulting in lower sales.

Last year more than one-fifth of the volumes were generated from an auction of gold that had previously been used as collateral, due to customer defaults. That said, it is a minuscule percentage compared to loans outstanding against gold in the form of jewellery, coins, bars or other articles. Viewing this from a longer time horizon, it wouldn't be a surprise to see sales of similar magnitude or even higher as the gold price falls and loan defaults rise.

Another source of scrap was from jari. As prices hovered at more than Rs.30,000/10 grammes it was common to find aggregators of old saris with jari. These jari's were separated from silk, cotton and melted to get gold and silver bars, which were then sold to jewellers.

Scrap generation at the beginning of 2014 is estimated to have been 34% higher than last year. Sales will be generated as loan defaults last year, as a result of sharp price decline, could come up for auction this year. Also higher interest costs, and lower than expected yields from farming, are likely to trigger gold sales.

## EAST ASIA

East Asian scrap supply also fell markedly last year in reaction to the drop in the dollar gold price, retreating by 14% to an estimated 326.8 tonnes, the lowest level since 2007 and 27% below the level recorded in 2009. The first half saw scrap volume plummet as the acute fall in the gold price in the second quarter removed the incentive to liquidate gold assets; many traders suggested that supply during this period almost entirely

dried up as consumers waited for a more opportune time to sell. The price rally in the third quarter that saw gold trade briefly above \$1,400 did tease out some scrap flows across most markets though even these were modest when compared to previous years, many having already liquidated stocks at the higher price level.

Looking firstly at **Indonesia** as the largest scrap market aside from China, supply from this market slumped by more than 25% last year to just over 36 tonnes, a level not seen since the mid 1990s. The 10% drop in the rupiah gold price assisted in driving down scrap receipts though supply has been on the wane for a number years (in spite of the higher price environment) with most of the high carat jewellery having already been liquidated much earlier in the price rally. The magnitude of the Indonesian decline was repeated across several key markets in the region. Indeed, scrap supply in **Thailand** also slumped nearly 30% to an eight-year low, scrap there declining 24% in the first half and retreating more than 30% year-on-year in the final six months of the year.

Elsewhere, **Japan** recorded the lowest decline in the region (aside from China), though still dipping by double digits to an estimated 36 tonnes, almost a third or 19 tonnes below the record level witnessed in 2011. Looking back, scrap supply was aided by the weaker yen that saw the average gold price in domestic terms actually increase marginally in 2013 though traders suggested most available close to market stocks had previously been liquidated. **Vietnam** and **Malaysia** saw annual scrap supply decline by 23% and 20% respectively, while **Singapore** and **South Korea** recorded some of the largest falls in the region, declining by close to a third.

As we went through a major upward revision on **Chinese** jewellery fabrication for 2011-2013, we also revised up the scrap tonnage accordingly, as Chinese scrap is largely dependent on jewellery recycling. China's scrap total in 2013 remained largely flat, rising only at the margin to 144.7 tonnes. After an uneventful first quarter, the sharp decline in the gold price during the second quarter discouraged consumers from liquidating their old jewellery. Domestic scrap supply saw a 19% year-on-year decline for the second quarter. Scrap volumes modestly improved for the second half of the year, boosted primarily by a rise recycling in the third quarter, as the debate on whether gold had turned into a bear market was heating up in China.



## 5. OFFICIAL SECTOR

- *For the third successive year, central banks were a significant source of net demand for the gold market in 2013. Net purchases by the official sector were 409 tonnes last year, down by a quarter on the prior year's multi-decade high, but still a historically elevated level.*
- *Underpinning the continued high level of net purchases was the view of many Asian and CIS countries that gold is a key means of diversifying their reserves. Russia was the largest reported purchaser for the second successive year with a recorded 77 tonnes.*
- *Sales remain at trivial levels with Germany the largest seller, at a mere four tonnes for its commemorative coin programme.*

### OVERVIEW

The estimates derived by the GFMS team at Thomson Reuters for official sector transactions are based on a combination of publicly available information, such as the statistics regularly published by the IMF and information extracted from individual central banks' websites, plus our own proprietary data on undeclared central bank activity, compiled using information collected through field research. Due to the lag that often exists between activity taking place and being identified, it is possible that our estimates will be revised in the future.

The official sector witnessed another year of strong central bank interest in gold in 2013 as it was largely uninterested in the slump in gold prices. Net official sector purchases are estimated to have totalled 409 tonnes in 2013, down by 25% against 2012. However, the 2012 figure had been the highest since 1964 and the 2013 total is more accurately portrayed

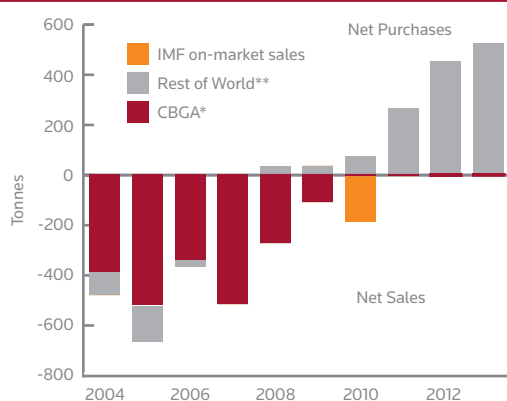
as another year of substantial purchases which are rapidly becoming the industry norm. Indeed, net central bank purchases from 2011 to 2013 inclusive amounted to almost 1,500 tonnes. To put this in context, this is equivalent to approximately six months of global annual mine production.

This is a fundamental change to the market, as it was preceded by more than two decades of persistently heavy selling. As recently as 2005 net official sector activity was equivalent to a fifth of supply. Despite the drop in official sector purchases in 2013, it still represented 8% of overall gold demand. This is a swing of over 1,000 tonnes in just eight years.

This shift in central bank purchases has in our view been a key element in supporting cyclically higher gold prices. Central to this has been not just the direct impact on supply and demand dynamics, but also the influence on investor confidence. However, 2013 marked the first time in many years when the market appeared to be more influenced by sell-side interest than buy-side activity. In fact, to be more accurate the most significant price impact from central banks in 2013 arguably came from no transaction at all!

In mid-April the news that the European Commission had suggested that Cyprus sell gold reserves to raise 400 million euros appeared to be the spark for the largest one day price drop since 1980. While the country's gold holdings (14 tonnes) are small, this raised doubts about the independence of Eurozone central banks and, by association, fears about possible sales from other struggling European countries where gold

### NET OFFICIAL SECTOR GOLD PURCHASES/SALES



Source: GFMS, Thomson Reuters

\*signatories to the Central Bank Gold Agreements

\*\*all other countries

### GOLD AND OTHER RESERVES (END - 2013)

	Gold Reserves (tonnes)	Total Reserves (US\$ bn)*	% Held in Gold*
United States	8,134	448.51	70.2%
Germany	3,387	198.54	66.1%
IMF	2,814	n/a	n/a
Italy	2,452	145.74	65.1%
France	2,435	145.16	65.0%
China, P.R.: Mainland	1,054	3,880.37	1.1%
Switzerland	1,040	536.24	7.5%
Russia	1,035	509.69	7.9%
Japan	765	1,266.85	2.3%
Netherlands	612	46.31	51.2%

Source: IMF

\*Gold valued using market prices



reserves are far more substantial. In particular, the concerns were that some of the troubled economies of Spain, Italy, Greece and Portugal, who have a combined total gold holdings of over 3,200 tonnes - or more than annual global mine production - might be forced to sell.

This dramatic price drop clearly illustrated how developments in the official sector can spook an already nervous market. Indeed, the Central Bank Gold Agreements, first implemented in September 1999, were designed to allay exactly that nervousness after years of sporadic, and heavy, disposals; see page 56.

As it has turned out Cyprus has not shown any inclination to sell any of its gold reserves and the official reserves of these countries are actually, albeit very marginally, up since the news broke as Greece has made some small purchases. It is interesting to note though that an announcement from Iraq in March 2014 that it had purchased 36 tonnes (subsequently raised to 60 tonnes), the largest reported transaction by a central bank since Mexico bought 79 tonnes in March 2011, appeared to have no positive effect on the price.

Robust central bank purchases are driven by the mindset of central bankers in emerging markets in general, and Asia and the CIS in particular, to diversify their growing foreign exchange reserves. This is underpinned by a number of factors, one of which has been the strong price performance of gold over the past decade. However, last year's price decline, and sustained heavy buying, shows that this influence can be exaggerated as while it caused some central banks to delay purchases for many it had very little effect on their motivation to buy gold.

A more important factor in our view is the small proportion of emerging market reserves that is currently held in gold and a desire to see this raised to a substantially higher level. This is underpinned by

a degree of scepticism about the prospects for many advanced economies and their respective currencies. Central to this is the continuation of monetary easing in many advanced economies, as even the United States is still expanding money supply and is set to keep interest rates ultra low for sometime. Against this backdrop, it is not surprising that some developing countries chose to convert a small portion of their reserves into gold in 2013.

Geographically, announced purchases were dominated by Russia and other CIS countries, although some Asian economies also made significant purchases. The high net purchase figure was also aided by the third successive year of trivial gross sales, at just twelve tonnes.

Turning to the prospects for 2014, we see little appetite for central banks whether inside the current CBGA group, or outside, to make sales this year, regardless of price fluctuations. Meanwhile, we expect central banks in emerging markets to continue their moves into gold as monetary policies in advanced economies are to remain ultra-loose for some time, and further policy loosening cannot be ruled out in Europe or Japan.

Gold will therefore remain a useful means of reserve diversification and a hedge against currency debasement. Overall, we therefore expect gold purchases by the official sector to remain elevated, at roughly 75 tonnes per quarter, throughout this year.

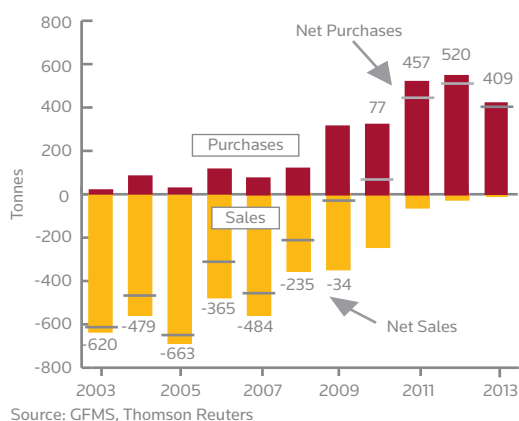
## SALES

The year 2013 was the third consecutive year in which **gross sales** from the official sector remained minimal, at just twelve tonnes. Consistent with the previous couple of years the difference with the prior period is the absence of large scale selling from countries within the CBGA. Despite this, the largest seller worldwide was as usual **Germany**. We estimate that Germany released just over four tonnes for its official coin programme. The only other CBGA signatory to be a net seller was **Belgium**, who reduced their holdings in March 2013, albeit by a miniscule amount - far less than 0.1 tonnes.

After Germany, the next largest gross seller of gold was **Mongolia**, who during the second and third quarters sold over three tonnes. However, this should be seen as part of its trading activity as purchases at the beginning and end of the year ensured that on a net basis Mongolia remained a net buyer of gold.

Perhaps one of the more surprising developments was that **Mexico** was a seller, given that it had been the

### WORLD OFFICIAL SECTOR SALES AND PURCHASES



largest purchaser as recently as 2011. To put this in context though, sales were barely 1% of the purchases made in 2011.

Elsewhere, sales remained lacklustre with the majority of gross sales seeming to have been related to coin minting, as in the **Czech Republic**.

Finally, **Canada** also made the first sale of any of its gold reserves since 2003, although a mere 0.4 tonnes. This consisted of selling 90% gold \$5 and \$10 coins that had been minted between 1912 and 1914, shortly after the Canadian branch of the UK's Royal Mint, as it was then, had been set up. This sale was part of an attempt to eliminate the federal deficit in Canada.

## PURCHASES

After a multi-decade high of 571 tonnes in 2012, gross official sector purchases are estimated to have totalled 421 tonnes in 2013, down by 26% year-on-year. However, this still represented a historically high level.

It is important to emphasise that our gross figure does not include the reported net increase in Turkish official reserves (as was also the case in 2011 and 2012) as this is reflected in changes in local commercial banks' gold deposits with the central bank. In 2013 this showed as an increase of 160 tonnes in Turkey's gold reserves.

For the second successive year, **Russia** was the largest announced buyer in 2013, raising its official gold holdings by a reported 77 tonnes, a smidgeon higher than in the previous year. This was partly achieved via regular acquisitions of local mine production. The pace of purchases fluctuated, with the largest acquisition in December, at 20 tonnes. Indeed, further purchases in early 2014 meant that in February Russia overtook Switzerland as the world's seventh largest gold holder.

## ANNUAL NET OFFICIAL SECTOR PURCHASES (TONNES)

2009	2010	2011	2012	2013
-34	77	457	544	409

Source: GFMS, Thomson Reuters

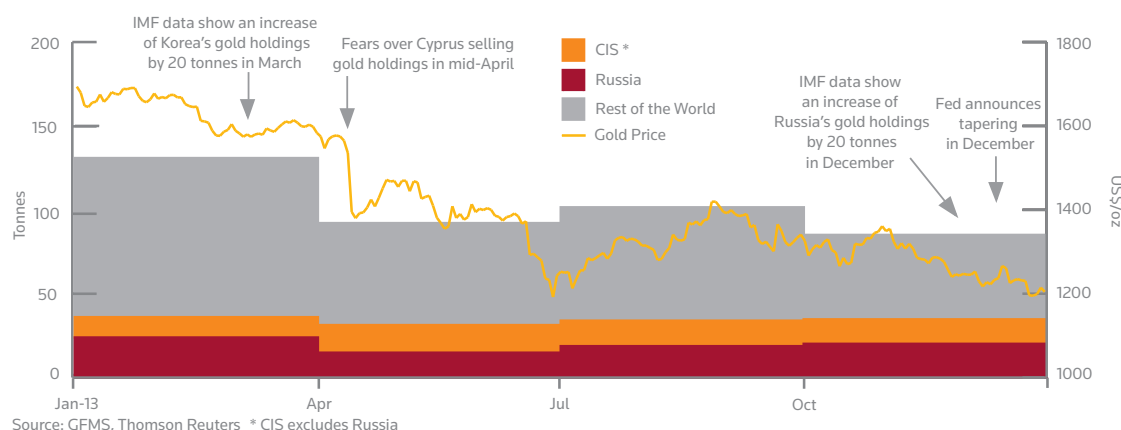
Most of the other major announced buyers in 2013 were CIS countries with **Kazakhstan** acquiring 28 tonnes primarily by buying domestic gold output throughout the year. This helped to ensure that the country continued its plan to raise gold's share of its reserves to 20%. Meanwhile, **Azerbaijan** purchased a reported twenty tonnes. These acquisitions are believed to have been made by SOFAZ, the country's sovereign wealth fund, in the international market. There were also purchases by Ukraine (of almost seven tonnes), and a combined three tonnes by **Belarus, Tajikistan, Kyrgyzstan**.

Elsewhere, modest purchases were also reported by a number of countries predominantly in Asia, including **Nepal, Sri Lanka** and **Indonesia** buying twelve, nine and four tonnes respectively. The largest reported purchase by a central bank outside CIS was **South Korea**, which raised its bullion holdings by 20 tonnes; this was entirely done in March.

Purchases from CBGA signatories, or for that matter other advanced economies, remained extremely rare with a purchase of 0.3 tonnes by **Greece** being an exception. Other small purchases were made by **Mozambique** of a little less than two tonnes along with **Venezuela** and **Haiti**. The latter two are believed to have been partly an attempt to support their currencies.

And while data are generally scarce for 2014 so far, **Iraq** has reportedly purchased 60 tonnes over the February/ March period, in an attempt to support the Iraqi Dinar; the transaction tripled Iraq's reported reserves.

## OFFICIAL SECTOR DEVELOPMENTS AND QUARTERLY NET PURCHASES IN 2013



## THE CHANGING LANDSCAPE OF CENTRAL BANK GOLD ACTIVITY

After two decades of persistent and at times heavy central bank selling the past three years have seen a switch as the official sector has been a major source of demand for gold. This shifting landscape of central bank activity may effectively be rubber stamped later this year as the Central Bank Gold Agreement (CBGA) may not be renewed. This would mark a complete 180 degree turnaround on the situation 15 years ago. In the late 1990s there was growing unease about the affect that European central bank sales were having.

To be clear, there was not an attempt to stop central banks selling but calm a market that was deeply unsettled by a series of heavy, and unpredictable tranches of sales (of 100 tonnes and more) from individual central banks over the 1990s. A concomitant result of this was that by August 1999 the gold price was at a 20-year low, partly from sheer heavy supply, and partly from bouts of short selling into nervous markets.

As a result, in 1999 fourteen European central banks and the ECB signed the first CBGA. The signatories agreed to not sell more than 400 tonnes per year between them for the next five years, with each year running from 27th September. The deal was renewed in 2004, when the limit was increased to 500 tonnes in any year and there was some changes to the signatories. In 2009, a third agreement was signed.

The chart below shows that while the initial sales almost matched the CBGA limits, these quotas have become increasingly irrelevant. In 2013, sales by CBGA signatories were just four tonnes, almost wholly from Germany, even those sales that do take place have, currently, more to do with minting coins rather than any desire to actively lower their gold holdings. Given this backdrop it is perhaps unsurprising that there has been increasing speculation the CBGA may not be renewed. Further, in 2009 the requirement not to increase lending above 1999 levels was dropped, although the massive contraction in

the global mine hedge book since its peak in Q3 1999 rendered that stipulation largely irrelevant.

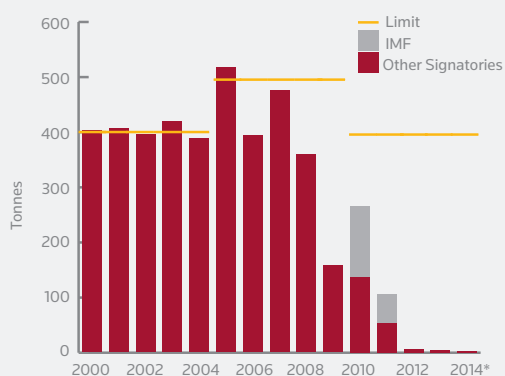
Looking ahead, we view the signing or otherwise of a new CBGA as a largely academic exercise as regardless sales will be far below the limit as European central banks appear to have no desire to lower gold holdings.

Arguably more important for the market over the past year are two other factors, namely continued purchases from emerging markets and the repatriation of reserves. As we have described in the overview the low percentage of reserves held in gold is central to the continued by emerging markets. In the chart below it can be seen that even with the purchases already made by emerging markets, and with gold's higher price the global average is still less than half the level of the early 1980s.

An interesting development is that the Bundesbank is to repatriate a portion of its gold reserves. In January 2013 it announced that it would be transferring 300 tonnes of gold from the Federal Reserve to vaults in Frankfurt by 2020. Additionally, it plans to bring the entire 374 tonnes that is held by the Banque de France back to Germany. The rationale behind moving all of the reserves from France is that both countries share the same currency. Overall, this would mean that Germany then has half of its gold reserves stored domestically.

In January 2014 the Bundesbank stated that it had so far brought back to Germany 37 tonnes of gold, of which 32 were from Paris and five from New York. In the same statement it said that "We had bars of gold which did not meet the 'London Good Delivery' general market standard melted down and recast. We are cooperating with gold smelters in Europe". Finally, it is worth noting that this is not the only example of a central bank repatriating gold reserves in recent years as the late Hugo Chavez announced that Venezuela would repatriate 160 tonnes of its gold reserves in 2011.

### SALES UNDER THE CBGA AGREEMENT

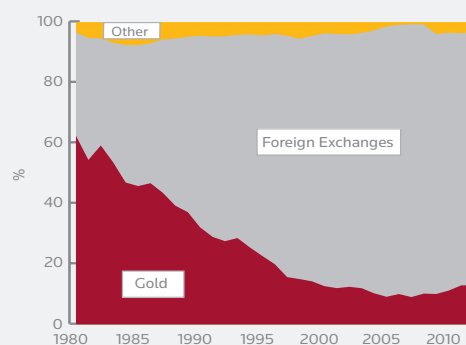


Source: GFMS, Thomson Reuters

Note: Annual years use CBGA terminology (year ends 26th September)

\* Represents data ending 29th January 2014

### COMPOSITION OF WORLD OFFICIAL RESERVES



Source: IMF

## 6. GOLD BULLION TRADE

- *India's gross bullion imports declined by 10% to 961.3 tonnes, amidst a surge in unofficial imports. As a number of key policies shaped the Indian bullion trade in 2013. Import duty on gold was raised to 10% and an 80:20 rule was introduced. These effects jointly brought down monthly import volumes to a quarter of the historical average.*
- *Middle East bullion imports saw a sharp rise in 2013, instigated by the gold price plunge in April. Exports from the region declined considerably, reflecting strong domestic demand and weak scrap supply. Pent up demand for gold in Turkey saw a doubling of bullion imports. Increased scrutiny surrounding "gas for gold" transactions saw Turkish exports drop substantially.*
- *Bullion flows to East Asian markets surged in 2013 as a result of a sharp rise in investment and jewellery demand, with imports to China, Thailand, and Vietnam all recording impressive gains. Bullion imports to China were exceptionally strong and we are increasingly seeing direct imports to Shanghai. Round-tripping remains a feature of the market despite a crackdown by the government, and has inflated trade figures.*
- *Bullion exports from Switzerland are thought to have doubled to over 1,900 tonnes in 2013. Much of these were outflows to Asia and the Middle East. Indeed, shipments from Switzerland to Hong Kong jumped over 500% in 2013.*
- *UK bullion exports also rose sharply, much of it shipped to Switzerland and Hong Kong. Much of the flow to Switzerland eventually made its way to Asia and the Middle East.*
- *In contrast to Asia and the Middle East, bullion exports into most European countries saw a decline in 2013. This in part reflects the contraction of gold jewellery fabrication industry and waning investment demand in the region.*
- *US bullion exports to East Asia surged 81% in 2013. This 116 tonne increase was the second strongest since 2010 and the second largest in the past decade. Meanwhile, US and Canadian imports from South America rose 27% in 2013. US and Canadian precious metals refiners have benefitted from the strong growth in gold and silver mine production in South America over the past decade.*

Whilst official trade statistics are quoted in our analysis, these figures should not be taken at face value. Our assessment of trade flows also incorporate substantial research with market participants.

### INDIAN SUB CONTINENT

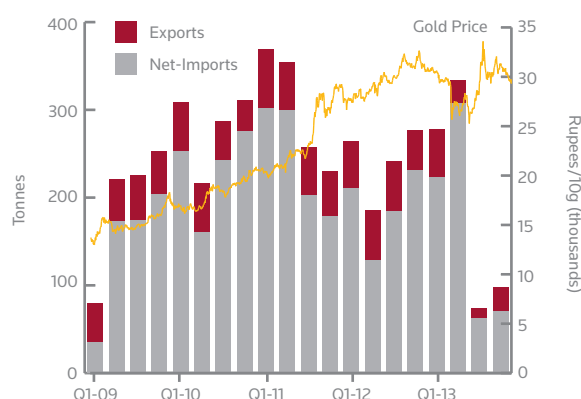
- *India's gross bullion imports declined by 10% to 961.3 tonnes, amidst a surge in unofficial imports.*
- *Revision of gold import policies brings down monthly imports to one fourth of the average volumes.*

India's gross gold imports for 2013 declined by 10% to an estimated 961.7 tonnes. With 23% of the total global supply absorbed by India, a broadly steady share compared to 2012. This reflects growth in unofficial supply, which is estimated to have grown by more than 75% from 2012 to 178.7 tonnes. Gross official imports are estimated at 782.6 tonnes, against 968 tonnes in 2012.

By country of origin, Switzerland, UAE and South Africa were the top three suppliers. An increase in unofficial supplies also saw South East Asian countries gaining prominence as of mid-2013. Other than refined bullion bars, 59 tonnes of doré were imported from USA, Australia, Peru, Tanzania, Guinea and Ghana. However, these are in gross weight terms with gold purity varying from 35% to a high of 92%.

An accurate picture of Indian bullion imports should account for round-tripping and genuine jewellery exports to derive underlying net bullion imports. Round tripping in 2013 is estimated at 103.5 tonnes, a decline from 170 tonnes in 2012; an outcome of legislation that prohibited export of medallions and coins from the Special Economic Zone (SEZ) effective May 2013.

### INDIAN BULLION NET IMPORTS AND EXPORTS\*



## GROSS INDIAN BULLION IMPORTS\*

(tonnes)	2006	2007	2008	2009	2010	2011	2012	2013
Gross Imports*	753	862	760	779	1,123	1,208	1,071	962
Local Price (Rs./10g)	8,912	9,345	12,256	15,233	18,304	23,899	29,730	29,310

\*including Direct Imports (imports by premier trading houses), NRI Imports, Export Replenishments; 2012 and 2013 also includes unofficial imports.

Source: GFMS, Thomson Reuters

Imports to the SEZ between May and December dropped by nearly 70% compared to 2012. Some circumvented the law by shifting production to Export Oriented Units (EOUs), manufacturing crude jewellery, or by over-invoicing exports. Genuine jewellery exports from India are estimated at 32.4 tonnes, down 26% from 2012. The decline was due to a supply shortfall from August, culminating in a cancellation of export orders. Allowing for the 135.9 tonnes from round-tripping and genuine jewellery exports, net bullion imports are estimated at 825.4 tonnes, a decline of 31 tonnes year-on-year.

A number of key policies shaped the Indian bullion trade last year: Import duty on gold was raised in three phases, eventually taking it to 10% effective 13th August from 4% at the beginning of the year. On the regulatory front, the Reserve Bank of India (RBI) restricted banks, nominated agencies and premier/star trading houses from importing on consignment basis, through circulars issued on 13th May and 4th June. The RBI also mandated that imports could happen only on 100% cash margin basis. With no signs of imports easing to levels deemed acceptable by policy makers, it was decided to revise the gold import policy completely through the now famous 80:20 rule, which came into effect from 22nd July.

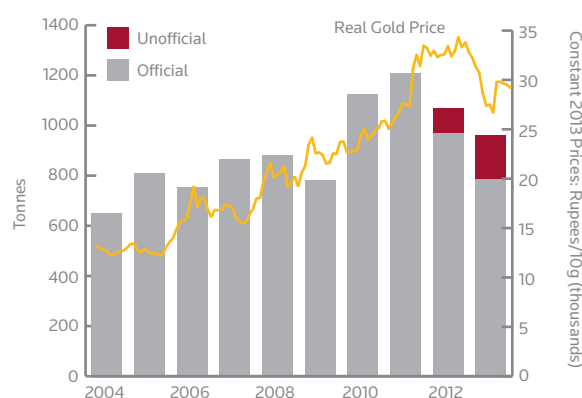
The policy required that "at least one fifth of every lot of imported gold is exclusively made available for purpose of export". In the clarifications that followed this new rule, premier/star trading houses were barred from supplying to the domestic market and any imports

under the Advance Authorisation or Duty Free Import Authorisation (DFIA) scheme were to be utilised for export only.

As the bar on imports was imposed, only a quarter of the 32 banks and nominated agencies that were active until July 2013 continued with imports. Much of this stagnation was attributed to compliance risks, and secondly, many of these market participants until then were catering to the domestic market. These reasons, alongside a lack of clarity in the rule for nearly a quarter, kept monthly imports at fewer than 12 tonnes. For instance, if a bank did not have an exporter from a specific airport, stock would not be cleared from that location. For locations like Bangalore, which is not a hub for jewellery export, the problem became more acute, resulting in premia 1.5% higher than the national average. Supply shortfall lifted premia to levels that not only incentivised unofficial imports but also imports of semi-finished jewellery and hand-carry gold via non-resident Indians. Exporters who stood to benefit from this 80:20 rule felt the heat instead; eventually some 30 exporters were importing directly into the EOUs by end of the year.

**Pakistan's** bullion trade was affected by a spurt in imports during the first half and reports of smuggling to India. This resulted in a month-long ban on gold imports to Pakistan effective 20th July that was followed by an amendment to jewellery export rules. Other than the value addition norms, processes and checks on exports were further tightened. As a result the two-way bullion flow between Pakistan and UAE came to a grinding halt.

## GROSS INDIAN BULLION IMPORTS (ANNUAL)



Source: GFMS, Thomson Reuters

## MIDDLE EAST

- Middle East bullion imports saw a sharp rise in 2013, instigated by the gold price plunge in April. Exports from the region declined considerably, reflecting strong domestic demand and weak scrap supply.
- Bullion imports into Turkey reached over 300 tonnes in 2013, an increase of 150%.

**Turkey** showed that it was a country of pent-up demand in 2013 as the first domestic gold price decline in over

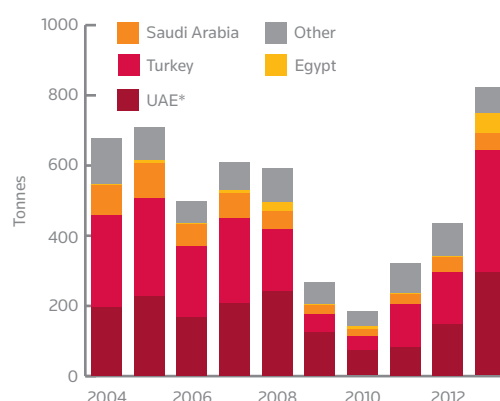
twelve years saw bullion imports more than double. The tonnage increase, based upon central bank figures, is even more remarkable considering that prices which began the year at 96 lira/gramme remained above the 90 lira/gramme level until April. The subsequent fall in dollar prices saw a rush for gold in Turkey with substantial increases in end-use demand from coin fabrication, up 126%, jewellery fabrication, up 18% and bar hoarding up 37% year-on-year.

As prices fell below 80 lira/gramme, demand more than doubled in the domestic market – as was the case in other price sensitive markets – while the domestic premium increased substantially and Turkey became a major pull on the global gold distribution network. Indeed in value terms, Turkey surpassed Thailand, the United States and Canada in 2013 to become the world's third largest bullion import destination.

Bullion imports were also boosted in the first half of the year by continued "gas for gold" transactions with Iran, which came to an end in July 2013 under pressure from United States sanctions. In terms of sources of bullion, Switzerland easily surpassed the UAE as the largest provider with (according to raw trade data) \$7.6 bn of Turkey's \$15.1 bn of imports coming from this source. Switzerland managed to increase trade by value terms by almost 200% in 2013 while the UAE sustained a more modest 50.5% increase to \$4.7 bn dollars. In a distant third Australia also substantially upped its exports into the region with a 316% gain to around \$871 million.

With the domestic market moping up as much gold as possible with near record-high domestic premia, reaching \$40/oz at one point, and with new sanctions curtailing "gas for gold" taking effect from 1st July it is understandable that Turkish exports dropped substantially in 2013. From a peak of 252 tonnes in 2012, according to Turkish customs data, the level

#### MIDDLE EAST BULLION IMPORTS BY DESTINATION\*



Source: GFMS, Thomson Reuters

\*excludes round tripping and scrap related import

fell to 71.9 tonnes in 2013. The two major receiving parties for this material were Iran and the UAE, which garnered 48.6% and 28.3% of the total value of exports respectively. Field research has shown that flows into both countries may have been associated with "gas for gold" and there were large declines in the second half of the year.

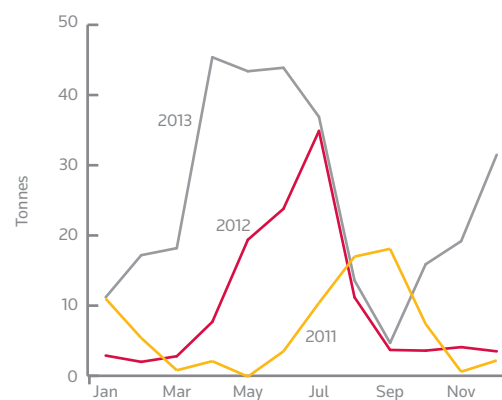
Turning to **Egypt**, gold bullion imports picked up sharply in 2013, a product of a recovering jewellery fabrication industry and a marked increase in investment demand; itself a function of the lower price environment and consumers purchasing gold as a safe haven asset, with the physical balance tightened by a sizeable decline in the availability of scrap supply. Imports from Switzerland surged as did direct flows from Dubai, with these key markets servicing the majority of Egyptian demand. Exports, in contrast, declined quite sharply as domestic scrap supply contracted by almost a fifth. With only a modest recovery in jewellery fabrication, much of this additional supply was consumed domestically. In addition, Egypt's mine production increased by almost three tonnes last year, with this production of almost 10.5 tonnes exported to foreign refineries.

#### TURKISH BULLION IMPORTS AND EXPORTS



Source: Turkstat, GFMS, Thomson Reuters

#### TURKISH BULLION IMPORTS SEASONALITY



Source: Turkstat, GFMS, Thomson Reuters



Bullion imports into the **United Arab Emirates (UAE)**, and more specifically Dubai as the trading hub for the region, soared by almost 140% in 2013 to a shade over 350 tonnes. This record level of imports were instigated by the gold price plunge in the second quarter that saw demand for gold explode as consumers and the supply chain raced to replenish stocks during the lower price environment. Demand surged across the region, draining domestic supplies and sending premia to multi-year highs, generating a wave of large bar imports. After a brief hiatus late in the third quarter, demand again gathered momentum towards year-end as healthy jewellery demand and a sharp rise in unofficial flows to India (hand carried from Dubai) renewed demand for fresh metal.

This genuine trade was of course in addition to the round-tripping flows that have existed between India and the UAE for several years. Last year, as part of the overall crack down on the gold trade the Indian authorities introduced several policies that impacted these flows. We, however, understand these shipments would have still exceeded 100 tonnes in 2013. While domestic scrap supply is estimated to have dropped quite considerably last year in response to the weaker gold price environment, supply from artisanal mine production across Africa remained at elevated levels.

The largest of these flows last year was most likely from Sudan though considerable imports from Mali, Ghana, and Surinam also contributed to more than 150 tonnes of imports. Exports also rose sharply last year. Indeed, shipments to Saudi Arabia more than doubled, while deliveries to Turkey jumped more than 75% to well over 100 tonnes. Official exports to India reached an estimated 184 tonnes though this was largely a first half phenomenon as trade completely collapsed after the increase in the import tariff in August.

Bullion imports into **Saudi Arabia** surged last year, gaining more than 80% year-on-year as domestic demand rebounded strongly on the acute drop in the dollar gold price. Direct deliveries from Switzerland jumped 90%, while shipments from Dubai were also markedly higher. Indeed, during the peak periods of demand (April and June) traders were taking large bars from Dubai to satisfy fabrication offtake. In contrast, the lack of scrap in the local market saw exports slump more than 60% last year as most of this material was retained locally for domestic fabrication.

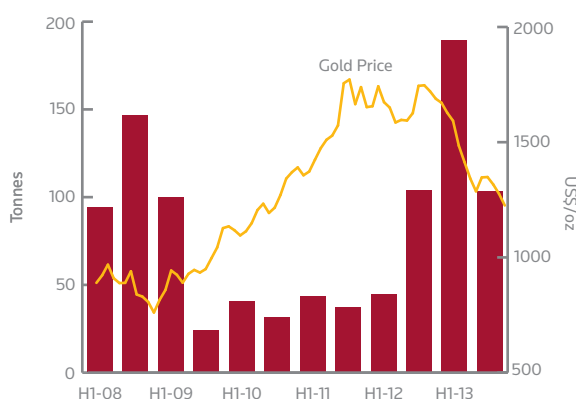
## EAST ASIA & OCEANIA

— *Bullion flows to East Asian markets surged in 2013 as a result of a sharp rise in both investment and jewellery demand, with imports to China, Thailand, and Vietnam all recording impressive gains.*

**South Korean** bullion imports rose 8% in 2013 to an estimated 24 tonnes (on a calculated basis). The healthy rise was largely a reflection of a more buoyant physical bar uptake, coupled with a reduced supply of available scrap as a result of the 18% drop in the local won gold price. Switzerland strengthened its position as the largest supplier with a share exceeding 30% of the annual total, with the rest concentrated equally on Japan, Hong Kong and Australia. On the export front, shipments dropped by almost 60% year-on-year to an estimated 19 tonnes, with flows to Hong Kong and Singapore both weaker.

A surge in investment demand, a robust recovery in jewellery fabrication across the region, and an increase in vaulting facilities accounted for the near 70% rise in **Singapore's** bullion imports last year. Thomson Reuters estimates that bullion imports reached an impressive 225 tonnes in 2013 to a new record level. Deliveries from Switzerland dominated imports (taking up near 70% of

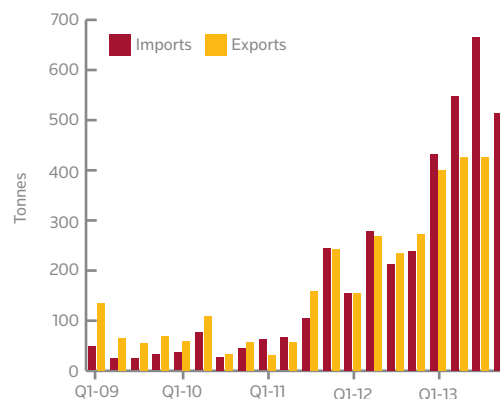
### UAE BULLION IMPORTS\*



Source: GFMS, Thomson Reuters

\*excludes various round tripping and scrap related imports

### HONG KONG BULLION IMPORTS AND EXPORTS\*



Source: GFMS, Thomson Reuters

\*Calculated quantities based on reported export and import values.



the total), increasing more than two-fold, while imports from Hong Kong and Japan (chiefly large bars) also recorded a healthy rise. On the export front, we estimate that these flows also jumped sharply to meet regional demand, with a significant proportion hand-carried from Singapore to neighbouring countries, dominated by trade to Indonesia and Cambodia.

Last year was yet another extraordinary year for bullion flows to mainland **China**, breaking all records along the way. Bullion imports were bolstered by the astonishing domestic demand that emerged after the price drop in the second quarter, led primarily by the jewellery and investment sectors. We estimate that gold imports to China reached an incredible 1,495 tonnes last year. Aside from the imports through Hong Kong, which still accounted for the majority of bullion inflows last year, direct imports to Shanghai intensified especially after the opening of Shanghai Free Trade Zone in September 2013.

Following the unprecedented demand surge in April bullion stocks were in short supply for several weeks, driving up the premia on the SGE above \$50/oz. In response to the shortfall, the SGE amended its policy on bullion imports in June, allowing LBMA standard (995) bars to be imported directly into China, instead of the previous standard of 9999 bars. In tandem with this, three more banks were given authority to import bullion, including two foreign banks, the first time ever in SGE history. Another notable trend in 2013 was the growing amount of direct bullion imports to Shanghai instead of via Hong Kong which has historically been the main conduit. Moreover contacts from the field suggested that the PBOC is encouraging banks to import to Shanghai to offer more diversity to SGE customers.

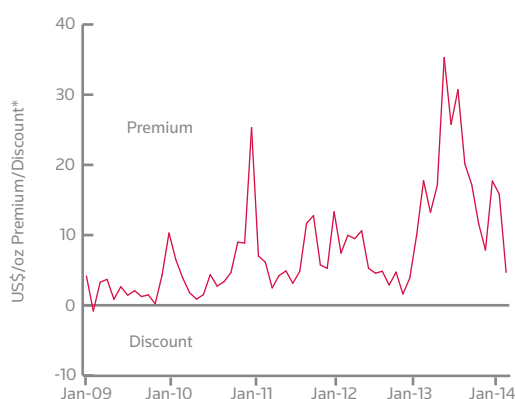
This emerging trend, in turn, has complicated the analysis of the Chinese bullion imports. Due to the opaque nature of the Shanghai import statistics, Hong

Kong export trade data is generally regarded as the most reliable proxy for Chinese imports. Hong Kong's record level of exports to China was evenly distributed over the four quarters last year, with each quarter reaching around 370 tonnes. It should be noted that these gross export figures were highly inflated due to the round-tripping flows that existed between Hong Kong and Shenzhen in southern China. This round-tripping phenomenon, which has been a feature of the market in the last few years, eased after the government launched a crackdown on such arbitrage practices in April. While there was a notable decline in these flows immediately after this crackdown, field research last year found that this practice was still occurring in significant volumes. In our conservative estimate, this two-way trading was in excess of 360 tonnes. After taking these flows into consideration and adding to our analysis of imported products via Shanghai, the true net Chinese bullion imports were in the order of 1,135 tonnes.

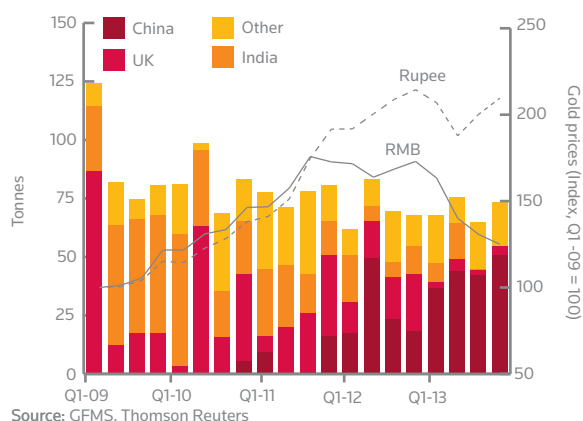
**Hong Kong** bullion imports more than doubled in 2013, reaching 2,192 tonnes on a calculated basis chiefly as a result of a surge in demand from mainland China. Last year, shipments from Switzerland jumped over 500% to become the dominant supplier to this conduit market. Imports from Australia, United States, and South Africa all recorded material gains. Exports were dominated by China at over 90% of the total, while shipments to Vietnam, Thailand, and Singapore also picked up sharply.

Gold imports to **Taiwan** jumped by almost 50% last year to reach nearly 20 tonnes, largely as a result of a strong pick-up in investment demand. Hong Kong, Switzerland, and Japan remained the largest suppliers, with the Hong Kong figure surging over 50% to almost 8 tonnes. Bullion exports retreated by more than a third last year as stronger domestic demand and waning scrap volumes reduced the need to export surplus material.

#### SHANGHAI GOLD EXCHANGE MONTHLY PREMIUM/DISCOUNT\*



#### AUSTRALIAN GOLD EXPORTS

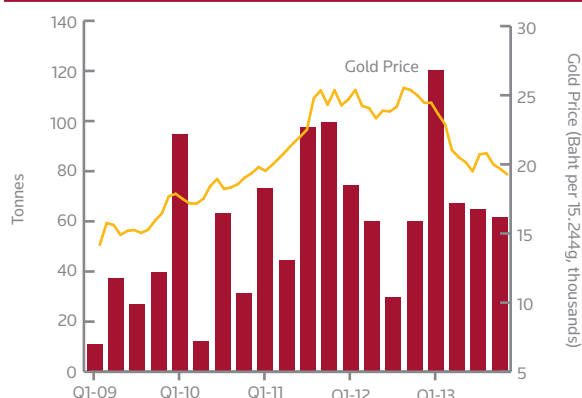


A significant surge in investment demand accounted for the bulk of the sharp rise in **Thailand's** gold bullion imports in 2013 although it was not the sole driver of the 64% increase. Indeed, bullion imports surged as consumers raced to buy gold when prices collapsed twice in the second quarter of the year, draining the market completely of stocks. However, it should be noted that Thailand's gold bullion imports – estimated to be just over 300 tonnes – was also servicing in part the Vietnamese market with unofficial flows using this conduit to enter the country. Shipments from Switzerland remained the largest source of supply at over 40% of the total, with a notable rise in deliveries from South Africa and Australia; the latter increased by almost 75% last year. Thomson Reuters estimates that exports, meanwhile, declined by over two-thirds last year as flows were dominated by imports and scrap supply was negated by the lower price environment.

Calculating **Vietnam's** bullion trade flows in the last few years has been a difficult task since a large proportion of gold enters the country chiefly via unofficial channels; primarily via neighbouring Cambodia, Laos, and to a lesser extent China. In 2013, the State Bank remained in control of all bullion imports, which were then sold domestically in an auction process prior to being released to the market. These official imports amounted to an estimated 70 tonnes last year with the vast majority of these flows emanating from Hong Kong and Switzerland.

Far more opaque is the unofficial cross border trade that we believe reached at least 45 tonnes in 2013, with two-thirds of this supply occurring in the first half when demand was at its peak. Given that the domestic market was operating above a \$200/oz premium at times and demand was always present, the incentive to smuggle gold into the country remained strong.

#### THAI BULLION IMPORTS\*



Source: GFMS, Thomson Reuters

\*Calculated quantities based on reported import values

Analysing **Australia's** bullion export flows often provides a reliable indication of demand in India and the South East Asian region, with a significant proportion of exports typically destined for these markets. Moreover, when demand for fresh imports declines in these countries due to the lack of demand or surplus scrap, this material is often redirected to the UK in large 400 oz bars. Given the surge in investment demand last year it should not surprise that shipments to the UK were down by 80% year-on-year. For the second year in succession China was the primary destination for Australia's gold shipments, commanding over 55% of the total. Indeed, flows to the Asian giant surged over 60% to almost 180 tonnes. Elsewhere, deliveries to Thailand jumped over 55% while shipments to India (once the mainstay of Australian bullion flows) slumped by almost 50% to an estimated 32 tonnes as a result of the increase in import tariffs that virtually strangled trade from May onwards.

In **Japan**, the lower gold price environment saw the country return to net investment for the first time in seven years and underpins the sharp jump in fresh bullion imports in 2013. In recent years, the bullion trade has been dominated by outflows as Japanese consumers liquidated significant volumes of gold assets, although we believe that bullion exports slipped by 10% in 2013 to an estimated 74 tonnes. Meanwhile, exports were dominated by flows to Hong Kong (at almost 50% of the total) and a sharp rise in deliveries to Thailand, while large bar shipments to the UK slumped by almost 70% year-on-year.

#### EUROPE

- **UK bullion exports are estimated to have risen steeply, thanks largely to higher shipments to Switzerland and Hong Kong.**
- **Swiss bullion exports appeared to have increased sharply last year.**
- **Germany saw a notable increase in gold bullion imports last year, while Italy, the UK and Switzerland posted declines.**

The substantial decline in scrap and a rise in fabrication demand in 2013 resulted in an increased European physical deficit, with the exception of Russia. Jewellery fabrication rose by 3% year-on-year from the 2012 low, to 254 tonnes. Meanwhile, scrap supply fell by 29% year-on-year to around 320 tonnes, its lowest figure since 2007, leading to the largest deficit in Europe since 2008.

Last year, bullion imports into Europe remained substantial since it is home to both the London terminal

market and to some of the world's largest refineries. The latter means that in addition to refined output (mainly from the CIS and South Africa), Europe takes in sizeable volumes of doré (mainly from West Africa and the Americas) and scrap (largely from the Middle East and East Asia). The resultant surplus supply often ends up as loco-London investment or exports to fabrication centres such as China or India.

**Swiss** bullion imports as reported by origin decreased by a marked 21% in 2013, reaching 945 tonnes on a gross weight basis. However, if we look at the figures on a calculated basis, volumes decreased by a smaller amount, 12% or around 94 tonnes, to 680 tonnes. The gap between these figures can partly be explained by shipments of silver-containing doré from the likes of Argentina and Peru. Much of the decline can be attributed to lower inflows from Italy, Germany and Peru; however the United States remains the single biggest supplier, contributing 280 tonnes of gold bullion.

There was a far higher inflow from the United Kingdom, at just over 37 tonnes, however we feel that the true inflow is likely to be far higher, representing the outflow of bullion from ETFs. As not all countries report or fully disclose bullion shipments, it is probable that the total inflow is far higher than the above calculated number.

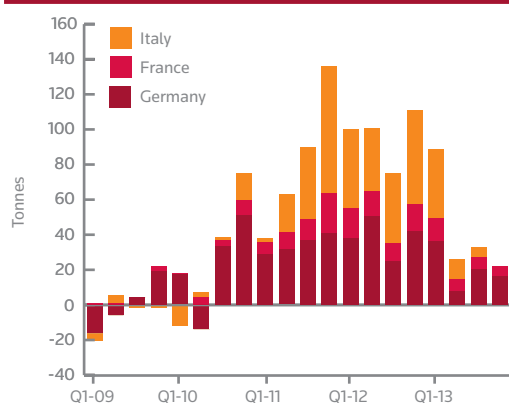
Bullion exports on a calculated basis from Switzerland look to have doubled to over 1,900 tonnes last year on the back of a huge increase in shipments to Asia, in particular Hong Kong, Turkey, Malaysia and Japan. Shipments to Hong Kong made up just under 50% of exports, at over 900 tonnes, representing a more than 500% increase over the previous year. However, outflows to India remained static, displaying the effect of new legislation. Meanwhile, exports to Germany, Austria and Italy increased. There is always a risk in the interpretation of trade statistics however and trade contacts and field

research suggests that the true figure is likely to be far higher than the 1,900 tonnes currently inferred.

Last year, official import data of the **United Kingdom** showed a marked reduction of 30% to 23 tonnes. Similarly, if one looks at imports to the UK as reported by origin, then on a calculated basis, imports fell by 46% year-on-year. While supply from Canada dropped 25% year-on-year, it still made up 62% of the total, meanwhile shipments from the United States dropped by 75% meaning that it only made up 12% of supply, compared to last year where it made up 28% of total imports. Shipments from Spain, Japan and Mexico all significantly declined, with inflows from the latter decreasing by almost 80% last year to 6 tonnes. However, it should be noted that volumes coming from countries that do not publish bullion trade data are understood to have been substantial. We estimate total volume at around 260 tonnes, substantially larger than the official figure.

The main story of the UK bullion trade last year was the astronomical rise in export volumes. Official statistics show a figure of 36 tonnes, up 767% year-on-year, with exports to Switzerland making up nearly 95% of the total. However, when we look at UK exports as reported by destination, the volumes of material are far greater at 105 tonnes representing a notable 173% year-on-year increase, with the bulk, just over 84% of the total, going to Hong Kong. Critically, this does not include Switzerland. If one were to pro-rate the official figures by share of exports, the estimated volumes shipped to Switzerland would be in the region of 2,000 tonnes, which could represent the outflow of ETFs in 2013. It must be stressed however, that drawing conclusions from patchy and contradictory trade data is fraught with pitfalls. However, with the Swiss Federal Council having resumed publishing data on the trade in gold, on a country by country basis, for the first time since 1981, this will provide more clarity on this in the future.

#### MAJOR EUROPEAN FABRICATORS NET BULLION EXPORTS\*



Source: GFMS, Thomson Reuters

\*Does not include Swiss data as it was not available prior to 2014.

**Italian** official bullion imports continued to fall in 2013, dropping by 2% to 107 tonnes, compared with over 250 tonnes a decade ago in large part reflecting the decline of the Italian gold jewellery industry. This tallies with the fact that total fabrication demand fell by 4% to 92 tonnes. Meanwhile, domestic scrap fell sharply by 30% to 86 tonnes, creating an apparent deficit. This necessitated a fall in exports, which duly fell by 33% to 127 tonnes. Despite the above, Italy still remained a net exporter of bullion to the world market, albeit at a far more marginal rate. Switzerland remained the main destination of Italian bullion exports, accounting for 77% of the total. Some of this figure comes as a result

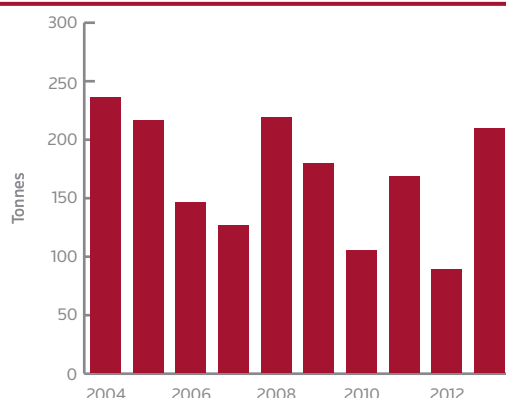
of imported scrap needing to be re-exported for VAT to be reclaimed. None of the above figures, however, are believed to be affected materially by shifts to or from the unofficial sector as the latter's volumes are said to have remained modest.

**German** gold bullion imports showed a considerable increase last year in both value and calculated weight terms, increasing by 19% and 42% respectively, to around 78 tonnes. The strong rise was mainly driven by the slump in the gold price, which, even in euro terms, fell by an average of 6% in 2013. Bar hoarding during the year was strong on both occasions when the price dipped and particularly at times when gold fell below €30,000/g; which is the threshold below which investors may purchase gold anonymously. Imports from Switzerland were up significantly and refiners had trouble keeping up with the surge in demand, whereas demand from Austria somewhat surprisingly fell in 2013 despite continued strong demand for coins. Interestingly, Hong Kong is no longer a supply source as growing investor appetite for gold in East Asia in recent years has kept the yellow metal within Asia.

Bullion exports from Germany on the other hand, fell 8% in 2013, to around 129 tonnes on a calculated basis. Despite the decline, this is still a decent performance as export volumes were elevated during the hey-days of gold investment in 2011-2012. The main export destinations, Switzerland and the United Kingdom, fell by 17% and 26% respectively, but bullion flows to Southern and Eastern Europe surged. In euro-denominated value terms, exports fell by around 20% from €6.4 bn in 2012 to around €5 bn last year.

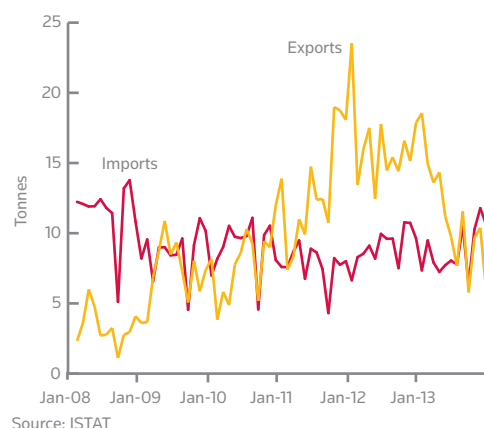
**CIS** gold bullion exports more than doubled in 2013 to over 200 tonnes, returning to historical highs. While the majority of countries within the region posted gains last year, the bulk of the rise was attributable to

#### CIS BULLION EXPORTS



Source: GFMS, Thomson Reuters

#### ITALIAN BULLION IMPORTS AND EXPORTS



Source: ISTAT

higher shipments from **Russia**. Russian bullion exports surged to a multi-year high, chiefly thanks to a strong rise in shipments to Hong Kong and Europe, and most notably Switzerland. Local gold supply, including mine production and scrap, posted a 12% year-on-year rise, to almost 248 tonnes. This total was comfortably sufficient to cover local fabrication demand, which saw modest growth, as well as official sector purchases.

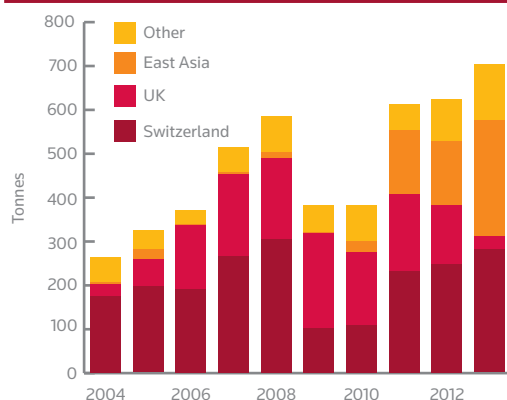
#### NORTH AMERICA

- **US bullion exports to East Asia surged 84% in 2013. This 121 tonne increase was the strongest since 2011 and the second largest in the past decade.**
- **US and Canadian imports from South America rose 27% in 2013, accounting for 64% of these two countries' gross imports of bullion and doré.**

North American countries, which are the US, Canada, and Mexico, imported 517 tonnes of gold bullion in 2013, a 7.8% increase over 2012. In aggregate, these countries exported 1,155 tonnes last year, up 10.6% from a year ago. On a net basis, net exports from the region rose 12.9% to 638 tonnes. Over the past decade, gross imports have increased by a compounded annual rate of 4.2% while gross exports have increased 10.5% per annum. Net exports, consequently, have expanded 21.0% per annum during this period.

North America is home to eight LBMA good delivery gold refining facilities with between 700 and 1,100 tonnes of annual installed capacity for good delivery gold. As such, the region is a major refiner of precious metals materials imported from South America, where relatively little refining capacity exists. US and Canadian precious metals refiners have benefitted from the strong growth in gold and silver mine production in South America and Mexico over the past decade. Last year, South American bullion and doré imports accounted for 50% of the gross

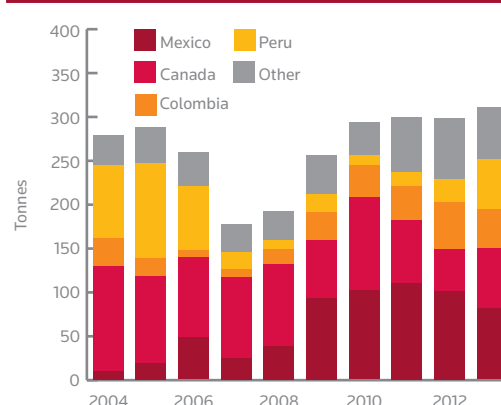
## US BULLION EXPORTS\*



Source: GFMS, Thomson Reuters

\*Calculated quantities based on reported export values.

## US BULLION IMPORTS\*



Source: GFMS, Thomson Reuters

\*Calculated quantities based on reported import values.

weight of imports to the US and 76% of the gross weight of imports to Canada.

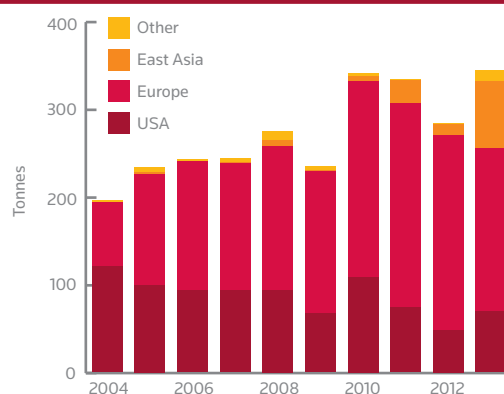
The **United States** imported 311 tonnes of gold bullion in 2013, up 5.2% from the previous year. This increase was driven by a surge in shipments from Peru. Growth in total imports, however, was curbed by lower shipments from Mexico, which exported 81 tonnes to the US, a 20% decline from 2012 levels. This was the second consecutive annual decline in imports from Mexico. Shipments from Colombia dropped 19% to 44 tonnes. Peru shipped 57 tonnes of bullion to the US, up 124% from the previous year. This surge may have been driven by the local market's anticipation of a crackdown on the export of illegally mined gold through legal channels, a pervasive issue in the country. Customs officials expect exports from Peru to fall 25% in 2014 as a result of stricter export standards put in place this year. While 50% of US imports (by gross weight of bullion and doré) came from South America, namely Peru and Colombia, 26% of its imports came from Mexico and 22% from Canada. In the past decade, imports from Ecuador, Bolivia, Guyana, and Guatemala have increased at the fastest pace, with growth rates ranging from 50% to 85%

each on a compounded annual basis between 2004 and 2013 due to strong growth in mining production.

The US exported 703 tonnes in 2013, the highest on record. The 12% growth in exports last year was curbed by a 38% decline in shipments to India and a 76% decline in shipments to the United Kingdom. India, the fourth largest US export destination last year, imported 33 tonnes of gold bullion from the US as the new import-export rule and the increase in import duties reduced demand for US bullion from the country in 2013. The UAE imported 35 tonnes from the US in 2013, up 110% from a year ago, which helped offset the decline in exports to India and the UK. The US mostly exports gold bullion to East Asia, which accounted for 38% of US exports in 2013, up from just 6% in 2010 and 23% in 2012. Exports to East Asia surged 84% last year, mostly a function of strong demand from China, amplified by the price collapse in the second quarter.

**Mexico** exported 108 tonnes of bullion in 2013, down 17% from the previous year. Most of this decline came from lower exports to the US. Mexico imports very little gold bullion. **Canada's** gold bullion trade expanded last year, with imports rising 12% to 204 tonnes and exports rising 21% to 345 tonnes. Higher imports from the United States accounted for most of this increase, while a decline in shipments from Peru curbed growth in imports last year. The increase in Canadian exports was mostly driven by higher exports to the United States, Hong Kong, and Switzerland, while a decline in imports from Peru curbed growth in imports last year.

## CANADIAN BULLION EXPORTS\*



Source: GFMS, Thomson Reuters

\*Calculated quantities based on reported export values.





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## 7. FABRICATION DEMAND

- *World gold fabrication rebounded strongly in 2013, increasing by 16% to reach 3,170 tonnes.*
- *The bulk of the sizeable increase was the 18% jump in global jewellery fabrication to 2,361 tonnes. This impressive recovery was chiefly as a result of the lower gold price environment that reinvigorated consumer activity.*
- *Jewellery production excluding the use of scrap, however, showed an even more robust increase of 34%, reflecting over 467 tonnes of new metal demand and a sizeable fall in scrap flows.*
- *Jewellery fabrication demand in East Asia soared by 40% last year, led by an extraordinary 46% surge in Chinese offtake to a record high of 871.9 tonnes.*
- *In contrast, Indian jewellery fabrication slipped 2% to a four-year low as a spike in domestic premia pushed gold demand lower in the second half of the year.*
- *Jewellery fabrication in the Middle East posted a healthy 19% rise in 2013, with sizeable gains recorded across the entire region, while European offtake remained moribund in the weaker economic climate, rising just 4%.*
- *Official coin minting is estimated to have risen by 43% to a record high of 297.3 tonnes.*
- *Dental demand suffered from further substitution to non-precious metals, slipping 6% to 36.3 tonnes.*
- *Other industrial and decorative uses rose 1% last year, boosted by a price led recovery principally from India and the Americas.*

### CARAT JEWELLERY

#### EUROPE

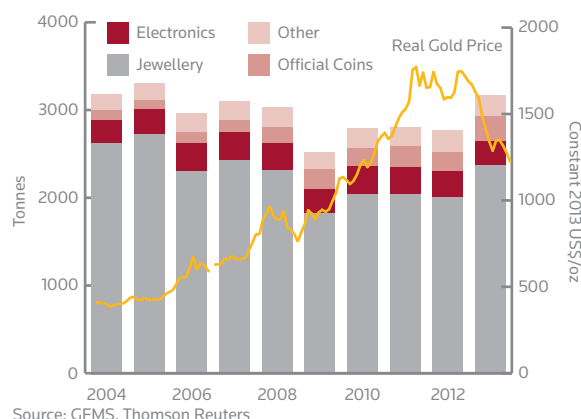
- *European jewellery fabrication posted a modest recovery, growing by 4% in 2013, largely thanks to a strong rebound in Turkey.*

Jewellery fabrication in Italy continued to slide last year, as offtake dropped another 4% to 82.6 tonnes. To put this into perspective, a period of uninterrupted losses took the 2013 figure to as little as 16% of the volumes seen at the start of the millennium.

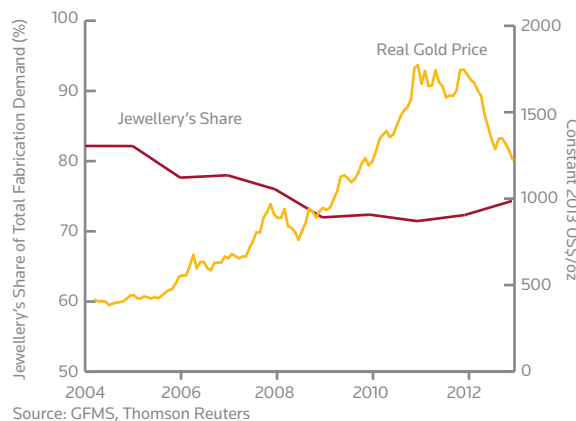
Nonetheless, the rate of decline, at 4% last year, slowed considerably compared to an annual average rate of 14% registered in the previous decade. This was largely attributable to the significant drop in the average gold price, which boosted demand from key export destinations, helping, to some extent, to mitigate losses from the continued weakness in the local market. This is supported by the trade data, which show that in the second quarter when the price averaged \$1,415/oz, overall Italian exports were up by 46% year-on-year. The growth then accelerated in the second half of the year as the price continued to slide, leading to a more notable rise in shipments in July to December period.

The impact of the weaker gold price environment looks to have been greatest on shipments to Italy's largest regional market, the Middle East, which is traditionally price-sensitive. For the full year Italian exports to the Middle East rose by 65%, compared to a double-digit decline in the previous year. This was largely driven by a surge in shipments to the United Arab Emirates, Italy's

#### WORLD GOLD FABRICATION



#### JEWELLERY'S SHARE OF TOTAL FABRICATION DEMAND





## WORLD GOLD FABRICATION (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Turkey	285.4	303.4	242.0	276.8	236.7	111.3	109.0	136.3	114.2	178.1
Italy	312.5	290.2	235.9	228.4	186.7	134.6	126.3	103.3	95.9	92.4
Russia	55.3	61.1	65.2	79.4	76.0	57.5	61.0	66.2	72.2	72.8
Switzerland	53.6	55.5	60.7	62.2	58.2	37.5	40.8	47.9	48.0	46.2
Germany	56.9	51.8	51.3	51.5	49.1	38.1	40.8	38.8	36.9	39.6
Austria	9.4	8.5	5.7	6.5	26.3	34.6	19.1	22.3	13.7	19.7
United Kingdom	32.9	28.6	24.4	16.9	15.6	15.2	13.9	15.5	15.2	16.3
France	18.6	16.4	14.4	14.0	13.0	11.0	11.1	10.1	8.5	7.6
Spain	31.7	27.4	24.2	23.6	19.3	13.6	8.4	7.1	6.3	5.8
Poland	6.0	5.9	5.8	5.4	4.6	4.4	4.4	4.2	4.0	4.0
Greece	9.8	8.6	7.8	8.5	7.4	6.2	6.2	4.5	4.0	3.7
Portugal	8.9	7.2	5.3	6.7	6.1	4.9	4.6	3.2	3.0	3.1
Sweden	2.0	1.9	1.7	1.4	2.2	2.7	2.6	2.8	2.8	2.8
Serbia	4.2	4.4	4.1	4.3	4.1	3.4	3.3	2.7	2.6	2.7
Netherlands	5.5	5.6	5.3	4.2	3.3	2.9	3.0	2.8	2.6	2.5
Romania	0.8	0.8	0.8	1.4	1.7	1.5	2.4	2.4	2.4	2.4
Czech Republic	2.1	2.1	2.0	1.9	1.7	1.7	1.9	1.9	1.9	1.8
Other Countries	10.3	10.3	9.0	8.5	7.8	6.8	6.9	6.6	6.3	6.1
<b>Total Europe</b>	<b>905.7</b>	<b>889.7</b>	<b>765.6</b>	<b>801.4</b>	<b>719.7</b>	<b>487.8</b>	<b>465.6</b>	<b>478.7</b>	<b>440.5</b>	<b>507.6</b>
<b>North America</b>										
United States	224.0	218.8	210.9	179.0	175.2	173.4	179.1	166.7	146.9	160.0
Canada	25.9	26.8	22.0	22.2	40.1	48.4	43.7	44.9	32.4	44.5
Mexico	34.3	35.4	28.5	25.3	23.0	18.9	18.2	13.2	12.8	15.1
<b>Total North America</b>	<b>284.2</b>	<b>281.0</b>	<b>261.4</b>	<b>226.5</b>	<b>238.3</b>	<b>240.7</b>	<b>241.0</b>	<b>224.9</b>	<b>192.1</b>	<b>219.7</b>
<b>South America</b>										
Brazil	22.0	25.9	22.7	23.7	25.3	25.2	29.9	28.5	30.1	41.6
Chile	4.2	4.3	3.9	3.6	3.2	2.8	2.9	2.2	2.2	2.7
Dominican Republic	6.3	6.1	4.8	4.5	4.3	2.8	2.5	1.9	1.8	1.8
Other Countries	19.8	20.4	18.2	15.9	13.0	9.8	9.2	8.0	7.8	9.1
<b>Total South America</b>	<b>52.3</b>	<b>56.7</b>	<b>49.7</b>	<b>47.7</b>	<b>45.8</b>	<b>40.6</b>	<b>44.5</b>	<b>40.6</b>	<b>41.8</b>	<b>55.2</b>
<b>Asia</b>										
China	240.3	262.6	278.3	339.8	378.8	427.7	520.6	637.2	700.3	978.3
India	621.1	695.2	633.8	684.4	708.1	571.0	783.4	761.0	736.0	715.8
Japan	159.3	164.4	175.0	177.8	163.7	140.5	157.5	147.2	126.1	124.2
South Korea	82.0	83.3	82.3	86.1	77.5	65.0	68.1	62.2	54.1	49.1
Indonesia	90.8	86.5	64.8	63.2	61.4	46.0	38.9	35.3	36.1	44.6
Iran	37.3	40.7	36.2	40.7	41.0	37.6	39.3	37.4	36.9	43.1
Malaysia	69.7	74.3	58.0	61.0	56.3	45.0	43.7	36.6	33.4	42.6
Saudi Arabia	118.0	124.6	89.6	99.6	85.0	53.5	46.6	36.8	32.5	39.4
UAE	48.5	55.0	46.6	49.4	46.3	35.9	32.9	28.4	27.5	37.8
Singapore	24.2	30.0	28.7	29.5	27.6	23.3	25.5	23.8	22.0	25.7
Pakistan	59.0	64.2	53.9	50.4	43.8	29.7	26.1	22.1	20.6	24.6
Thailand	64.1	68.5	52.7	47.5	40.3	25.2	22.0	18.7	17.0	23.7
Taiwan	28.5	31.9	30.7	29.7	27.5	23.1	26.1	24.0	22.5	22.2
Hong Kong	14.0	14.6	14.9	15.4	15.6	14.7	15.8	16.5	14.8	14.6
Vietnam	26.8	28.3	22.6	21.6	19.6	14.7	13.5	12.4	10.7	11.4
Kazakhstan	9.9	10.4	11.3	11.9	10.9	8.8	10.4	11.4	10.9	11.1
Uzbekistan	9.9	10.4	11.3	11.9	10.9	8.8	10.4	11.4	10.9	11.1
Israel	12.1	11.9	9.9	9.0	8.7	7.2	6.3	5.5	5.1	5.9
Bahrain	10.8	11.4	9.6	9.9	8.7	6.5	5.7	5.1	4.5	5.5
Jordan	6.0	6.9	4.5	4.7	4.7	5.6	5.9	5.2	4.6	5.5

## WORLD GOLD FABRICATION (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Iraq	4.0	4.2	4.6	5.3	4.6	3.8	3.7	3.8	3.9	5.0
Kuwait	12.7	12.3	9.7	8.9	8.4	5.6	4.8	4.1	3.7	4.6
Bangladesh	6.7	6.7	6.0	6.5	5.8	4.6	4.2	3.8	3.7	4.3
Syria	16.6	17.6	16.0	17.7	15.6	12.0	11.7	8.4	5.4	4.2
Nepal	7.5	6.9	5.8	5.3	4.5	3.5	3.5	3.3	3.5	3.9
Oman	7.4	7.7	6.8	7.1	6.0	4.5	4.1	3.5	3.2	3.8
Sri Lanka	6.3	6.2	5.1	5.2	4.5	3.8	3.7	3.2	3.1	3.5
Myanmar	5.0	4.3	4.0	4.0	3.5	3.0	2.6	2.3	2.3	2.7
Lebanon	8.0	7.6	5.4	5.5	4.8	3.4	2.6	2.1	1.9	2.3
Qatar	3.6	3.7	3.1	3.2	2.7	2.1	1.9	1.6	1.7	2.1
Other Countries	7.1	7.0	6.7	10.4	10.3	6.8	5.6	4.8	4.5	5.2
<b>Total Asia</b>	<b>1,817.0</b>	<b>1,958.9</b>	<b>1,787.7</b>	<b>1,922.3</b>	<b>1,906.9</b>	<b>1,642.3</b>	<b>1,946.8</b>	<b>1,979.2</b>	<b>1,963.2</b>	<b>2,277.5</b>
<b>Africa</b>										
Egypt	67.5	70.8	50.3	56.5	64.5	44.9	43.3	30.2	38.7	41.8
South Africa	12.8	10.0	10.3	14.0	16.4	28.3	24.6	27.4	27.2	30.8
Morocco	13.9	13.8	10.6	10.3	9.5	7.6	7.0	6.8	6.6	6.5
Libya	4.8	5.0	4.9	5.2	4.8	3.9	3.5	2.4	2.3	2.5
Other Countries	13.6	13.8	11.6	12.4	11.5	9.9	9.4	9.2	8.8	9.2
<b>Total Africa</b>	<b>112.4</b>	<b>113.3</b>	<b>87.7</b>	<b>98.4</b>	<b>106.6</b>	<b>94.7</b>	<b>87.7</b>	<b>76.0</b>	<b>83.5</b>	<b>90.8</b>
<b>Oceania</b>										
Australia	11.1	9.9	10.3	10.5	14.0	14.6	12.0	13.9	13.3	19.6
<b>Total Oceania</b>	<b>11.1</b>	<b>9.9</b>	<b>10.3</b>	<b>10.5</b>	<b>14.0</b>	<b>14.6</b>	<b>12.0</b>	<b>13.9</b>	<b>13.3</b>	<b>19.6</b>
<b>World Total</b>	<b>3,182.6</b>	<b>3,309.5</b>	<b>2,962.3</b>	<b>3,106.8</b>	<b>3,031.3</b>	<b>2,520.8</b>	<b>2,797.6</b>	<b>2,813.3</b>	<b>2,734.3</b>	<b>3,170.4</b>
...of which:-										
Middle East*	637.8	677.7	534.2	594.3	537.6	333.7	317.5	308.5	283.6	378.8
East Asia*	817.7	861.3	822.7	885.9	881.0	835.5	941.2	1,022.3	1,045.0	1,345.8
CIS*	75.4	82.2	88.7	108.4	103.4	78.1	84.2	90.9	95.9	97.0
Indian Sub-Continent*	700.6	779.2	704.6	751.7	766.7	612.5	820.9	793.4	766.9	752.0

Source: GFMS, Thomson Reuters \*The key regional bullion markets

largest destination in weight terms, where a second-quarter year-on-year rise of near 50% was followed by even larger gains for the rest of the year. Jewellery exports to Jordan, the second largest Middle East market, saw a sizeable recovery last year, reflecting stronger onward shipments to the US market. Another market to enjoy a rise in jewellery exports from Italy last year was Turkey, which was related to a lift in local jewellery consumption and higher onward business.

Lower gold prices helped to explain much of the gains for Italian shipments to EU countries. The trade data suggest that this was largely down to a marked increase in exports to Switzerland, the distribution centre for many high-end international brands, which more than doubled last year. This reflects the fact that Italy remains competitive in the luxury sector and that the top end continued to outperform the mass market in many countries. That said, it seems that the gold price was not the only factor, as a slightly improving economic situation in Europe helped to support demand. This is clearly

noticeable in shipments to Greece and Portugal that saw positive growth in 2013 compared to double-digit losses in the previous years. By contrast, direct shipments to Russia look to have slowed last year, largely the product of a lower growth in Russian jewellery consumption.

We feel, however, that higher exports to EU countries were largely attributable to trade restocking in light of considerably lower gold prices, rather than a rise in consumption, as most of these markets saw a continued decline in their offtake levels. It is also important to remember that the official trade statistics have to be treated with caution, as some destinations, particularly the more troubled ones, have been witnessing a shift from unofficial to official consumption, which could raise the visible, official component of trade. Industry sources indicate that the improvement in exports could have been somewhat less pronounced than suggested by the trade data, with some of the main jewellery exporting districts in Italy recording lower volumes.

## GOLD FABRICATION IN INDUSTRIAL AND DEVELOPING COUNTRIES (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Industrial Countries*</b>										
Jewellery Fabrication	729.0	692.2	585.1	550.7	468.1	353.2	340.9	309.1	288.3	297.0
Electronics	235.4	253.6	278.0	279.7	261.6	218.6	261.9	251.1	218.7	211.9
Dentistry	64.7	59.4	57.7	54.8	52.7	50.0	45.7	40.3	36.0	33.8
Other Industrial	49.9	49.9	51.9	55.2	54.2	46.1	49.8	47.9	45.4	44.5
Official Coin	52.0	46.8	56.3	49.6	106.9	149.3	118.5	119.1	90.6	123.0
Medals	2.0	1.7	1.8	1.8	1.8	1.8	1.9	3.3	2.3	2.4
<b>Sub total</b>	<b>1,133.0</b>	<b>1,103.6</b>	<b>1,030.8</b>	<b>991.8</b>	<b>945.3</b>	<b>818.9</b>	<b>818.7</b>	<b>770.7</b>	<b>681.3</b>	<b>712.6</b>
<b>Developing Countries*</b>										
Jewellery Fabrication	1,889.6	2,028.8	1,716.4	1,874.6	1,837.6	1,464.1	1,692.8	1,719.9	1,709.7	2,063.5
Electronics	30.5	32.0	38.0	41.9	49.6	56.3	64.1	68.8	65.8	67.0
Dentistry	2.9	3.0	3.0	2.8	2.9	2.7	2.7	2.6	2.6	2.5
Other Industrial	35.1	42.1	42.7	43.0	43.1	40.6	45.2	47.0	47.0	48.9
Official Coin	64.1	64.7	73.7	86.2	84.8	81.1	87.8	119.8	116.9	174.4
Medals	27.5	35.3	57.7	66.7	68.0	57.1	86.5	84.5	111.1	101.5
<b>Sub total</b>	<b>2,049.6</b>	<b>2,206.0</b>	<b>1,931.5</b>	<b>2,115.1</b>	<b>2,086.0</b>	<b>1,701.9</b>	<b>1,978.9</b>	<b>2,042.5</b>	<b>2,053.0</b>	<b>2,457.8</b>
<b>World Total</b>	<b>3,182.6</b>	<b>3,309.5</b>	<b>2,962.3</b>	<b>3,106.8</b>	<b>3,031.3</b>	<b>2,520.8</b>	<b>2,797.6</b>	<b>2,813.3</b>	<b>2,734.3</b>	<b>3,170.4</b>

Source: GFMS, Thomson Reuters

\*Industrial and Developing countries consistent with IMF definitions

## JEWELLERY CONSUMPTION \* (INCLUDING SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
China	224.1	241.4	244.7	302.2	340.6	376.3	451.8	589.4	604.6	816.4
India	517.2	573.5	516.4	557.8	599.8	471.4	657.4	618.3	552.0	612.7
United States	350.5	349.0	306.1	257.9	188.1	150.3	115.7	100.7	73.3	76.6
Russia	55.6	64.3	70.1	85.7	92.4	56.7	60.1	64.7	69.6	73.3
Turkey	185.7	194.9	165.3	188.1	153.2	75.2	67.4	70.1	61.5	73.3
UAE	89.3	96.4	92.4	99.8	100.0	74.6	69.6	58.1	49.8	62.3
Saudi Arabia	136.2	147.4	106.3	122.0	110.9	81.8	71.6	55.7	47.1	57.0
Hong Kong	15.8	16.0	15.1	18.2	17.0	16.4	20.6	35.8	34.3	53.7
Egypt	73.0	75.3	60.0	67.8	74.3	56.7	53.4	33.8	39.7	45.3
Iran	43.3	47.8	41.5	47.4	45.8	37.5	37.4	35.1	35.8	41.4
Indonesia	83.9	78.0	57.7	55.2	55.9	41.0	32.8	30.2	30.8	38.2
Brazil	30.6	33.3	29.2	30.7	29.8	26.8	29.4	26.6	26.7	33.6
Pakistan	59.8	65.1	54.7	51.8	45.5	30.9	27.3	23.1	21.4	24.6
UK	70.2	59.4	52.5	50.3	37.2	31.8	27.3	22.6	21.4	23.4
Mexico	44.0	42.4	37.1	34.9	28.5	26.4	23.8	19.9	17.7	20.9
Italy	77.2	71.0	64.8	57.4	49.1	41.4	34.9	27.6	22.3	20.2
Canada	29.6	30.1	27.4	24.7	22.3	18.6	17.5	16.3	15.5	19.2
Japan	34.6	33.5	32.8	31.7	31.2	22.3	21.3	16.6	16.7	17.6
France	38.2	35.1	30.7	28.9	26.1	23.6	20.2	18.2	14.2	12.6
Vietnam	26.1	26.9	22.1	21.4	19.6	15.1	14.4	13.0	11.4	12.2

Source: GFMS, Thomson Reuters

\*Fine gold content of all new jewellery sold at the retail level (excluding the exchange of old for new jewellery), calculated by taking jewellery fabrication, plus imports less exports and adjusting for retail stock movements. This list only includes those countries for which Thomson Reuters has supplied consumption data to the World Gold Council for use in its publications. Thomson Reuters' database, however, covers a much longer list of countries, for which consumption is measured, than that shown in the table above.

Direct exports to the United States last year rose by more than a third, thanks in the main to a recovery in US jewellery consumption, boosted by lower gold prices and an improving economy. It is of note that the growth last year, on the basis of US figures, for direct imports from Italy was notably higher than total imports from Turkey or Mexico. This also, therefore, suggests that Italy retains its competitiveness when it comes to higher end jewellery pieces, although the contribution of the top end market to the fine weight of gold sold is less significant. Higher shipments to Canada and Mexico also contributed to a robust increase in deliveries to North America.

Another area to enjoy gains was East Asia, where most countries saw their deliveries from Italy rise last year. The largest absolute increase was to China/Hong Kong, which was attributable to rising jewellery consumption as a result of the lower gold price environment. Elsewhere, last year saw a notable increase in the volume of shipments to Algeria - now Italy's fifth largest destination, accounting for the bulk of gains for the 'Others' category in the graph below.

As noted earlier, despite a visible improvement in demand from key exporting markets, industry sources hear little to support an overall improvement in Italian jewellery fabrication. While some contacts mentioned stability or even slight improvement (typically those who focus on exports or the top end), there were still many others who reported another difficult year. There are several longer term factors that remain in place, helping to explain the continued weakness in the market. One important element is structural change within the industrialised world's markets, such as a shift from plain to gemset jewellery, which continued last year, and the ongoing reduction in the gold content in jewellery articles. In addition, competition from cheaper forms of jewellery, such as high-end costume or silver pieces,

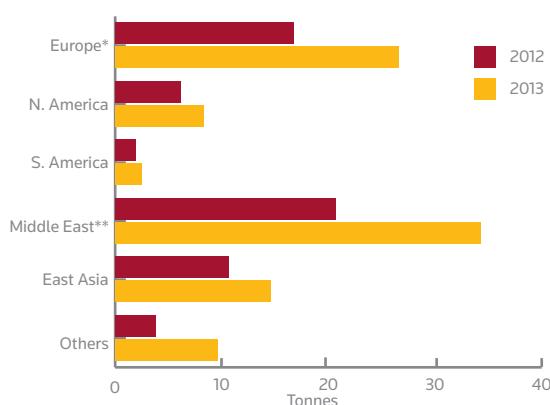
continued to weigh on the gold jewellery market. There are several in the industry who recently mentioned the problem of the bullion supply shortage, particularly during the periods of sharp price corrections.

Another important factor is market share loss, particularly to Asian markets that benefit from much lower labour costs, better supply conditions for gems, pearls and accessory products, and less stringent regulation. The presence of high customs duties remains a big issue for Italian exporters. The latter, for instance, explains much of the drop in Italy's share of US jewellery imports to just below 13% in 2013, compared with nearly 38% at the start of the millennium. This matter also helps to explain why Italian shipments to Thailand fell considerably last year, despite stronger domestic demand.

Italy's own jewellery consumption remained weak, falling by another 9% in 2013, to just above 20 tonnes, however the decline was not as great as in previous years. The continued decline in domestic retail activity was largely a reflection of weak economic conditions and subdued levels of disposable incomes. Neither can we ignore the competition from other categories of consumer goods, such as mobile phones and tablets. Looking ahead, still relatively high prices and poor economic prospects will continue to weigh on local consumption in the first half of 2014. On top of a weak domestic market, there are also reasonably widespread concerns about the impact of the US Dodd-Frank Conflict Minerals Act and the Responsible Jewellery Council's Code of Practices on the jewellery industry.

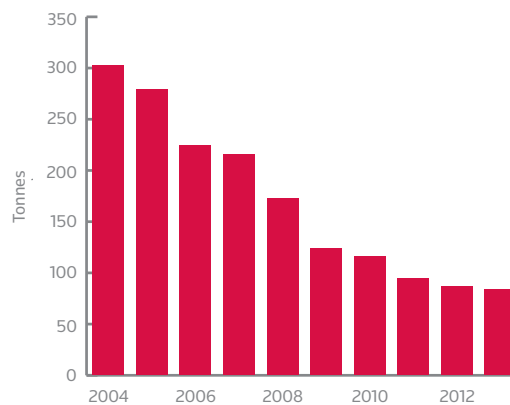
Jewellery fabrication in **Germany** is estimated to have fallen slightly in 2013, driven both by lower domestic consumption and weaker exports. Many jewellers had a tough time last year due to continued overall

#### ITALIAN OFFICIAL JEWELLERY EXPORTS BY REGION



Source: GFMS, Thomson Reuters; Calculations based on Italian export data. Shows only the direct flow of finished pieces. \*incl Russia; \*\*incl Turkey

#### ITALIAN JEWELLERY FABRICATION



Source: GFMS, Thomson Reuters

## CARAT JEWELLERY (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Turkey	238.0	251.1	184.9	219.7	183.2	80.0	73.0	77.0	73.8	87.1
Italy	302.4	279.0	224.4	215.3	172.6	123.3	116.0	93.8	86.2	82.6
Russia	38.3	44.4	47.6	58.5	53.2	34.9	39.4	45.1	49.2	51.9
Switzerland	27.4	32.2	35.8	36.0	35.0	20.1	21.1	29.4	31.1	30.1
Germany	21.7	21.3	19.9	19.9	19.0	14.8	15.1	15.4	14.7	14.7
United Kingdom	28.1	23.8	19.6	12.2	10.0	9.2	8.2	6.9	6.7	7.3
France	17.5	15.3	13.4	13.0	12.0	10.1	10.2	9.2	7.6	6.5
Spain	29.9	25.6	22.4	21.8	17.6	12.3	7.4	6.2	5.4	4.9
Greece	9.4	8.2	7.4	8.1	7.0	5.8	5.8	4.1	3.7	3.5
Poland	5.3	5.3	5.2	4.4	3.9	3.5	3.8	3.5	3.3	3.5
Portugal	8.3	7.1	5.3	6.6	5.9	4.8	4.5	3.1	2.9	3.0
Serbia	3.7	4.0	3.7	3.9	3.6	3.0	2.8	2.3	2.2	2.3
Other Countries	14.4	14.3	12.8	11.8	10.5	9.0	9.2	9.0	8.7	8.5
<b>Total Europe</b>	<b>744.4</b>	<b>731.6</b>	<b>602.3</b>	<b>631.1</b>	<b>533.4</b>	<b>330.6</b>	<b>316.4</b>	<b>304.9</b>	<b>295.4</b>	<b>305.9</b>
<b>North America</b>										
United States	131.9	130.0	108.0	94.5	77.0	63.0	66.0	60.3	53.7	61.4
Mexico	31.5	32.2	25.9	22.7	18.9	17.3	14.4	11.5	10.6	11.9
Canada	16.7	16.2	13.3	12.8	12.1	9.8	9.3	8.7	8.2	8.7
<b>Total North America</b>	<b>180.1</b>	<b>178.4</b>	<b>147.2</b>	<b>130.0</b>	<b>108.0</b>	<b>90.1</b>	<b>89.7</b>	<b>80.5</b>	<b>72.5</b>	<b>81.9</b>
<b>South America</b>										
Brazil	20.2	21.7	17.5	18.6	19.2	17.7	22.6	19.4	19.3	30.3
Chile	4.2	4.3	3.9	3.6	3.2	2.8	2.9	2.2	2.2	2.7
Dominican Republic	6.3	6.1	4.8	4.5	4.3	2.8	2.5	1.9	1.8	1.8
Colombia	2.3	2.3	1.9	1.6	1.4	1.2	1.1	1.2	1.1	1.5
Costa Rica	1.8	1.8	1.7	1.3	1.3	1.1	1.2	1.3	1.3	1.3
Other Countries	15.1	15.6	13.8	12.0	9.5	6.5	5.9	4.4	4.2	4.9
<b>Total South America</b>	<b>49.9</b>	<b>51.8</b>	<b>43.6</b>	<b>41.6</b>	<b>38.8</b>	<b>32.1</b>	<b>36.1</b>	<b>30.3</b>	<b>29.8</b>	<b>42.5</b>
<b>Asia</b>										
China	216.8	239.0	244.8	297.1	329.6	363.6	444.3	547.4	598.8	871.9
India	572.2	634.0	550.9	594.7	623.2	503.4	685.0	667.0	618.2	607.4
Indonesia	90.4	86.0	64.3	62.7	60.8	45.6	38.4	34.8	35.5	44.0
Malaysia	69.5	74.1	58.0	61.0	56.2	45.0	43.7	36.6	33.4	42.6
Saudi Arabia	118.0	124.6	89.6	99.6	85.0	53.5	46.6	36.8	32.5	39.4
UAE	46.3	53.2	45.4	48.1	44.6	34.0	31.0	26.3	24.7	34.4
Iran	32.7	36.5	32.2	36.2	35.7	30.0	29.9	27.8	27.7	32.8
Pakistan	59.0	64.2	53.9	50.4	43.8	29.7	26.1	22.1	20.6	24.6
Thailand	61.9	66.0	50.2	44.8	37.5	22.7	19.3	16.0	14.3	20.9
Singapore	12.5	11.2	9.9	10.9	10.2	7.9	8.9	9.7	10.4	15.5
Japan	22.3	22.3	21.1	19.0	17.5	14.4	14.3	12.9	13.3	14.5
South Korea	46.8	44.5	36.4	36.1	30.3	23.4	20.3	16.7	13.9	12.9
Vietnam	26.8	28.3	22.6	21.6	19.6	14.7	13.5	12.4	10.7	11.4
Hong Kong	11.1	11.5	11.6	11.8	12.2	11.6	12.2	12.8	11.4	11.3
Kazakhstan	8.6	9.1	10.0	10.6	9.6	7.6	9.2	10.2	9.7	9.9
Uzbekistan	8.6	9.1	10.0	10.6	9.6	7.6	9.2	10.2	9.7	9.9
Bahrain	10.8	11.4	9.6	9.9	8.7	6.5	5.7	5.1	4.5	5.5
Jordan	6.0	6.9	4.5	4.7	4.7	5.6	5.9	5.2	4.6	5.5
Israel	11.5	11.3	9.3	8.4	8.1	6.6	5.7	4.9	4.5	5.3
Iraq	4.0	4.2	4.6	5.3	4.6	3.8	3.7	3.8	3.9	5.0
Taiwan	14.6	16.1	12.3	10.3	9.1	5.8	5.3	4.6	4.6	4.9
Kuwait	12.5	12.3	9.7	8.9	8.4	5.6	4.8	4.1	3.7	4.6
Bangladesh	6.7	6.7	6.0	6.5	5.8	4.6	4.2	3.8	3.7	4.3
Nepal	7.5	6.9	5.8	5.3	4.5	3.5	3.5	3.3	3.5	3.9

## CARAT JEWELLERY (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Oman	7.4	7.7	6.8	7.1	6.0	4.5	4.1	3.5	3.2	3.8
Syria	16.0	17.0	15.4	17.1	15.0	11.4	11.1	7.7	4.8	3.7
Sri Lanka	6.3	6.2	5.1	5.2	4.5	3.8	3.7	3.2	3.1	3.5
Myanmar	5.0	4.3	4.0	4.0	3.5	3.0	2.6	2.3	2.3	2.7
Lebanon	8.0	7.6	5.4	5.5	4.8	3.4	2.6	2.1	1.9	2.3
Qatar	3.6	3.7	3.1	3.2	2.7	2.1	1.9	1.6	1.7	2.1
Armenia	0.4	0.4	0.9	5.1	5.6	3.1	2.5	1.9	1.9	2.0
Other Countries	6.7	6.6	5.7	5.3	4.7	3.7	3.2	2.9	2.6	3.2
<b>Total Asia</b>	<b>1,530.4</b>	<b>1,642.8</b>	<b>1,419.0</b>	<b>1,526.7</b>	<b>1,526.0</b>	<b>1,290.8</b>	<b>1,521.8</b>	<b>1,559.7</b>	<b>1,539.1</b>	<b>1,865.1</b>
<b>Africa</b>										
Egypt	67.5	70.8	50.3	56.5	62.4	44.0	42.1	28.7	37.5	40.7
Morocco	13.9	13.8	10.6	10.3	9.5	7.6	7.0	6.8	6.6	6.5
South Africa	8.9	8.1	7.5	7.0	7.4	5.1	4.5	3.7	3.5	3.3
Libya	4.8	5.0	4.9	5.2	4.8	3.9	3.5	2.4	2.3	2.5
Algeria	3.9	3.9	3.0	3.4	3.1	2.5	2.4	2.1	2.1	2.3
Tunisia	2.2	2.2	1.8	1.9	1.8	1.5	1.5	1.6	1.6	1.6
Other Countries	7.5	7.7	6.8	7.1	6.7	5.9	5.5	5.4	5.2	5.4
<b>Total Africa</b>	<b>108.6</b>	<b>111.4</b>	<b>84.9</b>	<b>91.4</b>	<b>95.5</b>	<b>70.5</b>	<b>66.5</b>	<b>50.7</b>	<b>58.5</b>	<b>62.1</b>
<b>Oceania</b>										
Australia	5.3	5.0	4.5	4.4	4.0	3.2	3.2	2.9	2.8	2.9
<b>Total Oceania</b>	<b>5.3</b>	<b>5.0</b>	<b>4.5</b>	<b>4.4</b>	<b>4.0</b>	<b>3.2</b>	<b>3.2</b>	<b>2.9</b>	<b>2.8</b>	<b>2.9</b>
<b>World Total</b>	<b>2,618.7</b>	<b>2,721.0</b>	<b>2,301.6</b>	<b>2,425.3</b>	<b>2,305.8</b>	<b>1,817.3</b>	<b>2,033.7</b>	<b>2,029.0</b>	<b>1,998.0</b>	<b>2,360.6</b>
...of which:-										
Middle East*	582.3	618.2	470.8	530.1	473.8	290.8	267.8	234.7	228.8	271.8
East Asia*	590.6	616.1	545.9	589.6	595.7	564.7	629.6	712.2	754.3	1,059.1
CIS*	55.9	63.0	68.5	84.8	78.0	53.1	60.2	67.4	70.4	73.7
Indian Sub-Continent*	651.7	718.0	621.7	662.0	681.8	544.9	722.6	699.4	649.1	643.6

Source: GFMS, Thomson Reuters \*: The key regional bullion markets

weakness in interest for traditional jewellery items. Indeed, particularly for the lower carat items, sales were down substantially, driven in part by a rising preference towards spending on electronic gadgets in combination with increased competition from larger fashion outlets. Young people in particular tend to favour buying pieces that match certain outfits rather than going to the traditional jewellery outlet. Lower carat items have suffered as a result. The only segment that continued to hold up well were the higher value items (18-carat and above) driven in particular by the bridal sector.

Contrary to the German market, **French** consumers have increased their preference for lower caratage items in recent years. Indeed, last year demand for nine-carat jewellery is estimated to have risen significantly whereas

demand for 18-carat jewellery was down around 15%. However, in overall terms, both jewellery fabrication and consumption are estimated to have declined in 2013 with demand from the larger retailers, who try to cater for demand across price brackets, falling in particular. The trend towards gemset pieces has also continued to increase with only reportedly one retail chain left that exclusively offers 18-carat jewellery.

Last year was a year of two parts for the **UK** gold jewellery sector. Indeed, demand started 2013 ploughing the same well trodden path as the industry appeared to be continuing its eleven-year decline in jewellery fabrication. However, the dramatic price declines of the second quarter sowed the seeds that eventually saw 2013 develop into the first year of increasing jewellery fabrication in the UK since 2001. Clearly the lower price was a key element of this trend and it is notable that the 22-carat market, which more rapidly reflects changes in the underlying gold price, was the first sector to start to recover.

## SWISS WATCH CASE HALLMARKING

(Index based on units with 2007 = 100)

2008	2009	2010	2011	2012	2013
103	59	62	87	104	99

Source: BCCMP

## WESTERN MARKETS' NET PULL ON PHYSICAL GOLD INCREASES

Previous GFMS Gold Surveys have reviewed and discussed the long term decline in fine gold consumption across the industrialised world. This peaked in 1992 in the case of Europe and in 2001 for the United States and last year's offtake (while recording a solid recovery) still remained almost a third below that recorded a decade earlier.

At the same time we have also seen a sizeable rise in scrap (predominately sourced from jewellery) for much of the last decade, and this led to multi-year declines in the net pull on the gold market from the major industrialised economies\*. Indeed, these opposing trends saw the net pull on the gold market decline from 779 tonnes in 2004 to just 104 tonnes in 2012, as shown in the chart below.

The trend was primarily driven by price, but there were also a number of other underlying factors that are of more concern for gold demand as emerging markets reach maturity. Firstly, in jewellery markets, is the trend toward more branded and lighter products often using a lower carat content. Secondly, there has been the rise of competing goods; this includes both a trend to more disposable fashion jewellery and a rise spending on electronics and other household appliances. Finally, there are continuing trends in other end-use sectors to substitute away from gold towards cheaper materials where possible; this is mostly in the electronics and dental segments.

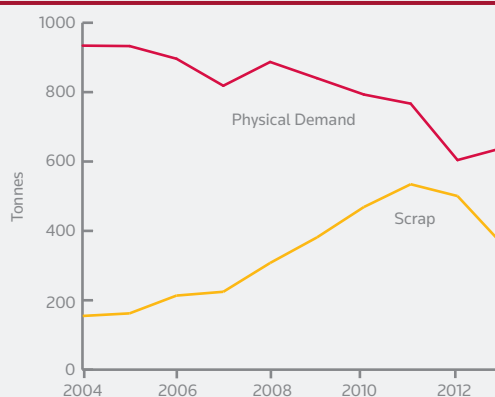
As in many aspects of the gold market, 2013 has proven to be a turning point. The net pull on gold from physical demand in the major industrialised economies has increased to 285 tonnes. While this is still only a third of the level seen in 2001 it is expected that the sizeable gap will remain given the declines in scrap supply and the improving economic outlook.

In the last year we have seen a number of "cash for gold" operations close and the level of distress selling ease as a result of the more buoyant economy. Likewise we have already seen some tentative steps for consumption to improve.

So will emerging markets go the way of mature economies and see falling physical gold demand? Per capita consumption in the developed markets remains lower than in emerging markets. While this might eventually lead to similar trends and falling physical demand in emerging markets there is no sign of this yet. Indeed, gold's role as an investment that can be held outside the financial system and avoid local political and currency risk mean both bar-hoarding and investment-grade jewellery demand are likely to remain strong for some years to come.

\*For the purpose of this analysis we look at physical demand (jewellery, bars, coins, electronic, medical and other industrial) for the United States, Canada, Germany, France, the United Kingdom, Italy and Spain versus total scrap supply from these countries.

### WESTERN PHYSICAL DEMAND AND SCRAP\*



Source: GFMS, Thomson Reuters  
\*US, Canada, Italy, UK, Germany, France, and Spain

By the final quarter of the year, the gold price decline was feeding through into lower retail prices and aided demand in the peak season across all caratages, just as the economy was finally picking up pace after a stuttering recovery from the global financial crisis. As a result, fabrication for the year as a whole was up 9%. The initial signs from both field research and the latest British Hallmarking data are that this strong resurgence has continued into 2014.

In **Switzerland**, jewellery fabrication was down 3% year-on-year in 2013. Central to this performance is the vital watch industry. In stark contrast to recent years, this was held back by shrinking demand from China. The main

cause of this was an anti-corruption drive by the new Chinese leader, Xi Jinping, from late 2012 onwards, which has dampened demand for ostentatious gift buying. However, while this backdrop pervaded throughout the year the decline in demand remained modest. This is partly because the drop in demand from China overstates the decline in demand from the Chinese themselves. Two factors contributed to this, namely rising tourism by the middle classes and increased awareness of the price differentials for gold watches between China and other countries. Consequently, there was increased demand for Swiss made watches from Chinese tourists in other markets, such as South Korea.



## HALLMARKED UK JEWELLERY FABRICATION AND IMPORTS

(tonnes, fine)					
2008	2009	2010	2011	2012	2013
22.5	17.4	15.6	12.4	11.7	12.3

Source: Birmingham Assay Office, British Hallmarking Council

## HALLMARKED RUSSIAN JEWELLERY FABRICATION AND IMPORTS

(tonnes, gross)					
2008	2009	2010	2011	2012	2013
134.0	73.5	80.5	88.2	93.4	98.4

Source: GFMS, Thomson Reuters

Russian jewellery fabrication recorded a 6% year-on-year increase, taking the full year total to just below 52 tonnes. After the 2008/09 economic crisis that led to a sharp drop in both local output and imports, Russian jewellery offtake enjoyed four years of growth, recovering by nearly 50% during that period. This period was characterised by booming domestic production and a rapid expansion in the number of retail chains in all major cities.

Last year's growth was mainly the result of the continued interest in gold jewellery from local consumers, who perceive gold as a symbol of wealth and prosperity. A larger portion of the Russian jewellery market is accounted for by the mass market, with mainly light-weight and more delicate designs suitable for the middle class with traditional taste and strong preference for domestically manufactured jewellery. The other, smaller group is represented by higher-income consumers, who prefer exquisite designs and high-quality jewellery articles made by Italian jewellers and other European fabricators. On top of the robust domestic market, a rise in demand from key export destinations helped to explain last year's growth in jewellery fabrication. That said, in recent years, the sector has witnessed a slowing growth rate, to 6% in 2013 from around 30% at the start of the millennium.

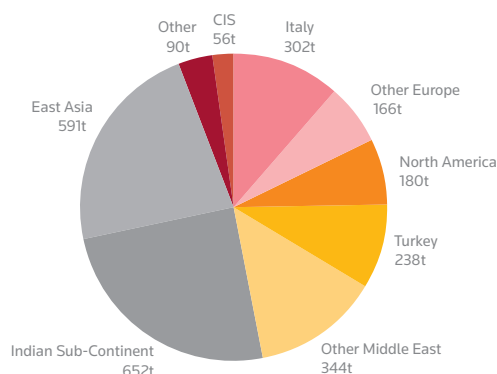
## NORTH AMERICA

— *An improving economy and lower prices pushed US gold jewellery demand up 4.6% in 2013.*

United States gold jewellery consumption is estimated to have risen to 76.6 tonnes in 2013, up 4.6% from an upwardly revised 73.3 tonnes in 2012. This marks only the second annual increase in demand over the course of the past thirteen years. Domestic fabrication saw an even healthier rise meanwhile, coming in at 61.4 tonnes, a 14.3% year-on-year increase. Unlike price sensitive markets the increase was primarily determined by the improving economic situation within the country and higher spending on luxury goods. Many retailers took several months to price in the falls in gold and even then the chosen method to pass on decreases was via discounts rather than mark-downs. This led to a modest improvement in margins reported by most retailers over the course of the year.

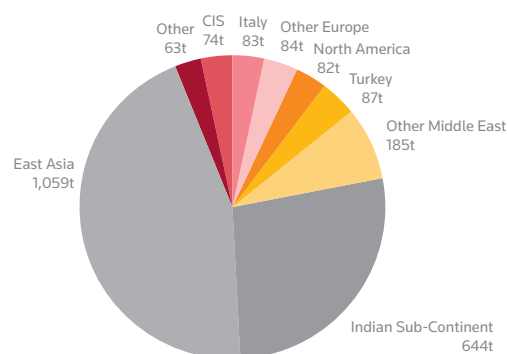
Another important factor in terms of the US market was that with price levels below \$1,400/oz retailers were able to begin moving away from some of the plated and bonded pieces of jewellery that had been produced in order to meet the lower price points in stores. Most research concluded that these products received lower levels of customer loyalty than carat gold jewellery and with lower prices meaning that more carat items could be produced at \$100, \$200 and \$300 price points, there has

## GLOBAL JEWELLERY FABRICATION, 2004



Source: GFMS, Thomson Reuters

## GLOBAL JEWELLERY FABRICATION, 2013



Source: GFMS, Thomson Reuters

## CARAT JEWELLERY (EXCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Europe</b>										
Italy	264.3	232.3	170.9	158.2	111.6	90.3	70.0	49.8	46.2	58.6
Turkey	189.0	197.9	117.4	164.7	100.2	24.8	18.5	29.0	30.8	51.4
Russia	30.8	36.0	38.8	49.0	43.2	21.2	27.4	34.6	38.2	43.9
Switzerland	27.4	32.2	35.8	36.0	35.0	20.1	21.1	29.4	31.1	30.1
Germany	17.6	16.3	13.9	14.2	13.3	9.8	10.0	10.4	9.7	11.6
France	13.0	12.8	11.4	11.0	10.0	8.1	7.7	6.2	4.6	4.5
United Kingdom	25.3	21.2	14.1	7.1	4.4	4.8	3.4	2.4	1.7	4.3
Portugal	7.8	6.6	4.4	5.8	5.0	3.5	2.9	1.5	1.3	2.3
Poland	2.4	2.7	2.5	1.8	1.2	0.6	0.9	0.9	0.7	2.3
Greece	8.3	6.9	5.8	6.7	5.1	2.8	2.5	0.8	0.6	2.1
Spain	25.8	21.9	16.3	16.3	11.1	3.7	0.5	0.5	0.2	1.9
Other Countries	10.9	11.1	7.6	7.9	7.0	5.1	4.3	3.4	3.0	6.2
<b>Total Europe</b>	<b>622.6</b>	<b>597.9</b>	<b>438.9</b>	<b>478.6</b>	<b>347.0</b>	<b>194.7</b>	<b>169.1</b>	<b>168.8</b>	<b>168.1</b>	<b>219.2</b>
<b>North America</b>										
United States	107.3	106.6	84.0	72.0	57.0	41.0	39.5	34.4	27.3	33.4
Canada	12.3	12.2	7.8	8.3	7.6	5.3	4.6	4.2	4.6	5.3
Mexico	25.8	25.0	19.4	14.1	7.8	4.5	1.3	0.4	2.0	4.7
<b>Total North America</b>	<b>145.4</b>	<b>143.8</b>	<b>111.2</b>	<b>94.4</b>	<b>72.4</b>	<b>50.8</b>	<b>45.4</b>	<b>39.0</b>	<b>33.9</b>	<b>43.4</b>
<b>South America</b>										
Brazil	13.6	17.4	12.2	13.0	12.6	8.1	9.3	6.7	6.5	16.7
Chile	3.7	3.8	3.3	2.8	2.3	2.1	2.1	1.3	1.3	2.1
Other Countries	16.2	15.6	11.3	7.8	5.3	2.8	1.9	2.1	1.8	3.6
<b>Total South America</b>	<b>33.5</b>	<b>36.8</b>	<b>26.8</b>	<b>23.6</b>	<b>20.2</b>	<b>13.0</b>	<b>13.3</b>	<b>10.0</b>	<b>9.7</b>	<b>22.4</b>
<b>Asia</b>										
China	182.8	198.0	201.6	257.0	264.9	262.7	334.6	445.4	485.1	756.2
India	465.2	540.0	470.9	521.7	533.7	387.9	604.0	608.5	505.2	506.6
Malaysia	64.2	68.3	49.4	53.5	48.6	36.0	35.2	29.4	27.0	37.0
Indonesia	46.3	34.5	26.0	25.8	29.5	16.8	15.6	12.5	18.0	31.3
Saudi Arabia	38.0	47.6	30.0	55.2	38.8	22.4	21.1	14.5	12.5	25.4
UAE	34.0	39.3	33.0	36.8	32.0	19.3	9.4	11.2	13.0	24.6
Iran	22.4	24.0	14.0	17.9	15.3	10.7	12.1	10.3	11.7	20.5
Thailand	50.2	54.5	36.7	28.8	21.0	6.1	6.1	3.5	4.0	14.3
Singapore	9.8	8.7	6.6	6.8	5.8	3.4	5.0	5.5	6.9	13.3
Pakistan	30.0	36.7	24.5	23.6	14.8	3.9	6.3	6.0	3.8	11.7
Kazakhstan	7.3	7.8	8.7	9.4	8.3	5.9	7.6	8.7	8.1	8.5
Uzbekistan	7.3	7.8	8.7	9.4	8.3	5.9	7.6	8.7	8.1	8.5
South Korea	35.6	33.8	24.2	24.3	18.3	7.6	7.3	5.0	4.7	7.0
Hong Kong	4.1	5.6	5.3	5.2	5.2	4.4	5.5	7.0	6.1	6.5
Vietnam	20.9	20.5	14.3	12.6	11.1	3.3	3.3	5.5	4.8	6.4
Japan	9.7	11.8	9.7	6.4	4.2	3.1	0.7	0.0	2.4	6.2
Jordan	2.5	5.4	2.6	2.9	3.0	4.7	4.5	3.8	3.2	4.5
Bahrain	9.2	10.0	6.4	6.7	5.5	3.0	2.8	2.5	2.4	3.9
Taiwan	2.6	6.7	1.8	2.7	2.9	1.1	1.2	1.5	2.7	3.6
Iraq	0.0	0.9	0.3	0.7	0.2	0.0	0.2	0.7	1.3	3.2
Nepal	6.3	5.8	4.3	3.7	2.8	1.6	1.7	1.7	2.2	2.8
Kuwait	5.4	4.2	2.7	3.4	3.0	1.0	1.2	1.0	1.2	2.7
Israel	4.4	6.1	3.9	3.4	2.2	1.7	1.0	0.9	1.0	2.6
Oman	6.5	6.2	3.8	4.6	2.8	1.8	1.6	1.5	1.4	2.4
Myanmar	4.1	3.1	2.8	2.9	2.4	1.8	1.6	1.4	1.5	2.1
Bangladesh	4.6	4.6	3.5	3.9	3.1	1.6	1.5	1.2	1.0	2.0
Other Countries	21.7	20.9	14.7	14.6	11.4	5.8	6.1	4.8	4.7	6.6
<b>Total Asia</b>	<b>1,100.2</b>	<b>1,219.6</b>	<b>1,015.1</b>	<b>1,155.1</b>	<b>1,108.7</b>	<b>829.9</b>	<b>1,109.8</b>	<b>1,205.3</b>	<b>1,144.5</b>	<b>1,521.2</b>

## CARAT JEWELLERY (EXCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Africa</b>										
Egypt	4.6	12.1	7.8	18.0	28.4	6.5	15.1	3.9	5.1	17.2
South Africa	7.7	7.0	6.2	5.8	6.0	3.8	3.2	2.1	2.0	2.2
Other Countries	9.1	9.1	6.7	6.5	5.4	4.2	4.1	3.7	3.6	4.6
<b>Total Africa</b>	<b>34.0</b>	<b>40.0</b>	<b>28.7</b>	<b>38.4</b>	<b>45.8</b>	<b>16.1</b>	<b>24.4</b>	<b>10.8</b>	<b>11.8</b>	<b>26.0</b>
<b>Oceania</b>										
Australia	4.5	4.3	3.8	3.7	3.3	2.2	1.7	0.6	0.4	1.2
<b>Total Oceania</b>	<b>4.5</b>	<b>4.3</b>	<b>3.8</b>	<b>3.7</b>	<b>3.3</b>	<b>2.2</b>	<b>1.7</b>	<b>0.6</b>	<b>0.4</b>	<b>1.2</b>
<b>World Total</b>	<b>1,940.2</b>	<b>2,042.4</b>	<b>1,624.5</b>	<b>1,793.8</b>	<b>1,597.3</b>	<b>1,106.6</b>	<b>1,363.7</b>	<b>1,434.6</b>	<b>1,368.2</b>	<b>1,833.3</b>
...of which:-										
Middle East*	333.5	372.1	234.8	330.1	243.4	103.3	94.3	83.7	86.0	161.2
East Asia*	439.4	454.6	384.3	431.2	417.9	348.4	418.4	518.4	564.7	886.9
CIS*	45.7	51.8	56.8	72.5	64.9	35.7	44.6	53.3	55.7	62.4
Indian Sub-Continent*	510.6	591.6	505.9	555.2	555.7	396.0	614.8	618.3	513.0	524.6

Source: GFMS, Thomson Reuters \*The key regional bullion markets

been a move back towards carat jewellery that we expect will be felt more forcefully in the market in 2014.

US Census Bureau figures show spending on jewellery (including non-gold items and watches) increased by 8% year-on-year in 2013, however the year was still largely characterised by high gold prices undermining demand. This led to another good year for silver and, in particular, branded silver pieces.

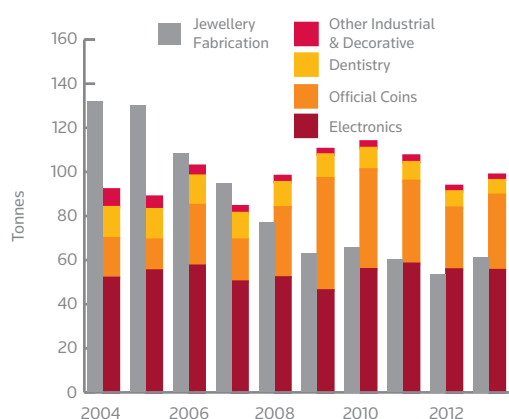
That said, 2013 was a year of turning points and we expect the reversal of multi-year substitution trends away from gold to continue. It will take a lot for the market to return the heady days of 2005, however, when jewellery consumption in tonnage terms peaked at 349 tonnes and fabrication was 130 tonnes. This is not just price-related (gold averaged \$445 in 2005 against \$1,411 in 2013) but there have also been substantial losses in shelf space and a big increase in fashion jewellery and alternative materials. In addition, the market needs to overcome the

dominance electrical goods have taken up on the wish list of luxury items.

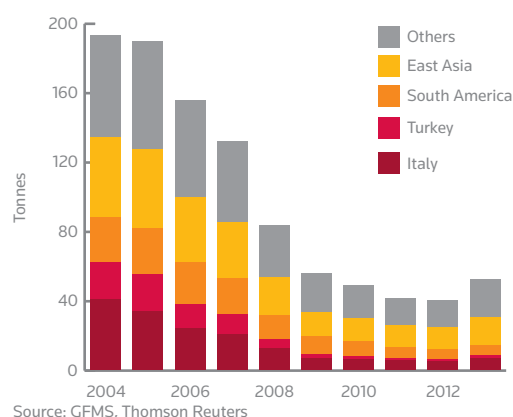
The recovery in the US market saw the first rise in jewellery imports since 2004 with total imports of 52.7 tonnes showing an increase of 30% year-on-year. The top exporters of gold jewellery to the US last year were India, China, and Italy, all of which exported more gold jewellery products to the US relative to the previous year. The US imported a significantly larger amount of Italian gold jewellery products in 2013 compared to 2012, rising by 34%. This was the first increase in gross imports from Italy since 1999.

There was a similar picture reported in **Canada**, with price declines taking time to filter into stores, but with this slightly offset by improving economic sentiment and higher luxury good spending. Canadian consumption is estimated at 19.2 tonnes in 2013, a 4.5% increase year-on-year. Meanwhile fabrication increased at a slower

## UNITED STATES FABRICATION



## UNITED STATES JEWELLERY IMPORTS



## PHYSICAL DEMAND AND PER CAPITA CONSUMPTION (EXCLUDING BANK ACTIVITY)

The tables below outline demand by country and consumption by capita GDP including the following: jewellery consumption; electronics; medical and dental; other industrial; coin fabrication and bar hoarding. The data does not include any purchases, holdings or transfers by central or commercial banks.

Looking at demand by country China tops the list for the first time (based on our data series) as Indian consumption struggled under the government's import restrictions, higher taxes, a weak rupee and subsequent high domestic premia. Indeed, China consumed 1,283 tonnes of gold in 2013, 28.2% of global physical demand and substantially higher than India at 987 tonnes and 21.7% of global demand. Chinese imports of gold, and deliveries from the Shanghai Gold Exchange (SGE) were also considerably higher than this owing to growth in pipeline stock, increased holdings by commercial banks to back paper products (a legal requirement in China) and some double counting of gold that was involved in round-tripping to Hong Kong or refined within China to a higher purity and subsequently resold via the SGE.

It should also be noted that opaque institutional investment or disinvestment, is not tracked in these figures and that this particularly under-reports US and European tonnages movements and their impact upon the gold price. Meanwhile,

### PHYSICAL DEMAND (EXCLUDING BANK ACTIVITY)

Country	2013 Demand	% of Global Total
China	1,283	28.2%
India	987	21.7%
United States	210	4.6%
Turkey	176	3.9%
Thailand	168	3.7%
Germany	151	3.3%
Japan	131	2.9%
Iran	102	2.2%
Vietnam	97	2.1%
Russia	96	2.1%
Saudi Arabia	74	1.6%
Indonesia	73	1.6%
Egypt	62	1.4%
Hong Kong	60	1.3%
Canada	58	1.3%
South Korea	53	1.2%
UAE	52	1.1%
Pakistan	49	1.1%
Brazil	46	1.0%
United Kingdom	43	0.9%

Source: GFMS, Thomson Reuters

China's and India's appetites for holding physical bullion, rather than allocations in a London bank, help to inflate the figures. It is also indicative of smaller scale investors looking to enter the market, often individuals or families looking to store value outside the financial system, and usually with one eye on inheritance.

This helps to provide a solid future for gold by tying it to the Asian middle class wealth effect rather than just the changes in western investment sentiment that have dominated price movements since the global financial crisis. It is also noticeable that all four BRIC countries and most countries flagged in other "ones to watch" acronyms in recent years also make the list.

On a per capita consumption basis, unsurprisingly, the three trade-hub city states of Hong Kong, Dubai (boosting the UAE) and Singapore top the list. This is because the cities serve as conduits of demand for China, the Middle East and India, and South East Asia respectively. There was also a large increase in jewellery, bar and coin pipeline stocks globally in 2013 as material moved from the West to the East and this would further boost figures in these regional entrepôts. The remainder of the top 20 are bolstered by a number of factors: including volatile local currencies; fear of inflation; cultural reasons such as wedding gifting; coin fabrication; political instability and higher tax rates in neighbouring countries. Many of these will help to underpin gold's role as a safe-haven investment even after the global financial crisis has subsided.

### CONSUMPTION PER CAPITA (SELECT COUNTRIES)

Country	Rank	Grammes/Capita 2013
Hong Kong	1	8.31
UAE	2	6.25
Singapore	3	5.48
Thailand	4	2.52
Saudi Arabia	5	2.47
Turkey	6	2.29
Belgium	7	1.95
Germany	8	1.88
Canada	9	1.65
Australia	10	1.56
Taiwan	11	1.44
Iran	12	1.32
Vietnam	13	1.07
South Korea	14	1.05
Japan	15	1.03
China	16	0.94
India	17	0.80
Egypt	18	0.72
United Kingdom	19	0.68
Russia	20	0.67

Source: GFMS, Thomson Reuters

pace than in the US at just 6.0% in tonnage terms. The biggest increases in both fabrication and consumption in the region came from **Mexico** with a 12.1% advance in fabrication and a 30.1% increase in consumption of gold jewellery, much more in line with the price sensitive markets.

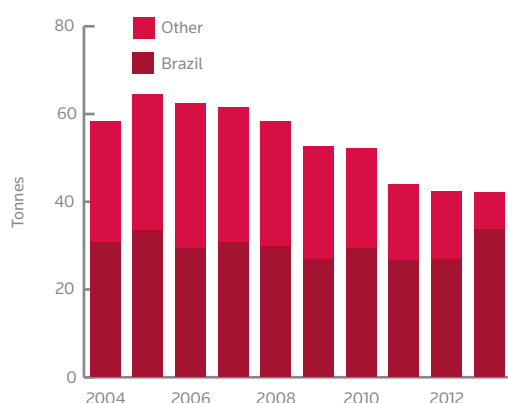
Across the continent consumption increased by a greater degree than fabrication and import dependency increased. One of the impacts on the market of a prolonged period of high prices has been for inventories to be slashed and pipeline stock to be kept on a shoestring. While this has left the industry less able to respond to a price fall as seen in 2013 it should mean, assuming prices do not rise to 2012 and 2011 levels, that the North American fabrication sector will recover over the course of 2014.

## SOUTH AMERICA

— *We expect jewellery fabrication trends in South America to be flat in 2014 as deteriorating economic conditions dampen demand.*

Jewellery fabrication in South America grew robustly in 2013 on the back of a weaker gold price to reach an estimated full year total of 42 tonnes. While economic growth has boosted consumers' purchasing power, the meteoric rise in the gold price in the past ten years has priced gold jewellery beyond the affordability of the masses in the region. As tastes and preferences are still strongly rooted in the gold appearance, the inability to afford carat jewellery has prompted a substitution trend towards gold plated designs, especially in **Brazil**. While we estimate that Brazil's fine gold jewellery industry may have grown by 50% in the past ten years, gold consumption in the plated jewellery industry has expanded by over six-fold. Indeed, we estimate that gold consumption in the plated jewellery industry is around

### SOUTH AMERICAN JEWELLERY CONSUMPTION



Source: GFMS, Thomson Reuters

a third of gold consumption in fine jewellery fabrication. There is also a push towards the fabrication of ten-carat jewellery away from the South American standard of 18-carat jewellery, but its progress is somewhat limited as retailers are uncertain as to whether the new pieces will be popular with customers, not to mention the potential cannibalisation of its existing 18-carat sales. We expect the jewellery fabrication trend in South America to be flat this year as deteriorating economic conditions and weak currencies dampen consumer confidence and offset a weaker price.

## MIDDLE EAST

— *Jewellery fabrication in the Middle East rose by almost 19% last year as lower gold prices reinvigorated consumer demand across the region.*

**Turkish** jewellery fabrication increased by 18% in 2013 to reach 87.1 tonnes, the largest increase since the financial crisis but still only 35% of the peak tonnage reached in 2005 of 251.1 tonnes. The key driver for the increase in fabrication was the fall in prices and the surge in buying that this saw from the market; indeed the second quarter saw a 36% year-on-year increase in production as price fell from over 97 lira/gramme at the beginning of the year to under 80 lira/gramme in both July and December.

The ability of fabricators to meet higher demand was limited by the scale of closures witnessed over the past five years, however a number of market participants had put growth plans in place after several years of either pulling back, or treading water within the market. The business environment remains difficult. This is partly because margins remain suppressed owing to high domestic competition, but also because export markets are increasingly competitive for Turkish jewellery exports.

Turkish bullion imports as reported by the central bank have long been the bellwether of the health of the Turkish jewellery industry and in 2013 they increased by 150% to 302.3 tonnes. This was indicative not only of a rise in fabrication, but also an increase in stock and pipeline material. Other factors included the huge increase in coin and bar investment, and also gold still entering under the "gas for gold" scheme with Iran that came to an end in July 2013. Nonetheless, imports in the second half of the year were still up by 98.6% year-on-year.

Last year was also a sea change in Turkey in terms of types of jewellery being sold, and lower prices saw a resurgence in the jewellery-for-investment market, dominated by Anatolian demand. In terms of products

this saw an increase in market share for 22-carat material at the expense of the 14-carat products that had seen their market share expand during the high price environment of 2011 and 2012.

Export markets for Turkish jewellery were generally positive, with the UAE importing 70% more gold containing jewellery year-on-year, on a tonnage basis. The biggest growth, meanwhile, came from Iraq, which saw over a 100% increase in shipments. We understand that northern Iraq remains the principal import route into the country, favouring Turkey, owing to the relative efficiency of the customs operations there. This material will subsequently permeate through the rest of the country. Increases into Russia, Turkey's third largest export market for jewellery ahead of the United States, were more subdued, with just a 3% year-on-year increase recorded.

On the downside for local fabricators there was a decline in demand from the Western markets of Germany and the USA. These two markets' jewellery demand takes several quarters to adjust to a lower price environment, however, and fabricators are hopeful of increasing exports over the course of 2014. In terms of imports the Turkish market continues to receive substantial volumes from Italy, up by 34% year-on-year, and also witnessed a large increase in the tonnage coming from the UAE. Indeed, for the first time since 2001 the UAE surpassed Italy as being the number one importer into the country.

The outlook in both tonnage and value terms has been for a further recovery, with more investment being made in expanding capacity towards previous levels. This has been somewhat undermined in the first quarter of 2014, however, by the depreciation of the lira and gold price increases in dollar terms. While price continues to be the most important factor for demand in both 2013 and 2014 the ongoing political unrest in country is also seeing

many wanting to diversify away from the lira as 2014 and 2015 see a series of hard-fought elections that have the potential to lead to instability within the country.

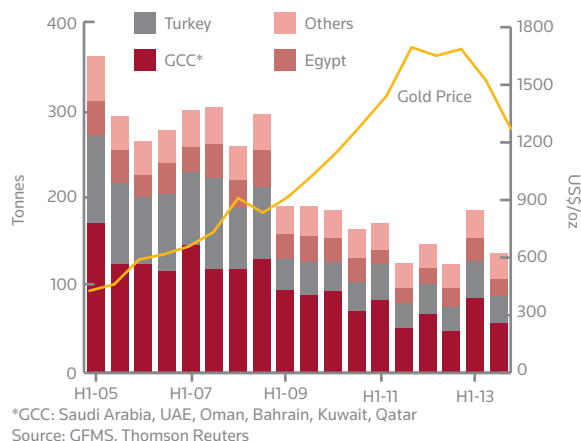
Following six consecutive annual declines, **Saudi Arabian** jewellery fabrication rebounded strongly in 2013, expanding by just over a fifth to 39.4 tonnes. Despite the healthy rise, annual offtake last year remained 26% below the 2009 figure and almost two-thirds below the level recorded a decade earlier as rising gold prices have continued to erode consumer demand.

Last year, with the average annual dollar gold price sliding 15%, Saudi consumers returned to the market to replenish stocks after many had liquidated gold assets previously at higher price levels. The acute price drop in mid-April and again in late June instigated a wave of buy-side activity that led to a brief shortage of inventory across the supply chain. This led to a sharp rise in imported product to meet the void in supply with flows from Dubai the main source of replenishment, though during the peak demand periods even this key source ran dry. Fabrication demand in the second quarter surged 35% on the back of the price correction and delivered a first half rise of almost 24% year-on-year.

Given that a large proportion of demand was driven by investment motives it was plain, higher purity (chiefly 21-carat) items that dominated sales last year though it should be noted that the 18-carat segment also recorded healthy gains as consumers took advantage of the lower retail price point to restock and accumulate new designs. The second half of the year delivered further gains, increasing 18% year-on-year, though the domestic market again faced headwinds in the third quarter as gold tracked higher with demand only spasmodic and largely triggered by any significant pullback in price. Demand picked up in the final quarter of the year as gold again eased, however, a weak Hajj sales period – which impacted sales in key western markets, and a crack down on the Saudisation policy dampened demand. The latter, which stipulates Saudi private companies allocate a minimum level of job slots to Saudi Arabians, severely impacted both factory output and retail outlets across the Kingdom, which are dominated by foreign workers.

Turning briefly to this year, it would seem demand in early 2014 has continued in the same vein as last year with retailers indicating during recent field research that consumer demand had been at healthy levels in January, though lost some momentum in February as gold in domestic terms pushed through 160 SR per gramme. The consensus among the key fabricators was that

#### MIDDLE EAST JEWELLERY CONSUMPTION



gold needs to lose further ground this year for jewellery demand to recover. However, if the gold price should revisit higher price levels, or even remain at current price levels, then further erosion of the domestic market is likely.

Jewellery consumption in the **United Arab Emirates** (UAE) rebounded strongly in 2013, increasing an estimated 25% to just over 62 tonnes, with both domestic and regional demand surging on the back of the lower price environment. Fabrication jumped nearly 40% year-on-year after several years of hefty falls as fabricators rushed to rebuild staff levels to meet the rise in demand.

After a solid first quarter rise, demand surged in April (and again late in June) as a result of the acute drop in the dollar gold price, with this price action generating a retail frenzy as both consumers and the supply chain hurried to replenish stocks. Within days inventory levels in Dubai were vastly diminished as demand from across the entire region exploded. Field research at the time found many wholesalers struggling to replenish inventory given the shortage of finished goods available at the time. Indeed many suggested they could have generated greater sales had they had access to fresh jewellery imports. As it was, demand in the second quarter surged almost 50% year-on-year.

The recovery in demand across the GCC region helped boost offtake for 21-carat jewellery, which had fallen sharply in recent years as consumption across the region waned. The only resilient market was **Iraq**, where strong demand had offset weaker markets elsewhere. This was illustrated by the rapid increase of Iraqi wholesalers last year who set up operations in the Dubai gold souk to service this expanding market. While sales of 21-carat jewellery picked up strongly in 2013 it was the 22-carat market that generated the greatest activity, which maintained healthy consumption growth into the second

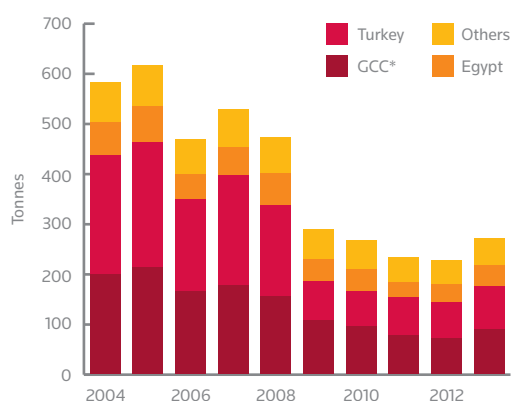
half of the year. This was driven by demand from India and Indian sub-Continent expatriates, as prices across the UAE were well below the domestic price in India due to the high premium in the market, encouraging consumers to hand carry purchases back home.

Jewellery fabrication in **Kuwait** rebounded strongly in 2013, to record an increase of 24% year-on-year to 4.6 tonnes. The lower price environment was the primary driver for the healthy rise, with fabrication volumes surging over 50% year-on-year in the second quarter as gold prices collapsed.

Fabrication demand in **Iran** also benefited from the lower price environment in 2013, increasing 18% year-on-year to an estimated 32.8 tonnes. Domestic consumption was again augmented by safe haven purchases as the country struggled to reign in spiralling inflation and support its domestic currency in an environment of economic sanctions. Like other key markets in the region, demand surged in the second quarter as consumers took advantage of the price drop to rebuild gold assets though demand was present on every significant price retracement during the year as consumers took advantage to protect against further currency weakness.

The trend in **Egyptian** jewellery fabrication last year mirrored other markets within the Middle East though domestic demand was again tempered by the political violence and country-wide protests that emerged after the Egyptian army overthrew President Mohamed Morsi in early July. Demand in the first half returned a healthy 23% growth as consumers rushed to replenish stocks as gold traded below EGP 300 per gramme for the first time since December 2011. All jewellery segments saw healthy gains during this period though it was the higher purity lower labour cost of 21-carat jewellery that recorded the strongest gains as this form of jewellery is often purchased as a quasi investment tool and can easily be sold back should the need arise.

#### MIDDLE EAST JEWELLERY FABRICATION



\*GCC: Saudi Arabia, UAE, Oman, Bahrain, Kuwait, Qatar  
Source: GFMS, Thomson Reuters

The second half of the year saw the full impact of the uncertain political environment with jewellery fabrication just one casualty of the unrest as both locals and tourist visitors were reluctant to shop in the larger cities during this period. Jewellery offtake slumped in the third quarter before returning to modest growth in the final three months of the year. Moreover, field research found that some domestic offtake was being hand carried to neighbouring African countries (chiefly Libya and Sudan), with this additional demand boosting local fabrication.



## INDIAN SUB-CONTINENT

- *Indian jewellery fabrication fell by 2% in 2013, as a result of policies that restricted official supply. Continued expansion by large retailers limited the decline, however.*
- *A surge in first half demand lifted annual consumption by 11% last year.*
- *Jewellery fabrication in Pakistan jumped by almost a fifth, reversing seven consecutive years of losses, due to a price elastic response and unofficial supplies to India.*

Last year, jewellery fabrication in **India** slipped by 2% to 607.4 tonnes. This marks the third consecutive year of weaker fabrication volumes, with offtake 78 tonnes lower than the 2010 peak. Also important to note is its decline in global share from a five-year average of 30% to 26%. This decline has to be viewed in the context of events during the two halves of the year, as the first six months saw fabrication increase 29% year-on-year, while the second half shrank by 27%. This decline is attributed to the new policies (as discussed in the bullion trade chapter) since July that created supply constraints that impacted significantly on jewellery fabrication volumes.

Delving further into these numbers, discussions with our contacts revealed that inventory levels of jewellery retailer and fabricators declined by an average 14% as supplies dried up following the policies that limited the availability of gold on lease and restricted bullion imports by linking them to exports. These policies eventually lifted the premia in the market, and as the price in rupee terms touched new record highs, scrapping increased, unofficial supplies gathered pace, and professional investors cashed out their holdings, thereby creating fresh sources of supplies. The demand response was so poor that gold was being offered at a discounted rate.

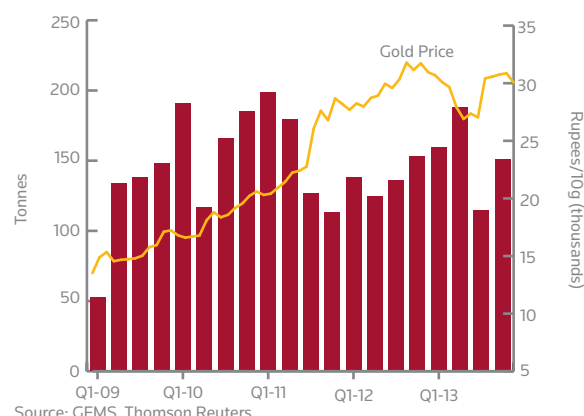
Several areas of concern remain in the industry, more so in the informal space. For instance, many of the family run single store retailers (stocks with 10 to 50 kilos) have indicated they may wind up their jewellery business, due to higher operating expenses and competition from professionally managed retailers. However, those willing to trade with unofficial supplies and flout the KYC (Know your Customer) regulations, are selling jewellery at discounted rates and have largely waded through the challenging times unscathed. The KYC regulations require traders to keep a permanent record of customers purchasing jewellery above Rs. 500,000. Additionally, since June 2013 cash transactions above Rs. 500,000 require the seller to collect 1% tax at the point of sale.

On the other hand, the professionally managed jewellery retailers, who are required to be transparent in their dealings, managed growth by continuing to expand across India and even into the Middle East markets. The latter helped them negotiate through the 80:20 rule. The strategy behind these expansions is to increase per store sales and drive retail sales turnover during the growth period. These factors helped the fabrication series hold over 600 tonnes for the fourth consecutive year, amidst a challenging second half. To this end, the winding down of retailers from the informal space only helped augment supplies for the expansions of retailers in the formal sector.

These structural changes in the industry were responsible for bringing about changes in the quality and designs offered to end users. For instance, we are noticing a shift from low margin products to those with higher value addition in the mature markets. There is also a growing shift amongst consumers to the established brands and those selling hallmarked jewellery. For retailers this has been a selling proposition to their new customer base as they expand stores to new cities and new tier markets. While these factors may have influenced consumer choice, the fine gold usage has actually expanded on this basis as wide spread under-carating has been reduced.

Looking at consumption trends, demand for plain gold jewellery continued to dominate the space, more so in southern India. Beyond the fascination towards plain designs there is also an 'investment' rationale during such purchases (this only enhanced after the RBI prohibited loans against gold coins weighing more than 50 grammes). By investment the intention is not to sell at higher prices but rather to utilise the role gold plays due to its intrinsic value. At time of financial emergencies it is used as collateral, and when prices rise the same gets exchanged for new jewellery, with minimal loss on making-charges. For instance during the second half

### INDIAN GOLD JEWELLERY CONSUMPTION



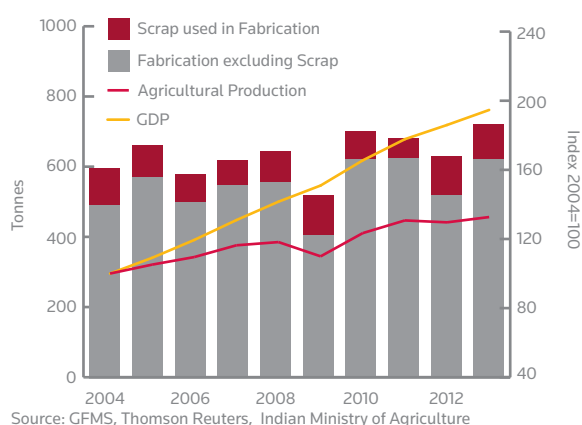
retailers were of the consensus view that the 40% of the sales turnover were realised from exchange of old plain jewellery for new as higher prices deterred consumers. Light weight jewellery, which constitutes 40 to 45% of the plain jewellery category, is said to be becoming more popular at higher prices.

The price inelastic category in the 22-carat two gramme to ten gramme jewellery sustained growth at a rate of near 15%. With the target segment below the middle class in the income pyramid, volumes in this segment are projected to grow, as retailers in organised segment explore this category, thus reducing the under carating.

Another segment that continued to post growth was the 18-carat market, often gemset or low-value diamond jewellery. This market continued to generate growth at a rate of more than 21%, but this was largely focused on the urban market. That said, it is worth mentioning here the growth in online store sales, which are estimated to be registering sales turnover of more than 25% year-on-year. In the high value segment, demand for diamond set jewellery is believed to have grown at a rate of 18% last year. Despite increases in gold and diamond prices, there has been growing demand for diamond jewellery for bridal wear. This in essence has been at the cost of fine gold volumes as we understand that not more than 30% of the jewellery value is of gold in these designs.

A similar trend has emerged with antique jewellery designs, especially for original hand made items from previous generations. Its value is derived from the intricate designs; retailers say there are very few goldsmiths in the country who could carve out such sophisticated designs. During field research visits we noticed that jewellery with 32 grammes equivalent gold is priced as high as Rs. 400,000, more than double the normal rate. Its popularity has grown due to increased supply from the original owners of these jewellery items.

#### TOTAL INDIAN FABRICATION DEMAND



#### INDIAN JEWELLERY FABRICATION AND CONSUMPTION

(tonnes)	Q1-13	Q2-13	Q3-13	Q4-14
Fabrication	134	227	113	133
Consumption	160	188	115	151
Average Price (Rs./10g)	30,173	27,383	29,211	30,562

Our information is that many households are liquidating their inherited possessions and investing it in real estate.

Overall, gold jewellery consumption during the second half was 8% lower year-on-year; however that was negated by the 32% year-on-year growth in the first half. That said, the additional supply required in meeting consumption demand is estimated to have largely come from imported jewellery, which doubled year-on-year to near 21 tonnes. For readers' knowledge official jewellery imports (finished or semi-finished) are treated as a source of jewellery consumption as the imports predominately are of 916 purity. In essence overall consumption grew by 11% to 612.7 tonnes.

Looking ahead, jewellery fabrication for the first half of this year is expected to decline by almost 20% year-on-year. However, this should be viewed in context of the high base in the first half of 2013. With an increase in exports since the beginning of last quarter, renewal of import licenses for 21 banks and a rise in commitments to exports have helped lift official imports since January, resulting in lower premia. For this reason fabrication numbers should be better than the second half of last year. However, the 10% import duty will be a deterrent for non-resident Indians, thus keeping consumption numbers tepid. Also we expect moderation of spending from rural households due to a fall in winter crop yields. Additionally, postponing the date for freezing circulation of pre-2005 notes has reduced jewellery offtake. Separately, there is a perception in the industry that parliamentary elections will dent demand during April-May, which traditionally has been a strong period.

**Pakistan's** jewellery fabrication, on the other hand, grew by nearly 20% year-on-year to 25 tonnes, reversing seven consecutive years of decline. The gains are attributed to buying during the first half of the year as prices declined. A country where heavy plain jewellery is more popular, and the growth came amidst the political crisis. While the fall in prices did alleviate some of the pent-up demand, our research suggests jewellery in semi-finished form would have been exported to India through unofficial channels. And, Pakistan's exports suffered last year due to the government's anti-gold policies that attempted to limit metal flows outside the country.

## EAST ASIA

- **Jewellery fabrication in East Asia surged by 40% last year, thanks largely to the acute fall in the gold price, with the lower price environment driving consumption higher across the entire region.**
- **Chinese jewellery fabrication increased by an extraordinary 46% in 2013, reaching a new record high of 872 tonnes and in so doing surpassing India as the world's largest jewellery fabricator.**

**Chinese** jewellery fabrication surged by an extraordinary 46% to 871.9 tonnes in 2013, surpassing India to become the largest jewellery market in the world. It is worth highlighting that our fabrication series has undergone a major upward revision since the last *GFMS Gold Survey* was published. This is due to new information gathered during extensive field research this year, which has necessitated a thorough review of previous estimates. Specifically, feedback from the local jewellery trade indicated that our estimates for domestic consumption may have been over conservative; underestimating the level of small-scale jewellery fabricators that have entered the market in the last few years, and particularly in 2013, which necessitated an increase to our estimates for the 2011-2013 period.

The significant rise in consumption witnessed last year was mainly due to the weak gold price. With rising disposable incomes, accumulated savings, and limited choices of investment options, Chinese consumers took advantage of the weaker gold price to build gold assets aggressively. The country's role in the global gold market has become increasingly important, with its jewellery demand accounting for more than 37% of the global total last year, compared with around 8% a decade ago.

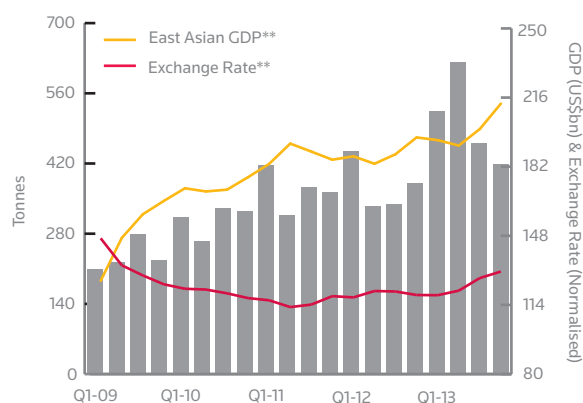
Looking at intra-year developments, following a relative lull in 2012, the start of 2013 saw robust year-on-year growth, rising over 15% for the first quarter. The healthy increase was mostly stimulated by the Chinese New Year sales coinciding with a period of easing gold prices and the expectation that the prices would return to the previous elevated levels. Although 2013, which was the Year of the Snake in Chinese culture, was not a good year to get married, gift-related purchases still soared during the new-year period thanks to an increase in promotional events held by retailer in order to boost sales.

Traditionally, the second quarter is usually a weak period for jewellery sales across China, but in 2013 it was marked as an extraordinary one. The acute gold price drop in April that pushed the domestic gold price below RMB 270/g (the first time since September 2010) saw demand explode; jewellery fabrication almost doubled in the second quarter as consumers (mainly women) rushed to accumulate gold for gifting, heirlooms, or chiefly as a simple quasi-investment tool. Many wholesale jewellery showrooms as well as retail outlets were wiped out of all inventory and this, according to our various sources, has never happened before. During this period, as the market was scrambling for supplies, the mark-up at the wholesaler level rose to as high as RMB 15/g, about three times the normal margin.

The lucrative margin attracted many new entrants into the jewellery retail business, which in turn lifted gold fabrication. In July and August alone, over 200 showrooms opened in Shenzhen, the southern city that houses almost 70% of the gold jewellery business in China. Meanwhile, over 100 small independent fabricators were also set up in Shenzhen to accommodate the surge in demand. Fabricators had to work overtime in order to fulfill their order books, and given the heaving demand for finished products, were producing jewellery with the simplest design to get the product out of the door. Consumers, on the other hand, were simply concerned about getting access to physical gold jewellery than any emphasis on design. As a result, labour costs as well as rental costs in Shenzhen were driven up by the huge demand, though many fabricators still enjoyed a profitable year due to impressive volumes and attractive margins, as well as a manageable capex levels required to start and operate the business.

The restocking of the retail outlets, in tandem with another price-driven frenzy in July and August, were the major contributors for another busy round of fabrication activities in the traditionally weak third quarter.

## EAST ASIAN TOTAL DEMAND \*



Jewellery consumption moderated in the final quarter, especially October and November which were the weakest months of the year. After two extraordinary quarters of strong consumption, demand started to wane. In response, some small fabricators closed down as they had already made a fast profit. However, fabrication demand picked up again during December due to the restocking process ahead of the 2014 Spring Festival. Although the fourth quarter was the weakest period recorded for jewellery fabrication in 2013, it still managed a 20% year-on-year increase.

Turning to trends within the gold jewellery sector, the 24-carat (pure gold or “Chuk Kam”) segment continued to dominate the market and to gain market share from other non-pure gold jewellery styles. In the wake of staggering sales among the general public, many jewellery manufacturers chose to reallocate some of their capacity from PGMs and 18-carat gold jewellery to the 24-carat segment, in order to meet the extraordinary high demand for the latter. During the second quarter, when retail stores ran out of stocks, fabricators could only produce pure gold jewellery with a simple design to satisfy the market appetite due to the time constraint.

The main drivers behind the robust demand for 24-carat pieces has been gold’s impressive price performance over the last decade, which has bolstered the metal’s credentials as reliable investment option. As is the case in India the Chinese have a long cultural affinity to gold, as it is a symbol of wealth. To traditional Chinese, housing and gold are the two major ‘necessities’.

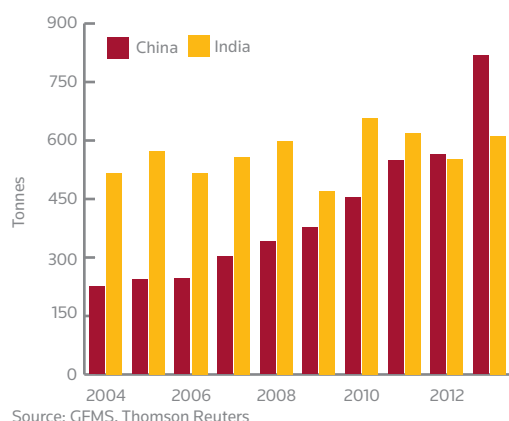
As the net income per capita has been on a strong uptrend in the last decade, people are keen on investing part of their savings to accumulate further wealth. However, the availability of investable asset classes is fairly limited in China; the property market is currently under close supervision and suppression from the central

government, while investors have lost confidence in the local stock market after losing over 60% in the last five years. The sharp fall in the gold price last April provided a buying opportunity and many people rushed into the market; this was an indicator that many of them were price sensitive. If there is another sharp plunge in the gold price this year, we may very possibly see another wave of demand in China.

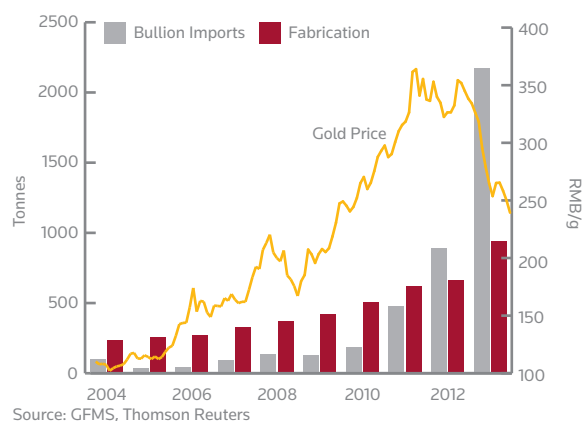
Demand for 18-carat gold jewellery also did well with a double-digit year-on-year increment, after only modest growth in recent years. In contrast to previous years, purchases from second and third tier cities went up noticeably. The recent growth can largely be attributed to the younger middle class; this consumer segment, assisted by increasing income levels and attracted by fashionable designs, is looking to buy gold primarily for its adornment qualities rather than as a simple investment option. Jewellery fabricators of 18-carat items enjoyed a lucrative year due to less direct competition, as many industry peers reallocated their business from 18-carat to pure gold jewellery.

Looking at this year, our feedback from research contacts points to a continued strong growth in jewellery demand during the Chinese New Year, which is partly due to aggressive promotions and discounting from retailers. Interestingly, the Year of the Horse has generated a new range of merchandise that is based on this traditional theme. While this year is believed to be an auspicious one according to the Chinese zodiac, demand trends for this important product range differ from year to year. Research meetings have found that while overall demand may be stronger this year, consumers have been favouring smaller lighter pieces. Following the retail surge in January there was a notable slowdown in wholesale demand from mid-February as the holiday sales period came to an end and the gold price started to rebound; yet, we still expect a modest increase in the

#### CHINESE AND INDIAN JEWELLERY CONSUMPTION



#### CHINESE FABRICATION & HONG KONG BULLION IMPORTS



first quarter compared to last year. However, barring any significant downfall in the gold price, few would expect another year-on-year increase in jewellery demand for the second quarter. Overall, we see a decline for total gold jewellery demand this year. This is mainly because last year was such an exception that, without a significant drop in the gold price, a similar outcome would be hard to replicate.

Looking at **Hong Kong**, jewellery consumption soared 57% to 53.7 tonnes last year. The overwhelming demand for gold jewellery was prompted by the weaker gold price with domestic offtake largely mirroring the frenzy for gold that took place on the Chinese mainland. In addition to the price impact, the number of tourist visitors also increased, jumping nearly 12% to over 54 million last year, with 75% of all visitors from mainland China. As was the case in China, demand for jewellery was dominated by 24-carat sales and many consumers were buying with investment motives as their primary focus; the lower price environment, though, meant all jewellery segments recorded healthy gains.

Jewellery fabrication in **Indonesia** is understood to have risen to 44 tonnes in 2013, up 24% from 35.5 tonnes in 2012. This marks the second consecutive annual rise in offtake reaching a four-year high. Last year it was the weaker gold price environment that invigorated the retail sector and pushed gold jewellery demand higher across the archipelago. While the drop in the gold price was indeed the chief architect for the resurgence in jewellery offtake the rate of growth was somewhat dampened by a weaker rupiah, which limited gold's decline in domestic terms to just 6.4% as did an economy that failed to fire, growing at the slowest rate in four years (Indonesia's GDP expanded at an estimated 5.8%), as the end of a commodities boom undermined exports and higher interest rates dragged on consumption.

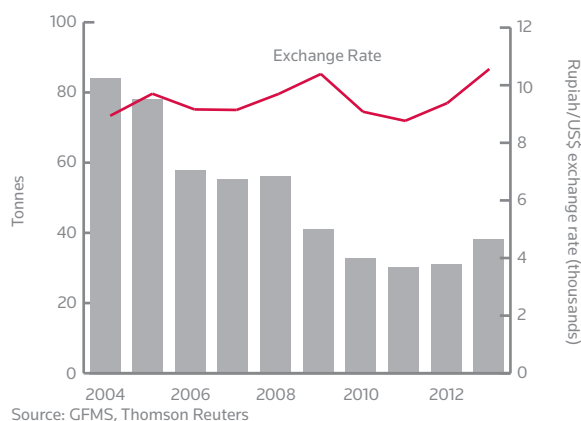
Jewellery demand in the first half of 2013 jumped 24% year-on-year, primarily as a result of the more than 50% surge in offtake witnessed in the second quarter when gold prices dropped sharply; consumers rushing to get their hands on as much gold as they could afford at the perceived bottom of the market. As in China, our field research at the time found fabricators were producing the most basic items they could to simply (and quickly) satisfy the unprecedented level of consumer interest, with design not a primary consideration as consumers looked to gold more for its investment potential.

In contrast to most regional markets the immediate reaction to the April price fall was largely cautionary as consumers waited for a clearer indication on which way the price would respond. However, as prices moved off their lows demand then surged as expectation of higher prices saw consumers rush to replenish stock, boosting fabrication demand beyond production limits. The sizeable decline in Indonesia's fabrication sector in recent years has seen the skilled labour force retreat and this impacted on the volume of gold jewellery that many could produce. Indeed, several fabricators suggested they could have delivered far higher volumes during this peak period had they had access to skilled workers.

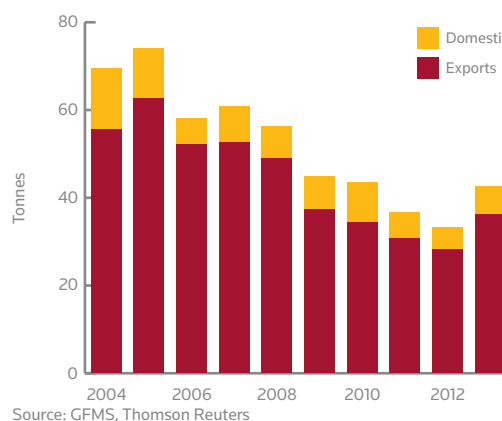
Demand in the second half of the year was also stronger, rising 24% year-on-year, aided by demand for higher carat designs. Indeed, one notable impact of the lower price environment last year was the recovery of the higher purity designs as many were buying gold as an investment tool rather than for its adornment qualities.

Following a sustained period of weakness **Malaysia's** jewellery fabrication sector recorded its strongest annual growth rate since the early 1990s. The industry had succumbed to a rapid decline in fine gold jewellery offtake on the both domestic scene and key export markets as gold prices increased over the last decade.

#### INDONESIAN JEWELLERY CONSUMPTION



#### MALAYSIAN JEWELLERY FABRICATION



In the last five years alone fabrication volumes have slumped at an annual average of 11% year-on-year.

Last year the average gold price in domestic terms declined only 14% as a weaker ringgit limited the impact of the dollar gold price drop. Nevertheless, with a significant proportion of Malaysia's fabrication volumes destined for export markets (which are priced in US\$) the currency impact on jewellery offtake was only modest.

Turning firstly to the domestic market, demand surged in the first half of the year, chiefly as a result of the acute price fall in April. This led to a surge in retail activity as consumers rushed to purchase gold jewellery at the perceived discounted rate. As many saw the opportunity as an investment play it was the 22-carat segment that generated most of the sales activity (due to its ease of selling back), with 18-carat and diamond jewellery slipping during this period. Counter to several other markets in the region the price drop in late June failed to elicit the same response from consumers with many expecting further falls and prepared to wait on the sidelines for a lower entry point. The second half of the year delivered further consumption gains though this was largely seen in the final quarter of the year, with weak retail sales in July ahead of Ramadan (usually a key gifting period) as consumers had already stocked up at the lower price levels earlier in the year.

The export sector also saw a remarkable turnaround in 2013 after declining in size for many years. Demand from the Middle East (principally Dubai and Saudi Arabia) and China (via Hong Kong) for machine made chain and cast jewellery exploded in the first half following the sizeable fall in the dollar price. Thereafter, while demand remained at healthy levels elsewhere it was demand from Indian consumers (in Dubai) that generated the bulk of fabrication growth towards year's end as Indian Sub-Continent tourists and expatriates stocked up on

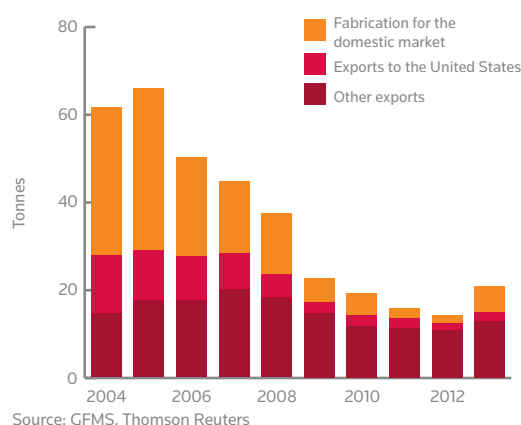
the "discounted" 22-carat jewellery available in the UAE compared to the hefty premia being charged in the Indian domestic market.

Despite a 18% drop in the annual average won gold price last year, **South Korean** jewellery fabrication was unable to replicate most other markets in the region, slipping an estimated 8% to 12.9 tonnes - a level not seen since the mid 1980s. Indeed, in just the last decade alone fine gold used in jewellery fabrication has slumped more than 70% or almost 35 tonnes. Over this time there have been three main factors at play. Firstly, there has been a steady rise in the domestic gold price that reshaped consumption trends across the country as end-users looked to cheaper and more fashion driven alternatives and, secondly, a weak economic environment also dampened consumer sentiment and in turn discretionary spending. In addition to this, rising labour costs have made fabricating jewellery costs prohibitive when competing against low cost producers (such as China) and has seen several Korean fabricators move offshore.

In an environment of lower gold prices it may appear slightly counter intuitive that jewellery fabrication volumes would retreat. However, consumption trends have been going through a secular change over many years and it is not easy to reverse these transformations. Consumers have moved away from traditional plain higher purity designs, and have migrated to lightweight stone set 14-carat items. Furthermore, demand for the "white look" has also seen offtake of fashion silver jewellery (and steel and titanium) increase at the expense of gold, forcing many fabricators to switch their focus.

In contrast to the domestic market, the export trade did record an uptick in offtake last year as stronger consumption growth in regional markets spurred demand. Jewellery shipments to Hong Kong and China were notably stronger while demand also picked up from the Middle East and US markets.

#### THAI JEWELLERY FABRICATION



Following an 11% decline in 2012, **Thailand's** jewellery fabrication rebounded strongly last year, surging an estimated 46% year-on-year to a four-year high of 20.9 tonnes as both domestic consumption and export orders also increased in the lower gold price environment. This significant gain was the first increase in eight years after the industry had contracted sharply as gold prices continued to rise. To put this into perspective it should be noted that in spite of the impressive jump in fine gold fabrication last year annual production remained more than two-thirds lower than a decade earlier when fabrication exceeded almost 62 tonnes.



While the second half of 2013 produced an impressive 31% increase in fabrication demand it was the first half of the year, and particularly the second quarter (after the baht price dropped below baht 18,000 per baht for the first time since late 2010), that saw fabrication demand explode as consumers rushed to replenish previously liquidated gold assets at the perceived discounted price. Such was the retail frenzy during the April price collapse that consumers were prepared to wait for hours in Bangkok's Chinatown to access any gold product they could get their hands on. Indeed, showrooms were cleaned out within hours and fabricators could simply not produce the product quickly enough, with most just making the most basic chain to appease consumers; some just stamping bars as means of moving volume and meeting demand for the yellow metal.

While lower prices were bringing a much needed stimulus to the retail sector, the industry also faced stiff headwinds from a weak economic performance last year. Thailand's economic growth slowed to an estimated 2.9% in 2013, far below the 6.5% recorded in 2012 when Thailand was rebounding from devastating floods the preceding year. Moreover, in the final quarter of the year, and as a result of the political unrest that emerged, GDP growth slowed significantly to just 0.6% for the period, impacting on consumer sentiment, and as a result, discretionary spending.

Thailand's jewellery exporters also experienced a return to healthy growth last year as key markets rebounded due to the lower price environment and in most cases a stronger economy. Thomson Reuters estimates that shipments to the key US market rose by as much as a fifth in 2013, while gross exports to the Middle East were also up by as much as a third. European demand remained moribund in the soft economic environment with Germany and Poland the only real exceptions.

Turning to **Taiwan**, jewellery fabrication recorded its second consecutive year of growth, edging up 5% year-on-year to 4.9 tonnes in 2013. The relatively sedate jewellery market in Taiwan, compared to most other markets in the region, was attributed to the less pure gold oriented market, a sluggish economy (which dampened consumer sentiment and impeded discretionary spending), and a stronger performance in the domestic stock market. According to our contacts, last year saw yet another year of consumer preference transferring from pure gold to other more affordable segments of jewellery. Even in traditional wedding sets, which are dominated by 24-carat jewellery, 18-carat is gradually eroding market share while in other areas the

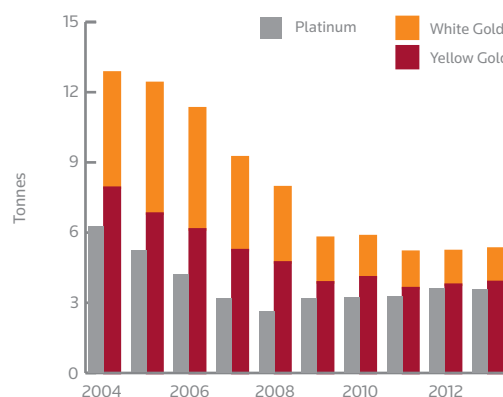
market as already migrated away to lower purity and mixed metal designs in a bid to limit retail price points.

**Vietnam's** jewellery fabrication industry is believed to have consumed an estimated 11.4 tonnes of fine gold, a 7% year-on-year increase. This modest recovery last year follows seven years of uninterrupted declines as consumers across the country balked at the rising gold prices that made gold jewellery unaffordable for many rural residents. However, the lower price environment of 2013 (the official dong gold price declined 15% last year) encouraged greater retail activity as consumers restocked and accumulated gold assets at the lower price level.

Despite the second quarter of the year being a typically low season for gift giving in Vietnam the price collapse in April instigated a wave of buying as consumers raced to purchase gold in any form. This surge in demand benefitted jewellery fabrication which recorded a near one third rise for the period on a year-on-year basis. Small investment products were the preferred choice; as most were buying gold as a quasi investment tool - as protection against rising inflation and currency weakness. However, with the tight government regulations in place with respect to access to investment products, consumers turned primarily to 24-carat jewellery designs (mainly 0.5 tael rings) which were being sold cleverly in plastic cases - as is often the case for investment products. Such was the level of demand and shortage of the yellow metal in the market that the local premia surpassed \$200 an ounce and remained at elevated levels for the duration of the year. Demand for lower purity jewellery also benefitted from the lower price environment though growth in these segments was more subdued.

While Vietnam recorded an annual rise in jewellery fabrication of 7% year-on-year it was well below that recorded by most countries in the region. Field research discussions with the supply trade found many blaming

#### JAPANESE JEWELLERY FABRICATION





the economy for the lack of further expansion. Vietnam's economy grew at an estimated 5.4% in 2013, picking up speed slightly after its worst performance in more than a decade the previous year. However, many traders maintained that retail activity remained sluggish and inflation was still a major concern, running at over 6% last year. Moreover, as household budgets felt the pressure of rising living costs they simply did not have the resources to purchase perceived luxury items.

**Japan's** jewellery fabrication recorded its highest level in five years, rising 9% year-on-year to an estimated 14.5 tonnes. Demand was assisted in the main by the drop in the yen price and the planned introduction of a 3% rise in the consumption tax in April 2014 that saw consumers bring forward purchases to limit the price increase. While the intra-year yen gold price declined 14% last year the annual average actually increased by just over 3% as the weaker currency offset the drop in the dollar gold price. Not surprisingly, the price drop in the second quarter generated the healthiest year-on-year gains (rising over 11% for the period as gold in yen terms fell below 3,800/g for the first time since May 2011) though demand was stronger across each quarterly period. Field research revealed the strongest growth to be in the white gold segment and for higher purity designs, while demand for 10-carat retreated last year.

## ELECTRONICS

— *Gold used in electronics slipped 2% in 2013, as lower gold prices were unable to offset continued thrifting in electronic applications.*

Global electronics demand fell for the third year in succession, slipping 2% to an estimated 278.9 tonnes. There were two opposing factors at play last year. On one hand, end user demand continued to pick up as consumer sentiment improved due to better economic conditions and expectations for future growth; this in turn provided a stimulus to the supply chain, generating a healthy rise in retail sales of finished goods. On the other hand, further losses in fine gold demand used for the production of bonding wires (chiefly as a result of substitution losses to copper) offset these output gains and was primarily responsible for the decline in gold used in this segment.

While the production and sales of semiconductors have returned to growth and look set to enjoy further increases in 2014, the use of gold in this sector is moving in the opposite direction. Moreover, gold (used in bonding wires) previously dominated the electronics segment,

commanding almost 90% market share just five years ago. Rising gold prices and significant investment by chip fabricators in alternative technologies have seen copper rapidly erode gold's share of this market. Last year gold used in the production of bonding wires dropped below 50% of the total and industry contacts expect this attrition will continue.

According to the Semiconductor Industry Association (SIA), total sales of semiconductors reached a record high in 2013, surpassing \$300 billion in sales for the first time, increasing 4.8% on the previous year. Regionally, the Americas was the stand out performer, increasing by 13% last year, while a return to expansion in Europe was the other notable feature of their findings.

Elsewhere, Japanese sales declined for the third year in succession, dropping by a sizeable 15%, in part due to the devaluation of the yen. According to the industry body, computer memory was the fastest growing industry segment, with DRAM offtake rising by as much as a third. Other areas of notable expansion were in the area of optoelectronics and analog applications.

Looking to 2014, Thomson Reuters expects further substitution losses in the area of gold bonding wire fabrication as the rate of migration to copper and cheaper alternatives continues to rise as these non-precious alternatives are being used in a much wider array of applications. Initially introduced at the low-end of the market, copper is increasingly being introduced into more advanced electronics. Sales of semiconductors (and that of the electronics sector in general) are likely to record healthy gains this year as the global economy improves though the drag on fine gold demand is likely to ease further.

Last year, **Japanese** electronics demand continued its recent slide, falling approximately 3% to a little under 86 tonnes. The chief architect for the decline remains the substitution away from gold in the area of bonding wires which are used extensively in making interconnections between an integrated circuit (IC) or other semiconductor devices and its packaging. As the gold price has tracked higher over the last decade fabricators have been working on alternatives that deliver the required reliability at a more affordable price with copper wires (pure and palladium coated). Copper wires are estimated to have reached over 40% (up from just 13% in 2010) of total wire fabrication as of 2013.

## GLOBAL BILLINGS

(semiconductor shipments per year, millions)

	World	Americas	Europe	Japan	Asia
2012	291.1	54.0	33.4	41.4	162.3
2013	303.4	60.6	34.6	35.1	173.1
Change	12.3	6.6	1.2	-6.3	10.8
Change %	4%	12%	4%	-15%	7%

Source: SIA

**Chinese** electronics demand returned to single-digit growth rates in 2013, after experiencing a modest retraction in 2012. The GFMS team at Thomson Reuters estimates that demand for fine gold used in electronics increased by just one tonne to 49 tonnes last year. Despite the lower GDP growth for China last year, demand for white goods and home appliances improved significantly, partly due to an improved housing market. The improvement of some key western economies (Chiefly the US and Europe) also helped with a recovery in export demand. However, as was the case in several markets, the increased output of electronic products did not equate to higher gold demand as substitution to copper bonding wires (mainly palladium coated) largely offset these gains.

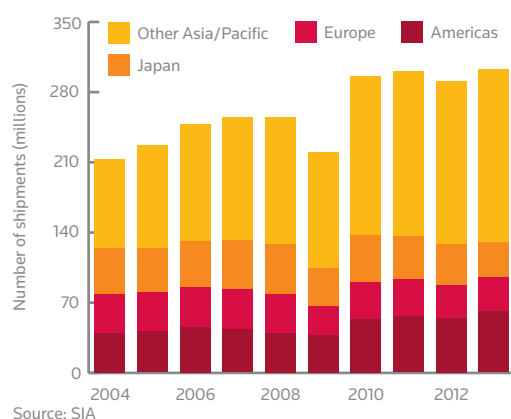
Following on from an 8% drop in 2012, **Taiwan's** demand for fine gold used in electronics slipped 3% in 2013 to an estimated 16.2 tonnes. A rise in electronics exports (predominately to the Chinese mainland), a healthy 16% annual rise in semiconductors sales output, and the drop in the gold price were still not sufficient to offset the decline in gold offtake due to substitution and migration away from the yellow metal to cheaper alternatives. Moreover, this ongoing trend has been largely borne out of the reduced demand for the production of gold potassium cyanide (GPC) used predominately in plating contacts.

**South Korean** electronics demand declined for the third year in succession, retreating 13% year-on-year to an estimated 23.5 tonnes, a ten-year low. In spite of an improving economic backdrop and a material rise in electronics exports (led by rising demand for smart phones, semiconductors, and memory chips), the migration away from gold used in bonding wire has had a profound impact on fine gold consumption in this area of fabrication. In the last few years, South Korean electronics demand has mirrored other major bonding wire markets to register a sizeable fall in fine gold demand. Moreover, there has been a rapid increase in the use of non-gold bonding wire as the larger chip manufacturers have looked to cheaper alternatives – led primarily by copper and palladium coated copper wires, though silver and aluminium wires are now also being introduced.

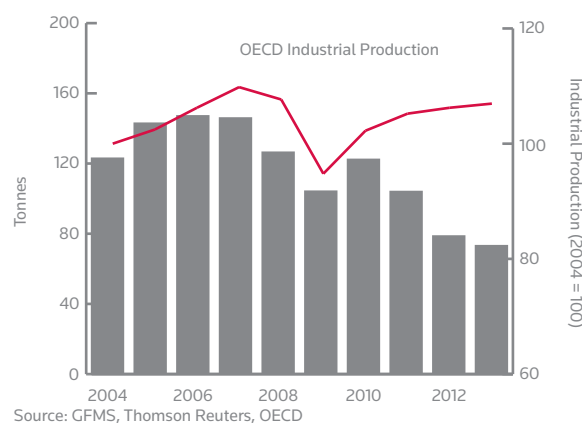
Gold used in electronics fabrication in the **United States** fell 1% to 55 tonnes in 2013. This unremarkable outcome was mostly a function of continued substitution away from gold to cheaper alternatives. The stronger economic environment in 2013 drove semiconductor sales to record levels, with US growth leading the world at over 12% last year, according to the Semiconductor Industry Association. However, increased production did not equate to greater use of fine gold as ongoing thrifting of precious metals in these applications has eroded the use of gold in this industry segment. Aside from substitution losses the type of product being fabricated has also had a bearing. Personal computers have been the mainstay of electronics demand for much of the last twenty-five years, but global shipments last year fell 10%, losing market share to mobile devices, namely tablets and smart phones, which consume less precious metal.

Following two consecutive years of declines, gold used in **Europe's** electronic applications posted a modest

## GLOBAL SEMI-CONDUCTOR BILLINGS



## WORLD FABRICATION OF GOLD BONDING WIRE



## ELECTRONICS (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Japan	108.0	112.4	123.6	128.4	116.0	94.5	115.0	108.0	88.0	85.7
United States	51.9	55.2	57.4	50.2	52.1	46.2	55.8	58.3	55.7	55.4
China	13.2	14.6	20.3	23.6	31.2	39.5	46.4	51.0	48.0	49.0
South Korea	26.2	28.0	32.9	35.6	33.3	28.8	33.4	31.6	27.0	23.5
Taiwan	12.8	14.6	17.1	18.1	17.1	16.1	19.4	18.1	16.7	16.2
Russia	11.9	12.0	12.1	12.6	13.1	12.3	12.4	12.5	12.6	12.7
Germany	11.3	12.2	14.3	15.3	14.5	9.8	12.6	12.0	11.2	12.5
Singapore	11.4	18.5	18.5	18.3	17.2	15.1	16.3	13.8	11.3	9.9
Switzerland	8.5	7.3	8.9	9.1	7.5	4.7	5.9	5.6	5.4	5.3
India	2.0	2.2	2.6	2.5	2.1	1.9	2.6	2.5	2.4	2.4
CIS (ex. Russia)	2.1	2.1	2.2	2.2	2.2	2.0	2.0	2.1	2.0	2.0
Hong Kong	1.6	1.7	1.9	2.0	1.9	1.7	1.9	2.0	1.8	1.8
Other Countries	4.9	4.7	4.4	4.0	3.2	2.3	2.5	2.5	2.4	2.6
<b>World Total</b>	<b>265.9</b>	<b>285.6</b>	<b>316.1</b>	<b>321.7</b>	<b>311.2</b>	<b>274.9</b>	<b>326.0</b>	<b>319.9</b>	<b>284.5</b>	<b>278.9</b>

recovery in 2013, growing by 4%, to just above 32 tonnes. This was mainly thanks to a combination of higher GPC exports and a recovery in end-user demand, buoyed by the lower gold price environment. Moreover, the significant year-on-year drop in the average gold price helped to limit substitution losses of gold within the electronic industry.

In addition, European semi-conductor sales returned to growth last year, according to the SIA, recovering by 3%. Having said that, Europe's offtake in 2013 remained almost 20% below 2007 volumes and only barely recovered to 2010 levels, as a weak economic environment continued to weigh on the industry.

## DENTISTRY

— ***Demand for gold used in dental applications slipped 5.9% last year to a new record low. The losses were driven by the elevated gold price environment and further structural and societal changes.***

Demand for gold used in the dental sector declined by 5.9% in 2013 to a new record low of 36.3 tonnes. The fall marked the tenth consecutive annual decline from this end-use. Demand in 2013 was 48% below its 70-tonne peak of 1997. Most of the decline over the past decade has been due to rising and high gold prices, which has triggered aggressive thrifting in the industry. For example, gold alloys in crowns used to be composed of around 65% gold in the 1980s.

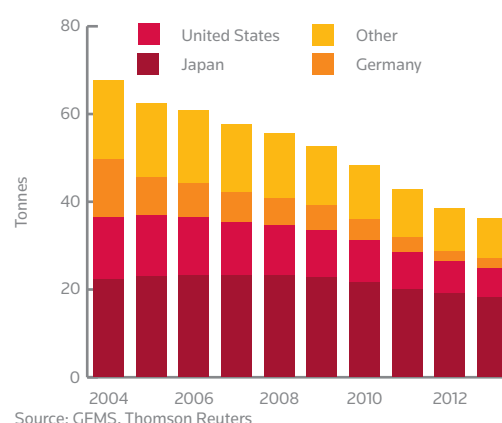
Today its alloy is closer to 40%. Demand for use in dental applications has declined also as a result of changing consumer preferences for more aesthetically

pleasing white teeth replacements. This substitution combined with improving dental care, oral hygiene, rising disposable incomes and a greater focus on dental appearance (particularly in the developed world), have moderated the need for (metallic) fillings.

Looking more closely at regional demand trends reveals modest falls across all the major consuming markets. Thomson Reuters estimates fabrication demand in Japan slipped by only 4.2% in 2013. The precious metal dental alloy market in Japan is shaped by demand for Kimpala 12, a gold:palladium alloy that is subsidised by the country's Ministry of Health Labour and Wealth. A review of the subsidy program that will limit claims to the five front teeth from January this year may have supported demand for gold in 2013 as consumers moved to beat the changes to the policy.

Elsewhere in key markets, demand was also weak though falls were of greater magnitude. Fabrication demand across Europe eased by 6% year-on-year while offtake in

## DENTAL GOLD FABRICATION



## DENTISTRY (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>World Total</b>	<b>67.6</b>	<b>62.4</b>	<b>60.7</b>	<b>57.6</b>	<b>55.7</b>	<b>52.7</b>	<b>48.4</b>	<b>42.9</b>	<b>38.6</b>	<b>36.3</b>

the US slipped by a tenth. Substitution away from gold to ceramics and increasingly towards palladium, in the case of the US, was the primary driver for the fall, with the drop in gold price having only a limited impact.

## OTHER INDUSTRIAL AND DECORATIVE USES

— *Global demand increased 1.2% last year, as healthy gains from India and the Americas were offset by a drop in Europe and flat outcome from East Asia.*

Other industrial & decorative fabrication in **Europe** remained broadly flat last year. European gold compounds, produced mainly in Germany, are primarily gold potassium cyanide (GPC) and are used as plating salts for decorative and industrial use. Industrial demand is focused on electronics, whereas decorative use is generally less, and tends to be exported to Asia.

Turning to trade, last year Italian official imports of gold compounds fell by around 35%, representing a drop in the fabrication of plated Jewellery in Europe. German exports of gold compounds in 2013, in terms of mass, rose by a third year-on-year, with more exports to France and the Czech Republic. This was due to a combination of increased demand and switching from local to German supply of GPC by electronics manufacturers. The consumption of plating salts by luxury accessory manufacturers remains stable, a reason for this niche remaining strong is that branding for the final product demands production in artisan centres such as Paris.

Other industrial & decorative use of gold in **India** gained 7% to 9.7 tonnes in 2013; chiefly from growth of plated jewellery and jari (thread made of gold, silver and silk, as is used in the weaving of saris) categories. However, demand for both these products has different price elasticity. The jewellery plating industry's trajectory has been rising as gold prices have increased, the converse tends to be true in the case of jari.

The volume of jari gained last year as a result of lower prices in the second quarter. However, comparing fabrication activity to just four years back, demand for jari has fallen by more than half due to thrifting by consumers as a result of higher gold prices, and also a shift to alternate fashions. Discussions with jari traders in Kanchipuram revealed that it has fallen from an average

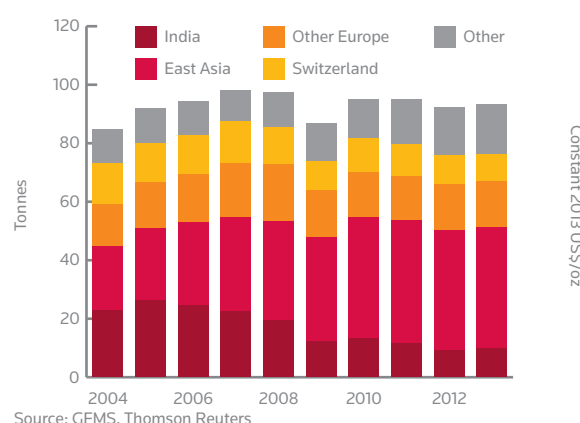
of 5,500 marks per day to little more than 2,000 marks, which translates to about 500 kilograms of jari per day. Here again there are two different qualities; the superior quality would contain 240 grammes of silver and three grammes of gold in a kilo of jari and inferior material known as 'Arni' contains 150 grammes of silver and two grammes of gold.

The plated jewellery market posted annual growth of more than 23% last year, primarily due to the higher gold price. Also, bridal collections in so called 'one-gramme' gold jewellery are performing well in sections of lower income groups. Here one gramme equivalent 24-carat gold is coated on an inferior metal. Its popularity is confined to the lower income consumers, and is commonly worn as the genuine article to impress colleagues or members within their peer groups. In the various regional markets that we have visited, shopper numbers were comparatively higher in the imitation jewellery shops than those selling higher carat gold jewellery. This is also attributed to a larger population in the lower income bracket.

Electroplating for industrial consumption remained suppressed with weak offtake from the automobile and electrical industry due to weak economic activity. However, our sources believe this industry is heading for a turnaround in 2014 and 2015 on the back of increased investment in modern technology.

Other industrial & decorative fabrication across **East Asia** returned to growth last year (if only at the margin) after retreating for the first time in a decade in 2012. The GFMS team at Thomson Reuters estimates demand

## OTHER INDUSTRIAL &amp; DECORATIVE USES



## OTHER INDUSTRIAL &amp; DECORATIVE USES (INCLUDING THE USE OF SCRAP)

(tonnes)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
China	5.0	5.5	6.3	8.1	10.1	13.9	17.2	18.7	19.2	19.5
Brazil	1.8	4.2	5.2	5.1	6.1	7.5	7.3	9.1	10.8	11.3
South Korea	5.6	7.6	9.8	11.3	11.1	10.0	11.8	11.4	10.8	10.6
India	22.6	26.2	24.5	22.5	19.3	12.2	13.2	11.5	9.1	9.7
Switzerland	14.0	13.4	13.1	14.2	12.9	10.1	11.5	10.8	9.8	9.2
Italy	5.6	7.0	7.8	9.7	10.9	8.6	8.0	7.7	8.2	8.4
Japan	6.5	6.3	6.7	6.9	6.7	6.5	6.4	5.9	5.4	5.4
Germany	4.1	3.8	3.7	3.7	3.6	2.6	3.2	3.2	3.0	2.9
Thailand	2.0	2.4	2.5	2.6	2.7	2.4	2.6	2.5	2.6	2.6
United States	8.1	5.7	4.5	3.1	2.8	2.5	3.0	3.0	2.5	2.5
Hong Kong	1.3	1.4	1.5	1.6	1.6	1.5	1.7	1.7	1.6	1.6
Other Countries	8.4	8.6	9.0	9.5	9.6	9.0	9.2	9.4	9.5	9.8
<b>World Total</b>	<b>85.0</b>	<b>92.0</b>	<b>94.5</b>	<b>98.2</b>	<b>97.3</b>	<b>86.7</b>	<b>94.9</b>	<b>94.9</b>	<b>92.3</b>	<b>93.4</b>

growth for fine gold in this industry segment at less than 1% for this region to 41.4 tonnes, well below the global average which was boosted by industry growth in South America. Much of the increase in the last decade has been delivered by China's expansion, which was due in part to the relocation of GPC production from western markets (chiefly Europe) attracted by the lower labour costs, though in the last few years demand growth in this key market has eased.

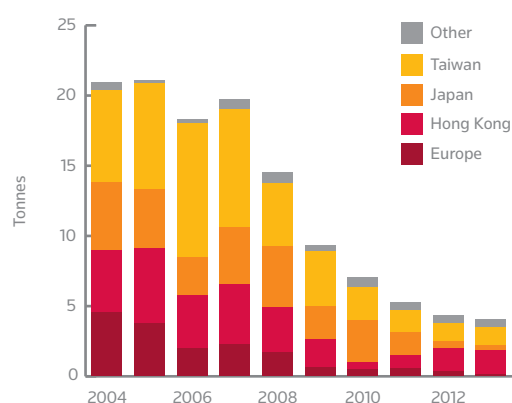
Elsewhere in the region, fabrication in recent years has been tempered by economic weakness; both on the domestic front and as a result of a notable contraction from exports orders from key western markets, while the rising price environment has also accounted for the sluggish outcome.

Looking briefly at regional demand trends last year (and excluding China for a moment), GPC demand for plated jewellery eased as consumers migrated back to carat jewellery due to the significant drop in the dollar gold price. Markets where growth of costume jewellery had grown rapidly during the elevated price environment, such as Indonesia, Thailand, and the Philippines all saw notable declines in offtake as consumers took the opportunity to replenish gold stocks at the perceived discounted price. In contrast, demand for plating salts used in the luxury accessories segment did rise last year, a function of a stronger global economic environment and expanding branded segment across Asia.

**China's** demand for gold use in the other industrial and decorative segments recorded nearly 2% growth in 2013, reaching an estimated 19.5 tonnes. Demand in this sector was again largely driven by gains in plating salts GPC offtake, which is widely used for the electroplating of a wide range of luxury goods and accessories such

as belt buckles, watch cases and sunglasses. Looking back to last year, demand growth from this segment has continued to wane, in part reflecting a weaker Chinese economy. It is worth noting that should the domestic economy slow further in 2014, in addition to the continuation of the anti-corruption gifting policy, fine gold demand from this segment will likely experience an even slower growth rate this year.

## CHINESE IMPORTS OF GOLD COMPOUNDS



Source: GFMS, Thomson Reuters

## 8. APPENDICES

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## APPENDIX 1 - GOLD FUTURES AND OPTIONS TURNOVER

	Gold Contracts on COMEX			Gold Equivalent		Gold Contracts on TOCOM	
	Futures Turnover <sup>1</sup> (100 oz)	Open Interest <sup>2</sup> (100 oz)	Options Turnover <sup>1</sup> (100 oz)	Futures Turnover (tonnes)	Options Turnover (tonnes)	Futures Turnover <sup>1</sup> (1kg)	Open Interest <sup>2</sup> (1kg)
2004	14,960,597	318,735	4,668,793	46,532	14,521	17,385,766	344,086
2005	15,890,617	323,247	2,886,183	49,425	8,977	17,958,240	299,973
2006	15,917,524	344,915	3,708,573	49,508	11,535	22,228,198	242,743
2007	25,060,440	541,854	3,555,038	77,945	11,057	18,202,949	177,089
2008	38,373,367	306,651	4,392,637	119,353	13,662	14,960,381	72,439
2009	35,136,388	489,779	4,850,111	109,285	15,085	11,913,502	134,163
2010	44,730,345	585,114	7,673,165	139,125	23,866	12,198,340	117,657
2011	49,171,091	419,154	9,477,081	152,937	29,477	15,193,602	123,688
2012	43,893,380	427,991	9,106,807	136,522	28,325	11,895,357	145,738
2013	47,291,629	379,550	10,247,306	147,093	31,873	12,224,611	90,135

## 2012

Jan	4,146,564	425,133	701,880	12,897	2,183	1,027,800	120,294
Feb	3,506,653	461,741	793,468	10,907	2,468	1,025,835	115,143
Mar	4,860,601	404,680	920,467	15,118	2,863	1,156,449	127,745
Apr	2,834,798	408,005	680,180	8,817	2,116	818,339	136,426
May	4,913,675	416,909	866,518	15,283	2,695	1,017,132	137,992
Jun	3,479,372	418,129	738,099	10,822	2,296	894,355	133,425
Jul	3,732,707	403,403	704,099	11,610	2,190	751,839	133,663
Aug	2,793,530	438,033	631,297	8,689	1,964	798,314	146,153
Sep	3,460,788	486,521	811,616	10,764	2,524	1,106,584	139,747
Oct	3,147,021	457,811	650,680	9,788	2,024	1,010,981	142,474
Nov	4,380,328	442,584	848,426	13,624	2,639	1,169,694	149,201
Dec	2,637,343	427,991	760,077	8,203	2,364	1,118,035	145,738

## 2013

Jan	4,221,119	424,165	940,044	13,129	2,924	1,282,839	140,800
Feb	3,632,342	435,263	1,038,071	11,298	3,229	1,339,193	141,559
Mar	3,906,568	408,594	887,611	12,151	2,761	957,936	143,098
Apr	5,218,768	421,087	1,434,651	16,232	4,462	1,719,855	108,422
May	5,312,285	375,206	904,087	16,523	2,812	1,115,809	101,207
Jun	3,744,747	409,081	784,258	11,647	2,439	1,094,429	105,790
Jul	4,647,176	398,573	925,609	14,454	2,879	1,049,758	109,802
Aug	3,463,769	381,963	712,054	10,774	2,215	953,509	106,075
Sep	3,331,945	369,196	653,543	10,364	2,033	830,574	104,893
Oct	3,458,162	387,763	641,769	10,756	1,996	748,222	102,603
Nov	3,577,065	383,966	667,131	11,126	2,075	531,061	102,650
Dec	2,777,683	379,550	658,478	8,640	2,048	601,426	90,135

<sup>1</sup> Turnover refers to period total. <sup>2</sup> Open Interest refers to end-period.



## APPENDIX 2 - OFFICIAL SECTOR GOLD HOLDINGS AND OTHER RESERVES

	end-2004 Gold					end-2013 Gold				
	million oz	tonnes	\$ billion <sup>1</sup>	\$ billion <sup>2</sup>	Other Reserves \$ billion	million oz	tonnes	\$ billion <sup>1</sup>	\$ billion <sup>2</sup>	Other Reserves \$ billion
United States	261.55	8,135	11.04	113.93	74.89	261.50	8,134	11.04	314.98	133.53
Germany	110.38	3,433	48.35	48.08	50.69	108.90	3,387	130.84	131.17	67.37
Italy	78.83	2,452	34.53	34.34	30.37	78.83	2,452	94.71	94.95	50.79
France	95.98	2,985	42.04	41.81	30.19	78.30	2,435	94.08	94.31	50.85
China, P.R.: Mainland	19.29	600	4.07	8.40	408.15	33.89	1,054	9.82	40.82	3,839.55
Switzerland	43.54	1,354	19.12	18.97	47.65	33.44	1,040	39.89	40.28	495.96
Russia	12.44	387	3.73	5.42	73.17	33.28	1,035	39.99	40.09	469.60
Japan	24.60	765	10.78	10.72	663.29	24.60	765	29.56	29.63	1,237.22
Netherlands	25.00	777	10.95	10.89	11.17	19.69	612	23.66	23.72	22.59
India	11.50	358	3.81	5.01	98.94	17.93	558	19.72	21.60	276.49
Turkey	3.73	116	1.58	1.63	33.99	16.71	520	20.08	20.13	110.93
Taiwan	13.61	423	4.82	5.93	241.74	13.62	424	5.13	16.41	416.81
Portugal	14.86	462	6.51	6.47	5.88	12.30	382	14.77	14.81	2.78
Venezuela	11.49	357	5.12	5.01	16.03	11.82	368	15.44	14.24	6.04
Saudi Arabia	4.60	143	0.25	2.00	22.62	10.38	323	0.41	12.50	725.29
United Kingdom	10.53	328	4.40	4.59	35.35	9.98	310	12.02	12.01	92.40
Lebanon	9.22	287	4.01	4.02	12.52	9.22	287	11.10	11.11	36.75
Spain	16.83	523	7.37	7.33	19.79	9.05	282	10.88	10.91	35.82
Austria	9.89	307	4.33	4.31	8.47	9.00	280	10.82	10.84	12.47
Belgium	8.29	258	3.63	3.61	10.99	7.31	227	8.79	8.81	18.14
Philippines	7.12	221	3.11	3.10	13.65	6.22	194	7.50	7.49	75.69
Algeria	5.58	174	0.30	2.43	33.13	5.58	174	0.30	6.72	194.71
Thailand	2.68	83	1.17	1.17	41.08	4.90	152	5.96	5.90	161.33
Kazakhstan	1.83	57	0.80	0.80	4.24	4.62	144	5.55	5.57	19.13
Singapore	4.10	127	0.21	1.78	96.03	4.10	127	0.21	4.93	272.86
Sweden	5.96	185	2.62	2.60	19.68	4.04	126	4.89	4.87	60.49
South Africa	3.98	124	1.58	1.73	6.50	4.02	125	4.83	4.84	44.86
Mexico	0.14	4	0.06	0.06	58.96	3.96	123	4.77	4.77	175.43
Greece	3.46	108	1.52	1.51	4.36	3.61	112	4.33	4.34	1.42
South Korea	0.45	14	0.07	0.20	155.28	3.36	104	4.79	4.04	341.65
ECB	24.66	767				16.14	502			
IMF	103.44	3,217				90.47	2,814			
BIS	6.69	208				11.17	348			
World	1,041.46	32,393				1,026.33	31,923			

<sup>1</sup> National valuation. <sup>2</sup> Market valuation based on end-2004 and end-2013 gold prices respectively

Source: IMF and central bank websites

## APPENDIX 3 - NOMINAL GOLD PRICES IN VARIOUS CURRENCIES

Average, high and low US\$ prices are based on the London PM fix.

Except for the Mumbai price, other prices are calculated using the PM fix and London exchange rates.

	PM Fix US\$/oz	Low US\$/oz	High US\$/oz	euro/kg*	CHF/kg	yen/g	A\$/oz	rand/kg	yuan/g	Mumbai Rs/10 g
1979	304.69	216.85	512.00	9,187	16,324	2,189	274.76	8,279	15.23	1,043
1980	614.50	481.50	850.00	18,284	32,946	4,457	537.56	15,331	29.60	1,452
1981	459.24	391.25	599.25	17,000	28,997	3,247	399.71	12,863	25.17	1,705
1982	375.17	296.75	481.00	15,016	24,599	3,016	371.96	13,142	22.83	1,708
1983	423.61	374.25	509.25	17,752	28,564	3,238	470.00	15,162	26.91	1,821
1984	360.78	307.50	405.85	16,811	27,144	2,749	409.90	16,948	26.91	1,958
1985	317.26	284.25	340.90	15,314	24,982	2,429	453.70	22,855	29.95	2,106
1986	367.85	326.30	438.10	13,067	21,147	1,983	553.11	27,126	40.84	2,210
1987	446.22	390.00	499.75	13,181	21,383	2,073	636.24	29,217	53.40	2,891
1988	436.87	395.30	483.90	12,604	20,532	1,801	560.13	31,889	52.28	3,202
1989	380.79	355.75	415.80	11,770	20,021	1,688	481.25	32,063	46.10	3,185
1990	383.59	345.85	423.75	10,192	17,148	1,784	491.27	31,893	58.99	3,406
1991	362.26	344.25	403.00	9,885	16,707	1,567	465.03	32,154	62.00	4,033
1992	343.95	330.35	359.60	8,819	15,522	1,400	468.13	31,502	60.98	4,255
1993	359.82	326.10	405.60	9,793	17,103	1,282	530.13	37,880	66.66	4,384
1994	384.15	369.65	396.25	10,235	16,865	1,261	525.36	43,867	106.45	4,652
1995	384.05	372.40	395.55	9,042	14,589	1,160	518.50	44,787	103.12	4,799
1996	387.87	367.40	414.80	9,587	15,388	1,355	495.99	53,466	103.68	5,191
1997	331.29	283.00	366.55	9,429	15,457	1,286	445.02	48,993	88.30	4,556
1998	294.09	273.40	313.15	8,506	13,707	1,238	467.79	52,307	78.28	4,182
1999	278.57	252.80	325.50	8,405	13,450	1,018	431.84	54,764	74.14	4,327
2000	279.11	263.80	312.70	9,734	15,158	967	480.88	62,173	74.29	4,518
2001	271.04	255.95	293.25	9,737	14,714	1,058	524.53	74,842	72.13	4,462
2002	309.68	277.75	349.30	10,545	15,470	1,245	569.76	104,477	82.41	5,131
2003	363.32	319.90	416.25	10,328	15,704	1,352	558.35	88,008	96.68	5,620
2004	409.17	375.00	454.20	10,582	16,335	1,422	556.01	84,738	108.88	6,119
2005	444.45	411.10	536.50	11,521	17,839	1,577	583.36	91,114	117.09	6,454
2006	603.77	524.75	725.00	15,452	24,298	2,256	801.47	131,751	154.78	8,912
2007	695.39	608.40	841.10	16,294	26,775	2,628	828.48	157,352	169.85	9,345
2008	871.96	712.50	1,011.25	19,071	30,267	2,907	1,033.13	229,694	194.79	12,256
2009	972.35	810.00	1,212.50	22,402	33,834	2,919	1,235.22	261,600	213.98	15,310
2010	1,224.52	1,058.00	1,421.00	29,739	38,267	3,444	1,331.28	287,568	266.15	18,386
2011	1,571.52	1,319.00	1,895.00	36,328	57,426	4,017	1,524.33	368,623	326.59	24,003
2012	1,668.98	1,540.00	1,791.75	41,755	57,238	4,278	1,610.49	440,575	338.51	29,730
2013	1,411.23	1,192.00	1,693.75	34,196	48,951	4,412	1,454.85	433,964	279.18	29,310

\* Prior to 1999 Deutsche Mark prices have been converted into euros at the official conversion rate

## APPENDIX 4 - REAL GOLD PRICES IN VARIOUS CURRENCIES (CPI DEFLATED - CONSTANT 2013 MONEY TERMS)

Average, high and low US\$ prices are based on the London PM fix.

Except for the Mumbai price, other prices are calculated using the PM fix and London exchange rates.

	PM Fix US\$/oz	Low US\$/oz	High US\$/oz	euro/kg*	CHF/kg	yen/g	A\$/oz	rand/kg	yuan/g	Mumbai Rs/10 g
1979	977.93	695.99	1,643.29	20,795	31,100	3,059	1,188.62	180,425	92.28	15,790
1980	1,737.66	1,361.57	2,403.60	39,256	60,341	5,778	2,111.49	293,959	166.79	19,753
1981	1,176.52	1,002.34	1,535.21	34,329	49,871	4,013	1,433.98	213,997	138.23	20,510
1982	905.38	716.14	1,160.78	28,806	40,043	3,628	1,198.39	190,721	122.89	19,031
1983	990.98	875.50	1,191.31	32,974	45,166	3,824	1,376.08	195,920	142.02	18,168
1984	808.68	689.24	909.69	30,493	41,697	3,174	1,154.42	196,370	138.22	18,024
1985	686.89	615.42	738.07	27,184	37,102	2,748	1,197.14	227,711	137.55	18,339
1986	781.24	692.99	930.42	23,224	31,172	2,230	1,338.32	227,772	175.24	17,742
1987	914.93	799.66	1,024.69	23,370	31,072	2,328	1,418.44	211,202	213.70	21,296
1988	860.49	778.60	953.11	22,066	29,287	2,009	1,164.72	204,391	176.23	21,566
1989	715.74	668.67	781.54	20,050	27,686	1,842	930.59	179,118	130.75	20,033
1990	683.93	616.64	755.53	16,906	22,497	1,889	885.06	155,848	162.36	19,657
1991	619.76	588.96	689.47	15,744	20,705	1,606	811.99	136,234	164.79	20,442
1992	571.07	548.49	597.06	13,555	18,489	1,411	809.22	117,209	152.41	19,292
1993	580.19	525.82	654.01	14,575	19,723	1,275	900.59	128,460	145.42	18,689
1994	603.75	580.97	622.77	14,831	19,285	1,247	875.26	136,555	187.02	17,994
1995	587.13	569.32	604.71	12,788	16,388	1,148	825.62	128,283	154.77	16,840
1996	576.05	545.65	616.05	13,271	17,146	1,339	769.64	142,651	143.64	16,716
1997	480.79	410.70	531.95	12,855	17,133	1,249	689.00	120,368	118.98	13,690
1998	420.29	390.72	447.53	11,469	15,191	1,194	718.08	120,239	106.31	11,097
1999	389.57	353.53	455.20	11,210	14,787	985	653.20	119,684	102.12	10,971
2000	377.61	356.90	423.06	12,716	16,408	942	696.35	113,618	101.96	11,013
2001	356.65	336.79	385.87	12,430	15,772	1,039	727.48	146,898	98.28	10,480
2002	401.09	359.74	452.41	13,163	16,476	1,233	767.34	187,851	113.16	11,555
2003	460.00	405.02	527.01	12,631	16,620	1,343	731.97	149,481	131.23	12,193
2004	504.58	462.45	560.12	12,670	17,150	1,413	712.22	141,960	142.23	12,792
2005	530.24	490.46	640.06	13,500	18,512	1,571	727.66	147,623	150.21	12,943
2006	697.84	606.50	837.95	17,721	24,950	2,242	965.40	203,994	195.69	16,833
2007	781.30	683.56	945.01	18,295	27,294	2,611	975.24	227,485	204.98	16,593
2008	943.69	771.11	1,094.43	20,736	30,123	2,848	1,165.43	300,995	221.98	20,085
2009	1,055.71	879.44	1,316.45	24,286	33,835	2,900	1,369.16	319,968	245.52	22,634
2010	1,308.08	1,130.19	1,517.96	31,728	38,008	3,445	1,433.79	337,367	295.56	24,266
2011	1,627.61	1,366.08	1,962.64	37,735	56,904	4,030	1,589.21	411,863	344.04	29,104
2012	1,693.41	1,562.55	1,817.98	42,316	57,113	4,293	1,649.95	465,915	347.39	32,963
2013	1,411.23	1,192.00	1,693.75	34,196	48,951	4,412	1,454.85	433,964	279.18	29,310

\* Prior to 1999 Deutsche Mark prices have been converted into euros at the official conversion rate

## APPENDIX 5 - GOLD PRICES IN 2004

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	409.53	409.17			10,582	16,335	1,422	556.01	84,738	223.38	6,119
Maximum	455.75	454.20			11,201	17,531	1,507	585.15	97,046	241.06	6,755
Minimum	373.50	375.00			10,152	15,436	1,351	511.62	76,599	210.33	5,600
Range:Average	20.1%	19.4%			9.9%	12.8%	10.9%	13.2%	24.1%	13.8%	18.9%

## Monthly Average

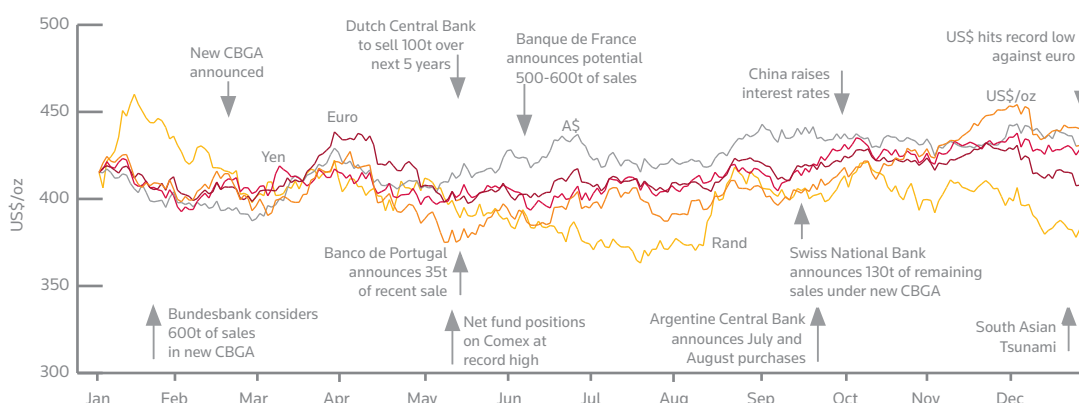
Jan	414.50	413.79	425.50	399.75	10,540	16,505	1,414	536.94	92,565	226.97	6,183
Feb	404.73	404.88	416.00	393.25	10,298	16,204	1,388	520.87	87,831	216.83	6,019
Mar	405.98	406.67	423.70	390.50	10,658	16,685	1,418	542.46	86,408	222.66	5,987
Apr	404.85	403.26	427.25	386.00	10,816	16,823	1,397	543.17	85,374	223.93	5,914
May	383.95	383.78	393.60	375.00	10,280	15,830	1,385	545.50	83,638	214.70	5,741
Jun	391.78	392.37	404.25	384.85	10,388	15,775	1,380	565.14	80,983	214.72	5,862
Jul	398.44	398.09	406.50	387.30	10,433	15,930	1,400	556.09	78,420	216.10	6,055
Aug	400.13	400.51	410.60	390.85	10,556	16,241	1,420	562.55	83,137	219.91	6,124
Sep	405.40	405.28	415.65	396.30	10,670	16,466	1,435	577.17	85,149	226.13	6,166
Oct	420.21	420.46	429.15	411.25	10,817	16,685	1,471	573.09	86,383	232.76	6,361
Nov	439.06	439.38	453.40	423.50	10,865	16,529	1,479	569.93	85,275	236.16	6,549
Dec	442.97	442.08	454.20	434.00	10,629	16,316	1,477	577.14	81,760	229.22	6,444

## Quarterly Average

Q1	408.38	408.44			10,507	16,476	1,407	533.90	88,873	222.25	6,064
Q2	393.63	393.27			10,495	16,136	1,387	551.82	83,250	217.73	5,839
Q3	401.34	401.30			10,553	16,212	1,418	565.31	82,221	220.72	6,112
Q4	434.16	433.80			10,777	16,517	1,476	573.21	84,573	232.88	6,453

## GOLD PRICES IN 2004, PM FIX DAILY

US\$/oz; other currencies reindexed to 2nd January



## APPENDIX 6 - GOLD PRICES IN 2005

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	444.99	444.45			11,521	17,839	1,577	583.36	91,114	244.95	6,455
Maximum	537.50	536.50			14,431	22,422	2,070	710.76	109,323	310.39	8,100
Minimum	411.50	411.10			10,301	15,943	1,385	531.09	80,518	220.58	5,950
Range:Average	28.3%	28.2%			35.8%	36.3%	43.4%	30.8%	31.6%	36.7%	33.3%

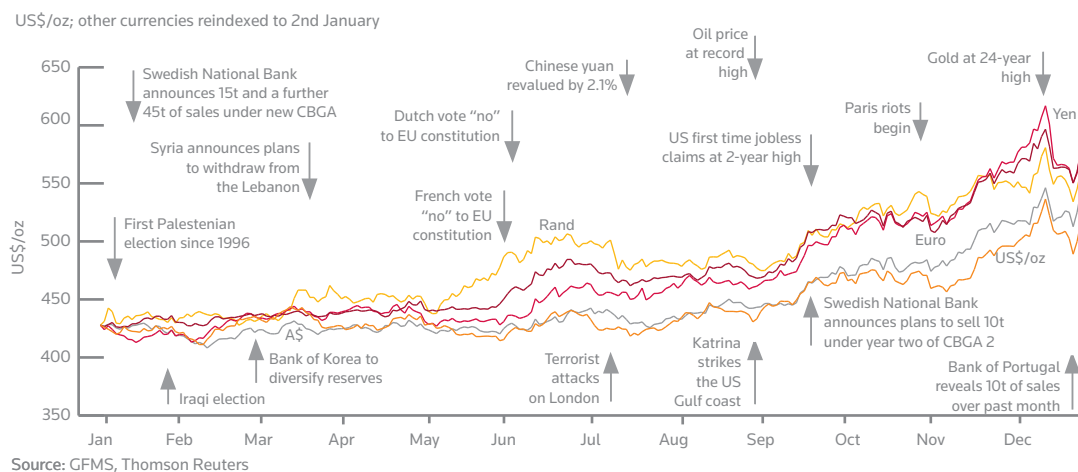
## Monthly Average

Jan	424.08	424.03	427.75	420.00	10,413	16,111	1,409	554.16	81,686	225.98	6,152
Feb	423.43	423.35	435.45	411.10	10,457	16,218	1,429	541.99	81,797	224.34	6,101
Mar	434.35	434.32	443.70	425.15	10,569	16,374	1,468	552.35	84,048	227.66	6,270
Apr	429.14	429.23	437.00	423.45	10,665	16,499	1,480	555.22	84,902	226.39	6,147
May	422.90	421.87	429.15	414.45	10,690	16,518	1,446	551.00	86,053	227.61	6,030
Jun	430.30	430.66	440.55	415.35	11,390	17,533	1,505	561.52	93,382	236.91	6,131
Jul	424.75	424.48	432.60	418.35	11,340	17,669	1,528	564.06	91,523	242.44	6,060
Aug	437.77	437.93	447.25	430.65	11,450	17,784	1,557	574.87	91,008	244.07	6,258
Sep	455.94	456.05	473.25	439.60	11,976	18,561	1,630	595.78	93,289	252.36	6,533
Oct	470.11	469.90	475.50	462.85	12,568	19,458	1,735	623.53	99,476	266.40	6,874
Nov	476.67	476.67	496.00	456.50	13,010	20,103	1,816	648.36	101,938	274.98	7,131
Dec	509.42	510.10	536.50	489.00	13,829	21,396	1,947	684.77	104,298	293.06	7,588

## Quarterly Average

Q1	427.40	427.35			10,481	16,237	1,436	549.55	82,536	226.02	6,174
Q2	427.57	427.39			10,926	16,866	1,478	556.08	88,229	230.45	6,101
Q3	439.71	439.72			11,593	18,010	1,572	578.45	91,947	246.35	6,285
Q4	484.88	484.20			13,099	20,262	1,827	650.56	101,787	277.36	7,209

## GOLD PRICES IN 2005, PM FIX DAILY



## APPENDIX 7 - GOLD PRICES IN 2006

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	604.34	603.77			15,452	24,298	2,256	801.40	131,719	327.68	8,913
Maximum	725.75	725.00			18,094	28,036	2,575	936.27	153,245	383.54	10,665
Minimum	520.75	524.75			13,952	21,568	1,955	702.64	103,939	298.90	7,620
Range:Average	33.9%	33.2%			26.8%	26.6%	27.5%	29.1%	37.4%	25.8%	34.2%

## Monthly Average

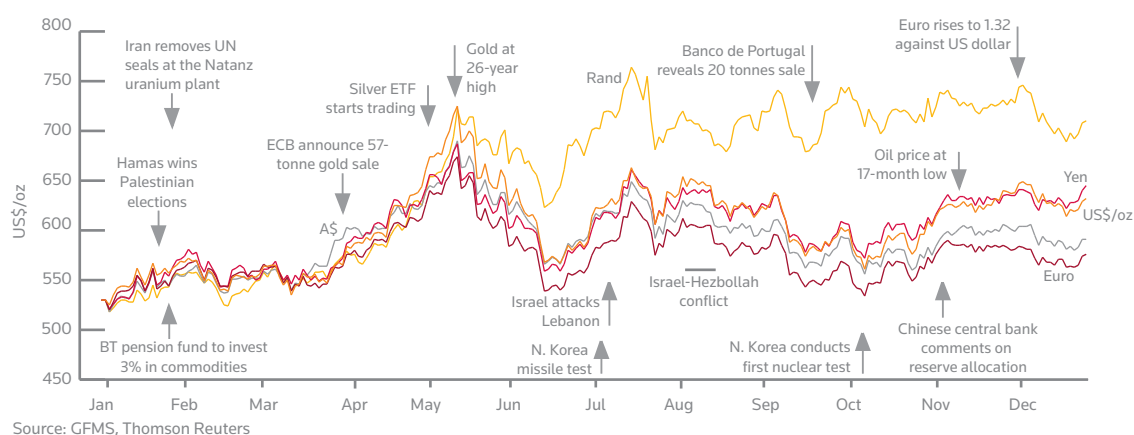
Jan	549.43	549.86	568.75	524.75	14,588	22,599	2,041	733.38	107,510	311.21	7,918
Feb	555.52	555.00	572.15	538.75	14,949	23,298	2,102	748.55	109,141	317.66	8,029
Mar	557.22	557.09	584.00	535.00	14,895	23,384	2,101	767.30	111,928	319.53	8,059
Apr	611.85	610.65	644.00	586.50	15,985	25,174	2,296	828.35	119,414	345.23	8,957
May	676.77	675.39	725.00	642.25	16,996	26,450	2,424	883.77	137,326	361.14	9,969
Jun	597.90	596.15	641.80	567.00	15,140	23,617	2,196	805.91	133,553	323.44	8,943
Jul	633.09	633.71	663.25	605.70	16,060	25,203	2,357	842.14	144,470	343.54	9,568
Aug	631.56	632.59	654.40	613.40	15,873	25,040	2,356	828.74	141,141	333.90	9,546
Sep	600.15	598.19	637.75	573.60	15,113	23,889	2,252	791.84	143,017	317.15	8,975
Oct	586.65	585.78	608.50	560.75	14,931	23,741	2,235	777.19	143,957	312.32	8,704
Nov	626.83	627.83	646.70	614.10	15,662	24,938	2,367	812.79	146,267	328.37	9,141
Dec	629.51	629.79	648.75	614.00	15,319	24,423	2,368	801.36	142,593	320.77	9,132

## Quarterly Average

Q1	554.13	554.07			14,811	23,099	2,082	750.31	109,607	316.22	8,002
Q2	629.17	627.71			16,028	25,052	2,304	839.34	130,680	342.85	9,294
Q3	621.76	621.67			15,685	24,716	2,322	821.03	142,849	331.57	9,361
Q4	613.61	613.21			15,302	24,363	2,320	796.77	144,410	320.46	9,015

## GOLD PRICES IN 2006, PM FIX DAILY

US\$/oz; other currencies reindexed to 3rd January



## APPENDIX 8 - GOLD PRICES IN 2007

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	696.43	695.39			16,294	26,775	2,628	828.48	157,352	346.98	9,345
Maximum	841.75	841.10			18,410	30,503	3,049	950.89	184,202	418.36	10,715
Minimum	608.30	608.40			15,063	24,242	2,324	756.38	141,802	314.34	8,520
Range:Average	33.5%	33.5%			20.5%	23.4%	27.6%	23.5%	26.9%	30.0%	23.5%

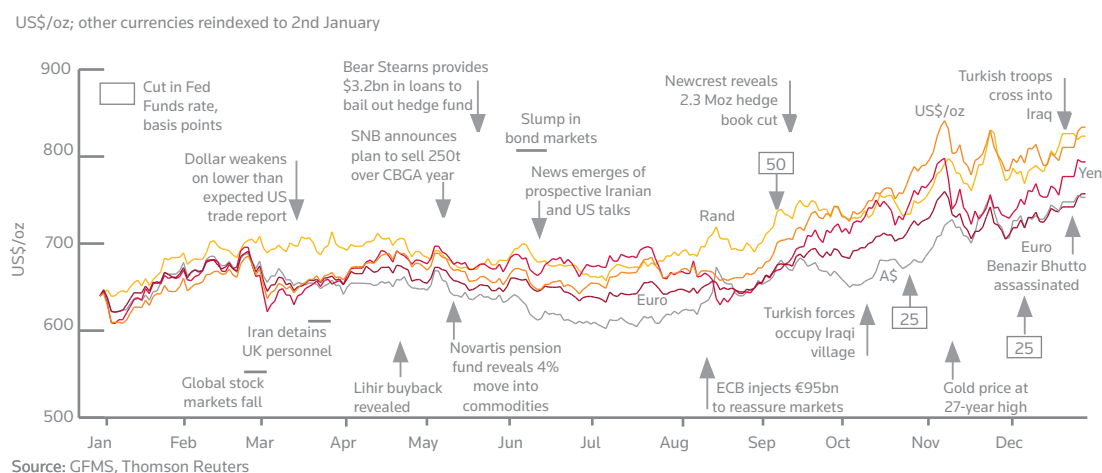
## Monthly Average

Jan	630.35	631.17	651.75	608.40	15,622	25,235	2,444	806.34	145,906	322.24	9,078
Feb	665.10	664.75	685.75	645.70	16,337	26,486	2,575	849.24	153,416	339.42	9,585
Mar	655.89	654.90	670.40	636.75	15,899	25,647	2,470	825.87	154,830	336.27	9,368
Apr	680.01	679.37	691.40	658.25	16,141	26,442	2,597	820.08	155,142	341.37	9,329
May	668.31	666.86	688.80	652.65	15,863	26,185	2,590	807.95	150,515	336.31	8,884
Jun	655.71	655.49	671.50	642.10	15,707	25,990	2,585	778.16	150,842	329.87	8,713
Jul	665.27	665.30	684.30	648.75	15,587	25,828	2,598	767.08	149,158	327.08	8,755
Aug	664.53	665.41	675.50	657.50	15,704	25,728	2,497	803.62	154,562	330.97	8,824
Sep	710.65	712.65	743.00	672.00	16,471	27,158	2,636	841.85	162,798	352.92	9,322
Oct	754.48	754.60	789.50	725.50	17,049	28,490	2,811	839.32	164,058	368.93	9,696
Nov	808.31	806.25	841.10	778.85	17,663	29,119	2,875	900.72	174,059	389.36	10,341
Dec	803.62	803.20	833.75	784.25	17,729	29,422	2,900	920.81	176,124	397.28	10,291

## Quarterly Average

Q1	649.99	649.82			15,941	25,767	2,494	826.46	151,320	332.43	9,314
Q2	667.62	666.84			15,896	26,198	2,590	801.47	152,069	335.67	8,975
Q3	679.19	680.13			15,903	26,209	2,575	803.00	155,278	336.49	8,950
Q4	787.57	786.25			17,453	28,969	2,858	883.45	170,915	383.95	10,107

## GOLD PRICES IN 2007, PM FIX DAILY





## APPENDIX 9 - GOLD PRICES IN 2008

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	872.37	871.96			19,071	30,267	2,907	1,033	229,694	471.62	12,256
Maximum	1,023.50	1,011.25			21,390	33,263	3,313	1,374	276,780	607.45	14,105
Minimum	692.50	712.50			17,015	26,398	2,134	908	185,415	418.08	10,650
Range: Average	37.9%	34.3%			22.9%	22.7%	40.6%	45.1%	39.8%	40.2%	28.2%

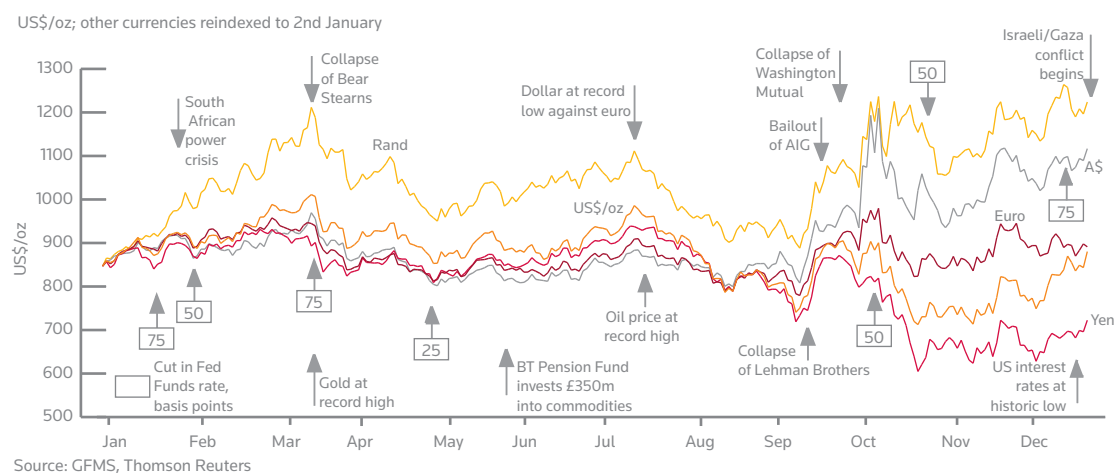
## Monthly Average

Jan	887.78	889.60	924.50	846.75	19,432	31,471	3,080	1,009.10	200,499	451.79	11,284
Feb	924.28	922.30	971.50	887.50	20,103	32,320	3,176	1,010.01	227,169	469.63	11,886
Mar	971.06	968.43	1,011.25	925.75	20,048	31,514	3,140	1,047.54	248,320	483.51	12,618
Apr	911.60	909.70	946.00	871.00	18,565	29,649	3,002	977.78	227,189	459.16	11,829
May	889.13	888.66	927.50	853.00	18,374	29,851	2,981	936.24	217,581	452.26	12,165
Jun	889.54	889.49	930.25	862.25	18,381	29,665	3,057	935.20	227,087	452.14	12,356
Jul	941.17	939.77	986.00	897.50	19,171	31,049	3,228	976.57	230,081	472.39	13,026
Aug	840.39	839.03	912.50	786.50	18,009	29,190	2,948	950.22	206,526	444.29	11,858
Sep	824.92	829.93	905.00	740.75	18,581	29,588	2,845	1,014.19	214,901	461.11	12,211
Oct	812.82	806.62	903.50	712.50	19,498	29,610	2,600	1,176.83	251,530	476.78	12,768
Nov	757.85	760.86	822.50	713.50	19,204	29,138	2,369	1,157.99	247,689	497.72	12,157
Dec	819.94	816.09	880.25	749.00	19,531	30,131	2,395	1,218.67	261,862	547.45	12,884

## Quarterly Average

Q1	925.67	924.83			19,848	31,772	3,131	1,021.19	224,187	467.55	11,912
Q2	897.11	896.29			18,443	29,718	3,014	950.40	224,105	454.63	12,114
Q3	870.81	871.60			18,613	29,983	3,012	981.19	217,695	459.93	12,389
Q4	797.98	794.76			19,413	29,618	2,463	1,183.57	253,457	505.19	12,611

## GOLD PRICES IN 2008, PM FIX DAILY



## APPENDIX 10 - GOLD PRICES IN 2009

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	973.66	972.35			22,409	33,834	2,919	1,235.22	261,600	621.07	15,233
Maximum	1,218.25	1,212.50			25,857	38,963	3,442	1,543.63	324,690	729.97	18,220
Minimum	813.00	810.00			19,910	29,318	2,337	1,126.74	232,031	552.67	12,905
Range: Average	41.6%	41.4%			26.5%	28.5%	37.9%	33.8%	35.4%	28.5%	34.9%

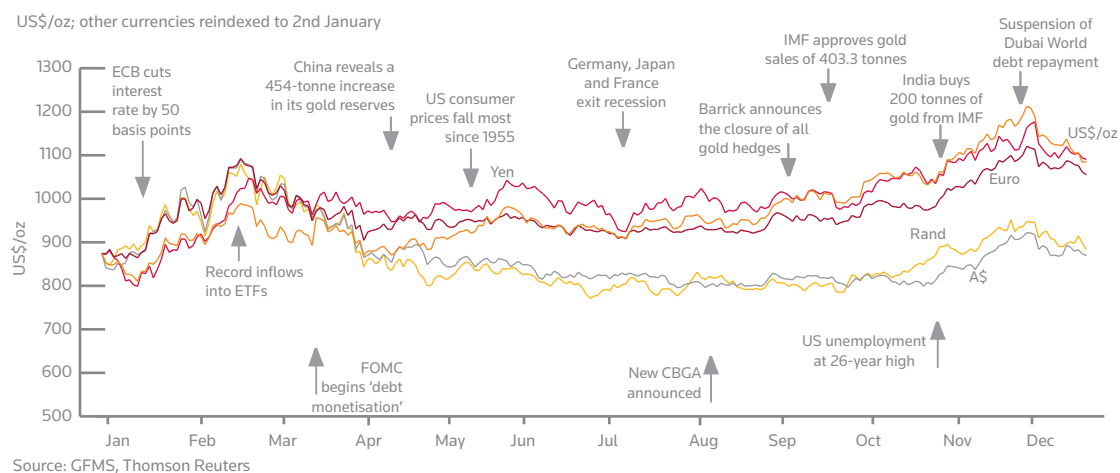
## Monthly Average

Jan	857.73	858.69	919.50	810.00	20,873	31,146	2,491	1,274.87	274,207	593.75	13,490
Feb	939.76	943.16	989.00	895.00	23,711	35,327	2,817	1,452.13	302,852	654.60	14,777
Mar	925.99	924.27	956.50	893.25	22,786	34,341	2,907	1,388.33	295,769	651.12	15,241
Apr	892.66	890.20	924.50	870.25	21,701	32,871	2,826	1,246.27	256,786	604.96	14,481
May	926.86	928.64	975.50	884.50	21,858	33,029	2,882	1,212.81	250,402	600.96	14,606
Jun	947.81	945.67	981.75	920.60	21,699	32,879	2,940	1,178.77	244,502	577.62	14,639
Jul	934.27	934.23	955.00	908.50	21,329	32,417	2,837	1,160.93	238,850	570.28	14,722
Aug	949.50	949.38	964.00	932.75	21,402	32,626	2,900	1,136.98	242,761	573.97	14,968
Sep	996.44	996.59	1,018.50	955.00	21,997	33,322	2,929	1,156.35	240,750	611.05	15,730
Oct	1,043.51	1,043.16	1,061.75	1,003.50	22,625	34,257	3,029	1,150.68	250,902	644.18	15,859
Nov	1,126.12	1,127.04	1,182.75	1,061.00	24,287	36,683	3,229	1,225.26	271,867	678.62	17,057
Dec	1,135.01	1,134.72	1,212.50	1,084.00	24,938	37,506	3,267	1,253.58	273,289	696.85	17,150

## Quarterly Average

Q1	907.61	908.41			22,442	33,589	2,739.87	1,370.76	290,830	633.10	14,467
Q2	923.20	922.18			21,749	32,923	2,884.56	1,211.50	250,367	593.86	14,577
Q3	960.00	960.00			21,577	32,788	2,887.37	1,152.01	240,696	585.21	15,125
Q4	1,100.64	1,099.63			23,897	36,075	3,169.69	1,208.06	264,864	672.38	16,712

## GOLD PRICES IN 2009, PM FIX DAILY



## APPENDIX 11 - GOLD PRICES IN 2010

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	1,226.66	1,224.52			29,739	38,267	3,443.66	1,331.28	287,568	790.98	18,304
Maximum	1,426.00	1,421.00			34,573	48,247	3,792.49	1,523.73	315,461	911.35	20,780
Minimum	1,052.25	1,058.00			24,668	32,111	3,040.31	1,197.71	258,374	668.89	16,055
Range: Average	30.5%	29.6%			33.3%	42.2%	21.8%	24.5%	19.9%	30.7%	25.8%

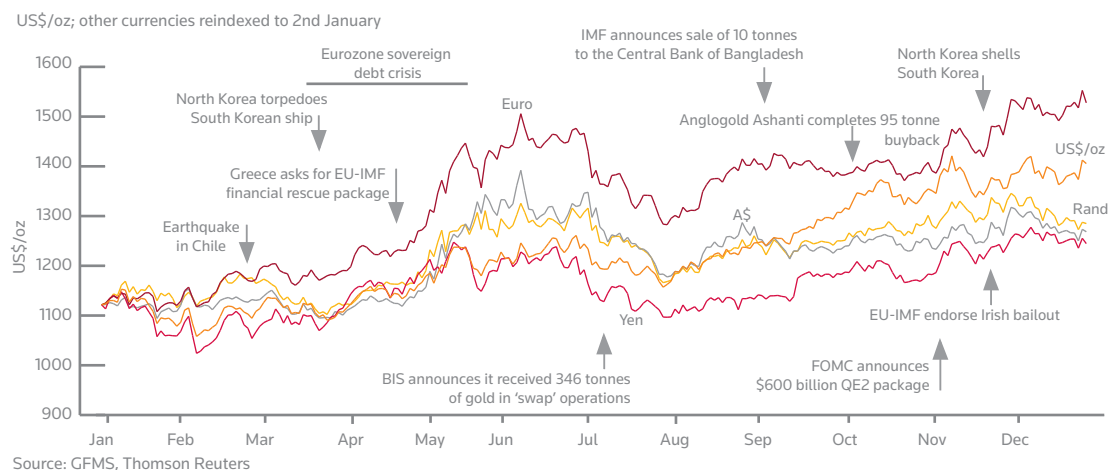
## Monthly Average

Jan	1,119.58	1,117.96	1,153.00	1,078.50	25,185	36,733	3,276	1,223.52	267,977	691.54	16,704
Feb	1,095.80	1,095.41	1,119.00	1,058.00	25,747	34,588	3,176	1,236.24	270,322	701.11	16,531
Mar	1,115.55	1,113.34	1,136.50	1,090.75	26,376	33,560	3,248	1,220.21	265,304	739.05	16,604
Apr	1,148.48	1,148.69	1,179.25	1,123.50	27,532	34,561	3,452	1,239.14	271,686	748.31	16,682
May	1,204.32	1,205.43	1,237.50	1,165.00	30,982	34,304	3,566	1,388.40	297,049	824.96	18,084
Jun	1,232.38	1,232.92	1,261.00	1,203.50	32,447	35,237	3,599	1,445.96	303,046	836.15	18,732
Jul	1,196.00	1,192.97	1,234.00	1,157.00	29,990	36,414	3,356	1,362.26	289,175	779.94	18,287
Aug	1,213.46	1,215.81	1,246.00	1,187.50	30,294	37,606	3,338	1,351.46	285,102	776.53	18,493
Sep	1,271.46	1,270.98	1,307.50	1,240.50	31,214	40,849	3,448	1,353.89	290,863	816.11	19,087
Oct	1,343.19	1,342.02	1,373.25	1,313.50	31,040	44,554	3,527	1,366.99	298,077	846.21	19,481
Nov	1,371.78	1,369.89	1,421.00	1,337.50	32,278	44,761	3,635	1,384.60	307,132	858.71	20,134
Dec	1,393.51	1,390.55	1,420.00	1,363.00	33,827	46,040	3,732	1,403.69	305,888	890.93	20,508

## Quarterly Average

Q1	1,110.56	1,109.12			25,798	36,117	3,234.21	1,226.35	267,746	711.92	16,615
Q2	1,196.13	1,196.74			30,369	34,732	3,540.10	1,359.75	290,794	800.55	17,826
Q3	1,227.18	1,226.75			30,503	38,300	3,381.48	1,355.94	288,431	791.08	18,605
Q4	1,369.53	1,366.78			32,333	45,083	3,628.36	1,384.49	303,684	863.91	20,044

## GOLD PRICES IN 2010, PM FIX DAILY



## APPENDIX 12 - GOLD PRICES IN 2011

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	1,573.16	1,571.52			36,355	57,426	4,017.36	1,524.33	368,623	981.23	23,899
Maximum	1,896.50	1,895.00			43,403	78,313	4,697.99	1,801.96	468,817	1,188.73	29,140
Minimum	1,316.00	1,319.00			31,041	44,673	3,488.92	1,313.79	296,075	822.83	19,660
Range:Average	36.9%	36.7%			34.0%	58.6%	30.1%	32.0%	46.9%	37.3%	39.7%

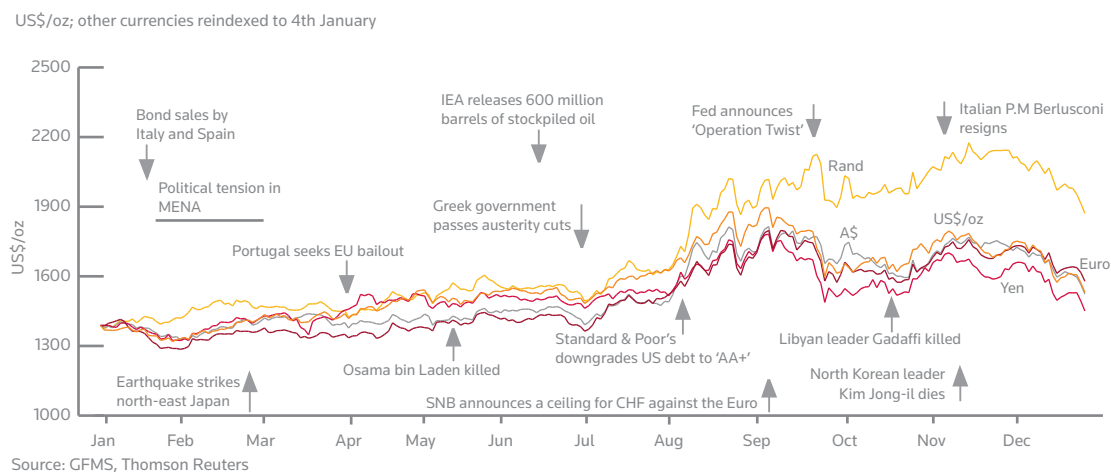
## Monthly Average

Jan	1,360.48	1,356.40	1,388.50	1,319.00	32,639	45,517	3,606.50	1,363.50	302,589	858.51	20,218
Feb	1,371.31	1,372.73	1,411.50	1,328.00	32,328	46,437	3,645.73	1,361.18	316,975	850.73	20,333
Mar	1,422.85	1,424.01	1,447.00	1,400.50	32,676	49,811	3,740.14	1,408.63	315,893	881.20	20,811
Apr	1,474.43	1,473.81	1,535.50	1,418.00	32,845	52,653	3,952.21	1,396.16	319,014	902.39	21,484
May	1,512.19	1,510.44	1,541.00	1,478.50	33,947	55,555	3,940.13	1,417.05	333,859	925.50	22,148
Jun	1,528.38	1,528.66	1,552.50	1,498.00	34,160	58,534	3,954.84	1,441.56	333,895	943.63	22,330
Jul	1,568.53	1,572.81	1,628.50	1,483.00	35,422	61,506	4,009.88	1,459.74	343,419	972.55	22,634
Aug	1,759.50	1,755.81	1,877.50	1,623.00	39,434	72,392	4,344.52	1,673.33	400,230	1,070.91	25,980
Sep	1,780.65	1,771.85	1,895.00	1,598.00	41,384	65,502	4,375.60	1,730.72	429,747	1,122.95	27,481
Oct	1,667.89	1,665.21	1,741.00	1,617.00	39,022	59,770	4,103.12	1,641.11	425,959	1,055.86	26,617
Nov	1,735.98	1,738.98	1,795.00	1,681.00	41,245	61,574	4,333.29	1,721.75	455,619	1,100.54	28,526
Dec	1,652.73	1,652.31	1,752.00	1,531.00	40,292	57,008	4,134.39	1,633.17	435,424	1,060.24	28,096

## Quarterly Average

Q1	1,386.69	1,386.27			32,552	47,337	3,666.58	1,378.77	311,950	864.32	19,660
Q2	1,506.80	1,506.13			33,687	55,730	3,949.05	1,419.40	329,343	924.27	20,745
Q3	1,704.96	1,702.12			38,798	66,543	4,246.92	1,623.75	391,866	1,057.86	21,585
Q4	1,686.85	1,688.01			40,199	59,605	4,195.36	1,667.85	439,449	1,073.26	25,915

## GOLD PRICES IN 2011, PM FIX DAILY



## APPENDIX 13 - GOLD PRICES IN 2012

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	1,668.86	1,668.98			41,755	57,238	4,278.04	1,610.49	440,575	1,052.96	29,730
Maximum	1,790.00	1,791.75			44,514	63,840	4,621.00	1,750.72	506,434	1,129.28	32,640
Minimum	1,537.50	1,540.00			39,028	50,765	3,909.00	1,517.90	402,433	968.45	27,320
Range:Average	15.1%	15.1%			13.1%	22.8%	16.6%	14.5%	23.6%	15.3%	17.9%

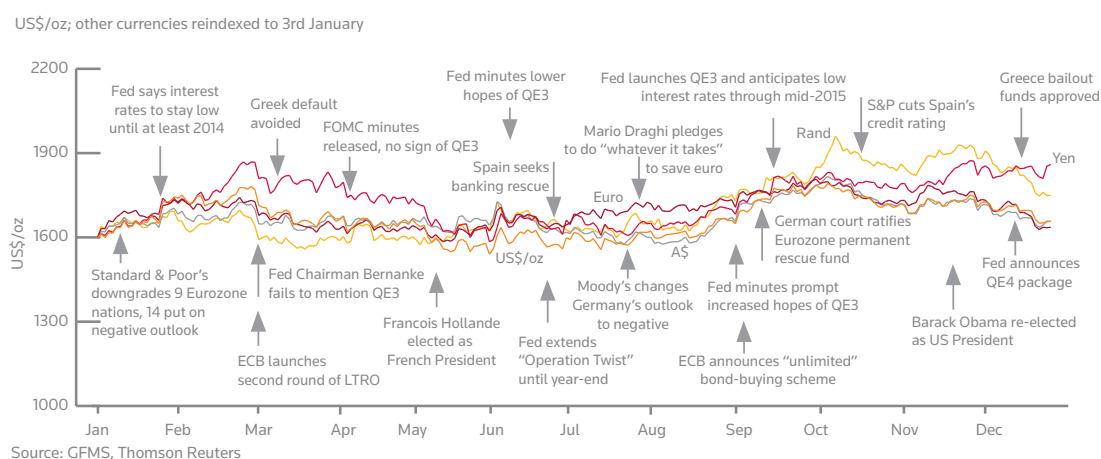
## Monthly Average

Jan	1,656.10	1,656.12	1,744.00	1,598.00	41,309	56,724	4,098.00	1,590.99	426,739	1,066.84	27,694
Feb	1,743.10	1,742.62	1,781.00	1,711.50	42,333	61,433	4,400.00	1,623.28	428,052	1,102.60	28,247
Mar	1,675.06	1,673.77	1,714.00	1,635.50	40,746	58,934	4,435.00	1,590.30	409,467	1,057.93	27,979
Apr	1,648.54	1,650.07	1,677.50	1,621.00	40,288	58,033	4,309.00	1,592.55	415,533	1,031.25	28,719
May	1,585.11	1,585.50	1,664.00	1,540.00	39,869	54,275	4,061.00	1,590.63	416,470	997.47	28,923
Jun	1,595.63	1,596.70	1,635.00	1,558.50	40,934	53,609	4,076.00	1,595.06	430,127	1,024.47	29,951
Jul	1,592.78	1,593.91	1,622.00	1,556.25	41,708	52,435	4,047.00	1,547.97	422,715	1,021.84	29,588
Aug	1,625.68	1,626.03	1,668.00	1,597.00	42,155	53,983	4,113.00	1,552.14	431,987	1,034.69	30,336
Sep	1,741.93	1,744.45	1,784.50	1,690.00	43,579	59,707	4,383.00	1,678.06	463,411	1,082.18	31,778
Oct	1,746.35	1,747.01	1,791.75	1,706.50	43,291	60,242	4,436.00	1,696.78	485,875	1,086.93	31,156
Nov	1,724.35	1,721.14	1,750.50	1,683.50	43,139	58,903	4,482.00	1,654.17	487,328	1,078.15	31,728
Dec	1,687.34	1,688.53	1,720.00	1,650.50	41,431	58,845	4,529.00	1,610.57	468,349	1,046.07	30,967

## Quarterly Average

Q1	1,691.16	1,690.57			41,452	59,029	4,313.00	1,601.35	421,232	1,075.79	27,969
Q2	1,608.53	1,609.49			40,339	55,207	4,145.00	1,592.64	420,582	1,016.33	29,241
Q3	1,650.70	1,652.00			42,446	55,240	4,175.00	1,590.06	438,620	1,044.52	30,471
Q4	1,721.27	1,721.79			42,727	59,384	4,478.00	1,658.02	481,585	1,072.61	31,274

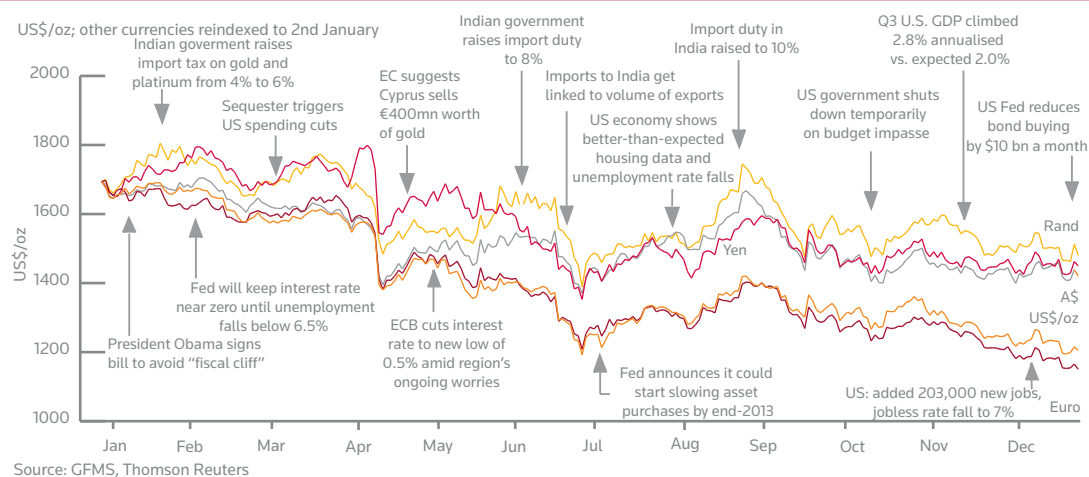
## GOLD PRICES IN 2012, PM FIX DAILY



## APPENDIX 14 - GOLD PRICES IN 2013

	London AM fix US\$/oz	London PM fix US\$/oz	High PM fix US\$/oz	Low PM fix US\$/oz	euro/kg	CHF/kg	yen/g	A\$/oz	rand/kg	£/oz	rupees/ 10g
<b>Annual Average</b>	1,409.51	1,411.23			34,196	48,951	4,411.58	1,454.85	433,964	903.74	29,310
Maximum	1,692.50	1,693.75			41,390	59,346	5,052.17	1,622.96	489,799	1,069.66	33,590
Minimum	1,192.75	1,192.00			28,056	40,473	3,798.70	1,304.76	376,728	730.00	25,270
Range:Average	35.5%	35.6%			39.0%	38.6%	28.4%	21.9%	26.1%	37.6%	28.4%
<b>Monthly Average</b>											
Jan	1,671.89	1,670.95	1,693.75	1,645.25	40,384	58,139	4,791.85	1,590.91	471,497	1,047.05	30,691
Feb	1,630.69	1,627.59	1,674.25	1,576.50	39,231	56,812	4,872.31	1,579.12	463,485	1,052.42	30,091
Mar	1,591.01	1,592.86	1,613.75	1,571.90	39,514	54,132	4,859.49	1,539.99	468,778	1,056.66	29,658
Apr	1,485.90	1,485.08	1,583.50	1,360.60	36,644	51,016	4,675.89	1,431.17	433,115	970.01	27,913
May	1,416.14	1,413.50	1,469.25	1,354.75	35,025	47,523	4,591.04	1,428.97	424,454	924.77	26,898
Jun	1,342.70	1,342.36	1,404.00	1,192.00	32,691	46,282	4,197.02	1,423.44	430,460	866.11	27,359
Jul	1,284.35	1,286.72	1,335.00	1,212.75	31,591	43,840	4,120.87	1,404.31	408,568	847.23	27,040
Aug	1,345.05	1,347.10	1,419.50	1,280.50	32,526	46,800	4,234.05	1,491.95	435,369	869.02	30,419
Sep	1,348.46	1,348.80	1,399.50	1,301.00	32,468	46,982	4,301.28	1,452.73	430,854	850.14	30,566
Oct	1,314.40	1,316.18	1,361.00	1,265.50	31,027	46,875	4,138.92	1,383.46	417,529	818.05	30,755
Nov	1,277.42	1,275.82	1,320.50	1,240.00	30,395	44,954	4,105.00	1,369.57	417,540	791.95	30,864
Dec	1,221.59	1,225.40	1,266.25	1,195.25	28,752	44,110	4,071.18	1,363.11	407,180	748.53	30,071
<b>Quarterly Average</b>											
Q1	1,632.51	1,631.77			39,731	56,418	4,839.62	1,570.68	468,035	1,051.88	30,173
Q2	1,416.08	1,414.80			34,820	48,306	4,492.68	1,427.93	429,325	921.17	27,383
Q3	1,324.67	1,326.28			32,176	45,811	4,215.72	1,448.27	424,427	855.21	29,211
Q4	1,273.26	1,276.16			30,153	45,422	4,107.76	1,372.85	414,528	789.03	30,562

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